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The Impact of Service Dogs on Combat Veterans with Posttraumatic Stress Disorder

Christine R. Hansen
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Christine R. Hansen

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Review Committee
Dr. Kathryn Dardeck, Committee Chairperson, Psychology Faculty
Dr. Timothy Lionetti, Committee Member, Psychology Faculty
Dr. Carolyn Davis, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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by

Christine R. Hansen

MA, Walden University, 2011

BS, University of Phoenix, 2007

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Combat veterans with posttraumatic stress disorder (PTSD) related symptoms often require the use of complementary therapeutic aids, such as service dogs, to assist them in their recovery in addition to traditional evidence-based therapy. Anecdotal literature was available on the use of service dogs, but quantitative research has not been conducted to answer the question of what the impact was of the use of service dogs on reducing symptoms of PTSD among combat and non-combat veterans. Attachment theory was one of the most common theoretical frameworks for exploring the use of service dogs for treating combat PTSD. The theoretical framework for this study was derived from Bowlby's theory on attachment and the work done with Ainsworth to review the possible correlations between secure and insecure attachment styles and the impact of using service dogs. Three surveys were selected to measure PTSD related symptoms, service dog tasks, and attachment styles of the 64 participants to be able to look at PTSD-related symptoms and attachment theory in relation to service dog tasks. This study did not show a difference between combat veterans and non-combat veterans who use service dogs in the reduction of PTSD-related symptoms, but the study did show that there was a positive relationship between PTSD-related symptoms and the use of service dogs. Participants' answers supported anecdotal reports of the positive effect of the use of service dogs. The results of the current research provide implications for positive social change by providing important information in relation to service dogs could improve the quality of life and more manageable psychological symptoms, and that attachment styles should be considered as a mitigating factor which was missing in previous research.

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Dedication

This dissertation is dedicated to the people who supported me and believed in me throughout this process. I am extremely grateful to my children, Keturah and Jordan, who inspired me to go back to college and follow my dream. I am thankful that they put up with my late nights, and time away from them so I could do homework. I appreciate the encouragement and support I received from my sister and my coworkers throughout this process. I am especially indebted to the Navy that supported my goals and allowed me to complete my dissertation.

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Chapter 1: Introduction to the Study

Service dogs have been used as a complementary means to help individuals cope with stress and difficult situations and adapt to adversity (Chumley, 2012; Owen, Finton, Gibbons, & DeLeon, 2015). Service dogs were used in Afghanistan and Iraq to reduce stress during a pilot program designed to aid in combat and operational stress control (COSC), and to help reduce posttraumatic stress disorder (PTSD)-related symptoms (Ritchie & Amaker, 2012). Yount, Olmert, and Lee (2012) developed a service dog training program that taught combat veterans diagnosed with PTSD how to train specially-bred canines to be service dogs for disabled veterans. Anecdotal reports from combat veterans in this program indicated they experienced fewer PTSD-related symptoms compared to before they took part in the program (Yount, et al., 2012). Shubert (2012) provided anecdotal reports of service dogs sensing the physiological changes related to a handler's oncoming seizure. Physiological changes include subtle changes in breathing or heart rate or smells the individual may secrete due to mild sweating (Brown & Goldstein, 2011). The dogs were reported to alert their handlers by barking when they sensed oncoming seizures (Ritchie & Amaker, 2012). Other anecdotal reports from combat veterans diagnosed with PTSD-related symptoms and who participated in a service dog training program indicated that they experienced a reduction in PTSD-related symptoms (Yount et al., 2012). Twaite and Rodriguez-Srednicki (2004) studied how attachment theory was used as a mediating variable in a study related to developing PTSD vulnerability. Building on studies by Ritchie and Amaker (2012), Shubert (2012), Yount et al. (2012), Brown and Goldstein (2011), and Twaite and

Rodriguez-Srednicki (2004), the purpose of this study was to compare the impact of service dogs on combat veterans and non-combat veterans with PTSD-related symptoms, and compare the respondents' attachment styles as the mediating variable. This study has the potential to contribute to positive social change by providing insight into the impact of using service dogs as a complimentary measure to treating PTSD related symptoms.

This chapter summarizes the background of the use of service dogs in aiding PTSD-related symptom reduction and presents the problem statement. I then outline the purpose of the study and present the research questions, before discussing the theoretical framework of attachment theory in relation to both service dogs and PTSD. The nature of the study, key definitions, assumptions, scope, delimitations, and limitations was explained. The chapter concludes with the significance of the study, a summary, and a transition to Chapter 2.

Background

Service dogs have been used as a complementary means along with regular evidence-based treatment to aid in reducing symptoms of PTSD-related symptoms (Chumley, 2012; Owen, 2015; Ritchie & Amaker, 2012; Yount et al., 2012). Patients with PTSD who participated in programs developed for the Veteran's Administration (VA) and the United States Army Medical Corps anecdotally reported that working with service dogs reduced their anxiety, increased their ability to be in crowds, decreased the numbers of nightmares, and alerted the individual to oncoming seizures (Ritchie & Amaker, 2012; Yount et al., 2012).

Research into the health benefits of human-animal bond was in its infancy (Beck & Katcher, 2003). The intimacy and bonds between humans and animals have been shown to aid with recovery from physical and mental health issues (Beck & Katcher, 2003). Current research that was focused on service dogs working with combat veterans diagnosed with PTSD was limited. These studies were related to the therapeutic effect of service dogs on non-combat veterans with general anxiety disorder, depression, and PTSD (Esnayra & Love, 2008; Marshall, 2012). Shubert (2012) and Yount, Ritchie, St. Laurent, Chumley, and Olmert (2013) discussed the need for additional empirical research to support earlier anecdotal studies showing the effectiveness of service dogs on the reduction of PTSD-related symptoms among combat veterans.

The wars in Iraq and Afghanistan have resulted in increased incidences of combat-related PTSD (Butcher, Mineka, & Hooley, 2010). PTSD is a psychiatric disorder that occurs in the aftermath of living through or witnessing a major traumatic event during which one experiences real threats to one's existence or well-being (Butcher, et al., 2010). Combat-related PTSD has been associated with life-threatening traumatic events experienced during combat, including explosions, improvised explosive devices (IEDs), and detonations causing mass casualty events during military deployments (Peterson, Luethcke, Borah, Borah, & Young-McCaughan, 2011). The resulting emotional, cognitive, behavioral, and physical responses include mood changes, intrusive memories or nightmares, flashbacks, emotional and/or physical responses to triggers that remind the person of the event, and avoidance of people, situations, or events that remind the person of the traumatic event (Peterson, et al., 2011). Other ramifications

may include problems with memory, attention, fear, guilt, anger, recklessness, self-destructive behavior, and heightened sensitivity or awareness of surroundings. Frequently, such symptoms were accompanied by hypervigiliance, such as a person's scanning of the environment for potential threats (American Psychiatric Association, 2013).

Animal-assisted therapy involves using a trained animal during treatment with detailed goals created specifically for the client (Pet Partners, 2012b, para. 1). For example, a therapist could have an individual brush or stroke the animal during the therapy session to help the individual remain fully present in the session. Another example might include equine assisted therapy, which was often used to help raise self-esteem and to instill a sense of empowerment in the client (Pet Partners, 2012b, para. 1). Beck et al. (2012) conducted a literature review on human-animal interaction and animal-assisted therapy and how these topics were related to psychological well-being. Beck et al. (2012) presented theoretical perspectives behind the human-animal bond. Yount et al. (2012) created a volunteer service dog training program in which veterans diagnosed with combat-related PTSD provided obedience and task training to service dogs for physically-disabled veterans. The volunteers reported that training the service dogs helped reduce their own stress and anxiety (Yount et al. 2012). Additionally, Yount et al. (2013) researched oxytocin levels of combat veterans with PTSD-related symptoms who had trained service dogs. Those veterans also reported reduced PTSD-related symptoms, such as reduction in the number of nightmares, anxiety, stress, negative emotional responses, depression and a lower need for medication for pain (Yount et al. 2012). The

participants also reported increased social interaction, improved ability to deal with frustration, and higher tolerance of others or situations Yount et al. (2012).

Yount et al. (2013) suggested that additional research be conducted to further explore the validity of the anecdotal reports on the use of service dogs. In reviewing the relevant literature for the current study, I was unable to locate any studies on attachment styles of individuals who use service dogs to mitigate PTSD-related symptoms. The current study was designed to examine the gap in the literature of how service dogs used by combat and non-combat veterans with PTSD-related symptoms may or may not reduce those symptoms. Additionally, I endeavored to determine if there were any correlations between symptom reduction, or lack thereof, and attachment styles. This quantitative study on the use of service dogs as complementary treatment for PTSD symptom reduction was intended to fill a gap in the literature of such studies.

Problem Statement

Erford et al. (2016) stated that 7% of the world population has been diagnosed with PTSD and approximately 2% out of the 7% diagnosed were in the United States. This 2% equates to roughly 6.3 million individuals of any age and social economic status (Erford et al., 2016). The numbers of reported cases of veterans diagnosed with PTSD-related symptoms has risen since military members were deployed in support of Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn (Butcher et al., 2010). Slightly more than 1,600 military members were diagnosed with PTSD in 2001, a number that rose to 103,792 by the end of December 2012 (U.S. Army Office of the Surgeon General [OSG], as cited in Fischer, 2013).

Veterans diagnosed with PTSD have struggled with substance abuse, suicidal ideation, and homelessness after release from active duty (Krause-Parello, Sarni, & Padden, 2016). Individual and group counseling has been the primary means to treat PTSD-related symptoms (Erford et al., 2016). Different types of counseling have been used to treat PTSD-related symptoms that include supportive therapy, interpersonal psychotherapy, meditation, dialectical behavior therapy counseling behavior therapy, and eye movement desensitization and reprocessing (EMDR) (Erford et al., 2016). Approximately 41% of veterans diagnosed with PTSD-related symptoms still have those symptoms after completing evidence-based treatment; thus, they require complementary treatment (Hoge, 2013; Wilk et al., 2013). Additionally, 60% of combat veterans diagnosed with PTSD who had limited support systems still had PTSD-related symptoms after completing evidence-based therapy, and required complementary therapy methods to aid in the recovery process (Chumley, 2012; Ritchie & Amaker, 2012; Yount et al., 2012).

A comprehensive library search revealed anecdotal reports and a dissertation related to the therapeutic effect of service dogs on combat and non-combat veterans with general anxiety disorder, depression, and PTSD (Krause-Parello, et al., 2016; Shubert 2012; Yount et al., 2012). Cukor, Spitalnick, Difede, Rizzo, and Rothbaum (2009) conducted a meta-analysis of 26 studies and found that 33% of military members diagnosed with PTSD who completed evidence-based treatment still met the criteria for PTSD after treatment. Many other studies looked at combat related PTSD (see Carr, 2011; Chumley, 2012; Ritchie & Amaker, 2012; Yount et al., 2012), the use of service

dogs by veterans with PTSD-related symptoms (see Ritchie & Amaker, 2012; Shubert, 2012), and how attachment styles affect the incidence of PTSD-related symptoms after a trauma event (see Benoit, Bouthillier, Moss, Rousseau, & Brunet, 2010; Owens et al., 2013). No researcher, however, combined and examined these variables in one study. Considering the limited, but promising research on the efficacy of the use of service dogs to aid in the reduction of PTSD-related symptoms, this study was designed to fill that gap in the research.

Purpose of the Study

The purpose of this study was to compare the impact of service dogs with combat veterans and non-combat veterans with PTSD-related symptoms and quantify the respondents' attachment styles as the mediating variable. This quantitative study examined the use of service dogs by combat and non-combat veterans based on the tasks the service dogs provided. Specifically, I examined PTSD-related symptoms in those who used service dogs, the tasks performed by the service dogs, and participants' attachment styles to evaluate the impact on the relationship between the respondents and their service dogs. Therefore; the independent variable was veterans with service dogs, and the dependent variables were PTSD-related symptoms, service dog tasks, and attachment style.

Research Questions and Hypotheses

Based on a review of the literature on the use of service dogs for PTSD-related symptoms and attachment theory in relation to PTSD-related symptoms, the following research questions and hypotheses were developed:

RQ1: Do service dogs decrease PTSD-related symptoms in non-combat and combat veterans diagnosed with PTSD?

$H_0$1: Service dogs, as measured by the PDSAS, do not decrease PTSD-related symptoms in non-combat and combat veterans.

H_a1: Service dogs, as measured by the PDSAS, decrease PTSD-related symptoms in non-combat and combat veterans.

RQ2: What was the relationship, if any, between attachment style and the impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

$H_0$2: There was no relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

H_a2: There was a relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

RQ3: What was the relationship, if any, between PTSD-related symptoms and the perceived impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

$H_0$3: There was no relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

H_a3: There was a relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

Theoretical Framework

Bowlby (1982/1988), who referenced evolutionary psychology to help explain attachment theory, studied the attachments that animals and humans develop from birth.

Dykas and Cassidy (2011) and Peacock, Chur-Hansen, and Winefield (2012) associated attachment theory with the connection between humans and how these relationships affect social information processing. The child relies on the mother for its care and creates an attachment, which was based upon the security and safety the child experiences as a result of the care (Walsh, 2009). Attachment theory has been used to understand how human connections can create positive and negative social attitudes. Specifically, negative or insecure attachments cause individuals to develop strategies to avoid connecting with others to prevent emotional pain or negative social schemas (citation). Positive attachment experiences or secure attachments enable individuals to develop positive schemas and process positive and negative social experiences in a confident and constructive way (Dykas & Cassidy, 2011).

As attachment theory may be used to explain healthy relationships between humans, it may also relate to the therapeutic human-animal bond (Peacock et al., 2012). The attachments that individuals have with companion animals and service dogs compare to the attachment a child has with his or her parent (Shubert, 2012). Service dogs provide a secure base for individuals diagnosed with combat-related PTSD (Shubert, 2012). Additionally, the service dog serves as a conduit for emotional support, which helps create attachment behaviors (Shubert, 2012). Shubert (2012) described these factors as the reason attachment theory applies to the human-animal relationship as well as the human-human relationship. This theoretical framework was derived from Bowlby's (1962, 1973, 1982, 1988) theory on attachment and the work he did with Ainsworth (Ainsworth & Bowlby, 1991), and is described in greater detail in Chapter 2.

Nature of the Study

This quantitative design was based on a survey. Quantitative research provided the means to assess the relationship between PTSD-related symptoms of non-combat veterans and combat veterans diagnosed with PTSD who use service dogs. This methodology was consistent with the need to examine the relationship between the independent variable of veterans with service dogs, and the dependent variables of PTSD-related symptoms, service dog tasks, and attachment style (see Creswell, 2009). The independent variable of veterans with service dogs contains two sub-variables: combat veterans and non-combat veterans, both with PTSD related symptoms. This study focused on how service dogs were used for assistance in reducing symptoms of PTSD, and if attachment style influence symptoms of PTSD.

For the purpose of this study, *combat veterans* were individuals who were in combat with any branch of the service. *Non-combat veterans* were all other veterans who used service dogs as a complementary means of PTSD-related symptom reduction. The dependent variables were PTSD symptoms, service dog tasks, and attachment style of combat and non-combat veterans. PTSD symptoms was measured using the PTSD checklist (PCL-5). The PCL-5 was created based on the *Diagnostic and Statistical Manual of the American Psychiatric Association* [*DSM-V*] (2014) and the previous version of the PTSD Checklist (PCL). The PCL-5 measures PTSD-related symptoms from symptom clusters for PTSD as outlined in the *DSM-V* (Yoder, Tuerk, Price, Grubaugh, Strachan, Myrick, & Acierno, 2012). The use of service dogs was measured by the tasks the service dog performs for the user. Service dog tasks was measured using

the Psychiatric Service Dog Assistance Scale (PSDAS), and attachment styles was measured using the Experiences in Close Relationships-Revised (ECR-R) Questionnaire.

Esnayra and Love (2009) examined psychiatric service dog use by developing, administering, and analyzing a quantitative survey for the U.S. Army to provide a means to conduct qualitative research into the use of service dogs. The survey was developed to examine how service dogs aid in reducing the symptoms related to PTSD, general anxiety disorder (GAD), and major depressive disorder (MDD). The PSDAS was used to evaluate the tasks perform by service dogs. This scale was based on a survey that was validated only once in a previous dissertation (see Marshall, 2012). A review of the literature revealed that there were no set scales that measure the tasks performed by service dogs other than the scales created by Esnaya and Love (2008) and refined by Marshall (2012). Other surveys reveal how an individual was attached to his or her companion animal, but these surveys did not focus on any task performed to aid with mental health relief (Cromer & Barlow, 2013; Stewart, 2006; Zilcha-Mano, Mikulincer, & Shaver, 2011, 2012).

The ECR-R measures attachment styles of individuals on the attachment anxiety and attachment avoidance scales (Fraley, Waller, & Brennan, 2000). Low scores in these two scales indicate secure attachment styles (Fraley, Waller, & Brennan, 2000). These two scales provided variables to measure and analyze against tasks to see which would predict symptom reduction using a hierarchal multiple regression, which identified potential associations between the dependent variables with the independent variables.

Definitions

Attachment anxiety: Attachment anxiety relates to the fear of being abandoned, constant need for approval, and fear of rejection (Woodhouse, Ayers, & Field, 2015).

Attachment avoidance: Attachment avoidance relates to the avoidance and fear of intimacy, the need for independence, and the desire to handle everything alone (Woodhouse, Ayers, & Field, 2015).

Combat veteran: Combat veteran is a term used to receive health benefits and disability compensation from VA (VA, 2011). This term has been heavily debated and veterans have been required to show proof of being engaged in combat with the enemy until the Combat Veteran Authority act outlined the definition (VA, 2011). Under the Combat Veteran Authority, a *combat veteran* was defined for health care purposes as someone who served in combat or hostilities after November 11, 1998 (VA 2011). For the purpose of this study a combat veteran was any military personnel who was deployed to areas where combat was prevalent.

Insecure attachment style: Insecure attachment style relates to attachment anxiety and attachment avoidance (Woodhouse, Ayers, & Field, 2015)

Non-combat veteran: Non-combat veteran refers to any veteran who was in the armed forces who did not come under direct fire but could have been assigned to a combat zone(VA, 2011)..

PTSD-related symptoms: PTSD-related symptoms include symptoms such as flashbacks, avoidant behaviors; disorientation, confusion, feelings of isolation, difficulty

falling and/or staying asleep, hypervigilance, fear, nightmares, dissociation, or persistent negative emotional state (American Psychiatric Association, 2013).

Secure attachment: Secure attachment relates to low incidences of attachment anxiety or attachment avoidance (Renaud, 2008).

Service dog tasks: Service dog tasks refers to a trained behavior used to alleviate PTSD-related symptoms, such as fetching medication, checking rooms, calming the handler, assisting the handler when he or she was disorientated, and interrupting or redirecting obsessive behaviors (Marshall, 2012).

Assumptions

Several assumptions underlay this study. The first was related to participants meeting the requirements of the study. The assumption was that all participants met the age requirement, had a service dog, received a diagnosis of PTSD, and submitted only one questionnaire. Another assumption was that each participant answered each question truthfully in the questionnaires. Another assumption was that conducting this study using the Internet produced a large enough number of responses for statistical review. The sample size of 31 per group was optimum based upon a power analysis conducted using G*Power tool (Cohen, 1992). The last assumption was that adult attachments can be assessed by using a self-reporting questionnaire (see Benoit et al., 2010). These assumptions were necessary to analyze the data and draw conclusions on the impact of service dogs.

Scope and Delimitations

The scope of this study was to assess the use of service dogs by combat and non-combat veterans with PTSD-related symptoms and attachment style. No single repository tracked individuals who use service dogs for PTSD-related symptoms. Sampling took place using the Internet as the primary source. All combat and non-combat veterans with access to the Internet and who have a service dog as a compensatory measure for PTSD-related symptoms were afforded the opportunity to take part in this study. The request for participants was posted on psychiatric service dog listservs, Facebook, and was presented to various psychiatric service dog organizations.

Information was collected from three quantitative surveys to measures PTSD-related symptoms (PCL-5), tasks performed by service dogs (PSDAS), and attachment styles (ECR-R) of the participants. The questions on the PSDAS related to service dog tasks did not evaluate specific symptom reduction, but only whether the service dog aids or provides assistance by completing a task when the participant has a symptom. Other questions relate to improvements to the participants' quality of life since obtaining a service dog. The PSDAS also collected data on the participants' mental health history, including symptoms, diagnosis and treatment; the history of learning about and obtaining a service dog; and demographic information, such as gender, ethnic, or cultural identity, age, and employment. Attachment had been thought to affect how well individuals recover from trauma (Kurdek, 2009; Walsh, 2009). Individuals with secure attachments were thought to see improved PTSD-related symptom reduction (Kurdek, 2009; Walsh, 2009). The ECR-R assessed the type of attachment the participant associates with secure

or insecure attachment (anxiety and avoidance) to determine if attachment style was a covariate to symptom reduction.

The target populations for this study were male and female combat and non-combat veterans older than the age of 18 who self-identify as having PTSD-related symptoms as defined in the *DSM-V* (2013) and who used service dogs. Participants who were currently in a psychiatric in-patient treatment facility were excluded. Sampling took place using the Internet and other means discussed below to recruit participants. Participants meeting the criteria must have access to the Internet and have basic computer skills.

I used a nonprobability sample method to collect data regarding other demographics to define characteristics of the sample. These variables include age, gender, marital status, level of training their service dog has received, and the number of years with a service dog. The results may not reflect other populations, given the nonprobability sampling method and the specific population studied (combat and non-combat veterans who use service dogs).

A review of the literature suggested that attachment theory was the most prevalent theory related to the PTSD and human-animal bond (Peacock et al., 2012; Walsh, 2009a, 2009b), companion animals (Kurdek, 2009; Zilcha-Mano et al., 2011,2012), and canine interaction (Beetz, Julius, Turner, & Kotrschel, 2012; Yount et al., 2012). While various theories have been associated with either PTSD or animal-assisted therapies, no other theories were identified that related to both PTSD-related symptoms and the use of service dogs.

Recruitment using nonprobability sampling has been found to provide differences in demographics and can limit the results (Creswell, 2009). Since not all individuals in this study group were afforded the same opportunity to participate in the study. The PSDAS collects demographic data that can be compared to the larger veteran community to assess this issue. Another factor that could affect generalizability in the study was missing data. I took care to examine for missing data to reduce any impact on the findings.

Limitations

Limitations existed in this study that range from personal perception, willingness to answer questions related to mental illness, a desire to participate, and the motivation to complete all three surveys. Individuals' perception of the amount of assistance a service dog provides them may be different than non-respondents' perceptions. Additionally, individuals who choose to participate in this study may be more willing to discuss their own mental health issues connected to PTSD-related symptoms than might be individuals who do not want to participate. Another limitation was there was no means to verify the participants' service status and keep the study confidential.

Studies can be threatened by research bias, inaccurate inferences from the data, and generalizations (Creswell, 2009). Self-report surveys can be affected by response bias, which can influence the outcome (Creswell, 2009). Creswell (2009) discussed the need for researchers to recognize and plan for the possibility for a participant's experiences and perceptions to skew results. Respondents may not answer all the questions in the three surveys, which could affect the analysis and results.

Using a nonprobability sample does not allow for effective randomness of the target population. Creswell (2009) discussed probability samples as being used when a researcher knows the sample population. As no repository tracks combat and non-combat veterans who use service dogs, there was no way to ascertain that total population. Using nonprobability sampling can cause research bias since not all individuals in a study group were afforded the same opportunity to participate in the study (Creswell, 2009). Convenience sampling could cause an overrepresentation of individuals with similar demographic characteristics (Creswell, 2009).

The nonprobability sampling method I used was snowball sampling (see Fawcett & Garity, 2009). A limitation of snowball sampling was that it does not provide all individuals who meet the inclusion criteria the chance to complete the survey. This then reduces the ability to draw accurate conclusions from the data (Sadler et al., 2010). This type of sampling allows for respondents to suggest the study to other individuals who meet the criteria. Sadler et al. (2010) discussed using community agencies that have an affinity for the problem to ensure the widest dissemination of the research study. Service dog associations, organizations, social media groups, and the like were contacted to aid spreading the word about this study in an attempt to obtain a wide variety of respondents.

Significance of the Study

Few researchers have examined the impact of the use of service dogs by veterans with PTSD-related symptoms (Chumley, 2012; Ritchie & Amaker, 2012; Yount et al., 2012). This study contributes to the literature by exploring the relationship between PTSD-related symptoms of non-combat veterans and combat veterans diagnosed PTSD

who use service dogs. Positive anecdotal reports have been published concerning the use of service dogs (Chumley, 2012; Ritchie & Amaker, 2012; Yount et al., 2012).

McIntosh (2009) discussed the VA's concern about the efficacy of use of service dogs as a complementary means to treat veterans with PTSD-related symptoms. The VA's concern was how individuals with PTSD-related symptoms were associating symptom reduction with the complementary use of service dogs, and not the primary treatment method (McIntosh 2009). McIntosh reported that the VA favors treatments such as exposure therapy to teach the veteran to overcome fear, help reduce negative behaviors, and enable the veteran to participate in previously feared behavior. Veterans who use service dogs may attribute any change in symptom reduction to the fact that they have a service dog, rather than to the exposure therapy. Love and Esnayra (2009) recognized the lack of evidence-based research dedicated to the use of service dogs to aid in the treatment of mental health issues. Many veterans suffer from PTSD, and conventional therapies do not always help them function in peacetime society (Hoge, 2013). This study may contribute to positive social change by adding to the scholarly literature on effective treatments for veterans with PTSD-related symptoms. If service dogs aid individuals with PTSD-related symptoms, their quality of life may be improved.

Summary

Traditional evidence-based therapy, while generally effective, does not always alleviate PTSD-related symptoms for veterans (Chumley, 2012; Hoge, 2013; Ritchie & Amaker, 2012; Yount et al., 2012). Veterans diagnosed with PTSD often require complementary treatment to help reduce symptoms. Service dogs have been used as a

complementary treatment; however, only anecdotal reports can be found in literature (Ritchie & Amaker, 2012; Shubert, 2012; Yount et al., 2012, 2013). Attachment theory has been used to provide a lens through which I analyzed symptoms of PTSD. Benoit et al. (2013), Clark and Owens (2012), and Renaud (2008) explored the links between insecure attachment and the incidence and treatment of PTSD. This study was designed to measure PTSD-related symptoms, service dog tasks, and attachment style through nonprobability sampling.

Chapter 2 examines literature on attachment theory, PTSD, and the use of service dogs. The literature review begins with a review of Ainsworth and Bowlby (1991) and recent research on the connection between attachment style and PTSD (Benoit et al., 2010; Kurdek, 2009; Owens et al., 2013; Renaud, 2008). The chapter provides the history of combat-related PTSD and how the term has been defined in the various versions of the *DSM*. A review of the use of dogs as companions, emotional support, and psychiatric support was provided to include the VA's stance, and the American with Disabilities Act (ADA) law on the use of service dogs.

Chapter 2: Literature Review

Although traditional evidence-based therapy can be an effective treatment for combat veterans diagnosed with PTSD, approximately 41% of veterans diagnosed with PTSD still had PTSD symptoms after completing the therapy and required complementary treatment (Hoge, 2013). Since 2007, service dogs have been used as one such complementary treatment (Chumley, 2012; Ritchie & Amaker, 2012; Yount et al., 2012). Walter Reed Medical Center's occupational therapists found that their personal canines were able to garner physical and emotional responses from soldiers who had withdrawn or previously been unresponsive to human interventions (Ritchie & Amaker, 2012). The first canine-assisted therapy program for soldiers at Walter Reed Medical Center was created in 2008. Yount et al. (2012) later anecdotally reported about the effectiveness of the program. For example, soldiers reported they felt less stress, had more patience, and improved sleep (Yount et al., 2012). In response to such preliminary findings, the VA and the United States Army Medical Corps have since developed formal canine-assisted programs. Participants in these programs have experienced improvements in PTSD-related symptoms, including reduced anxiety, increased ability to be in crowds, and fewer nightmares (Ritchie & Amaker, 2012). In addition, Shubert (2012) provided anecdotal reports of some service dogs sensing the physiological changes related to a handler's oncoming seizure. The dogs alerted their handlers by barking when they sensed these changes (Shubert, 2012).

Other anecdotal reports from combat veterans diagnosed with PTSD-related symptoms and who participated in a service dog training program indicated that they

experienced a reduction in PTSD-related symptoms (Yount et al., 2012). For example, service dogs were used in Afghanistan and Iraq to reduce stress during a pilot program designed to aid in COSC (Ritchie & Amaker, 2012). Current research focused on service dogs working with combat veterans diagnosed with PTSD was limited, particularly studies related to the therapeutic effect of service dogs on non-combat veterans with general anxiety disorder, depression, and PTSD (see Esnayra & Love, 2008; Marshall, 2012). Shubert (2012) and Yount et al. (2013) discussed the need for additional empirical research to support earlier anecdotal studies showing the effectiveness of service dogs on the reduction of PTSD-related symptoms among combat veterans.

The purpose of this literature review was to better understand the impact of service dogs on combat veterans with PTSD through the lens of attachment theory. Databases included PsycINFO, Google Scholar, ProQuest, Homeland Security Digital Library, Defense Technical Information Center, and the Thoreau multilibrary search engine. Searches were run using combinations of the words *attachment theory, human-animal bond*, *companion animal*, *human-animal interaction*, *animal assisted therapy*, *pet therapy*, *therapy*, *service dog*, *veterans* and *service dogs*, *veterans* and *PTSD* or *post-traumatic stress disorder*, *attachment theory* and *service dogs*, *attachment and animal assisted therapy*, and *attachment, PTSD, and veterans*. Most of the research examined covered the years 2009 to 2014, but I examined as far back as 1967. The types of literature included research articles, book chapters, reports, dissertations, laws, and regulations. The types of publications included periodicals, books, primary source documents, and military reports.

This chapter provides an examination of how previous literature on attachment theory, PTSD, and the use of service dogs relate to my study. The examination begins with a discussion of different aspects of attachment theory and attachment styles by Ainsworth and Bowlby (1991) and recent research articles. This section also discusses the connection of attachment theory with PTSD and the use of service dogs. The next section reviews and analyzes the background of combat related PTSD and the evolution of the disorder in the different versions of the *DSMD (*1st ed.; *DSM-I;* 2nd ed.; *DSM-II;* 3rd ed.; *DSM–III*; 3rd ed., rev; *DSM–III–R*; 4th ed.; *DSM*-IV; 4th ed. text rev.; *DSM-IV-TR;* 5th ed.; *DSM-V*; American Psychiatric Association, 1952, 1968, 1980, 1987, 1994, 2000). This section is followed by a review of research on the use of dogs in therapy by discussing research related to the human-animal bond, companion animals, emotional support dogs and animal-assisted therapy. The discussion then transitions to a review of animal-assisted therapy, the different uses of animal assisted therapy, and service dogs. The chapter also examines the ADA in relation to service dogs, and concludes with a synthesis of the literature on attachment theory, service dogs, and combat veterans diagnosed with PTSD.

Theoretical Framework

Theories used in research have been described as the proposition or hypothesis that indicates the rationale behind the relationship between the variables of a study (Creswell, 2009). One of the most common theoretical frameworks for exploring the use of service dogs for treating combat PTSD was attachment theory (Walsh, 2009b). Attachment theory aids in understanding the basic human need for social support and

emotional relationships with others, and provides the framework for understanding PTSD-related symptoms that lead to social impairments (Renaud, 2008; Woodward et al., 2013), affect emotion regulation (Benoit, et al., 2010), and interpersonal relationships (Benoit et al., 2010; Owens et al., 2013; Renaud, 2008). Common symptoms of PTSD include intrusive, distressing memories, recurrent disturbing dreams, dissociative reactions, intense or prolonged psychological distress at exposure to internal or external cues that resemble an aspect of the traumatic event, and persistent avoidance of stimuli that remind the survivor of the trauma (ADA, 2013). Renaud (2008) discussed how attachment theory provides the means to understand how PTSD related symptoms affect emotion regulation, negative social support reactions, and how individuals relate to others by disrupting social support systems. This was especially useful in counseling combat veterans diagnosed with PTSD (Troxel & Germain, 2011). Although Bowlby (1982, 1988) compared human attachment to animal attachments, he did not explore human-animal attachments within his theory. Thus, the current research on animal-assisted therapy was designed to add an additional perspective on how attachment theory can serve as a grounding point for understanding and addressing posttraumatic stress disorder.

Ainsworth (1991) discussed four aspects of attachment to a caregiver: (a) proximity maintenance, (b) separation distress, (c) secure base, and (d) safe haven. Individuals enjoy being physically close to the attachment figure and miss the attachment figure when he or she was not present (Ainsworth, 1991). Additionally, the individual depends on the attachment figure as a source of comfort and seeks him or her out to aid in

alleviating distress (Ainsworth, 1991). Kurdek (2009) conducted two studies on attachment theory and the use of companion dogs and found that owners enjoy being physically close to their dogs, miss them when they were not with them, and often depend on them for comfort. When the study participants were asked to whom they turned to in times of stress, subjects offered somewhat paradoxical responses (Kurdeck, 2009). While they rated the aspect *safe haven* as low for companion dogs compared to the other aspects of attachment, most of participants responded that they turn to their dogs over their mother, father, sister, brother, best friend, and children when faced with distress (Kurdek, 2009). Indeed, the only human relationships that rated higher than canine companions were romantic partners (Kurdek, 2009).

Secure and Insecure Attachment and Emotional Regulation

Attachment theory was originally used to provide a framework for understanding secure and insecure attachments related to early childhood development and emotional bonds (Ainsworth & Bowlby, 1991; Bowlby, 1982, 1988). Attachment theory has been expanded to include adult attachments, cultivating coping mechanisms, and the management of emotions (Fonagy, Gyorgy, Jurist, & Target, 2003). One component of attachment theory involves the concept that relationships act as a secure basis for individuals to explore the world and grow emotionally. Bowlby (1988) discussed the importance of attachment figures providing a secure foundation that allows an individual to explore the world and his or her emotions. The basic premise of attachment theory revolves around how a child relies on the mother or caregiver for security and care. The availability of the caretaker to provide the support and security a child needs results in

two broad types of attachment: secure and insecure (Bowlby, 1988; Walsh, 2009a). Bowlby posited that secure attachment development enabled individuals with the ability to create healthy emotional bonds with other individuals, first with parents, then with others. Secure attachments were created when a child knows that his or her attachment figure was available, supportive, and encouraging (Bowlby, 1988). Secure attachments were associated with the ability to create healthy emotional bonds and were seen as appropriate mental health development (Bowlby, 1988). Positive attachment experiences, or secure attachments, enable individuals to develop positive schemas and process positive and negative social experiences in a confident and constructive way (Dykas & Cassidy, 2011).

In contrast, insecure attachments develop when a child is unsure or has no confidence in the attachment figure's availability and responsiveness (Bowlby, 1988). Bowlby (1988) described two types of insecure attachments: attachment anxiety and attachment avoidance. Attachment anxiety occurs when a child is unsure of his or her caregiver's availability to provide the care and security needed (Bowlby, 1988). When the child has no confidence in the attachment figure, he or she develops attachment avoidance (Bowlby, 1988). Clark and Owens (2012) found that combat veterans diagnosed with PTSD had higher levels of attachment anxiety and attachment avoidance compared to veterans who were not diagnosed with PTSD. Individuals with attachment anxiety tend to fear rejection, abandonment, or unavailability of others (Clark & Owens, 2012). Individuals with attachment avoidance tend to disassociate or distance themselves from situations, events, and other people (Benoit et al., 2010; Kulkarni, Porter, & Rauch,

2012; Renaud, 2008). This is manifested through pushing others away with anger or negative expressions or by avoiding social interactions (Benoit et al., 2010; Kulkarni, Porter, & Rauch, 2012; Renaud, 2008). Attachment avoidance becomes an adaptive means to avoid interpersonal relationships and deter relationships by focusing on one's surroundings for any perceived threat. The idea was that negative or insecure attachments cause individuals to develop strategies to avoid connecting with others to prevent emotional pain or negative social schemas (Renaud, 2008).

Internal working models develop over time by means of individuals' interactions with others (Renaud, 2008). Two types of internal working models make up differences in attachment attributes: the internal working model of others and of self (Renaud, 2008). The experiences individuals have with other people and the support individuals believe they received affects their internal working model of others. The function of these models was to mimic internally what the individual believed happened in the real world (Renaud, 2008). By consciously or unconsciously acting out situations, the individual can design behavioral strategy for different circumstances (Bowlby, 1962, 1973). The internal working models of self and others sometimes operate independently, but for the most part the two models were intertwined as a part of a person's attachment style (Renaud, 2008).

Renaud (2008) studied attachment styles of combat veterans with PTSD-related symptoms to understand the effect those symptoms had on interpersonal relationships and emotion regulation. Most of the veterans Renaud (2008) studied indicated an attachment avoidance style. Prolonged heightened senses associated with PTSD could impede the ability to actively connect with other people emotionally (Renaud, 2008). Owens, et al.

(2013) found that many self-referred combat veterans with PTSD-related symptoms and PTSD-related symptoms with substance abuse had higher levels of attachment avoidance than those with substance abuse alone. In both studies, veterans with combat PTSD-related symptoms had difficulties managing their emotions, problems with interpersonal relationships, and negative effects on social support systems (Owens et al., 2013).

Emotion regulation refers to how an individual handles him or herself emotionally, physically, and behaviorally in relationships and toward attachment figures (Benoit et al., 2010). When an individual experiences trauma, he or she can develop emotion regulation strategies of avoidance, disassociation, substance use, difficulty understanding, acknowledging, and expressing emotions, or an inability to engage with his or her social support network (Benoit et al., 2010; Wolf et al., 2012). While emotion regulation was not necessarily equal between individuals in a relationship, verbal and nonverbal cues aid in an individual's ability to regulate his or her emotions toward his or her social support network, comprising a partner, family members, and friends (Renaud, 2008).

Healthy Attachment and Psychosocial Well-Being

Emotion regulation. How individuals recover from the effects of trauma can be linked to attachment styles (Renaud, 2008). Individuals with secure attachments may initially be affected by trauma and the individual may initially avoid dealing with the emotional effects but the emotion regulations strategies that the individual developed as a child are what the individual uses to aid with the recovery from the trauma (Benoit et al., 2010). Individuals with insecure attachment styles have different emotion regulation

strategies based on their attachment style. Individuals with attachment avoidance tend to avoid having to deal with emotion regulation by pushing others away (Renaud, 2008).. The advantage to attachment avoidance was that the individual can focus on being vigilant to surroundings and self-healing, but the disadvantage was the loss of interpersonal relationships (Renaud, 2008).

Researchers have associated attachment theory with the connection between humans and how these relationships affect social information processing (Dykas & Cassidy, 2011; Owens et al., 2013; Peacock et al., 2012; Renaud, 2008). One aspect of Bowlby's (1988) theory about attachment and psychotherapy addressed how a therapist can provide the secure foundation to develop a positive attachment experience. This was accomplished by the therapist providing the patient with a positive, supportive place to develop trust and explore his or her current and previous relationships (Bowlby, 1988). The idea was to create a healthy attachment to change negative internal working models (Levy, 2013).

Human-animal bonding and attachment. Bowlby (1988) reviewed studies on how animals develop bonds with attachment figures, and how both animals and humans develop attachments from birth. Walsh (2009) associated attachment theory with the human-animal bond due to pet owners feeling more secure in their attachment with a pet more often than with a significant other. There appears to be a strong correlation between attachment theory and an animal's ability to improve psychological symptoms in a human being (Kurdek, 2009; Walsh, 2009). Peacock et al. (2012) noted that because attachment theory can be used to explain how healthy relationships between humans

develop so, too, can attachment theory be applied to the human-animal bond. Companion animals provide human counterparts with stress reduction, increased self-esteem, acceptance and psychosocial well-being, and the human-animal bond can enrich owners' lives (Peacock et al., 2012). Beetz et al. (2012) explored how canine interactions affect the internal working model of self and others in children with attachment anxiety and avoidance. The authors found that male children with insecure attachments related positively to canine interaction over human and toy interaction (Beetz et al., 2012). Additionally, the children did not treat friendly companion animals with the same negative attachment and internal working models they developed toward humans (Beetz et al., 2012). Moreover, the authors' studies assessed how interacting with toys, companion animals, or humans resulted in changes in cortisol levels, a marker of stress levels in children with insecure attachments (Beetz et al., 2012).. The study found that being around friendly dogs rather than friendly people lowered the cortisol levels and the stress of these children (Beetz et al., 2012). Yount et al. (2012) found similar positive results toward dogs in a study of stress levels in combat veterans with PTSD-related symptoms. Cortisol levels were sampled before and after the veterans interacted with a service dog with whom the individual had a bond (Yount et al., 2012). In this aspect, attachment theory can be used to look at the increased ability of combat veterans to function in society. Taking care of and working and living with service dogs provides the combat veteran a safe and secure environment via the unconditional love the veteran receives from the service dog. This assists in altering the internal working model, or inner beliefs, of the combat veteran (Peacock et al., 2012; Walsh, 2009a).

Evolution of PTSD

The evolution of PTSD can be seen through the type of combat trauma each major war has inflicted on the soldiers who deployed and participated in battle. Public and military perception of the disorder has changed over the years and wars (Gomes, 2012). Additionally, technological advancements in warfare, medicine, and the protection of soldiers through enhanced body and vehicle armor has increased the survivability of soldiers, and affected the number of reported cases of PTSD from World War I to today (Gomes, 2012).

New Types of Warfare During World War I

Soldiers in WWI experienced a new type of combat compared to the previous American wars, including the Civil War. World War I (WWI) featured chemical warfare, heavy artillery, genocide, and air warfare bombardments that killed civilians. This modern and unexpected warfare caused new types of reactions to combat. Symptoms called *soldier's heart*, *traumatic neurosis*, and *shell shock* became associated with traumatic shock (Friedman, Resick, Bryant, & Brewin, 2011, p. 751). Symptoms of shell shock included wide eyes, tremors, deafness, blindness, or paralysis, which could not be otherwise explained (Gomes, 2012). The medical community believed symptoms of shell shock related directly to the physical shock of artillery bombardment that shocked the soldier's nervous system (Gomes, 2012). The military community believed that if soldiers received proper training and had high morale, they would be psychologically resistant to mental health problems related to combat (Greenberg, Jones, Jones, Fear, & Wessely, 2011).

Still, the military and medical community during WWI acknowledged that healthy or normal individuals exposed to extreme traumatic events could experience shell shock. It was expected that the soldiers would recover quickly once removed to a safe location (Greenberg et al., 2011) and treated immediately (Gomes, 2012). Greenberg et al. (2011) explained how military medical professionals at the time believed shell shock applied only to individuals who had hereditary mental health weaknesses and should be treated immediately on the battlefield. This belief led the military to send military psychiatrists to the front lines (Greenberg et al., 2011).

The discovery of shell shock during WWI caused an international debate within the medical and psychiatric communities because the symptoms could not be associated with a physical ailment (Linden, Hess, & Jones, 2012). The psychiatrists on the front lines began to see instances of shell shock in soldiers who had not experienced artillery fire. The debate hinged around unexplained mental symptoms of those who were not physically injured or had not been in the shockwave of explosions (Linden et al., 2012). This led the United States military to conduct research on the symptoms of and treatments for shell shock. One belief from military psychiatrists was that shell shock resulted in weak soldiers (Gomes, 2012). Those who showed symptoms of shell shock required treatment by occupational retraining (Gomes, 2012). The treatment these soldiers received lacked empathy, understanding, or kindness causing feelings of shame and emasculation. Additionally, these soldiers found little in the way of mental health care due to the lack of understanding of the problem and lack of health care coverage (Greenberg et al., 2011). Military psychiatrists developed comprehensive testing based on

the belief that shell shock was preventable (Greenberg et al., 2011). After WWI, the military conducted pre-deployment screening on soldiers to determine if there were any psychological deficiencies showing hereditary weakness. The military sought to avoid having soldiers develop shell shock through the use of pre-deployment screening, but these screenings were imperfect and untrustworthy (Gomes, 2012).

Gomes (2012) indicated that exposure to combat trauma was not the only reason an individual may develop PTSD. Tanielian and Jaycox (2008) discussed factors that increased the likelihood for development of PTSD-related symptoms, such as longer deployments, seeing others wounded or killed as a result of combat, injuries sustained in combat, poor social support within the military and at home, as well as traumatic brain injury (TBI) (Tanielian & Jaycox, 2008). Furthermore, not every individual has the desire, knowledge, or predisposition to take a life (Gomes, 2012), which means the military had to train the rest of the soldiers how to kill. For returning soldiers, however, the military failed to provide adequate training on how to reintegrate into civilian life after WWI (Gomes, 2012). Additionally, approximately half of all combat veterans with PTSD-related symptoms sought mental health care (Tanielian & Jaycox, 2008).

Developments During and After World War II

A new kind of warfare far more deadly than what soldiers witnessed during WWI occurred during World War II (WWII). The sheer horror and human atrocities witnessed by soldiers during WWII brought about a new type of shell shock (Gomes, 2012). In addition to technological advances and the atomic bomb soldiers witnessed during the war, United States (U.S.) and allied soldiers witnessed the extreme cruelty of the

concentration camps when rescuing those held within. The exposure to such extreme trauma increased incidences of PTSD-related symptoms. The medical community found soldiers experienced panic attacks, nightmares, dizziness, fatigue, memory loss, poor concentration, headaches, and startled reactions (Gomes, 2012).

The United States medical community continued to believe that genetic predisposition to mental illness caused shell shock during World War II. However, as the war progressed, U.S. psychiatrists considered that even those who passed the pre-deployment screenings as strong and psychologically healthy men had a point where they could no longer handle the stress of battle (Greenberg et al., 2011). British and German psychiatrists and neurologists believed the neurological symptoms of shell shock were psychological, and labeled shell shock as hysteria (Linden et al., 2012). The overall question from German psychiatrists and neurologists was whether war was the cause of hysteria, or whether a genetic predisposition to mental illness was the cause (Linden et al., 2012). Despite improved diagnoses, soldiers continued to be ostracized, mistreated, and shamed (Gomes, 2012).

The first edition of the *DSM* (1952) contained the diagnosis of gross stress reaction instead of the diagnosis of shell shock. This aided in diagnosing combat veterans and civilians who experienced extreme trauma and allowed veterans to receive treatment (Friedman et al., 2011). The *DSM-I,* however, recommended short-term treatment for combat stress trauma because psychiatrists believed this was a temporary disorder. The American Psychiatric Association removed the term *gross stress reaction* from the second edition of the *DSM–II* (1968) and placed the symptomology for trauma under

situational reaction disorders (Gomes, 2012). Situational reaction as outlined in the *DSM-II* provided a wide range of diagnostic criteria including trauma, causing many soldiers to go without care for PTSD-related symptoms. This was because situational reaction disorder was the only available diagnosis left for combat trauma and thought to be reversible through short-term treatment (Friedman et al., 2011). Removal of combat-related diagnoses from the *DSM-II* tied psychiatrists' hands and caused many veterans to go undiagnosed and untreated (Gomes, 2012).

The War in Vietnam Through Present Conflicts

The Vietnam War signaled a change from thinking that shell shock was the result of a genetic predisposition to mental illness. Research into PTSD did not occur during or immediately after the war (Greenberg et al., 2011). Researchers began to look at war trauma as the primary causation of PTSD, rather than secondary issues after the Vietnam War (Centers for Disease Control Vietnam Experience Study, 1988; Greenberg, et al., 2011; Kulka, et al., 1990). Reported cases of shell shock during the Vietnam War were significantly lower than during WWI or WWII, attributable to the negative connotations of shell shock from previous wars and its removal as a diagnosis from the *DSM* (Greenberg, et al., 2011). During the 1970s, a shift started to occur related to situational trauma. Although the diagnosis for PTSD-related symptoms was not included in the *DSM,* mental health professionals began diagnosing patients based on the trauma that they experienced. Diagnostic terms such as *rape trauma syndrome*, *post-Vietnam syndrome*, *prisoner-of-war syndrome*, *concentration camp syndrome*, *war sailor syndrome*, *child abuse syndrome*, and *battered women's syndrome* (Friedman et al., 2011,

p. 751) aided in bringing about a positive change for the inclusion of the diagnosis of PTSD. The inclusion of PTSD in the *DSM-III* in 1980 aided the diagnosis and increased acceptance of the disorder. PTSD was thus viewed not only as a war-related psychological phenomenon but also as a response to traumatic events of all kinds. This inclusion in the *DSM-III* (1980) allowed for greater acceptability, diagnosis, and treatment for combat veterans in the aftermath of military combat (Greenberg et al., 2011).

The wars in Afghanistan and Iraq led to additional research into the effects and treatment of combat-related PTSD (Peterson et al., 2011). These two wars brought about a type of fighting that American soldiers, sailors, and marines had not seen before. Those who deployed in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) reported higher rates of combat trauma than in any other war (Peterson et al., 2011). Improvised explosive devices (IEDs) allowed the enemy to attack convoys, supply chains, and troops by remote means. Additionally, because it was an all-volunteer military, the length of deployments and redeployments soldiers experienced was far longer than any other war. Medical advancements, as well as advancements in physical protection, such as body and vehicle armor, increased the survivability rate of deployed soldiers, resulting in increased numbers of reported PTSD cases (Gomes, 2012).

Veterans with PTSD-related symptoms have been found to have symptoms of lowered self-esteem, decreased feelings of well-being, and social anxiety (Kashdan, Julian, Merritt, & Uswatte, 2006), as well as a lower quality of social relationships, and social anxiety as compared to veterans without PTSD symptoms (Kashdan et al., 2006).

Carr (2011) described how individuals with PTSD-related symptoms lose their sense of safety, and traditional treatment options have not been robust enough to return them to a safe state. As such, the complementary therapy method of service animals has been used to aid in the recovery process of individuals with PTSD-related symptoms, and has provided them with the feeling of security (Chumley, 2012; Ritchie & Amaker, 2012; Yount et al., 2012). Research into the use of adding a service dog to empirically based therapy was limited, and the results were anecdotal.

Use of Service Dogs for PTSD

Programs developed by the VA and the United States Army Medical Corps have shown that patients with PTSD who received service dogs claim to have a reduction in anxiety, an increased ability to be in crowds, a decrease in nightmares, assistance in the form of being alerted to oncoming seizures, and a feeling of security (Chumley, 2012; Foreman & Crosson, 2012; Ritchie & Amaker, 2012; Yount et al., 2012). As discussed earlier, the results from these programs were preliminary and anecdotal, and the authors suggested that additional research be undertaken to further examine the earlier findings. The United States Army Medical Corps has worked with the National Education for Assistance Dog Services (NEADS), a service dog organization, to provide service dogs to disabled veterans to provide them assistance once they leave U.S. Army hospitals. Many of the disabled veterans were also diagnosed with PTSD. While working with veterans with both disabilities and PTSD, NEADs and the U.S. Army Medical Corps found these individuals reported reductions in PTSD symptoms after receiving service dogs (Foreman & Crosson, 2012). The VA and the U.S. Army Medical Corps developed service dog

programs to aid physically disabled patients and improve their quality of life. Some of these patients were also diagnosed with PTSD and claimed that having a service dog also provided them with a reduction in anxiety, increased ability to be in crowds, decreased nightmares, and assistance with being alerted to oncoming seizures (Ritchie & Amaker, 2012).

Human–Animal Bond

The term *human–animal bond* resulted from discussions in the 1970s in the veterinary community concerning the relationship between humans and their companion animals. The military's interest and promotion of the human–animal bond dates back to the early 1900s. The military recently began researching how the human–animal bond assists in reducing PTSD-related symptoms (Chumley, 2012). The military used dogs for mentally ill patients at the Saint Elizabeth Hospital in Washington, DC in 1919, and farm animals at the United States Army and Air Force Convalescence hospital in New York in the 1940s (Chumley, 2012).

Chumley (2012) described how early researchers of the human-animal relationship were in veterinary medicine and were ill-regarded by researchers in other disciplines. Even though some professors at veterinary colleges supported the importance of the human-animal bond, courses in companion animal relationships were not included in the core curriculum in veterinary medicine. Psychologists were slower at looking at the importance of human-animal relationship (Hines, 2003); those who used animals in therapy sessions, such as Levinson (1965), were often ridiculed when discussing this concept. Levinson (1978) championed research in the field of human–animal interaction

because he believed companion animals influenced personality development, promoted self-understanding, and provided healing effects.

Several veterinarians and individuals, including Levinson (1965), believed the bond was important and recognized the need for a theoretical perspective and empirical studies. Out of this belief came the Delta Society, created in 1977 by five veterinarians, one medical doctor, and a psychiatrist. These individuals sought to change the way people thought about companion animals, and to conduct research on the therapeutic value of companion animals (Walsh, 2009). The 1984 convention of the Delta Society sought to outline ways to conduct research into the human-animal bond, and led the way to empirically supported research (Walsh, 2009). Understanding the background of human-animal bonding can contribute to researchers' understanding of how animals can be used to mitigate trauma related symptoms, and enhance the quality of life of those diagnosed with PTSD. The past efforts of animal use in the military paved the way for current research (Rubenstein, 2012). The U.S. Army Medical Corps' research into the relationship with companion animals sought to elucidate attachment theory based on traditional human-human attachment aspects (Crawford, Worsham, & Swinehart, 2006; Prato-Previde, Custance, Spiezio, & Sabatini, 2003). Mills and Yeager (2012) discussed how Ainsworth's (1991) four aspects of attachment, proximity maintenance, separation distress, secure base, and safe haven, used for human-human bonds can assist in clarifying the human-animal bond, which has been used as the basis of therapeutic assistance and therapies using different animals. Some common roles canines play in animal assistance were as companion animals, emotional support dogs, animal assisted

therapy and assistance dogs, as well as service dogs. The hypothesized effectiveness of the human-animal bond in recovery from trauma was thought to relate specifically to the type of assistance provided by the dog and the role of the animal. The types of assistance include: providing basic comfort during stressful situations, providing safety checks or room searches; blocking persons in dissociative episodes from wandering into danger; waking individuals from nightmares, reminding individuals to take medication, and deterring or stopping destructive, impulsive, or negative behaviors such as self-mutilation (Mills & Yeager, 2012). Further studies were necessary to determine the effectiveness of animal assistance in the therapeutic process.

Benefits of Companion Animals for Human Well-Being

Companion animals and *pets* were terms used synonymously in research. The term *pet* has been used to show a special affection for an animal kept for companionship. The shift from the term *pet* to *companion animal* occurred in the veterinary, animal welfare, and scientific community to indicate the emotional bond and special relationship owners had with their animals. Companion animals were considered part of the family, and most of owners value the companionship the animals provide (Walsh, 2009a). Mills and Yeager (2012) noted how companion animals were implicated in research as supporting improved health and well-being in healthy, as well as disabled individuals (Mills & Yeager, 2012). Human-animal relationships represent a unique form of partnership which can often directly benefit the human physically, emotionally, and cognitively (Walsh, 2009b).

Domesticated animals were used to farm, build, and aid in the survival of humans as far back as 14,000 years ago (Walsh, 2009a). Dogs were especially useful as herders, hunters, and protectors, but these were not their only roles. Historical records indicate the significance of dogs and cats as valued companions through depictions in stories, paintings, and burial sites (Walsh, 2009a). Walsh (2009a) noted how animals provided companionship to humans and were often considered part of the family. Today, a large majority of households include animals. The Humane Society (2014) indicated that pet ownership had risen from 67 million in 1970 to 164 million households in 2012, with approximately 62% of the households in the United States having at least one pet. Dogs and cats make up the majority of companion animals, but many individuals also have birds and horses (Humane Society, 2014; Walsh 2009a).

Many companion animal owners consider their animals to be an integral part of their family. Some owners celebrate their animals' birthdays, take them on vacations, and allow them to sleep in the same bed. Companion animals provide a source of comfort and security during times of family crisis, upheaval, or absence of a family member (Risley-Curtiss, Rogge, & Kawam, 2013). Special bonds were created when individuals participate in the nurturing, feeding, cleaning, and exercising their animals. These bonds last throughout the animal's life and can cause grief and depression subsequent to the death of the animal (Slater, Lloyd, & King, 2012). Companion animal ownership has also been associated with anxiety reduction, lowered blood pressure, stress reduction, and increased self-worth (Peacock et al., 2012). Taking care of animals has been shown to

reduce symptoms of loneliness and depression, increase owners' sense of well-being, and provide a source of unconditional love (Walsh, 2009a).

Walsh (2009a) discussed how individuals with physical and mental health issues benefited from owning companion animals. Having animals in a human, preoperative setting resulted in lower anxiety levels, improved morale, and lowered the need for medication after surgery (Slater, Lloyd, & King, 2012). Researchers have reported that individuals who suffered heart attacks and had companion animals were more likely to survive than those without a companion animal (O'Haire, 2010; Walsh, 2009a; Wells, 2009). These reports indicated animal owners showed significant improvements with less aftercare when reunited with their animals. Companion animals appear to assist individuals in coping with being diagnosed with major medical conditions. Additionally, Walsh (2009a) suggested that companion animals have been found to reduce depressive symptoms for patients after being diagnosed with cancer or acquired immune deficiency syndrome (AIDS). Physical interactions with a companion animal through stroking has been shown to aid in relaxation, increased bonding, lowered blood pressure, reduction of anxiety, and to facilitate recovery from hospital care in heart attack patients (Walsh, 2009a). Moreover, reduced symptoms of anxiety, blood pressure, and stress were found to occur in the presence of animals (Peacock et al., 2012). Nagengast, Baun, Megel, and Leibowitz (1997) studied how companion animals affected the physiological arousal and behavioral distress in healthy children. When companion animals were present during stressful situations, children had fewer stress-related behaviors than when the animal was not around. The findings were supported by significantly lower blood pressure and heart

rates as compared to with and without the animal present (Nagengast, Baun, Megel, & Leibowitz, 1997).

Companion animals have also been found to aid those with mental disorders (Risley-Curtiss, et al., 2013). For instance, an animal's presence, care, and use in therapy has been attributed to influencing favorable behaviors, learning responsibility and self-control, and understanding how to stop focusing negatively on oneself (Risley-Curtiss et al., 2013). Slater, Lloyd and King (2009) studied the social implications of companion animals and indicated that the presence of a dog provided positive feelings. Individuals reported more affirmative and safe feelings when showed images of people with a dog, as opposed to an identical image without a dog (Slater et al., 2012).

Companion animals, such as dogs, have been shown to increase and improve social interactions. There have been reports of improved social interactions by individuals accompanied by a dog, such as being smiled at or talked to more often than without a dog (Slater et al., 2012). Additionally, Slater et al. (2012) found that individuals were more involved with their community and participated in more exercise activities when they owned animals which, in turn, increased social interactions. Other studies on companion animals in relation to social inclusion and stress were conducted on mentally healthy individuals. Aydin et al. (2012) conducted two studies of healthy college students to determine if the presence of a dog helped reduce mental distress after the students had been socially excluded. Individuals who were socially excluded without the presence of the dog rated themselves lower on scales related to the meaning of life, social acceptability, and self-esteem than those with a dog. Both studies showed how the mere

presence of a dog can provide a calming and accepting atmosphere, and can aid with the therapeutic process (Aydin et al., 2012; Slater et al., 2012).

Emotional Support Dogs

Some dogs provide emotional support and comfort to individuals with mental disorders to specifically aid with easing feelings of loneliness, depression, anxiety, and phobias. Emotional support dogs may be included in the individual's treatment process, but the dogs were not required to complete tasks (Brennan, & Nguyen, 2014). As such, these dogs were not considered service dogs, and while individuals with emotional support dogs may be afforded some accommodations similar to those with service dogs, they were not protected by the ADA (Mill & Yeager, 2012). Individuals with emotional support dogs qualify for accommodations under the Fair Housing Act just as do individuals with service dogs, as neither type was considered a companion animal. Schools were not required to allow students to bring their emotional support dogs with them to school unless the learning teams deem that the dog was a necessity to aid in the students learning. The Individuals with Disabilities Act (IDEA) and Section 504 of the Rehabilitation Act allows for an Individual Education Plan (IEP) and 504 teams to assess the student's needs and make the determination on a case-by-case basis. Airlines allow both types of dogs in the cabin of the plane with their handler, but often require documentation to prove that the dog was required for mental health purposes (Brennan & Nguyen, 2014). Emotional support dogs provide mental and emotional assistance to individuals but do not meet the requirements to be labeled a service animal. Additionally, emotional support animals were not used as therapy dogs. Dogs used in therapy were

used for a specific purpose and provide emotional, physical, and social assistance (Brennan & Nguyen, 2014).

Animal-Assisted Therapy

To be able to understand how service dogs impact combat veterans diagnosed with PTSD, one needs to consider how dogs have been used in the past to treat PTSD-related symptoms. A review of the literature revealed various studies on how the military has used animal assisted therapy as a complementary means of treating PTSD-related symptoms. Numerous terms have been used to describe the use of animals in psychotherapy, including *pet therapy, pet-facilitated therapy, animal-assisted therapy, animal assisted interventions, companion-animal therapy*, and *pet-oriented psychotherapy*. The many terms have caused confusion in the field and led the Delta Society, and later Pet Partners to issue definitions for any therapy where animals were used (Pet Partners, 2012a). The Delta Society changed their name to Pet Partners in 2012. The organization has been the leading provider in the area of research and training for animal assisted therapy (International Association of Assistance Dog Partner, n.d.). The International Association of Assistance Dog Partner (n.d.) described the Delta Society, as a prominent pioneer and provider of research into the human-animal bond. Additionally, the American Society for the Prevention of Cruelty to Animals (2015) partners with Pet Partners to ensure therapy dogs were appropriately trained for use in the American Society for the Prevention of Cruelty to Animals (ASPCA) Animal Assisted Therapy Programs. The VA and U.S. Army Medical Corps worked solely with the Delta Society

in creating their animal assisted programs and conducting human-animal bond research (Ritchie & Amaker, 2012).

Animal-assisted activities (AAA) and animal-assisted therapy were the preferred terms to be used when trained individuals use animals to enhance the therapeutic process and encourage change (Pet Partners, 2012a). Pet Partners (2012a) described AAA as a way for specially trained individuals to allow individuals, or small or large groups of people to spend time with the animal as a means to increase the individual's quality of life. These type of activities were not goal directed but were more akin to meet-and-greet opportunities that allow the trainers to motivate, educate, or provide therapeutic assistance to individuals in need (Pet Partners, 2012b, para. 1).

Animal-assisted therapy, on the other hand, was defined as using a trained animal as part of the therapeutic process with specific goals for the individual taking part in the therapy (Pet Partners, 2012b, para. 1). Animal-assisted therapy has been used in group and individual sessions to aid in the therapeutic process (Kruger, & Serpell, 2006). The application of animal-assisted therapy by specially trained therapists ensures that the role of the animal during the therapy session was that of a social facilitator. The animal used in the therapy sessions was often the therapist's personal companion animal. The positive effect resulting from animal-assisted therapy has been linked to the loving camaraderie associated with the human-animal bond between the therapist and his or her companion animal (Pandzic, 2012). Levinson (1965), who used his own dog in therapy sessions to aid with building rapport, overcoming resistance, providing a calming effect, and reducing anxiety, found using his dog provided assistance with helping children to

overcome their fears during initial visits. Levinson described his discovery of the effects of his dog during a therapy session with an extremely withdrawn child. Unable to establish rapport with the child until the child encountered his dog, Levinson observed how the connection the child made with the dog opened the door to building rapport and moving into psychotherapy. This discovery paved the way for his use of animals in therapy in his own practice, as well as his call for others to conduct methodological research in the use of companion animals.

Beck et al. (2012) conducted a study on the effects of animal-assisted therapy on military members attending an occupational therapy life skills program. The study compared occupational therapy life skills training with and without animal-assisted therapy to assess any differences in mood, stress, resilience, functional status, and fatigue. While the study did not find a significant difference in these areas between the baseline and posttests, there was a difference in functional skills. The posttests revealed improvements in the areas of psychological function, work performance, and quality of interaction for military members in the animal-assisted therapy group.

Service Dogs

Service dogs receive extensive training to provide assistance to individuals with disabilities, or to individuals who face challenges with functioning in society (Walsh, 2009). The ADA was updated to define service animals as “dogs that were individually trained to do work or perform tasks for people with disabilities” (U.S. Department of Justice, 2010, para. 3). Tasks were not limited to individuals with physical disabilities but also include those with mental disabilities (Shubert, 2012). An important factor

concerning service dogs was the role the dog plays in an individual's life. A service dog receives training to complete tasks to improve the life of those with a disability (Walsh 2009a). Ritchie and Amaker (2012) reviewed claims by veterans diagnosed with PTSD. Veterans reported an improved quality of life since receiving service dogs. In particular they reported reduced anxiety, an increased ability to be in crowds, a decreased incidence of nightmares, and an improved ability to recognize oncoming seizures (Ritchie & Amaker, 2012). Due to the anecdotal nature of this research, further research was required into the physiological effects that service dogs provide for veterans recovering from combat trauma (Ritchie & Amaker, 2012; Shubert, 2012).

Revised ruling on service animals. The ADA recognizes service dogs as the main type of service animal for use by individuals with disabilities (U.S. Department of Justice, 2010). Additionally, the ruling requires service dogs to be individually trained to perform a task related to the handler's disability, and under the control of its handler. Inappropriate behavior that disrupts the normal course of business, or threatens the health or safety of others, was automatic grounds for excluding the service dog from the premises (U.S. Department of Justice, 2010). The VA has specific regulations related to psychiatric service dogs (Department Veterans Affairs on Service Dogs, 2012), and some states have passed laws to further define the requirements of service dogs. California defined the topic of tasks by describing how the dogs must be trained to respond to the needs of the individual, and not merely for comfort. Texas specified that dogs that were individually trained, or in training to be service dogs, may be included under the term "service dog." Additionally, Texas includes "calming a disabled veteran who has post-

traumatic stress disorder" (Expands Access, 2013, para. 14) as a part of the new state law that went into effect January 1, 2014.

Types of service dogs. The most commonly known service dogs were first trained in the late 1920s as a means to aid blind individuals. Seeing Eye dogs have aided visually impaired individuals by guiding them where they need to go (Mill & Yeager, 2012). In 1973 canines were trained to aid hearing impaired individuals by alerting them to noises they could not hear. Hearing dogs alert their handlers to sounds and situations they would not be aware due to their hearing impairment. Service dogs were also used as mobility dogs in addition to aiding with the hearing and vision impaired (Shubert, 2012). Mobility dogs aid the disabled by helping with balance and walking (Walsh 2009a), performing tasks such as turning on and off lights, and getting needed items. Some service dogs were used to pull the handler's wheelchair (Mill & Yeager, 2012; Shubert, 2012). This allows the handler to take preventative measures or move to a safer place (Shubert, 2012). The VA instituted a service dog training program called the Golden Rule Assistance Dog (GRAD) to aid returning combat veterans diagnosed with PTSD (Yount et al., 2012).

Service dog training. The ADA requires service dogs to be trained individually to perform a task related to the handler's disability (U.S. Department of Justice, 2010). Service animals used for physical disabilities have been found to receive extensive training to provide assistance (Walsh, 2009). Although there were extensive training programs for service dogs providing support to those who face challenges with functioning in society (Walsh, 2009), there were no set guidelines for training

requirements. The VA does have specific regulations related to service dogs (Department of Veterans Affairs, 2012) that aid visual-, hearing-, and mobility-impaired veterans, but the VA does not provide benefits for service dogs used for mental health services unless those services provide assistance with mobility. Indeed, the lack of training guidelines for service dogs providing mental health services was instrumental in the VA's decision to not provide benefits for veterans requiring the need of service dogs for mental health services alone (Department of Veterans Affairs, 2012). However, the VA has reported numerous subjective accounts of improved mental health after the inclusion of services dogs (Department of Veterans Affairs, 2012). This lack of evidence-based findings of improved mental health was the motivation for this study.

Conclusion

This review of the literature presents information related to the theoretical orientation of attachment, combat veterans with PTSD, human-animal bond, animal assisted therapy, and service dogs (Chumley, 2012). Peacock et al. (2012) documented anecdotally how animal-assisted therapy and service dogs provide a positive impact on individuals. The benefits noted include lower blood pressure, decreased anxiety, depression, loneliness, and stress, and increased self-worth. Research into companion animals has shown their ability to aid individuals to cope with medical conditions and reduce depression in patients with cancer or acquired immune deficiency syndrome (AIDS) patients (Peacock et al., 2012; Walsh, 2009a). Peacock, Chur-Hansen, and Winefield (2012) discussed how attachment theory has been related to the human-animal bond and companion animal ownership. The attachments that individuals have with

companion animals and service dogs compares to the attachment a child has with his or her parent. Service dogs were said to provide a secure base for individuals diagnosed with combat-related PTSD (Shubert, 2012). Additionally, the service dog serves as a conduit for emotional support aiding with increasing attachment behaviors.

The increase of reported cases of PTSD that occurred as a result of the wars in Iraq and Afghanistan, and the unresponsiveness to evidence-based therapy, created a need for alternative or complementary therapy (Hoge, 2013) among combat veterans. Although preliminary, often anecdotal evidence suggests service dogs have been one such means to help reduce symptoms of PTSD for combat veterans (Beck et al., 2012; Chumley, 2012; Foreman & Crosson, 2012; Ritchie & Amaker, 2012; Shubert, 2012; Yount et al., 2012), further research was needed into how service dogs impact the physiological effects of recovering from combat trauma on veterans with PTSD-related symptoms (Shubert, 2012). Limited studies exist (Esnayra & Love, 2008; Marshall, 2012) related to the therapeutic effect of service dogs on non-combat veterans with general anxiety disorder, depression, and PTSD. Further studies were therefore needed in this realm.

The next chapter describes the methodological approach to gathering quantitative data by which the study was completed. Topics include research design, participant selection criteria and recruitment, a review of survey questionnaires, and data analysis procedures.

Chapter 3: Research Method

Service dogs have been used as a complementary means to help individuals cope with stress and difficult situations and adapt to adversity (Chumley, 2012). Current literature provides information on how service dogs were used in animal-assisted therapy as part of individual and group therapy (see Ritchie & Amaker, 2012; Yount et al., 2012). Service dogs were used in Afghanistan and Iraq to reduce stress during a pilot program designed to aid in COSC (Ritchie & Amaker, 2012). The dogs have also been used in combination with regular evidence-based treatment to help reduce PTSD-related symptoms (Ritchie & Amaker, 2012). Yount et al. (2012) developed a service dog training program that taught combat veterans diagnosed with PTSD how to train specially bred canines to be service dogs for disabled veterans. Anecdotal reports from combat veterans in this program indicated they experienced fewer PTSD-related symptoms (Yount et al., 2012). Current research on the therapeutic effect of service dogs does not specifically focus on combat veterans diagnosed with PTSD, although limited studies do exist (e.g. Esnayra & Love, 2008; Marshall, 2012) related to service dogs' effects on non-combat veterans with general anxiety disorder, depression, and PTSD. Attachment theory aids in understanding the basic human need for social support and emotional relationships with others. Baron and Kenny (1986) explained that sometimes other variables could affect the outcome variable. These other variables serve as mediating variables affecting outcome or symptom reduction. Twaite and Rodriguez-Srednicki (2004) studied how attachment theory was used as a mediating variable in a study related to developing PTSD vulnerability. Using attachment as a mediating variable was useful in this study,

because attachment to the service dog could affect symptom reduction and not merely the task performed by the service dog. Therefore, the purpose of this study was to compare the impact of service dogs on combat veterans and non-combat veterans with PTSD-related symptoms and compare the respondents' attachment styles as the mediating variable.

This chapter includes a description of this study's research design, sample, instrumentation, data analysis, and ethical considerations. An overview of the study's research design includes a rationale for why this design was selected. The sample characteristics and size, as well as a description of the instrumentation is presented. The data collection process and analysis are discussed.

Research Design and Rationale

This quantitative study was designed to understand the impact of service dogs on combat and non-combat veterans with PTSD-related symptoms. It was also designed to see if attachment styles affect the impact of using service dogs. I used a cross-sectional survey methodology using three short surveys completed in one sitting: the PCL-5 (see Weathers et al., 2013), the PSDAS (see Marshall, 2012), and the ECR–R (see Fraley, 2012). This correlational survey design was consistent with exploring the relationship between the independent variable of veterans with a service dog, and three dependent variables: (a) PTSD-related symptoms, (b) service dog tasks, and (c) attachment style (see Creswell, 2009). The independent variable of veterans with service dogs contained two sub-variables consisting of non-combat veterans and combat veterans, both with PTSD related symptoms. The PTSD-related symptoms variable contained sub-variables

of intrusive thoughts, persistent avoidance of certain stimuli, negative alterations in cognitions and mood, and alterations in arousal and reactivity. The dependent variable of attachment style had two sub-variables: attachment avoidance and attachment anxiety.

I used a quantitative method to collect data for this study using SurveyMonkey to administer three surveys to measure PTSD related symptoms, tasks performed by service dogs, and attachment styles of the participants. The first survey was a PTSD symptom checklist (PCL-5) to establish the baseline of PTSD related symptoms from the Symptom Clusters B, C, D, and E as outlined in the DSM-5 (see Weathers et al., 2013). The second survey was the PSDAS tasks scale, which was consistent with the task lists created by Esnayra and Love (2008). The PSDAS aided with understanding the tasks that service dogs perform to aid with perceived PTSD-related symptom reduction. The third survey (ECR-R) was a scale used to measure attachment style (see Fraley, Waller, & Brennan, 2000). The ECR-R was an updated version of the original ECR developed by Brennan, Clark, and Shaver (1998). The questionnaire was created to assess the participant's attachment style by evaluating two attachment styles, attachment anxiety and attachment avoidance (see Brennan et al., 1998). Using these surveys was consistent with current research into PTSD and attachment style. PTSD checklists and the ECR scales are often used together in PTSD research on veterans (see Clark & Owens, 2012; Ogle, Rubin, & Siegler, 2015; Owens et al., 2013; Renaud 2008). Adding the ECR was appropriate for determining attachment style for individuals with PTSD related symptoms (Clark, & Owens, 2012). The PCL-5, PSDAS, and the ECR-R contributed multiple dependent sub-variables. I conducted a regression analysis to understand the relationship between the

variables and document collective effects that predict the outcomes between factors (see Fields, 2013).

Methodology

Population

The target populations for this study were combat and non-combat veterans, male or female, older than the age of 18 who self-identify as having PTSD-related symptoms as defined in the *DSM-V* (2014), and who use service dogs. Participants who were currently in a psychiatric in-patient treatment facility were excluded. A power analysis was conducted using the G*Power tool to determine a sample size for each group (see Cohen, 1992). Cohen (1992) recommended using a power level of .80, alpha level of .05, and an effect size of .35 to determine a sample size when doing multiple regression. The results of the analysis showed a sample size of 31 per group would be optimum, meaning 62 participants minimal. There is no single repository that tracks individuals who use service dogs.

Sampling and Sampling Procedures

Sampling took place using the Internet and other means discussed below to recruit participants. Participants meeting the criteria had to have access to the Internet and have basic computer skills. The recruitment method involved me posting flyers on websites directing participants to the survey. I asked the following psychiatric service dog training organizations that specifically train service dogs for veterans with PTSD to post flyers advertising my study: America's VetDogs – the Veteran's K-9 Corps, Inc., ALPHA K9, Canines 4 Hope, Canines for Service, Canine Help of ZORRO's Dynasty,

Comprehensive Pet Therapy, Inc., Cosby's Therapy Animals, Inc., Custom Canines Service Dogs Academy, Inc., Fidos For Freedom, Inc., Freedom Service Dogs, Inc., Georgia Canines for Independence, Helping Paws Inc., Honor Therapy and Assistance Dogs, Inc., K9's For Warriors, Patriot Rovers, Inc., My Angel with Paws, Inc., Next Step Service Dogs Inc., Pawsitivity, Paws Assisting Veterans, Inc., Paws Giving Independence, PetsLoyal2Vets, Service Dogs for America/Great Plains Assistance Dogs Foundation, Stiggy's Dogs, Smoky Mountain Service Dogs, Susquehanna Service Dogs, The Sam Simon Foundation Assistance Dogs Program, Tender Loving Canines Assistance Dogs Inc., The Joys of Living Assistance Dogs, and Train A Dog - Save A Warrior Program. The flyer had a link to SurveyMonkey where potential participants can anonymously complete the study, as well as Facebook pages dedicated to psychiatric service dogs to distribute the surveys. I requested that participants and psychiatric service dog organizations distribute the flyer to other possible participants. Creswell (2009) discussed probability sample as being used when a researcher knows the sample population. There is no known repository that tracks combat and non-combat veterans who use service dogs so there was no way to ascertain what the total population was for combat and non-combat veterans who use service dogs. Nonprobability samples are used when the target population is not known to the researcher (Creswell, 2009). Because of this, the nonprobability sampling method cannot ensure that all persons in the target population were afforded the same opportunity to participate in a study (Creswell, 2009). Therefore, nonprobability sampling was a less desirable method for sampling over a probability sample where populations were known because it removes the randomness of

selection that the probability sample provides (see Creswell, 2009). The nonprobability sampling method I used was snowball sampling (see Fawcett & Garity, 2009). This type of sampling allows for respondents to suggest the study to other individuals who meet the criteria. Conducting this questionnaire using the Internet produced a large enough number of responses for statistical review based upon the sample size analysis. Participants were restricted to individuals who have any PTSD-related symptoms and who use service dogs to aid with symptom reduction.

Procedures for Recruitment

Participants was recruited through either direct posting on listservs and other online groups, or other individuals in psychiatric service dog organizations who could post flyers for the study on such places as Facebook groups, veteran organizations, organizations that provide service dog training, Listserv groups related to PTSD and service dogs, and other nonprofit organizations that provide service dogs to veterans. The flyers outlined the criteria for participating in the survey. There were questions on the PSDAS concerning their current diagnosis. The questionnaires were administered online by SurveyMonkey to aid with confidentiality and anonymity. Additionally, this method of conducting a survey reduces costs and aids with swift data collection, compilation, and electronic export into Statistical Package for the Social Sciences (SPSS). Informed consent was presented at the beginning of the survey. A debriefing page was provided at the end of the surveys to recap the purpose for the study, provide contact information, and reiterate the need to contact the Veteran's Crisis Line or the PTSD Foundation of America if issues arise. The Veteran's Crisis Line and the PTSD Foundation of America

provided permission to provide the telephone number and website information in the survey (Appendix G).

Instrumentation

Cross-sectional data was collected using three short surveys completed in one sitting. The three surveys was scored independently from one another as designed by the instrument creators. The three surveys include the PCL-5, the PSDAS, and the ECR–R. The PCL-5 consists of 20 questions with a 5-point Likert scale and was used to evaluation PTSD-related symptoms. The PSDAS has 47 multiple choice questions with a 5-point Likert scale, whereas the ECR–R has 36 questions based on a 7-point Likert scale. The PSDAS gathers demographic data, as well as the mental health history of the respondent, which I used when I sorted and analyzed the data.

PTSD Checklist for DSM-5 (PCL-5). The PCL-5 was based on the DSM-5 PTSD Symptom Criteria B, C, D, and E and was an updated checklist from the original PCL created for the DSM-IV. Criterion B covers intrusive symptoms such as memories, dreams, flashbacks, and distress or reactions caused by cues reminding the individual of the trauma (American Psychiatric Association, 2013). Criterion C consists of the desire to avoid situation, events, emotions, thoughts, and feelings that remind the individual about the traumatic event (American Psychiatric Association, 2013). Negative alterations in cognitions and mood fall into Criterion D and Criterion E covers a wide range of negative issues related to the persistent symptoms of increased arousal (American Psychiatric Association, 2013).

The PCL-5 is a self-reporting measure consisting of 20 questions and can be used to make preliminary diagnosis and in treatment to monitor change (Weathers et al, 2013).The PCL-5 can be scored based on total symptom severity or symptom criterion clusters B, C, D, and E in the DSM-5 (Weathers et. al., 2013). The PCL-5 responses were changed to offer four choices vice the five responses in the original PCL (Weathers et al, 2013).Participants respond to questions based on “Not at all," "A little bit," “Moderately," "Quite a bit," and "Extremely." Even though the questions. These questions were scored as a 5-point Likert scale with “Not at all” at the low end of the scale equal to zero and “Extremely” at the high end with a score of 4. Additionally, there was an increase in questions from 17 on the original to 20 questions on the PCL-5 (Weathers et al, 2013). Weathers et al. (2013) recommend an overall score of 38 as a cutoff score for screening purposes.

The original PCL total symptom score (Cronbach’s $\alpha = 0.97$) and for symptom group B, C, and D scores (Cronbach’s $\alpha = 0.92–0.93$) demonstrated strong internal consistency. The original PCL has demonstrated very strong test-retest reliability ($r = 0.96$) and with strong concurrent validity when tested on veterans (Keane et al., 2014). Keane et al, (2014) conducted two studies of the PCL-5 to check the internal consistency. The studies showed Cronbach’s alpha of 0.94 and 0.97 showing that the PCL-5 maintained high levels of internal consistency. Lowe, Sampson, Gruebner, and Galea’s (2015) conducted a study of Hurricane Sandy survivors and found the Cronbach’s alpha reliability of the PCL-5 was 0.93. In another study the Cronbach’s alpha was .91 (Wang et al., 2015). That same study reviewed the PTSD symptom criteria internal consistency

as well. The Cronbach's alpha was .79 for criteria B, .77 for criteria C, .82 for criteria D, and .82 for criteria E showing acceptable internal consistency. Weathers et al. (2013) indicated that PCL score interpretations has a high convergent validity (*r* .81) and strong test-retest reliability (*r* = .82) (Blevins, Weathers, Davis, Witte, & Domino, 2015). Permission to use the PCL-5 was received from the National Center for PTSD (Appendix E; M. Yoder, Personal Communication, December 7, 2015).

Psychiatric Service Dog Assistance Scale (PSDAS) questionnaire. The main questionnaire for this study was based on a 47-item questionnaire refined by Marshall (2012). Marshall's questionnaire was an abridged version of the Psychiatric Service Dog Assistance Scale (PSDAS) questionnaire originally created by Esnayra and Love (2008). The original PSDAS was created to understand the benefits of using service dogs for psychiatric support. Additionally, Esnayra and Love sought to establish a baseline questionnaire to help researchers create hypotheses concerning the effectiveness of using psychiatric service dogs. The Psychiatric Service Dog Society (PSDS) developed task definitions and therapeutic functions for service dogs to perform in relation to symptoms outlined in the *DSM-IV*. Esnayra and Love (2008) used these tasks and functions as the basis for the original, six-part, 118-question survey consisting of Likert responses, rating questions, and open-ended questions. The original questionnaire was reviewed and approved by the Westat Institutional Review Board (IRB). The inclusion criteria for that study only required the participants be from one of the Psychiatric Service Dog listservs (Esnayra and Love, 2008).

Marshall (2012) refined the PSDAS questionnaire into an abridged version to study individuals with service dogs who were diagnosed with PTSD, GAD, and MDD. Her abridged version was used to conduct a validity assessment of the revised PSDAS survey Morris and Esnayra (2011) created. Marshall removed the open-ended questions to allow for a strictly quantitative study prior to administering the survey. Marshall's PSDAS survey was a four-part questionnaire that addresses four main areas: mental health history including symptoms, diagnosis and treatment; the history of learning about and obtaining a psychiatric service dog (PSD); services provided by the PSD to mitigate the identified symptoms; and demographic information such as gender, ethnic or cultural identity, age, and employment. In her dissertation, Marshall focused not on combat veterans but on individuals diagnosed with major depressive disorder, general anxiety disorder, and PTSD (Marshall, 2012). Marshall described how she manipulated the PSDAS to improve the internal consistency by removing 14 questions after analyzing the results due to consistency issues, as the original version had only a moderate construct validity and reliability. Marshall (2012) reported the final internal consistency for the PTSD scale as being .810, the MDD scale as being .750, the GAD scale as being .665, and the General scale had an internal consistency of .694. Additionally, she explained how the task related questions should be changed from "Completely agree," "Somewhat agree," "Neither agree nor disagree,'' "Somewhat disagree," and "Completely disagree" to "Frequently," "Occasionally," "Rarely," "My dog does not perform that task," and "I don't know" (p95). Thus, I updated the PSDAS based upon her recommendations and used this survey to examine the impact, if any, of the use of service dogs with PTSD-

related symptoms in non-combat and combat veterans diagnosed with PTSD. Creswell (2009) stated that making modifications could affect the validity and reliability of surveys. Individuals with a diagnosis of PTSD have symptoms of anxiety and depression. This type of survey allowed me to compare non-combat and combat veterans who use service dogs to mitigate symptoms of PTSD.

The PDSAS measures the participant's perception of how the use of the service dog has aided in symptom reduction. PTSD-related symptoms may be reduced as a result of other factors besides the use of service dogs and that could pose a threat to the validity of the test. The original PDSAS was created as a pencil survey which was mailed out to participants (Esnayra & Love, 2009). Morris & Esnayra updated the PSDAS but never tested the updated version (Morris & Esnayra, 2011). Marshall (2012) further refined by the PSDAS and distributed the PSDAS via SurveyMonkey. Marshall (2012) attempted to overcome construct validity issues by removing questions. This data analysis only looked at the PTSD subscale, but there were questions in the general scale that individuals with PTSD-related symptoms related to and this may have affected the validity of the results. Marshall provided authorization to use her abridged PSDAS survey on March 31, 2015 (Appendix D; C. Marshall, Personal Communication, March 31, 2015).

Experiences in Close Relationships Questionnaire–Revised (ECR-R). The ECR-R was a 36-item questionnaire consisting of two 18-item scales. One scale assesses attachment anxiety; the other, attachment avoidance. The original Experience in Close Relationships (ECR) questionnaire was highly reliable. Mikulincer and Shaver (2007) reviewed numerous studies that used the ECR and found the alpha coefficients were

continuously near or above .90. Fraley, Waller, and Brennan (2000) found the test-retest reliability scores of .94 for the anxiety scales and .95 for the avoidant scales. Mikulincer and Shaver (2007) indicated that the test-retest coefficients for the ECR ranged from .50 and .75, depending on the interval and the sample. Internal consistency for the ECR has shown to be strong, as indicated by Lim, Adams, and Lilly (2012) in their study of 228 undergraduate ($\alpha = .93$ for the anxiety scale; $\alpha = .94$ for the avoidance scale).

Response bias in the anxiety scales was possible because of only one reverse response question (Fraley, Waller, & Brennan, 2000). Mikulincer and Shaver (2007) version of the ECR has been used as a benchmark to compare other attachment scales. The ECR-R was originally tested on undergraduate students in a five-study series to determine the validity and reliability of the questionnaire (Fraley, Waller, & Brennan, 2000). In addition to undergraduate students, the ECR-R has been used on combat veterans diagnosed with PTSD-related symptoms (Renaud, 2008). Renaud (2008) used the ECR on 49 male volunteers diagnosed with combat-related PTSD-related symptoms. The questionnaire revealed a reliability score of .93 for anxiety and .91 for avoidance subscales. In another study, the ECR-R was given to 262 former POW veterans (Dieperink, Leskela, Thuras, & Engdahl, 2001). Fraley (2012) indicated that researchers may use the ECR-R without the need to contact the creators for permission to use the scales as long as the use was for research purposes (Appendix F).

Operational Definitions of the Variables

The independent variables for this study were combat veterans and non-combat veterans. The dependent variables were service dog tasks, PTSD-related symptoms and

attachment style. The first dependent variable, reduction of PTSD-related symptoms, was derived from the 5-point Likert-type scale from the PCL-5 and responses of perceived service dog task performance on the PSDAS survey. The PCL-5 provides overall PTSD symptom severity score by adding the totals of all 20 questions and by PTSD symptom clusters B, C, D, and E. Scoring for the PTSD symptom Cluster B was the sum of questions 1-5, Cluster C was the sum of questions 6-7, Cluster D was the sum of questions 8-14, and Cluster E was the sum of questions 15-20 (Weathers, et al., 2013). The outcome measure for PSDAS considers whether the inclusion of a service dog has aided in symptom reduction (Marshall, 2012). The PSDAS construct includes measurements of perceived symptom and medication reduction, as well as changes in quality of life as measured by PSDAS survey (Marshall, 2012). The dependent variable of attachment was determined from the 7-point Likert-type scale responses on the ECR-R. The outcome measure for the ECR-R was shown by the attachment scores on the two subscales, anxious attachment and avoidance attachment (Fraley, 2012). Low scores on these two subscales indicate secure attachment, whereas high scores indicate an insecure attachment (Fraley, 2012).

Data Analysis Plan

The SPSS and Microsoft Excel 2013 were used to analyze the data collected from the surveys. The data can be transferred directly to SPSS and Microsoft Excel 2013 from SurveyMonkey.com for analysis. I calculated frequency of and percentages of sex, ethnicity, age, education, marital status, employment status, combat veteran status, service dog partnership status, length of time with service dog, and proportion of time

spent with service dog. Separate analyses were conducted for each survey. In the analysis, combat veterans were recoded to 0 and non-combat veterans to 1. This allowed for exploring possible differences in the dependent variables.

RQ1: What impact, if any, do service dogs have on PTSD-related symptoms in non-combat and combat veterans diagnosed with PTSD?

H_o1: Service dogs as measured by the PDSAS have no impact on PTSD-related symptoms.

H_a1: Service dogs as measured by the PDSAS have an impact on PTSD-related symptoms.

I conducted independent samples t-tests and Cronbach's alpha to determine the scale scores of PSDAS-MDD, PSDAS-GAD, PSDAS-PTSD, and PSDAS-G to corroborate the validity and reliability and measure the validity of the scales of the PSDAS since the PSDAS was only used in a dissertation. The PSDAS survey then was analyzed using independent measures ANOVA to determine if using a service dog had any impact on PTSD-related symptoms for combat and non-combat veterans.

RQ2: Quantitative: What was the relationship, if any, between attachment style and the impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

H_o2: There was no relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

H_a2: There was a relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

RQ3: What was the relationship between PTSD-related symptoms and the perceived impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

H_a3: There was no relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

H_a3: There was a relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

A multiple regression analysis was conducted to explore questions two and three (Clark & Owens, 2012). This method allowed me to enter PDSAS-PTSD scale score, attachment style (attachment avoidance and attachment anxiety), PTSD-related symptom (symptom clusters B, C, D, and E), and PTSD severity into the model. First, I scored the PCL-5 symptom clusters by adding the scores in the symptom clusters. Additionally, I added all the scores for the PCL-5 to obtain a PTSD-related symptom severity score (Weathers, et al., 2013). Second, I scored the ECR-R for attachment anxiety by averaging questions 1-18 and attachment avoidance by averaging questions 19-36 (Fraley, Waller, & Brennan, 2000). This process provided me with scores for the dependent variables of PTSD-related symptoms (Clusters B, C, D, and E) and attachment style (anxiety and attachment avoidance). Independent variables were checked for their appropriateness for multivariate analyses to ensure that kurtosis, skewness, and multicollinearity were in acceptable ranges (Fields, 2013).

To investigate the second and third hypothesis via a multiple regression, PSDAS-PTSD scores and attachment style, with PTSD symptom severity was calculated. To

investigate potential associations between PTSD symptom clusters and variables of interest, the four PTSD cluster scores were also included. A hierarchical multiple regression was performed to assess which variables were significantly associated with PTSD symptom severity (Fields, 2013; Clark & Owens, 2012). PSDAS scores were entered in the first step of model, along with combat or non-combat veteran status. Due to the large number of dependent variables Step 2 variables were done incrementally to account for degrees of freedom (Fields, 2013). In the first analysis I added PTSD Symptom clusters in Step 2 and then ran the analysis with the addition of the attachment style variables. This allowed me to observe whether the model was statistically stable, or if there were significant differences when adding attachment style. I then analyzed the F-test to ascertain whether the combination of the PTSD symptom clusters and attachment style predict the perceived impact of the use of service dogs. I then reviewed the R squared results to review the strengths and direction of the relationships between the perceived impact of the use of service dogs, PTSD Symptom clusters, and attachment style.

Threats to Validity

Research into changes in independent variables was not without threats to the internal and external validity of the study. Researchers need to recognize and plan for the possibility for a participant's experiences and perceptions to skew results. External validity can be threatened by researcher bias, inaccurate inferences from the data, and generalizations (Creswell, 2009). The PDSAS questions were developed using a symptom-task pairing, which relies on how the participant understands his or her

symptoms, and what tasks the service dog task pairing could reduce the internal validity of the PSDAS (Marshall, 2012). To counter this issue, the wording of some of the multiple-choice questions in the PSDAS in this study was updated based on Marshall's (2012) recommendations.

Ethical Considerations

This study was conducted based after receiving approval from the Walden University IRB, approval # 05-12-17-0259088, and it expired on May 11th, 2018. Vulnerable individuals receiving psychological treatment might take part in the survey. Participants might experience emotional reactions from reflecting on previous trauma, but there were no physical risks or benefits for participation in the study. The informed consent form was located at the beginning of the session on SurveyMonkey and provided a notice indicating that participation in the surveys was voluntary and the participant could stop at any time. Participants was notified that the surveys being conducted was not meant to interfere with current treatment, and that if they become distressed they should contact their therapist or the Veteran's Crisis Line. The Veteran's Crisis Line contact information was provided at the beginning and the end of the session in the event an individual requires assistance. The Veteran's Crisis Line and the PTSD Foundation of America provided permission to provide the telephone number and website information in the survey (Appendix H). The websites provide additional crisis information and teams by location if the participants need local assistance. To protect individuals' identity, names, addresses, and phone numbers were not collected; moreover, SurveyMonkey employs a Secure Sockets Layer (SSL) encryption, and I designed the session on

SurveyMonkey so that the Internet Protocol (IP) address collection and email addresses were disabled.

Summary

This chapter provided a brief outline of the research study of combat and non-combat veterans diagnosed with PTSD related symptoms who use service dogs. I discussed the justification for the selection of a quantitative design, reviewed the steps I took to recruit volunteers, and provided the criteria required for study participation. Additionally, I outlined the data collection and recruitment processes, the instruments that I was using, and ethical considerations. Chapter 4 will describe the study results.

Chapter 4: Results

The purpose of this study was to compare the impact of service dogs with combat veterans and non-combat veterans with PTSD-related symptoms, and to quantify the respondents' attachment styles as the mediating variable. The research questions and hypotheses that guided this quantitative study were as follows:

RQ1: Do service dogs decrease PTSD-related symptoms in non-combat and combat veterans diagnosed with PTSD?

H_01: Service dogs, as measured by the PDSAS, do not decrease PTSD-related symptoms in non-combat and combat veterans.

H_a1: Service dogs, as measured by the PDSAS, decrease PTSD-related symptoms in non-combat and combat veterans.

RQ2: What was the relationship, if any, between attachment style and the impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

H_02: There was no relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

H_a2: There was a relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

RQ3: What was the relationship, if any, between PTSD-related symptoms and the perceived impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

H_03: There was no relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

H_a3: There was a relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

In this chapter, I will review the data collection process including identifying data collection issues; reviewing the results including descriptive statistics, statistical analysis and the main results from the three hypotheses and will end with a summary.

Data Collection

The three surveys used to collect data in this study were the PCL-5, the PSDAS, and the ECR–R. The PCL-5 assesses PTSD-related symptoms, helps with making a diagnosis of PTSD, and assists with monitoring improvements of PTSD-related symptoms (Marshall, 2012).The PSDAS was a multiple-choice survey that measures service dog tasks that assist their owners who have MDD, GAD, and PTSD-related symptoms (Marshall, 2012). The ECR–R was used to measure the differences between the two insecure attachment styles of anxiety and avoidance (see Fraley, 2012). The data collection process was originally scheduled for 2 months, but this was extended to 7 months due to response issues. During the first week of the study, the organizations listed in Chapter 3 who had agreed to assist with the data collection process were sent flyers and links to the study. I emailed the flyers to 28 psychiatric service dog organizations listed in Chapter 3, but only received responses from five of those organizations stating they would share the flyer with their clients. I received negative responses from three other organizations who had previously expressed an interest.

The participant response completion rate was approximately 27% after the first month due to a looping error in the survey. A looping error occurs when the survey

question has circular skip logic I incorrectly applied and takes the individual back to a question previously or to a question on the same page. In this case, the looping error occurred in the PDSAS psychological history survey question 1, 2, 4, 4a, and 7 and demographics questions 14, 14a. A “no” or “I don’t know” answer would take the participant to a sub-question and a “yes” answer would take the individual to the next question. I sought assistance from the technical staff at SurveyMonkey to increase the response rate to the study and to fix the looping error. The staff gave me advice on how to increase the response rate but indicated that the service dog community was still small and guarded and obtaining responses would take time. They also assisted with fixing the looping error which increased the completion rate to 59%. SurveyMonkey assesses completion rates based upon all questions answered. Participants were not taken to every question in the surveys because some questions were skipped based upon the individuals answer.

To increase the response rate, I emailed the organizations again and attempted to contact the organizations who had not responded via Facebook. I was able to message 10 of these service dog organizations, but I received no response from six of them. Two organizations declined my request and two organizations agreed to post my flyer on their Facebook page. The response rates from the organizations could not be calculated because I did not know which organization each participant was from, due to confidentiality and privacy requirements.

There were 68 participants who started the questionnaire by completing one or two of the surveys, but only 64 participants answered all three surveys. Two participants

checked yes to the informed consent page, but never answered any of the questions. Therefore, I removed the data from the four incomplete and two informed consent participants prior to running the analysis.

This study compares results from combat and non-combat veterans. Participants were asked if they had been in the armed forces; if they had ever been deployed, and if they had ever been in a combat situation to identify which group they were in. The ideal sample size for the study was determined to be 31 participants in each of the two sample groups as discussed in Chapter 1. The sample size was met since 31 participants indicated they were combat veterans and 33 were non-combat veterans.

A calculation of the frequencies and percentages of demographic statistics was conducted in SPSS. These demographics included sex, race, age, marital status, education, and employment status. There were more males (68.8%) than female (31.3%) respondents. A large portion of the participants identified as Caucasian (63.2%) and their age ranged from 20 to 60 years old. The marital status of the participants ranged from married, in a relationship but not living together, and in a relationship and living together (58.7%) to divorced, widowed, separated or single (35.3%). Table 1 shows the frequencies and percentages of the demographics. Most participants indicated that they were employed full time, part-time, or self-employed (74.9%). There currently was no baseline descriptive or demographic characteristics to compare this study to because there was no repository for combat and non-combat veterans with PTSD who use service dogs. Therefore, there was no way to ascertain what the baseline demographics were for combat and non-combat veterans who use service dogs.

Table 1

Frequencies: Demographics of Participants

	n	%
Gender		
Female	20	31.3
Male	44	68.7
Race		
African American	4	6.3
Asian	4	6.3
Caucasian or White	42	65.6
Hawaiian or Pacific Islander	4	6.3
Hispanic or Latino	6	9.4
Native American	1	1.5
Decline to Answer	3	4.7
Age		
20-29	10	15.6
30-39	22	34.4
40-49	15	23.4
50-59	13	20.3
60+	1	1.6
No Response	3	4.7
Marital Status		
Married	28	43.8
Divorced	5	7.8
Widowed	1	1.6
Separated	4	6.3
Single, no current relationship	15	23.4
In a relationship but not living together	9	14.1
In a relationship and living together	2	3.1
Education		
Some high school.	8	12.5
High school diploma or GED.	18	28.1
Some college.	26	40.6
Associates degree.	4	6.3
Bachelor's degree.	5	7.8
Advanced degree (masters, doctorate).	3	4.7
Employment Status		
Employed part-time.	10	15.6
Employed full-time.	31	48.4
Self-employed.	7	10.9
Unable to work.	7	10.9
Retired.	9	14.2

The types of service dogs looked at in this study were fully trained, physical disability service dogs, or psychiatric support service dogs. A fully trained service dog is a dog who has been trained to provide a variety of both physical and psychiatric tasks (Marshall, 2012). Physical disability service dogs and psychiatric service dogs were trained to perform tasks based upon the needs of the individual (Marshall, 2012). A frequency analysis was conducted in SPSS to identify the type of service dog with whom participants were partnered with and how long they had their service dogs. This included fully trained service dogs (48.4%), physical disability service dogs that provide physical disability tasks as a primary function and psychiatric tasks as a secondary function (6.3%), psychiatric service dogs with physical disability support as a secondary function (14.1%), or psychiatric service dogs in training (9.4%). The length of time participants had their service dogs varied from less than a year (25%) to over 11 years (6.3%). Most of the respondents had their service dogs for 2-3 years (29.7%) or 4-7 years (31.3%).

Results

Statistical analyses findings were reported and organized by research questions and hypotheses. Data from the three surveys were exported from SurveyMonkey into two formats: SPSS and Microsoft Excel 2013. I conducted a review and comparison of the data variables in SPSS and Microsoft Excel to ensure the data for all three surveys and the demographics were identified in a manner that was understandable and easily analyzed.

Assumption Testing

I conducted parametric tests to determine if the assumption of normality was met. George and Mallery (2016) discussed the range for the results of skewness and kurtosis. The ideal range for normality was equal to or between +1 and -1. The acceptable range was between +1 and +2 and -1 and -2. The unacceptable range was above +2 and below -2 (George & Mallery, 2016). A review of the skewness revealed that the PSDAS-General score fell into the ideal range, whereas the rest of the scale scores fell into the acceptable range as shown in Table 2. The results of the kurtosis showed that the PSDAS-General, PSDAS-PTSD, PSDAS-GAD, and attachment style scores fell within the ideal range. The PTSD severity score and PSDAS-MDD scores fell into the acceptable range.

Table 2

Skewness and Kurtosis

Test Scale	Skewness	Kurtosis
PTSD Severity score	1.250	1.478
PSDAS-General	0.412	0.791
PSDAS-PTSD	1.173	0.988
PSDAS-MDD	1.466	1.534
PSDAS-GAD	1.167	0.352
Attachment Anxiety	-1.098	0.92
Attachment Avoidance	1.264	0.604

Note: N=64,

Multicollinearity. Two of the three hypothesis were tested using hierarchical multiple regression. A preliminary analysis was conducted to test for multicollinearity. Multicollinearity was tested by obtaining the variance inflation (VIF) statistic during the multiple regression analysis in SPSS. A VIF below 10 and tolerance levels below 0.1 indicate that indicate there were multicollinearity issues (Fields, 2013).

Table 3

Tolerance and Variance Inflation Factor

Variable	Tolerance	VIF
PSDAS-General	0.101	9.884
PSDAS-PTSD	0.126	7.950
ECR Anxiety scale	0.283	3.539
ECR Avoidance scale	0.327	3.061

Note: N=64,

An independent sample t-tests and Cronbach's alpha was conducted to compare combat and non-combat veterans scale scores of PSDAS-G, PSDAS-PTSD, PSDAS-MDD, and PSDAS-GAD. The independent samples *t* test included the Levene's test for equality of variances (see Field, 2013). I reviewed the Levene's test was reviewed to see if the variance for combat and non-combat veterans on the PSDAS scales were equal. Scores on the PTSD-MDD and PTSD-GAD subscales showed unequal variances, so the degrees of freedom were adjusted. There was no significant difference in the PSDAS-General scores for combat veterans (M=26.97, SD=9.87) and non-combat veterans (M=25.49, SD=7.97), $t(62)$=-0.633, p=0.510. There was no significant difference in the PSDAS-PTSD scores for combat veterans (M=22.90, SD=9.71) and non-combat veterans (M=18.46, SD=8.37), $t(62)$=-1.97, p=0.054. There was no significant difference in the PSDAS-MDD scores for combat veterans (M=22.77, SD=10.94) and non-combat veterans (M=18.46, SD=8.37), $t(54.11)$=-1.43, p=0.160. There was a significant difference in the PSDAS-GAD scores for combat veterans (M=8.84, SD=4.45) and non-combat veterans (M=6.66, SD=2.99), $t(52.30)$=-2.28, p=0.027.

Table 4

Independent Samples T-Test

		N	Mean	Std. Deviation	*df*	*t*	*p*
PSDAS-General	Non-Combat	33	25.48	7.97	62	-.633	0.510
	Combat	31	26.97	9.87			
PSDAS-PTSD	Non-Combat	33	18.45	8.37	62	-1.97	0.054
	Combat	31	22.90	9.71			
PSDAS-MDD	Non-Combat	33	19.36	7.84	54.11	1.43	0.160
	Combat	31	22.77	10.94			
PSDAS-GAD	Non-Combat	33	6.66	2.99	52.30	-2.28	0.027
	Combat	32	8.84	4.45			

A Cronbach's alpha was conducted on the PSDAS scale score results of the PSDAS. Each scale was tested for reliability and consistency. The PSDAS-General scale consisted of 10 items ($\alpha = .88$), the PSDAS-PTSD scale consisted of 9 items ($\alpha = .92$), the PSDAS-MDD scale consisted of 10 items ($\alpha = .92$), and the PSDAS-GAD scale consisted of 4 items ($\alpha = .81$). These results were higher than Marshall's (2012) study where the alpha for PSDAS-General was 0.69, PSDAS-PTSD was 0.81, the PSDAS-MDD was 0.75, and the PSDAS-GAD was 0.67.

Main Analyses

The PSDAS survey was analyzed using independent measures analysis of variance (ANOVA) to determine if using a service dog had any impact on PTSD-related symptoms for combat and non-combat veterans. A one-way was calculated on participants' ratings of PTSD severity to compare combat and non-combat veteran's PTSD severity score. The analysis found that the PTSD severity score was not significantly different, $F(1,62) = 2.47$, $p = 0.121$.

A hierarchical multiple regression analysis was conducted to explore questions two and three (Clark & Owens, 2012) using the PTSD symptom severity as the dependent variable. The PSDAS-PTSD scale was entered at stage one to control for PTSD-related tasks (psychiatric disability tasks) provided by service dogs. In the second stage, I added the PSDAS-General scale to the regression analysis as this scale represents general tasks a service dog would do for its owner regardless of the owner's diagnostic symptoms (Marshall, 2012). The ECR anxiety and avoidance scale scores entered in the third stage to determine if any of the variables were significantly associated with PTSD symptom severity (Fields, 2013; Clark & Owens, 2012). Stage one of the hierarchical multiple regression showed that there was a relationship between PTSD symptom tasks and PTSD severity and accounted for 95% of the variation $F(1,62) = 1313.14$, $p<0.01$ $R^2 = 0.955$. Adding in the PTSD-General scale increased the variation by 1.5% and this change in R^2 continued to show that the relationship between symptom tasks and PTSD severity was significant, $F(2, 61) =979.85$, $p < 0.01$, $R^2=0.970$. Stage three included the attachment scores only increased the variation by 0.6%, and added to the significance of the relationship between the variables and the PTSD severity score, $F(4,59) =594.06$, $p<0.01$. Table 5 shows the summary of the hierarchical regression analysis.

Table 5.

Summary of Hierarchical Regression Analysis for Variables predicting PTSD Severity

Variable	*B*	*SE B*	*β*	*R*	R^2	ΔR^2
Stage 1				0.977	0.955	0.954
PSDAS-PTSD scale	3.187	0.088	0.977*			
Stage 2				0.985	0.970	0.969
PSDAS- PTSD scale	2.361	0.167	0.724*			

PSDAS- General scale	0.953	0.174	0.281*			
Stage 3				0.988	0.976	0.974
PSDAS-PTSD scale	2.004	.186	.614*			
PSDAS-General scale	1.414	.216	.417*			
ECR Anxiety Scale	-3.175	.876	-.138*			
ECR Avoidance Scale	1.511	.951	.056**			

*Note: N=64, *p=<.001, **p>.05*

Research Question 1

RQ1: Do service dogs decrease PTSD-related symptoms in non-combat and combat veterans diagnosed with PTSD?

H_o1: Service dogs, as measured by the PDSAS, do not decrease PTSD-related symptoms in non-combat and combat veterans.

H_a1: Service dogs, as measured by the PDSAS, decrease PTSD-related symptoms in non-combat and combat veterans.

A One-Way ANOVA was used to measure whether service dogs decrease PTSD related symptoms. The analysis found that PTSD severity score was not significantly different, $F(1,62) = 2.47$, $p = 0.121$. Since the probability value was greater than 0.05, I failed to reject the null hypothesis.

Research Question 2

RQ2: What was the relationship, if any, between attachment style and the impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

H_o2: There was no relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

H_a2: There was a relationship between attachment styles as measured by the ECR-R and the impact of the use of service dogs as measured by the PDSAS.

The relationship between the use of service dogs and attachment style was measured by the PSDAS and the ECR. The hierarchical multiple regression analysis revealed that the addition of attachment styles was significant $F(2,59) = 594.06$, $p < .01$. Therefore, the null hypothesis was rejected, and the alternate hypothesis was accepted. However, when the two scales were reviewed individually, attachment avoidance showed no statistical significance as shown in table 6.

Table 6

Multiple Linier Regression Analysis with Attachment scales

Variable	*B*	*SE B*	*β*	*t*	*p*
Attachment Anxiety	-3.175	.876	-.138	-3.62	0.001
Attachment Avoidance	1.511	.951	.056	1.59	0.117

Research Question 3

RQ3: What was the relationship, if any, between PTSD-related symptoms and the perceived impact of the use of service dogs of non-combat versus combat veterans diagnosed with PTSD?

H_o3: There was no relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

H_a3: There was a relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PDSAS.

The relationship between the use of service dogs and PTSD-related symptoms was found to be statistically significant, $F(1, 61) = 979.845$, $p < .001$. Therefore, the null hypothesis was rejected in favor of the alternate hypothesis. Table 7 shows the multiple regression results for the PSDAS-PTSD and General tasks.

Table 7

Multiple Linier Regression Analysis with PSDAS-PTSD and General scales

Variable	*B*	*SE B*	*β*	*t*	*p*
PSDAS-PTSD	2.361	0.167	0.724	14.122	.001
PSDAS-General	0.953	0.174	0.281	5.487	.001

Summary

This chapter provided a brief review of the data collection process for the research study of combat and non-combat veterans diagnosed with PTSD related symptoms who use service dogs. The results of this study were presented in this chapter, including the descriptions and data analyses for the three hypotheses. The One-way ANOVA analysis for the first question revealed there was not enough data to reject the null hypothesis. The analysis for hypothesis 2 indicated that there was a relationship between attachment styles and the perceived impact of the use of service dogs. The analysis for hypothesis 3 revealed that the relationship between PTSD-related symptoms and the perceived impact of the use of service dogs were positively related. Chapter 5 provides a review of the study, interpretations of the findings, limitations of the study, recommendations for future research, and implications for positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to observe whether service dogs decreased PTSD-related symptoms in combat and non-combat veterans, as well as to examine the relationship between attachment style and the use of service dogs. The reason for conducting this study was to understand the use of service dogs and their relationship with PTSD-related symptom reduction and attachment style.

This study had three major findings. The first major finding was that there was no significant difference between combat veterans and non-combat veterans who use service dogs in the reduction of PTSD-related symptoms. Secondly, this study did show that there was a positive relationship between attachment anxiety and the use of service dogs, and a relationship between PTSD-related symptoms and the use of service dogs. The third major finding was that there was a relationship between PTSD-related symptoms as measured by the PCL-5 and the impact of the use of service dogs as measured by the PSDAS. This chapter contains an interpretation of findings, a discussion of the study's limitations, recommendations for future studies, and a conclusion.

Interpretation of the Findings

This study did not quantitatively prove that the inclusion of a service dog decreased PTSD-related symptoms, but this could be due to the varying degrees of time individuals had their service dog, length of treatment, and because this study only reviewed a moment in time during the respondent's treatment and service dog usage. The PSDAS results in this study did support previous anecdotal research on the positive use

of service dogs by combat veterans and non-combat veterans. The results and the information presented in this study did show that there is a positive relationship to the use of service dogs and the reduction of PTSD-related symptoms, provided additional knowledge and further insight into the perceived impact of including a service dog in the course of treatment for PTSD-related symptoms and showed that service dogs provided their handlers with a sense of security and comfort, Furthermore, this study provided the results of insecure attachment style as a mitigating factor for PTSD severity.

RQ1 looked at whether service dogs decreased PTSD-related symptoms in combat and non-combat veterans. The analysis of the PTSD scale score of the PSDAS and PTSD severity score revealed that this study failed to show that the use of service dogs decreased PTSD-related symptoms. This does not necessarily prove or disprove that service dogs impact PTSD-related symptoms because this analysis only reveals a small portion of the situation. A better analysis would be derived from obtaining the filled-out surveys from the participant before and after receiving a service dog and then comparing those results. Additionally, a comparison of the PSDAS scale scores between combat veterans and non-combat veterans revealed that there was no significant in difference in the PTSD, MDD, and general scale scores, but there was a significant difference in the GAD scale scores. The results indicate that combat veterans and non-combat veterans reported their service dogs completed the same amount of PTSD, MDD, and general tasks.

The interesting results were that combat veterans reported their service dogs completed more GAD related tasks than non-combat veterans. A hypothesis is that the

correlation between combat as the traumatic event, insecure attachment, and the fact that many PTSD-related symptoms are anxiety related could account for this result. Renaud (2008) found that many veterans in his study had an attachment avoidance style. Combat veterans diagnosed with PTSD were found to have higher levels of attachment anxiety and attachment avoidance compared to veterans who were not diagnosed with PTSD (Clark & Owens, 2012). Friedman et al. (2011) discussed that sometimes individuals could be diagnosed with anxiety disorders, had they not had an extremely traumatic event cause the symptoms to manifest. The researchers also argued that stressors not caused by traumatic events could trigger anxiety symptoms and that using a trauma to diagnose PTSD could cause the overuse of the PTSD diagnosis (Friedman et al., 2011).

While this study's focus was on PTSD-related symptoms, it revealed that there was no significant difference between depression-related symptoms, but there was a difference in anxiety-related symptoms. These two results are worthy to note due to the mitigating factor of attachment styles (anxiety and avoidance). Renaud (2008) hypothesized that if individuals with PTSD-related symptoms viewed themselves and the world around them negatively, this would be directly related to attachment anxiety and avoidance. Therefore, Renaud believed that individuals with PTSD-related symptoms would score either attachment anxiety or avoidance on the ECR-R he administered. The results of Renaud's study indicated that both insecure attachment styles contributed to PTSD-related symptom severity on the Mississippi Scale for combat-related PTSD. The results of my study showed that there was a positive correlation between insecure attachment style (anxiety and avoidance combined) and PTSD-severity score. These

results are in line with the studies discussed in Chapter 2 that looked at the relationship between attachment styles using the ECR-R and PTSD severity score (Clark & Owens, 2012; Renaud, 2008; Woodhouse, Ayers, & Field, 2015). Clark and Owens' (2012) and Renaud (2008) research results both showed that there is a positive relationship between insecure attachment and PTSD severity score. Renaud's results showed attachment avoidance had a higher correlation to PTSD severity than attachment anxiety. Clark and Owens' results indicated that the relationship between attachment avoidance and PTSD severity score was significant. This is where there was a difference between the results of their studies and the results of my study. The results of my study indicated that there was no significant relationship between attachment avoidance and PTSD severity score.

The fact that there was no statistical significance between attachment avoidance and PTSD-severity scores could be attributed to the attachment style itself. Clark and Owens (2012) mentioned that their results were lower than Renaud's (2008) results. They attributed their lower results to the fact that people who participate in online studies and seek to help their community would be less likely to have attachment avoidance (Clark & Owens, 2012). Clark and Owens (2012) discussed how a volunteer sample may skew the results of studies related to PTSD and attachment because those who respond may have better attachment styles and be more accepting of mental health issues. Individuals with attachment avoidance may be less likely to participate in a study related to psychological distress and this could affect the results of the study (Clark & Owens 2012).

RQ3 looked at whether there was a relationship between PTSD-related symptoms and the perceived impact of the use of service dogs of non-combat versus combat

veterans diagnosed with PTSD. The results did show that there was a relationship between the use of service dogs and PTSD-related symptoms. Since there is no quantitative data using the PSDAS questionnaire and the PCL-5, there is no way to compare the results of this data with previous quantitative studies. However, the results of this study support previously reported anecdotal reports (Ritchie & Amaker, 2012; Shubert 2012).

Anecdotal Reports

Ritchie and Amaker (2012) discussed how researchers had received personal accounts from combat veterans on the positive impact service dogs had on PTSD-related symptoms. These positive impact claims ranged from the service dog assisting the veterans with reducing or stopping nightmares and being able to be in crowds, to the reduction of PTSD-related medication. Ritchie and Amaker also received anecdotal reports from veterans who reported that their service dog provided them a sense of security. Yount, et al. (2012) found that combat veterans who participated in service dog training programs developed increased patience, were able to control their impulses, and could regulate their emotional responses better than they could prior to entering the training program. Additionally, these combat veterans claimed to be able to sleep better, felt like they belonged more, reported less depression, lowered stress, and reduction in their intake of PTSD-related medication. Taylor, Edwards, and Pooley (2015) found that veterans claimed their service dogs helped to ground them through physical contact when they were having PTSD-related episodes or when they felt overwhelmed. The veterans also disclosed that they felt more secure, reported decreased hypervigilance, and

described being able to be more social, explaining that the dogs provided them with a sense of comfort through touch (Taylor et al., 2015).

Participants in my study tended to support the anecdotal reports in the Ritchie and Amaker (2012) and Yount, et al. (2012) studies dealing with the positive impact of service dogs and reduction in medication. The participants in this study were asked if their quality of life improved since obtaining a service dog. Most of the participants in this study chose either "completely agree" (62.5%) or "somewhat agree" (29.6%)." Additionally, participants were asked about improvements in their ability to manage their psychological symptoms. Most respondents who answered this question responded either "completely agree" (62.5%) or "somewhat agree" (31.3%)." Survey results showed that more than half of the participants reported that having a service dog reduced their intake of medication for psychological (65.6%) or physical symptoms (68.7%).

In the present study, the positive relationship between the perceived impact of service dogs and the reduction of PTSD-related symptoms found in the results of RQ3 and quality of life questions of the PSDAS also supported O'Haire and Rodriguez' (2018) research findings. O'Haire and Rodriguez reported a large change in PTSD-related symptom reduction by veterans when a service dog was added to their treatment. They conducted pre-and post-PCL tests on combat veterans who received a service dog in addition to their regular therapy session (O'Haire & Rodriguez, 2018). The PSDAS quality of life questions did not specifically ask participants about the reduction of nightmares, impulse control, or emotional regulation, or anxiety reduction as part of the quality of life questions but did ask scale questions that covered similar areas. In my

study participants were asked if their service dog assisted them with nightmares, 50 % of the respondents answered that their service dogs “frequently” woke them when having night terrors and 14.1 % indicated that their service dogs “occasionally” woke them. Over 70 % of participants responded that they completely agreed when asked about their service dog making them feel better when they are sad or tearful.

Ritchie and Amaker (2012) and Taylor, et. al. (2015) found that physical contact with service dogs aided in reducing PTSD-related symptoms. In my study, answers to PSDAS questions supported the findings of Riche and Amaker (2012) and Taylor et. al. (2012). There were two questions in the PSDAS survey that were closely related to physical contact. An overwhelming number of respondents to the PSDAS portion of the current study indicated that their service dogs “frequently” (64.1%) or “occasionally” (17.2%) helped them though touch, breath, or pressure when they are feeling uninterested. When asked about service dogs resting their weight on the handler when they felt sad or tearful, many respondents also answered that their service dog did this “frequently” (60.9%) or “occasionally” (18.8%). The responses to these two questions in my study supported the findings of physical contact with service dogs aiding in the reduction of PTSD-related symptoms as discussed in Richie and Amaker’s (2012) and Tayler’s (2016) studies.

Marshall (2012) discussed how individuals diagnosed with PTSD also have the potential for comorbid symptoms of GAD and MDD. Participants in her study reported that their service dogs performed tasks from the GAD and MDD task lists, as well as, PTSD tasks on the PSDAS. Even though the current study was focused on PTSD-related

symptoms, participants also indicated that their service dogs performed GAD and MDD tasks. One thought-provoking question on the PSDAS used in Marshall's study and my study deals with how service dogs alerted their handlers to the onset of mental health symptoms (Marshall, 2012). This question was not related to PTSD, GAD, or MDD, but most of the participants in Marshall's study chose either "completely" or "somewhat agree" (98.1%) that their service dog alerted them to impending symptoms (Marshall, 2012). The response to the same question in the current study was only slightly different with a large portion of respondents choosing "completely" or "somewhat agree" (76.6%). While this was not a main focus area in either study, this may be a good area for future studies as there does not appear to be a lot of literature on this topic.

There was a section in the PSDAS survey used in Marshall's study where participants did not seem to understand the questions (Marshall, 2012). Marshall believed that approximately 25% of the participants in her study had not understood the PTSD-related task questions (Marshall, 2012). Her conclusion was drawn from the large number of participants who selected "neither agree or disagree" to a few of the questions. Some examples include question number 5: "When I become lost or confused, my PSD leads me home or to another safe place" (27.3%); question number 8: "When I'm having a flashback, looking at my PSD's behaviors helps me know if what I am experiencing is actually happening" (21.8%); question number 17: "My PSD wakes me up when I have night terrors" (29%); question number 24: "I look at my PSD's reaction to things I hear or see helps me know if they are real when I am hallucinating" (40%); and question 28: "My PSD turns on the lights in my home when I have night terrors" (36.4%). These are

examples of those items in Marshall's study that had higher than 21% response rates on "neither agree or disagree*",* however, overall respondent rates from these types of questions ranged from 0.9% to 40% (Marshall, 2012). The nature of these questions would lead one to believe that the participant would respond that they either agree or disagree (Marshall, 2012). Therefore, Marshall recommended changing the response criteria (Marshall, 2012). I made the recommended changes to the response criteria on these questions from "strongly agree," "agree," "neither agree or disagree," 'disagree," and "strongly disagree," to "frequently," "occasionally," "rarely," "my dog does not perform this task," and "I don't know." In my study some individuals may not have understood the task-related questions, but there appeared to only be a small number of respondents who were not sure whether their dog performed certain PTSD-related tasks. Therefore, the recommended change appears to provide for more understanding of the questions and provided a better response rate.

Limitations of the Study

Limitations mentioned in chapter one remain a factor at the completion of this study. As mentioned in chapter one, willingness to take the study could have limited the participant pool to individuals with attachment anxiety, reducing the accurateness of the relationship between attachment avoidance and PTSD-severity. The limitation of using a nonprobability sample remained and was a concern since a nonprobability sample does not allow for an effective random sample of the target population (Creswell, 2009). The sample population was recruited from a small sample of PTSD service dog organizations and through Facebook. Only five of the 28 reputable organizations posted fliers for this

study, limiting the population participant pool. Using this type of recruitment and snowball technique made it difficult for obtaining a random sample from individuals with PTSD-related symptoms who use service dogs.

A limitation not previously mentioned is the fact that individuals self-reported on the tasks the service dog conducts. Marshall (2012) mentioned that the tasks a service dog provides may change over time depending on the severity of the individual's symptoms. Therefore, the PSDAS only provides a glimpse into the tasks provided by service dogs and does not consider other coping skills the handler may have gained through regular psychological care.

Recommendations

O'Haire and Rodriguez (2018) suggested that self-reports could be subject to expectancy bias that requires a validated process to accurately assess PTSD symptomology. Incorporating mental health providers to conduct PTSD assessments using a more detailed PTSD scale would provide more objectivity and could assist with removing expectancy bias and provide a more controlled environment. Future research into the relationship between the use of service dogs, PTSD symptom level, and attachment avoidance should be done in a more controlled environment. A more controlled environment would be to have participants complete the ECR-R and PCL surveys before, and then 6-12 months after he or she receives a service dog. This would allow for an examination of change in the variables over time and between groups. This would also allow for individuals with all attachment styles to be represented. Including the PSDAS after the 6-12-month period could provide additional insight into whether

having a service dog is the reason for the incongruity between this study and previous studies.

The hierarchical multiple regression analysis in this study only analyzed the relationship between the use of service dogs and insecure attachment style in relation to PTSD severity. This study did not analyze secure attachment in relation to the use of service dogs and PTSD severity. Research has indicated that individuals with secure attachment recover quickly after traumatic events (Benoit et al., 2010). Secure attachment has also been associated with quicker recovery times for individuals with PTSD-related symptoms PTSD (Benoit et al., 2010). Future research needs to be done on secure attachments in relation to the use of service dogs and PTSD severity.

Implications

There have been studies that look at attachment style's effect on PTSD-related symptoms (Benoit, et al., 2010; Owens et al., 2013; Woodhouse, Ayers, & Field, 2015) and anecdotal research on the use service dogs by combat veterans for PTSD-related symptoms (Brown & Goldstein, 2011; Ritchie & Amaker, 2012; Shubert, 2012; Yount, et al., 2012; Yount et al., 2013). There has also been a limited number of quantitative research published (Kloep, Hunter, & Kertz, 2017; O'Haire & Rodriguez, 2018; Vincent, Belleville, Gagnon, Dumont, Auger, Lavoie, … Lessart, 2017) on the use of service dogs and PTSD-related symptoms since this research study began, but none of these studies combine combat veterans, PTSD-related symptoms, and attachment style.

Positive Social Change for Individuals, Families, and Society

The results of this study created the potential for positive social change on individuals, families, organizations, and society by expanding information on the relationship between the use of service dogs by military veterans and the potential for reducing PTSD-related symptoms. Individuals and families could use this study as a resource when making the decision on the inclusion of a service dog in the treatment of PTSD-related symptoms. These findings could also be used to understand how attachment styles are a mitigating factor in PTSD-related symptoms and assist them with seeking treatment options related to improving attachment anxiety and attachment avoidance that assist with improving PTSD-related symptoms.

At the organizational level, this study could be used to not only better understand how service dogs could be used as a complementary form of treatment of PTSD-related symptoms, but also to refine the PSDAS tasks and conduct future studies. The VA and the U. S. Army Medical Corps have pursued research into the use of service dogs for combat veterans with PTSD-related symptoms, but only have anecdotal reports. There currently is a gap in quantitative research related to the impact of service dogs on PTSD-related symptoms and attachment styles. The results of the current research has the potential for positive social change by providing important information, such as how the addition of a service dog resulted in improved quality of life and more manageable psychological symptoms, and that attachment styles should be considered as a mitigating factor which was missing in previous research (Rodriguez & O'Haire, 2018; Erford et al.,

2016; Owens et al., 2013; Ritchie & Amaker, 2012; Shubert, 2012; Benoit, et. al, 2010; Renaud, 2008).

Conclusion

Combat-related PTSD has been associated with life-threatening traumatic events experienced during combat that include explosions, improvised explosive devices, and detonations causing mass casualty events during military deployments. These types of events can result in emotional, cognitive, behavioral, and physical responses (Peterson, 2011). The use of service dogs by combat veterans for PTSD-related symptoms have increased since Operation Enduring Freedom due to the increased cases of PTSD-related symptoms (Rodriguez & O'Haire, 2018). Ritchie and Amaker (2012) and Shubert (2012) found that veterans claimed that the use of service dogs as a complementary treatment measure does provide a positive and important impact for combat and non-combat veterans with PTSD-related symptoms. Erford et al. (2016) also studied combat veterans who used service dogs and reported that their service dogs assisted them with PTSD-related symptom reduction in addition to evidence-based therapy.

The current study looked at the impact of the use of service dogs by combat and non-combat veterans with PTSD-related symptoms with attachment style as a mitigating factor. This was done by examining PTSD-related symptoms, service dog tasks, and attachment style with three different surveys: the PCL-5, PSDAS, and the ECR. The PCL-5 and the ECR-R are common surveys used in studies on PTSD and attachment theory (Owens et al., 2013; Benoit, et. al, 2010; Renaud, 2008), but the PSDAS is a newer survey that Marshall (2012) created to look at tasks that service dogs complete for

their handlers. The premise of using these three studies was to be able to look at PTSD-related symptoms and attachment theory in relation to service dog tasks to understand the impact of service dogs on combat veterans with PTSD-related symptoms and to provide quantitative results. This study did not show that the use of service dogs impact PTSD related symptoms, but the study did show that there was a positive relationship between PTSD-related symptoms and the use of service dogs. Participant answers on the PSDAS survey supported anecdotal reports of the positive effect of the use of service dogs even though the quantitative results did not prove that service dogs reduce PTSD-related symptoms. The VA, the Army Medical Corps, and mental health professionals have used service dogs as a complementary measure even though there have only been anecdotal reports on the positive impact of service dogs on PTSD-related symptoms. The consideration of the results of this study will contribute to the body of literature on this topic, and to helping future veterans and their therapists have ample information to make an informed decision about utilizing a service dog as a helpful complementary treatment to help mitigate PTSD-related symptoms.

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Appendix A – PTSD Checklist for the DSM-5 (PCL-5)

Instructions: Below was a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	*Not at all*	*A little bit*	*Moderately*	*Quite a bit*	*Extremely*
1. Repeated, disturbing, and unwanted memories of the stressful experience?	**0**	**1**	**2**	**3**	**4**
2. Repeated, disturbing dreams of the stressful experience?	**0**	**1**	**2**	**3**	**4**
3. Suddenly feeling or acting as if the stressful experience were actually happening again *(as if you were actually back there reliving it)*?	**0**	**1**	**2**	**3**	**4**
4. Feeling very upset when something reminded you of the stressful experience?	**0**	**1**	**2**	**3**	**4**
5. Having strong physical reactions when something reminded you of the stressful experience *(for example, heart pounding, trouble breathing, sweating)*?	**0**	**1**	**2**	**3**	**4**
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	**0**	**1**	**2**	**3**	**4**
7. Avoiding external reminders of the stressful experience *(for example, people, places, conversations, activities, objects, or situations)*?	**0**	**1**	**2**	**3**	**4**
8. Trouble remembering important parts of the stressful experience?	**0**	**1**	**2**	**3**	**4**
9. Having strong negative beliefs about yourself, other people, or the world *(for example, having thoughts such as: I am bad, there was something seriously wrong*	**0**	**1**	**2**	**3**	**4**

***with me, no one can be trusted, the world was completely dangerous)*?**					
10. Blaming yourself or someone else for the stressful experience or what happened after it?	**0**	**1**	**2**	**3**	**4**
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	**0**	**1**	**2**	**3**	**4**
12. Loss of interest in activities that you used to enjoy?	**0**	**1**	**2**	**3**	**4**
13. Feeling distant or cut off from other people?	**0**	**1**	**2**	**3**	**4**
14. Trouble experiencing positive feelings *(for example, being unable to feel happiness or have loving feelings for people close to you)*?	**0**	**1**	**2**	**3**	**4**
15. Irritable behavior, angry outbursts, or acting aggressively?	**0**	**1**	**2**	**3**	**4**
16. Taking too many risks or doing things that could cause you harm?	**0**	**1**	**2**	**3**	**4**
17. Being "superalert" or watchful or on guard?	**0**	**1**	**2**	**3**	**4**
18. Feeling jumpy or easily startled?	**0**	**1**	**2**	**3**	**4**
19. Having difficulty concentrating?	**0**	**1**	**2**	**3**	**4**
20. Trouble falling or staying asleep?	**0**	**1**	**2**	**3**	**4**

DSM-5 symptom cluster severity scores can be obtained by summing the scores for the items within a given cluster, i.e., cluster B (items 1-5), cluster C (items 6-7), cluster D (items 8-14), and cluster E (items 15-20) (Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013).

Appendix B - Psychiatric Service Dog Assistance Scale (PSDAS) questionnaire

The Psychiatric Service Dogs (PSDs) survey can be found in Marshall's (2012) dissertation available on ProQuest.

Appendix C - The Experiences in Close Relationships-Revised (ECR-R) Questionnaire

Scoring Information: The first 18 items listed below comprise the attachment-related anxiety scale. Items 19 – 36 comprise the attachment-related avoidance scale. In real research, the order in which these items were presented should be randomized. Each item was rated on a 7-point scale where 1 = strongly disagree and 7 = strongly agree. To obtain a score for attachment-related *anxiety*, please average a person's responses to items 1 – 18. However, because items 9 and 11 were "reverse keyed" (i.e., high numbers represent low anxiety rather than high anxiety), you'll need to reverse the answers to those questions before averaging the responses. (If someone answers with a "6" to item 9, you'll need to re-key it as a 2 before averaging.) To obtain a score for attachment-related *avoidance*, please average a person's responses to items 19 – 36. Items 20, 22, 26, 27, 28, 29, 30, 31, 33, 34, 35, and 36 will need to be reverse keyed before you compute this average.

Generic Instructions: The statements below concern how you feel in emotionally. We were interested in how you *generally* experience relationships, not just in what was happening in a current relationship. Respond to each statement by [web: clicking a circle] to indicate how much you agree or disagree with the statement

1. I'm afraid that I will lose this person's love.

    1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

2. I often worry that this person will not want to stay with me.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

3. I often worry that this person doesn't really love me.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

4. I worry that this persons won’t care about me as much as I care about them.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

5. I often wish that this person's feelings for me were as strong as my feelings for him or her.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

6. I worry a lot about my relationships.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

7. When this person was out of sight, I worry that he or she might become interested in someone else.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

8. When I show feelings for this person, I'm afraid they will not feel the same about me.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

9. I rarely worry about this person leaving me.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

10. This person makes me doubt myself.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

11. I do not often worry about being abandoned.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

12. I find that this person(s) don't want to get as close as I would like.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

13. Sometimes this persons change their feelings about me for no apparent reason.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

14. My desire to be very close sometimes scares people away.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

15. I'm afraid that once this person gets to know me, he or she won't like who I really am.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

16. It makes me mad that I don't get the affection and support I need from this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

17. I worry that I won't measure up to other people.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

18. This person only seems to notice me when I'm angry.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

19. I prefer not to show this person how I feel deep down.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

20. I feel comfortable sharing my private thoughts and feelings with my this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

21. I find it difficult to allow myself to depend on this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

22. I am very comfortable being close to this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

23. I don't feel comfortable opening up to this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

24. I prefer not to be too close to this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

25. I get uncomfortable when this person wants to be very close.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

26. I find it relatively easy to get close to this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

27. It's not difficult for me to get close to this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

28. I usually discuss my problems and concerns with this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

29. It helps to turn to this person in times of need.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

30. I tell this person just about everything.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

31. I talk things over with this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

32. I am nervous when this person get too close to me.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

33. I feel comfortable depending on this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

34. I find it easy to depend on this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

35. It's easy for me to be affectionate with this person.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

36. This person really understands me and my needs.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Neither agree or disagree

5 – Somewhat agree

6 – Agree

7 – Strongly agree

Appendix D – Permission to use the PSDAS

Gmail by Google

Christine Hansen [redacted]

Dissertation request

8 messages

Marshall [redacted] Tue, Mar 31, 2015 at 2:02 PM
To: [redacted]

Hi Christine,

I am deeply flattered by your request to use my questionnaire in your dissertation. Before you do, though, let's talk so that I can alert you to some limitations of the instrument in its current form (it needs to be fixed but the change is simple). Let me know what your schedule is and we can pick a time. I am free before 3:30 pm (pacific time) Sunday - Wednesday and all day on Thursday - Saturday.

Congratulations on making progress with your dissertation! I am very excited to hear about your topic!

Sincerely,

Carolyn

Christine Hansen [redacted] Wed, Apr 1, 2015 at 3:01 PM
To: Marshall [redacted]

Good Afternoon,

Tomorrow would be great, I am available on [redacted] from 8:00a-3:00p or (c) [redacted] (I recently moved from Maryland to California). I usually go for a walk between 11:00-12:00.

Thank you,

Christine Hansen
Doctoral Student • Counseling Psychology
College of Social and Behavioral Sciences
Walden University
Minneapolis, MN
[redacted]
[Quoted text hidden]

Marshall [redacted] Thu, Apr 2, 2015 at 5:27 PM

Appendix E – Permission to use the PCL-5

Gmail by Google

Christine Hansen [redacted]

Use of PCL-5 in dissertation

Yoder, Matthew S <[redacted] Mon, Dec 7, 2015 at 6:20 AM To: [redacted]

Hi Christine,

You can access the PCL-5 through our website at the following link:
http://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp

Best wishes in your research,

Matthew Yoder, Ph.D.

Clinical Psychologist & Consultant

PTSD Mentoring & Consultation Programs

National Center for PTSD, Executive Division

[redacted]

Assistant Professor, Medical University of South Carolina Department of Psychiatry and Behavioral Sciences

Charleston, SC 29401

PTSD Consultation Program
FOR PROVIDERS WHO TREAT VETERANS

866-948-7880 or PTSDconsult@va.gov

IMPORTANT INFORMATION about the scope of our program: The VA PTSD Consultation Program for Community Providers offers education, training, information, consultation and other resources to non-VA health professionals who treat Veterans with PTSD outside of the VA system. These services provided are consistent with evidence-based practices for PTSD and VA consensus statements such as the VA/DoD

Appendix F– Permission to use the ECR-R

20	2.88	3.59
30	2.96	3.55
40	3.04	3.51
50	3.12	3.47
60	3.20	3.43

Note. The values for age represent the predicted values for variable ages based on a regression model that models avoidance and anxiety as a function of age in years. The equation for avoidance is 2.72 + .008*AGE. The equation for anxiety is 3.67 - .004*AGE.

In the full sample, the correlation between the avoidance and anxiety scales was .40.

Please note that these norms should be taken with a grain of salt. They are based on data that our lab collected online using the ECR-R in the early 2000's. I strongly encourage interested readers to consult **Sanjay Srivastava**'s thoughtful blog entry on the pros and cons of using norms in individual differences research.

Q: Do I need permission to use these scales in my research?

A: No. The scales were published in a scientific journal for use in the public domain. You do not need to contact any of the authors for permission to use these scales in non-commercial research. You may *not* use the scales for commercial purposes without permission.

Q: The ECR-R items appear to be written for people in romantic relationships. Can I modify the items to make them relevant to other kinds of relationships, such as parental or sibling relationships?

A: You should feel free to modify the items in any way that seems appropriate to you. Many people have modified the items for their research purposes and you should feel free to do the same. We have recently developed a new (and shorter) version of the ECR-R that can be used for a variety of relational targets. To take an online version of that test, please visit this link: ECR-Relationship Structures. Additional information about this measure is available here.

Q: Is there a way to categorize people into a specific attachment category (i.e., secure, fearful, dismissing, preoccupied) on the basis of their scores on the two ECR-R dimensions?

A: In short: There is no "natural" or "correct" way to assign people to attachment categroies or styles.

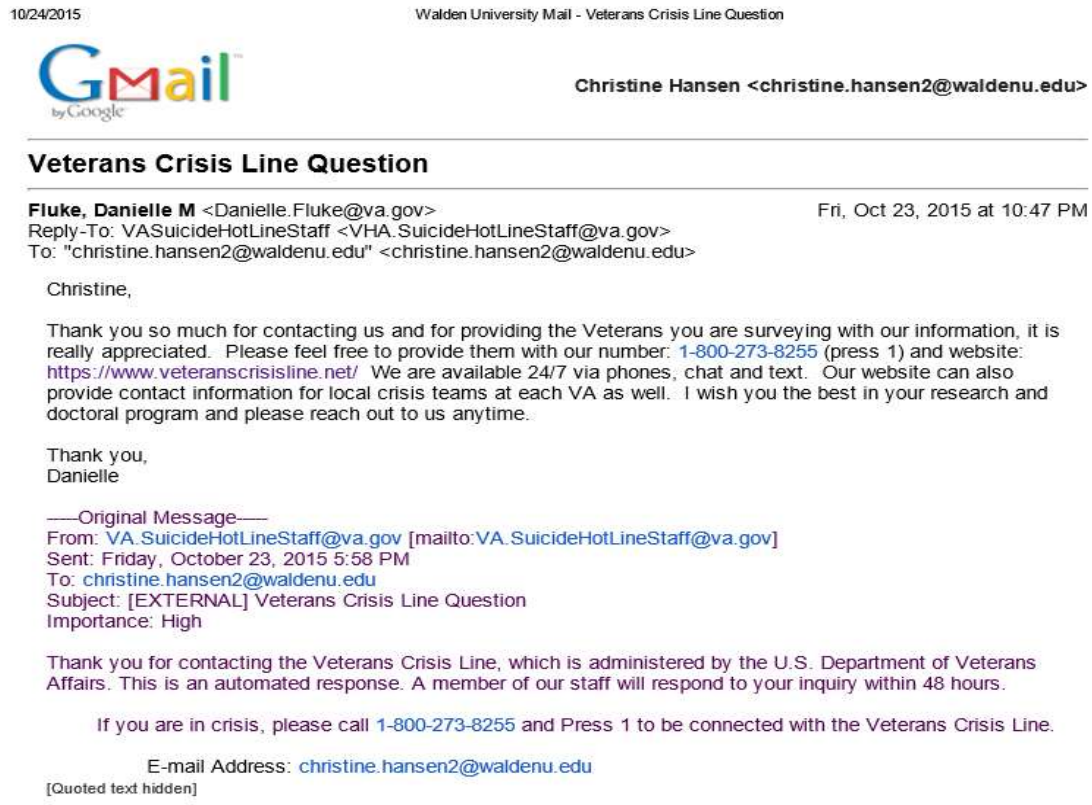
Over the years I have been interested in the question of whether attachment styles are categorical variables (i.e., matters of kind) or continuous variables (i.e., matters of degree). Taxometric analyses (Meehl, 1995) offer one useful way to address the question of whether a construct is categorical or dimensional. Taxometric analyses on multiple samples and

Appendix G – Permission to post Crisis Hotline numbers

The following Crisis Hotlines dedicated to veterans were contacted for inclusion with the surveys:

Veteran's Crisis Line: Veterans can call 1-800-273-8255 and Press 1, chat online, or send a text message to 838255 to receive confidential support 24 hours a day, 7 days a week, 365 days a year. Support for deaf and hard of hearing individuals was available. The website for the Veteran's Crisis Line was https://www.veteranscrisisline.net/

PTSD Foundation of America: Veterans can call the 24 Hour PTSD Veteran Line: 1-877-717-PTSD (7873) or visit the website for additional hotline or crisis number. The PTSD Foundation of America website was http://ptsdusa.org/get-help/national-outreach/



10/24/2015 Walden University Mail - Veterans Crisis Line Question

Gmail by Google

Christine Hansen <christine.hansen2@waldenu.edu>

Veterans Crisis Line Question

Fluke, Danielle M <Danielle.Fluke@va.gov> Fri, Oct 23, 2015 at 10:47 PM
Reply-To: VASuicideHotLineStaff <VHA.SuicideHotLineStaff@va.gov>
To: "christine.hansen2@waldenu.edu" <christine.hansen2@waldenu.edu>

Christine,

Thank you so much for contacting us and for providing the Veterans you are surveying with our information, it is really appreciated. Please feel free to provide them with our number: 1-800-273-8255 (press 1) and website: https://www.veteranscrisisline.net/ We are available 24/7 via phones, chat and text. Our website can also provide contact information for local crisis teams at each VA as well. I wish you the best in your research and doctoral program and please reach out to us anytime.

Thank you,
Danielle

-----Original Message-----
From: VA.SuicideHotLineStaff@va.gov [mailto:VA.SuicideHotLineStaff@va.gov]
Sent: Friday, October 23, 2015 5:58 PM
To: christine.hansen2@waldenu.edu
Subject: [EXTERNAL] Veterans Crisis Line Question
Importance: High

Thank you for contacting the Veterans Crisis Line, which is administered by the U.S. Department of Veterans Affairs. This is an automated response. A member of our staff will respond to your inquiry within 48 hours.

If you are in crisis, please call 1-800-273-8255 and Press 1 to be connected with the Veterans Crisis Line.

E-mail Address: christine.hansen2@waldenu.edu
[Quoted text hidden]

Gmail by Google

Christine Hansen <christine.hansen2@waldenu.edu>

Re: Contact Us

1 message

David Maulsby <david.maulsby@ptsdusa.org> Mon, Oct 26, 2015 at 7:56 AM To: christine.hansen2@waldenu.edu

Christine, we would be glad to have our information listed. Good luck with your dissertation!

> On Sat, Oct 24, 2015 at 2:26 PM, WordPress <christine.hansen2@waldenu.edu> wrote:
>
> Name : Christine Hansen
> Email : christine.hansen2@waldenu.edu
> Phone_# : 3017512693
> Comment : I am a Navy Veteran and am attending Walden University to obtain a doctorate degree in Counseling Psychology. My area of interest is combat PTSD and service dogs. I am currently working on my dissertation titled "The Impact of Service Dogs on Combat Veterans With Posttraumatic Stress Disorder." I plan on distributing a survey concerning the use of Service Dogs by combat and non-combat veterans with PTSD. As part of the survey I need to provide crisis numbers and in the event the survey distresses the participant. I was wanting to post your crisis number as one of the numbers to call and wanted permission to do so. If you could let me know if I can use your crisis number via email to christine.hansen2@waldenu.edu. I would greatly appreciate it.

–

David Maulsby, Executive Director
PTSD Foundation of America
PO Box 690748
Houston, TX 77269
281.664.7948

If you are a veteran in crisis, or know a veteran in crisis, call 877.717.7873 www.ptsdusa.org
Follow us on Twitter: @ptsdusa
Follow us on Facebook: www.facebook.com/ptsdusa CFC
Participant : 29527

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Appendix H - Debriefing Form

Debriefing Form: The Impact of Service Dogs on Combat Veterans With Posttraumatic Stress Disorder

Thank you for agreeing to participate in this study! The general purpose of this research was to examine the impact, if any, of the use of service dogs on PTSD-related symptoms in non-combat and combat veterans diagnosed with PTSD. Sometimes these dogs were also referred to as PTSD Dogs or Mental Health Assistance Dogs. For the sake of this study, PTSD Dogs and Mental Health Assistance Dogs will also be referred to as Psychiatric Service Dogs (PSD). Additionally, my dissertation was looking at attachment styles of combat and non-combat veterans.

We invited people who were combat and non-combat veterans older than the age of 18 who self-identify as having PTSD related symptoms and who use service dogs. The experimenter does not know whether the use of service dogs positively or negatively impact your PTSD related symptoms or what attachment style you have. In this study, you were asked to complete a survey on the different tasks your service dog does for you and how this impacts your daily life. Additionally, you were asked to complete an attachment survey to assess your attachment style. Completing these surveys aid in understanding if attachment styles and the use of service dogs assist in the reduction of PTSD related symptoms. The results from this study will provide a better understanding

of the impact of service dogs on combat veterans with PTSD through the lens of attachment theory.

If you feel especially concerned about PTSD related symptoms and you feel as though you need to discuss this discomfort with a professional, you were encouraged to contact the following crisis organizations:

Veteran's Crisis Line: Veterans can call 1-800-273-8255 and Press 1, chat online, or send a text message to 838255 to receive confidential support 24 hours a day, 7 days a week, 365 days a year. Support for deaf and hard of hearing individuals was available. The website for the Veteran's Crisis Line was https://www.veteranscrisisline.net/

PTSD Foundation of America: Veterans can call the 24 Hour PTSD Veteran Line: 1-877-717-PTSD (7873) or visit the website for additional hotline or crisis number. The PTSD Foundation of America website was http://ptsdusa.org/get-help/national-outreach/

Thank you for your participation in this study. If you have further questions about the study, please contact the researcher via email at. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She was the Walden University representative who can discuss this with you. Her phone number was 612-312-1210. Walden University's approval number for this study was 05-12-17-0259088 and it expired on May 11th, 2018.