ABSTRACT

OUTCOMES FOR U.S. VETERANS WITH COMBAT-RELATED POSTTRAUMATIC STRESS DISORDER: USE OF CERTIFIED SERVICE AND THERAPEUTIC COMPANION DOGS

The purpose of this study is to identify the attitudes and perceptions about canine-assisted therapy (CAT) from United States (US) veterans who have a diagnosis of posttraumatic stress disorder and who are currently utilizing a therapy dog as part of their care plan. These evaluations will assist the researcher in assessing these attitudes and beliefs in an attempt to understand more about the best practices and support the implementation of CAT within the military medical setting.

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OUTCOMES FOR U.S. VETERANS WITH COMBAT-RELATED POSTTRAUMATIC STRESS DISORDER: USE OF CERTIFIED SERVICE AND THERAPEUTIC COMPANION DOGS

by

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Nursing in the College of Health and Human Services California State University, Fresno May 2015
APPROVED

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CHAPTER 1: INTRODUCTION

Canine-assisted therapy (CAT) is a form of therapy that involves a canine being used as a type of treatment in therapeutic medicine. Canines are used in a variety of settings such as prisons, hospitals, mental facilities, and educational institutions. The bond created between a human and a dog is significant, as it has been known to improve one’s quality of life. Dogs play an important role in American culture. According to the American Pet Products Association (Gourdreau, 2009), 62% of American households own a pet, and most are willing to spend massive amounts of time and money on their animals, especially canines. The advantages of canine involvement in rehabilitative settings can be remarkably accommodating for both patient and provider. Research indicates that the positive social connections achieved with service and therapy dogs offer patients a safe, secure, and fairly inexpensive way of healing. Consequently, nonprofit agencies and military medical centers such as the Walter Reed National Military Medical Center (WRNMMC) have started using dogs as an alternative form of therapeutic medicine for their combat soldiers in various select programs.

Myra Estrin Levine’s Conservation Model and Theoretical Framework

The theoretical framework for this study is founded upon Myra Estrin Levine’s Conservation Model (CM). CM focuses on promoting adaptation, while maintaining wholeness and using the principles of conservation (Levine, 1973). The model has been applied in various research studies and contains four principles: conservation of energy, conservation of structural integrity, conservation of personal integrity, and conservation of social integrity (Levine, 1973). The nursing interventions are based on conservation of the patient’s
integrity in each of the conservation domains (Levine, 1999). The model has strengthened communication, improved nursing care overall, and has been incorporated into qualitative studies to increase understanding in patients during their whole state (McEwen & Wills, 2007).

According to CM, the primary care provider (PCP) is seen as a part of the environment that shares skills, knowledge, and compassion towards helping his or her patients. Establishing early interventions and developing practical care plans for our US veterans is critical towards the growth in healthcare provision at the largest health care system in the United States: Veterans Health Administration (VHA) (Litaker, Tomolo, Liberatore, Stange, & Aron, 2006). If the theory is to be applied within the Veterans Affairs (VA) medical system, the PCP would assist each veteran to confront challenges, helping to solve problems in a unique way. According to the CM, every soldier is seen as an individual, requiring a special arrangement of skills, techniques, and philosophies (Levine, 1991). The treatment requirements for each veteran will vary based on the individual care plans encompassing multiple trauma exposure, traumatic brain injury (TBI), or poor social support (Hoyt & Candy, 2011). Once needs are identified, CM encourages a relationship between the PCP and patient. This promotes successful outcomes in patient-centered care while the PCP becomes a critical component within that veteran’s environment. Together, both soldier and PCP identify concerns and work towards solving. Once needs have been identified, PCP and veteran can explore the option of CAT. This could include either a service or therapy canine based on the physical or psychological needs of the veteran.

The impact that CAT has within the military setting has been problematic in terms of calculating the progress of the animal therapy. This has made it difficult for those veterans who have not undergone therapeutic contact with a
canine in the past (Foreman & Crosson, 2012). There is an eminent need for scientific data regarding animal therapy so that researchers can fully comprehend how the human-animal bond assists with psychological and physical disabilities of veterans (Ritchie & Amaker, 2012). Proper guidelines and policies regarding CAT could be established within the military medical setting once further research has been conducted.

Given the individual and varying circumstances of veterans who suffer from PTSD, they have been previously been treated by psychotropic medication, cognitive behavioral therapy (CBT) and traditional individual or group counseling. However, CAT practices tend to have a therapeutic effect that mediate fatigue, function, anxiety, mood states, and stress that can fluctuate per patient. It is extremely important that each practitioner realizes this and is able to assess whether CAT would be an appropriate therapeutic choice for the veteran receiving therapy. CAT provides another therapeutic option that possibly allows for one’s healthcare goals to be achieved. Continued investigations through evidence based (EB) research is advantageous in order to promote standards of practice for CAT in the near future.

**Purpose of Study**

The purpose of this study is to identify the attitudes and perceptions about CAT from US veterans who have a diagnosis of PTSD and who are currently utilizing a therapy dog as part of their care plan. These evaluations will assist the researchers in assessing these attitudes and beliefs in an attempt to understand more about the best practices and support the implementation of CAT within the military medical setting. Programs such as CAT have been limited in growth and policy, despite the successful outcomes witnessed within the military system. As
WRNMMC continues to pave the way for CAT programs, qualitative research from a multidisciplinary perspective will be required in order to promote further research and developments of these practices becoming more commonplace.
CHAPTER 2: LITERATURE REVIEW

The literature review will begin with a past account of dog therapy foregone by both disabled populations and US veterans. The purpose and significance of this literature review is to examine current qualitative research primarily conducted within the civilian and military medical setting, while offering CAT as an alternative intervention in a soldier’s care plan. Research is critical and necessary towards gaining a better acceptance and understanding within nontraditional forms of therapeutic treatment such as animal-assisted therapy (AAT).

Therapists and mental health experts have been looking into AAT for years, as the interest towards canines especially within the rehabilitation setting, has certainly increased. More and more research is being conducted, but limited EB documents on AAT continue to be a problem, especially in the military medical setting. To gain a better understanding of this issue it is important to recognize the benefits that CAT provides through programs and studies that have been currently created within and outside the military medical setting.

History of Guide and Therapy Dog Use by United States Veterans

Guide dog use by veterans within the US is connected to the very first training schools founded in Germany during World War I. The schools were established to care for the soldiers who had lost their eyesight due to combat (Ostermeier, 2010).

The Seeing Eye, founded by two Americans—Dorothy Eustis and blind man, Morris Frank—was established in Nashville, Tennessee, 1929 (Ostermeier, 2010). Persuading the American people that a guide dog could direct a blind
soldier did not take much convincing. Several US veterans were blinded after the attack on Pearl Harbor and needed a guide dog to help with activities of daily living (ADLs). World War II increased the number of guide dog schools available and once a disabled soldier had been eligible to receive a service canine, various guide dog teams formed within the States (Ostermeier, 2010).

Initially, the use of guide dogs was established to support veterans with physical mobility, promoting independence due to loss of their vision. However, a positive and therapeutic response was identified between the two individuals during this time. Veterans report being empowered by the dogs’ guidance, companionship, and the dogs’ abilities to provide unconditional love and emotional support throughout the recovery process. The bonds reduced anxiety, depression, and panic episodes related to combat-related, post-traumatic stress disorder (PTSD) (Finley, 2013). The use of AAT in US military treatment facilities has evolved, and animals are being integrated into the therapeutic settings for veterans with severe emotional distress (Chumley, 2012).

The use of animals in a therapeutic setting has rapidly grown in size and popularity in the last decade. One of the first recorded human-animal bond programs in military medicine, however, involved the Department of Defense (DoD) in the 1940s at Pawling Army Air Force Convalescent Center in New York. The farm animals (horses, chickens, cows, pigs, and goats) at the center participated in therapy sessions, delivering a meaningful collaboration for that veteran undergoing treatment (Chumley, 2012).

Dr. Boris Levinson

Dr. Boris Levinson, a psychologist who has been considered the true father of AAT, acknowledged that his findings were innocently unintentional when his
dog greeted a client by mistake. The client and his mother had arrived early as Dr. Levinson was preoccupied, attempting to restrain his dog before their arrival. Levinson had been unable to initiate a relationship with this troubled child in past visits. Yet the bond between the child and dog became immediate, paving the way for a therapeutic relationship between the child and Dr. Levinson (Levinson & Mallon, 1997). The psychologist went on to incorporate dogs within his therapeutic practice, while making efforts to document and present the results of his AAT at conferences, clinics, and mental health facilities in the 1960s. Levinson and his propositions were met with much skepticism along the way. Persistence regarding AAT was founded upon his personal beliefs that people had become totally alienated from each other and nature, and they would benefit from this unique bond (Shubert, 2012).

**Human-Animal Bond in Military Healthcare**

Lieutenant Colonel (LTC) Thomas Catanzaro, US Army Veterinary Corps, wrote about the symbiotic relationships regarding animals, humans, and healthcare professionals in 1983. His book emphasized the importance and demand for creating an AAT program in the military system during this time (Chumley, 2012). The name of his book was called *An Administrator’s Guide for Animal Facilitated Therapy Programs in Federal Healthcare Facilities*. Three decades later in 2012, the veterinarian’s compassion and concern for the bond between humans and animals earned the Leo Bustard Companion Animal Veterinarian of the Year Award. This is one of the most prestigious awards in the profession. Catanzaro believes that the human-animal bond is what keeps veterinarian practices in business, because pet owners want their animals to be healthy (DeGioia, 2012). Catanzaro continues to promote the human-animal bond in practice via education,
research symposiums, and applications that strictly adhere to human-animal interactions (DeGioia, 2012). He was quoted in 2012 regarding the aftermath of 9/11:

Pets gave non-judgmental love to families when they were afraid to venture out. Caring for another living entity is a responsibility most people fear, but with animals, because of the non-judgmental love, it becomes a pleasure. (para. 11)

Proceeding Dr. Catanzaro’s work in 1983, the US Army Veterinary Corps wanted to establish a better comprehension on the human-animal relationship. They began to examine ways that they could use animals to help military personnel overcome physical and psychological struggles (Chumley, 2012). As a result, the US Army Service Dog Training Center (SDTC) in Kentucky was founded and operated from 1995-2004. Initially a pilot program, the SDTC trained top-quality, shelter dogs to assist physically impaired veterans and or their family members (Chumley, 2012). The staff consisted of two civil service animal trainers who trained the dogs, along with select inmates from the local prison that could help with the training process. Training shelter dogs into valuable partners for those in need, the inmates could attain a unique, rehabilitative experience of their own (Olmert, 2009). The SDTC graduated over 60 canine-human units represented by all DoD Services. The program ended in 2004 due to funding limitations (Chumley, 2012).

**Combat and Operational Stress Control and Use of Therapy Dogs**

Combat and operational stress control (COSC) teams were founded in 1992 to establish education and provide mental health therapy during a war for service
members (Ritchie & Amaker, 2012). COSC was developed to provide individuals with effective coping methods during a stressful time of deployment.

AAT began in the Army with COSC in December 2007 when two dogs had been deployed to Iraq for therapeutic purposes with the 85th Medical Detachment (Ritchie & Amaker, 2012). Military personnel felt that active duty members could benefit from this interaction, suggesting animals would provide stress relief and therapeutic support during tours (Foreman & Crosson, 2012). The dogs were popular amongst the service members, serving two deployments for a total duration of 24 months. Upon return back to the U.S., there were several concerns about the canines and their overall wellness. The army was reluctant to send more dogs until the following points were evaluated: measurements of effectiveness regarding posttraumatic stress disorder (PTSD) symptoms diverted, suicides prevented, marriages saved, and deployment policies created. Additionally, there were concerns because the dogs displayed signs and symptoms of trauma. They were reconditioned at VetDogs in New York for 6 weeks prior to returning back to work as a service or therapy dog in the military setting (Ritchie & Amaker, 2012).

The first deployment experiences with the dogs provided lessons that needed to be understood, such as establishing a proper dog diet, isolating canines from outside animals within the area, and rules to prevent service members from bringing in canines from the outside. Due to the reluctance to approve and send additional dogs to Afghanistan in 2010 until more details could be derived from the first deployment in 2007, only two additional dogs were sent with the 212th Medical Detachment (COSC) (Ritchie & Amaker, 2012). In 2011, the recognition of AAT and CAT in COSC units during deployment became official with the passing of the Office of The Surgeon General (OTSG) Rehabilitative and Reintegration Division Army Medical Command (MEDCOM) policy 11-030.
Walter Reed National Military Medical Center

Shortly after the Army’s trial with the dogs in 2007, WRNMMC began to initiate a variety of human-animal bond programs. WRNMMC serves as a developing leader for CAT, particularly using canines to enhance the healthcare needs of over 500 wounded veterans living within in-campus facilities (Yeager & Irwin, 2012). CAT programs, as previously mentioned, might range from visitation, group therapy, puppy raising, and physical rehabilitation. Prior to the animals working within a therapeutic setting, temperament and health evaluations are completed by military veterinarians (Chumley, 2012). The most effective animals are approved and certified, so that they can properly assist the patient to the best of one’s ability during the restorative process. Focusing on the disciplined animal not only brings smiles to staff members and patients alike, it eases pain, fear, and anxiety (Velde, Cipriani, & Fisher, 2005).

Programs making headlines at WRNMMC are the following: Service Dog Program, Warrior Canine Connection, Canines for Combat Veterans (CCV), Pets2Vets, Dog Tags, and Red Cross Pet Visitation. The enthusiasm that WRNMMC displays with investigative nontraditional approaches of medicine remains promising, continuing to influence those who have served and suffer. However, victories remain uncounted until further policies are incorporated into the military medical structure (Yaeger & Irwin, 2012).

Policy Initiatives and Future Use of Canines in Military Medicine

In November 2010, OTSG Behavioral Health Division published the first MEDCOM policy 10-077. Few policies had existed at the local level during this time, and services were inconsistent due to the many different forms of AAT being practiced in the military. The policy established requirements on the ownership
and assistance needed within facilities and transition units involved with AAT
(Watkins, 2012). As previously mentioned, directly following this policy, the
OTSG MEDCOM policy 11-030 was initiated in April of 2011. The policy
distinguished army occupational therapists as the lead handlers for these dogs,
making behavioral health professionals alternates (Watkins, 2012).

Following a meeting in December 2010 between the Clinical Services
Division and sponsors involved in Army animal-assisted programs, the Clinical
Services Division became the front-runner for all the MEDCOM AAT labors.
And in October 2011 the Clinical Division began drafting a policy regarding the
future use of animals in the healthcare setting in military medicine. Since then,
they have been evaluating AAT programs along with surveys from soldiers
involved with therapeutic canines (Watkins, 2012). The policy will include
regulations on use of AAT, service animals, and animal-assisted activities that
include canines, equines and other species. Once approved, the policy will be
incorporated into all army medical facilities using animals in a healthcare setting,
regardless of ones’ current duty status. Publication of this policy is still expected,

The impact that CAT has had within the military setting is problematic in
terms of calculating the progress of the animal therapy (Foreman & Crosson,
2012). There is an eminent need for scientific data regarding animal therapy so
that researchers can fully comprehend how the human-animal bond assists with
psychological and physical disabilities of veterans (Ritchie & Amaker, 2012).
When CAT is being used for therapeutic intervention, the veterans’ goals should
be examined as the progress is continually recorded and documented. Once
further research has been conducted and published, proper guidelines and policies
regarding CAT could be mandated as the use of dogs can be beneficial to a veteran’s plan of care in military medicine.

**Scientific Literature Related to Oxytocin Hormone and Its Benefits**

Scientific literature and clinical observations hypothesize that concise, positive interactions with service and therapy canines are connected to an increase in oxytocin and reduction in stress (Yount, Olmert, & Lee, 2012). Olff, Langeland, Witteveen, and Denys (2010) discovered that oxytocin levels are innately increased by warmth, close relationships, which as it happens, are attributes that the canines are trained to provide through CAT. There are some clear indicators that CAT and the production of oxytocin are noteworthy of further investigation.

Oxytocin is a hormone produced by the hypothalamus and released by the posterior pituitary gland. It is considered to be the biological root of the human emotion of love (Lee, Macbeth, Pagani, & Young, 2009). In order for oxytocin to have a powerful effect on our bodies’ functions, hormones must join to receptors inside the cells or surfaces on the cell. Once linked, they lead to changes within the cell and ultimately within that individual as well (Saphire-Bernstein, Way, Kim, Sherman, & Taylor, 2011). The behaviors of oxytocin are managed by only one type of oxytocin receptor that can be found within the brain or body. Receptors are critical for the sole purpose that they activate the cellular response by sensing the oxytocin outside of the cell (Viero et al., 2010). The oxytocin gene and receptor unite together to ensure the psychosocial functioning of the following: social memory, attachment, sexual and maternal behavior, human bonding, trust, and aggression (Lee et al., 2009).
According to Rebecca Johnson, a registered nurse who leads the Research Center for Human/Animal Interaction at the University of Missouri College of Veterinary Medicine, having a pet such as a dog can increase outdoor activities, physical exercise, socializing with others, and most importantly, responsibility (Rovner, 2012). Johnson reveals the following when discussing oxytocin and the relation to the animal-human bond:

Oxytocin helps us feel happy and trusting. Oxytocin has some powerful effects for us in the body’s ability to be in a state of readiness to heal, and also to grow new cells, so it predisposes us to an environment in our own bodies where we can be healthier. (Rovner, 2012)

Johnson’s research focused on the significance of a canine-walking program by evaluating volunteers walking the dogs at animal shelters. *Walk a Hound, Lose a Pound* (2011) was a book written and dedicated to the volunteers at the canine-walking program at the animal shelter. Johnson believes that programs such as these help people get active and make better decisions regarding their health as they continue to make exercise a part of their routine by volunteering. Johnson notes that the program helped the dogs as well (Zeltzman & Johnson, 2011). The participating dogs were more likely to get adopted due to the additional exercise and socialization they were exposed to in the program (Rovner, 2012).

According to Rebecca Johnson, happiness and trust are just a few of the obvious conditions that form the human-animal bond. However, Johnson strongly promotes forming a scientific foundation through continual research, based on the hypothesis that animals continue to benefit people in many ways. Furthermore, continued EB research will remain critical towards the growth, approval and eventual establishment of certified service and therapeutic companion animals in any medical settings (Rovner, 2012).
Research Grants Devoted to the Human Animal Bond

In 2008, The National Institutes of Health (NIH), Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), and Mars Inc.—a pet food giant—united to donate over $9 million towards research studies related to the human animal interaction (HAI). The program offers scientists grants for research dedicated to finding the significances and positive consequences that animals have on the physical, psychological, public, and child development issues related to healthcare (Mars.com, n.d.). The partnership has since published two books: *Animals in Our Lives: Human-Animal Interaction in Family, Community and Therapeutic Settings* and *How Animals Affect Us: Examining the Influences of Human-Animal Interaction on Child Development and Human Health*. A third book called *The Health Benefits of Dog Walking for Pets and People; Evidence and Case Studies* evolved from a joint gathering between Mars Inc. and NICHD in 2011. These books are significant in that they provide noteworthy investigation for future policy makers regarding animals and nontraditional forms of therapy.

Therefore, it is important that partnerships such as NIH, NIHCD, and Mars Inc. continue to promote the value of the HAI through scientific data. It allows scientists to conduct their research, consenting for opportunities in our future regarding policies founded upon scientific data. There are over 20 research studies currently in progress that will provide scientific evidence connected to the shared benefits regarding pets and humans, according to the Mars Inc. and their Developing Partnerships in Health Nutrition (Mars.com, n.d.). Research consists of pregnant women and daily physical activity, older adults diagnosed with hypertension residing in living communities, obesity, autism, and PTSD. On-
going, scientific-based research will continue to show the many strengths that pets can have on a variety of health-related issues via the HAI.

**Human Animal Bond Studies in Non Military Medical Setting**

A study held in 2007 concerning oncology patients examined a 1-hour CAT session as patients received their chemotherapy in an outpatient hospital (Orlandi et al., 2007). The session was divided into three, 20-min segments that consisted of viewing the dog exercise with the trainer, playing with or feeding the dog, and giving food and or holding the dog during that 1-hour session. Patients who participated in the study while receiving chemotherapy demonstrated a significant reduction in depression, anxiety, aggression, and blood pressure. An increase in arterial oxygen saturation was also noted.

In 2011 a study concerning 69 hospitalized, heart failure patients and the use of canine-assisted ambulation (CAA) was observed. Prior to the study, these patients had been previously cleared by a doctor to ambulate with a restorative agent. In the beginning, if the patients had refused to ambulate on the initial proposal, they were approached on an additional account with the proposition of ambulating with a therapy dog. Once they agreed to ambulate with the therapy dog, consent was obtained afterwards or upon second refusal from that patient, to avoid any prejudices detained along the way. The distance walked was computed by pedometer, and patient happiness was calculated by a Likert scale. When given the opportunity to ambulate with the therapy dog after the initial refusal with the ambulatory aide, these patients walked double the distance with the dog, versus the group who had not refused the initial offer and walked with the ambulatory aide. Patients who participated within the study regarding CAA were satisfied with their overall experience. It provided a unique alternative regarding patient
care routines as they would recommend this form of therapy amongst other cardiac patients (Abate, Zucconi, & Boxer, 2011). Early ambulation within a cardiac patient’s care plan is critical towards the overall wellness and reduction in one’s hospitalization costs. The study suggests that CAA can be a motivating, and inspiring form of rehabilitation therapy in a variety of patient populations consisting of: stroke, postoperative, orthopedic, psychiatric, and or the neurologically impaired (Abate et al., 2011).

Dr. Glenn N. Levine, professor and director of the cardiac care unit at Baylor College of Medicine in Texas, considers dog ownership to be linked to a decreased risk in cardiovascular disease (Castillo, 2013). A study of more than 5,200 adults cited by the American Heart Association (AHA) in 2013 demonstrates that dog owners were more physically active than non-owners. Increased survival rate amongst cardiovascular patients due to the physical activity of pet ownership promotions was also noted (Castillo, 2013).

Over the last two decades, most studies surfacing and supporting the health benefits of therapeutic animals have concentrated on cardiovascular effects (Friedmann, Katcher, Lynch, & Thomas, 1980) However, according to Animal Assisted Therapy: Paws with a Cause (Ernst, 2013) 50% of psychologists prescribe animal-assisted therapy for their patients. Stress can inhibit the healing process in patients of all ages and diagnoses. Stress factors such as cortisol have been shown to decline after a 15-min dog interaction (Handlin et al., 2011). Reduction in anxiety and stress in an inpatient setting plays an important role clinically. Both are significant factors towards non-compliance with delay in motivation, trust, and treatment, as they have a tendency to hinder the physician-patient relationship. Furthermore, about one in five people will experience a major depressive incident at some point in their lives. Major depressive disorder
ranks most common of all mental health diagnoses, and is amongst the leading causes of disease burden worldwide (Kessler et al., 2003).

In 2009, a study regarding dog-assisted intervention revealed a reduction in anxiety amongst those who were acutely depressed, hospitalized patients (Hoffman et al., 2009). A total of 12 depressed patients, six male and six female, ranging in age from 40-50 were interviewed for the study. There were two, 30-min sessions involving each patient. Each individual was assigned either to the animal-assisted interview or the control interview without the animal, at the first of the two sessions. The animal-assisted interview session consisted of a 30-min interaction with a dog and research assistant. The patient was encouraged to discuss hobbies and previous interactions with pets and animals, along with the patient’s medical history. The control interview involved a 30-min talk without the dog and with the same research assistant about the patient’s previous encounters with pets, along with the patient’s medical history. State anxiety was measured prior to and after each session whether without or with the dog. Both sessions took place in the same quiet room and during the same time of the day. Findings suggested that AAT significantly reduced the state of anxiety for those patients participating with the dog therapy versus the control group without the dog therapy. The study determined that dogs may offer extra, therapeutic advantages that decrease anxiety and could potentially enhance therapy policies in the future that motivate patients, providers, and therapists alike.

An additional study by Coakley and Mahoney (2009) aspired to determine whether AAT involvements could improve physiological and behavioral mood outcomes in occurrences with hospitalized patients. Fifty-nine hospitalized patients were evaluated during the study, as paired t-tests evaluated changes from a baseline, following the therapeutic intervention with a dog. There were noted
reductions in pain, respiratory rate, and negative mood state. A significant increase in perceived energy level was also noted (Coakley & Mahoney, 2009). Quantitative and qualitative data findings were also suggestive in that there was a significant decrease in tension, anxiety, and fatigue as well; they concluded that AAT is cost-efficient and a low-tech therapy, that improves overall mood and had meaningful importance to patients throughout their hospitalization (Coakley & Mahoney, 2009).

The Study of Transition and Recovery Strategies (STARS) led in Oregon and Washington in 2009 on individual(s) recovering from a mental illness also provided significant, scientific-based evidence on benefits regarding AAT. Questionnaires and interviews concerning 177 HMO members (Wisdom, Saedi, & Green, 2009) concluded that animals supported a patients’ recovery initiating the following: providing compassion and therapy, influencing connections that could assist in redeveloping an individual’s social opportunities, serving as “family” in the lack of or in supplementation to human family members, verifying one’s self-worth, and empowering with responsibility while caring for that animal (Wisdom, et al., 2009). Even though the clinical experiments were those of civilian adults diagnosed with psychiatric disorders, these conclusions are important to consider when treating US veterans and active military personnel who display similar symptoms and disorders (Knisely, Barker, & Barker, 2012).

**Human Animal Bond Programs and Studies in Military Medicine**

It is acknowledged that there are numerous psychological and physical advantages of owning a pet and studies conducted in past years show that the potential for animals to be another form of alternative medicine is colossal (Chumley, 2012). Veterans with a PTSD diagnosis who do not own dogs are
shown to have low confidence, report feelings of apathy, and do not hold themselves accountable for basic daily needs. Shubert (2102) discovered that veterans with PTSD who own dogs experience a dramatic improvement in confidence, mood, social skills, less feelings of apathy, become accountable for daily needs and physical abilities. Veterans who were once preoccupied with the mental and physical damages of having served in a war reported being more accountable for themselves once they owned a dog (Mills & Yeager, 2012).

Luis Montalvan, in his book about his experience with his service dog Tuesday Tucks Me In: The Loyal Bond Between a Soldier and His Service Dog (Montalvan & Witter, 2014), expresses the following:

My disabilities, including post-traumatic stress disorder and traumatic brain injury, are the result of war. In 2003, after I was wounded in Iraq, I started to have difficulty sleeping and walking without pain. After my second tour of duty ended in 2006, things got worse. Eventually, I stopped leaving my apartment. I felt angry and ashamed about my conditions, and I withdrew from friends and family. Tuesday saved my life. And dogs like him, trained by wonderful organizations like Educated Canines Assisting with Disabilities, have saved the lives of other veterans, too. (p. 39)

Personal accounts from service veterans like Montalvan who own service canines prove assuring, as the benefits are convincing. The lives of disabled veterans are continually changed based on experience of having or working with a service or therapy dog. Yet, holistic forms of patient-centered care are often discouraged from the medical setting due to lack of EB accounts (Yeager & Irwin, 2012).

In 2009, National Education for Assistance Dog Services (NEADS) had spent nearly 2 years and over $500,000 on a pilot study that paired 15 disabled
combat Veterans diagnosed with PTSD with service canines (Ruiz, 2012). Based on their well-known, service dog training program, NEADS was actually the first service dog program invited to WRNMMC in 2006 to examine the possibility of training service dogs for combat-injured veterans (Foreman & Crosson, 2012). The study was designed to assess veterans who may or may not have physical limitation(s), and to evaluate whether trained service dogs could lessen symptoms of PTSD, which is often a secondary condition for most soldiers. As NEADS continued to place service dogs with disabled veterans, observations concluded that a natural byproduct of having a service dog was often the improvement of PTSD symptoms (Foreman & Crosson, 2012).

Dr. Cynthia Crosson, a psychiatric consultant who guided the study regarding NEADS noted that the study was originally designed to be investigative and qualitative in nature versus quantitative (Ruiz, 2012). Quantifying people’s healing, particularly psychological, became a problem throughout the study; this seems to be the challenge for most findings concerning CAT. The investigation provided invaluable insight towards improving standards within the program, as veterans were closely followed for a year and evaluated. A noteworthy response from veterans applying for service dogs was the wish to give the dog to a veteran perceived as needing a dog’s help more than the disabled person initially applying for the dog. NEADS did not get this special request in the private sector, as veterans seemed to be more concerned about fellow comrades (Foreman & Crosson, 2012).

Noteworthy research from academic and or non-profit partnerships is highly encouraged so that delivery of the scientific evidence from the narratives of veterans served can be incorporated into primary practice (Ruiz, 2012). Increased funding and similar research studies remain critical before EB best practices are
the standard for each accredited service dog organization. Until then, non-profit programs such as NEADS continues to place trained service dogs supporting veterans with physical and emotional difficulties.

Research focused on a multidisciplinary approach could contribute in greater awareness, growth and implementation of policies and procedures within the military rehabilitation milieu. Shubert (2012) initiates the following:

Regardless of which research methodology is used, as Beck and Katcher (1996) have emphasized, it must be interdisciplinary in nature, involving not only mental health and medical professionals, but also sociologists, ethnologists, animal behaviorists and trainers, and likely numerous other professional communities. (p. 27)

A multidisciplinary approach could be the mainstay of which CAT needs to establish within the military medical system. Specialists are needed who understand the essentials required for scientific data, and fully comprehend how the human-animal bond benefits the military population. Once scientific data can be provided, designated protocols and procedures can be implemented into practice.

Two programs that use dogs as physical and psychological therapy are the Service Dog Program and Canines for Combat Veterans (CCV). Service Dog Program is a program that is limited to wounded warriors with physical disabilities. The program works with civilian organizations that are certified under Assistance Dogs International (ADI). Acceptance into the program begins with a MD, therapist, or Warrior Transition Brigade recommendation, as a majority of the organizations are nonprofit and have a 501(c)3 tax exemption (Yeager & Irwin, 2012). Veterans cannot accept service dogs from a nonprofit organization until outpatient status is reached or are living off campus (Yeager & Irwin, 2012).
Dogs that are not certified by accredited service dog agencies are often not recognized nor accepted within the military medical setting. Accredited service dogs undergo a very extensive training period, which can take anywhere from 2 to 3 years until graduation. Once a veteran has selected their nonprofit of choice the application process begins and the veteran is matched accordingly by physical disabilities. There is no charge pertaining to the veteran and their service dog, along with the extensive training often involved. Veterans with working service dogs are provided veterinary care and equipment through VA Prosthetics and Sensory Aides (Prosthetics.va.gov.com). The VA will not pay for food, grooming, or boarding, and any other usual expenses associated with owning a dog.

CCV is another nonprofit organization founded to assist the physical needs of combat-veterans by providing service dogs to wounded soldiers. Under the sponsorships of NEADS, CCV donates service dogs to veterans from all foreign wars based on their qualification, application, and recommendation (Yeager & Irwin, 2012). The dog’s training is specifically customized for a veteran based on their needs, as the organization continues to follow-up with the soldier on a monthly basis after graduation.

WRNMMC was the only medical center at the time (2012) using a fully trained service dog provided by CCV for both demonstration purposes and patient therapy. Due to donation limitations, the handler responsible for the CCV dog had been a combat veteran who was also a rehab therapist (Yeager & Irwin, 2012). The handler did not have a disability, but the dog was to be used to provide patient therapy and physical assistance in a clinical setting. The therapist was responsible for the health of the dog along with guidelines for which the dog could participate. Both dog and rehab therapist perform many tasks that are implemented by most trained, service dogs (Beck et al., 2012). The program not only benefits the
patients, but serves as a valuable instrument from a multidisciplinary standpoint for medical providers of all services (Yeager & Irwin, 2012). CCV dogs can now be adopted to staff members working at a VA, providing therapy or professional support to US veterans who suffer from a physical or mental disability. Once a CCV dog is adopted by a handler, whether a rehab therapist or disabled veteran, professional training is received to assist the client and canine within a clinical or outpatient setting (Yeager & Irwin, 2012).

Canine Interactions at WRNMMC

Successful canine programs at WRNMMC have created a stronger awareness concerning the benefits of utilizing therapy dogs as part of the healing process for wounded veterans. However, these victories remain largely uncounted until more programs are initiated and additional scientific research is conducted.

Rick Yount and Volunteer Service Dog Program at WRNMMC

Soldiers Magazine (2014) published an article on the healing power of dogs. Veterans suffering from PTSD train service dogs for wounded veterans at WRNMMC. The proposal to create a volunteer service dog program at WRNMMC began when founder, Rick Yount, a social worker who had once specialized in taking care of children, had been consulted to initiate a program. Having created a similar service dog training program in the past at a large VA residential facility for PTSD victims, Rick was asked to create a larger, service dog training program at the National Intrepid Center of Excellence (NICoE); located at WRNMMC in 2010. The NICoE is a medical facility devoted to research and treatment for military veterans that suffer from TBI and psychosocial issues (Yount et al., 2012). This program has grown tremendously since 2009,
recovering the lives of many soldiers suffering from PTSD. Now offered though the nonprofit foundation, Warrior Canine Connection (WCC), WCC breeds its own, high-quality, purebred service dogs that eventually assist wounded veterans with their physical disabilities. The puppies are named after fallen soldiers, which contributes to the dynamics of the program.

According to Mr. Yount, patience and communication are directly linked to PTSD, and are the fundamentals required to train service dogs. He feels that such skills prevent veterans from isolating themselves when undergoing treatment for PTSD and TBI. Yount estimates that throughout their 2-3 years of training, a dog might help as many as 60 service members before it is placed with their disabled veteran (Williams, 2014). The program is cost effective, as there are designated “puppy parents” that take full responsibility of the dog throughout the training experience and prior to the adoption (Yount, et al., 2012).

Michelle Nordstrom, Occupational Therapist and manager for the program at WRNMMC, believes in its purpose. At worst, she feels that veterans can look forward to something each day. At best, it changes lives and helps with anxiety, depression, and isolation issues. She also believes it helps them improve their memory, because they have to remember the commands for the dogs undergoing training (Williams, 2014).

Retired Staff Sergeant Spencer Milo was sent to NCoE for his second TBI injury in 2011 and met Gabe, a future service dog and golden retriever puppy at the time. Upon arrival at WRNMMC Milo had the following: hearing loss that turned out permanent, poor memory and cognition problems, double vision, vertigo, soaring migraines, severe light and noise sensitivity, seething nightmares and anxiety so dysfunctional that he refused to be in public areas and talk to people (Williams, 2014). Alcohol was his medication of choice, as he hoped that
it would end all of his pain, suffering and problems that reaped from a combat war.

Milo’s life changed suddenly when he was sent to Bethesda, Maryland for therapy. He had felt like an actual patient, having discovered the service dog training program that would initially change his life. He states that he only cared about the dogs. Every single moment that he had at the facility, he wanted to be with Gabe and the puppies. He admits to even missing appointments due to the dogs. He credits this experience with much of his healing progress, as he only agreed to go outside Walter Reed’s boundaries when training Gabe. He notes that Gabe needed to learn how to behave on a bus, Metro, and at a grocery store (Williams, 2014). He states:

I couldn’t believe it. I didn’t even realize I had done all that because I was so focused on making sure that Gabe was doing the right thing. I didn’t even care about what was going on with me. That was the first time since my deployment – maybe four years, five years – that I hadn’t had severe, crippling anxiety about doing something like that. It was because I was so focused on the dog. (Williams, 2014)

When Milo’s treatment ended and he was discharged, he had a very difficult time saying goodbye to the dogs, especially Gabe. He drove from North Carolina to Maryland every rotating weekend to continue to work with the dogs. The experience changed his life and helped him heal. He was also aware that Gabe would also eventually change someone else’s life. And, this life was retired and physically disabled Staff Sergeant, Justin Lansford (Williams, 2014).

Lansford has a prosthetic left leg, and learning to trust and use it has been very difficult in past times. He had been severely injured in April 2012 by an improvised explosive device (IED) that caused organ damage, a collapsed lung,
nerve damage, and tore off his left leg. He knew that he could benefit from an assistant dog, as he had witnessed others succeeding quite well from investing in one. Prior to both Justin and Gabe officially joining each other as a designated team, both underwent additional training to make sure they were a solid fit. Gabe has been trained to actually catch Justin and keep him from falling. If he does fall, which can happen often, Gabe comes up underneath him and puts his entire body under Justin’s arm. He is able to use Gabe’s body as a foundation and lift himself up (Williams, 2014).

Gabe also serves as a connection to the external world for Justin, as his dog gives him the strength and confidence to ride a Metro and attend events and gatherings that he would have otherwise avoided. He notes that the dog serves as a total distraction from himself and his disability, especially from his prosthetic. He feels that people just want to see and pet the dog, which allows the attention to be shifted towards the dog versus his disability. Gabe helps Justin to be more social, having been initially isolated and depressed upon his return and learning to work through his physical and emotional wounds. Even though Gabe was trained to be a service dog at heart, he can recognize PTSD signs, along with the stressors that trigger Lansford. Occupational Therapist, Michelle Nordstrom, states the following about the therapeutic effect of the canines:

They come in and they stick their nose underneath your hands and give you a little bump to get you look up. You’re no longer focusing on whatever it is that was getting you down. And how can you not smile when you have an absolutely adorable Lab face saying, ‘Come on, can you be happy?’ (Williams, 2014)

Both Milo and Justin have met on several accounts, and Gabe always remembers the first veteran he helped along his training. Milo feels very satisfied
that Gabe is helping Justin function on a daily basis. Justin Lansford summarizes the following: “That’s kind of the embodiment of a good soldier, wanting to take care of other soldiers. It means a lot to me that those guys cared enough about me to do that for me” (Williams, 2014).

The program has been so successful that scientists at the Uniformed Services University Consortium for Health and Military Performance are actually guiding an investigation. It will calculate biological markers such as heart rates amongst veterans undergoing therapy. A very important sleep study is also underway, as drastic improvements in a veteran’s sleep condition and duration was discovered when having a dog sleep on his or her bed (Williams, 2014).

According to Rick Yount and his associates (Alvarez et al., 2009), veterans who participated in CAT and the service dog training improved in the following: increase in patience, impulse control, emotional regulation, improved ability to display affect, decrease in emotional numbness, improved sense of acceptance, assertiveness, and sense of purpose, improved sleep, decreased depression, lowered stress sensations, added calmness, improved parenting skills and family dynamics with their loved ones, along with fewer stories associated with the war with more thoughts consistent within present thinking (Alers & Simpson, 2012). Yount and his coworkers hypothesized that concise, therapeutic interactions when training a service dog increases oxytocin and decreases biomarkers such as inflammation and stress (Yount et al., 2012). Therefore, these interactions provide meaningful purpose, uniquely providing them the endurance and patience needed to overcome their challenges and emotional difficulties related to PTSD.
Facts and Recent Studies Related to PTSD

According to the 2010 DoD report, *Health Promotion, Risk Reduction, and Suicide Prevention*, suicides and unintentional overdoses have increased, predominantly in the Marines and Army. They estimated that one third of the military suicides involve prescription drugs and that 14% of the Army consume prescribed opiate pain medication. The report also reveals that many soldiers are taking more than one variety of medication, including those medications that are known to increase suicidal ideation such as psychotropics.

In 2009, a study that investigated trends and risk factors for Iraq and Afghanistan veterans with PTSD, depression, and other mental diagnoses when receiving treatment at a VA, was conducted (Seal et al., 2009). Lack of social support, whether divorced, separated, or widowed, imposes serious risk factors for veterans returning from deployment. This is very true for those veterans who are not married and or without social support of family and friends. Despite being treated with theoretical interventions (Monson et al., 2006) 60% of those patients treated with PTSD will continue to meet the criteria for PTSD according to the study (Smith et al., 2008).

According to Brashear and Rintala (2007) among veterans with spinal cord injuries, there was a significant attraction towards service dogs. 30% of veterans seeking care at a VA expressed interest in receiving a dog, while 42% requested information (Brashear & Rintala, 2007). Considering interest expressed, it is essential that we continue to explore, investigate, and recommend additional approaches of therapy regarding PTSD based on the potential it might have to improve these soldiers’ lives if possibly proposed (Yount et al., 2012).

Research is going to be a critical component of CAT in the military setting, should it continue to be practiced and encouraged. Investigations are critical so
that practitioners can offer or suggest non-traditional forms of treatment if outcomes are scientifically accounted for. Implementing a therapeutic activity such as CAT, could enhance one’s therapy experience, while making the treatment experience more entertaining, meaningful and accommodating (Alers & Simpson, 2012). Recognizing populations for whom CAT might not be beneficial is important to avoid causing damage to either individual or dog (Shubert, 2012).

The ability that these dogs have had so far to improve a veteran’s recovery outlook in military medicine reveals potential for continued studies and policies. Studies intended to examine the causes and effects of the service dog program is needed. Decreased dependency on pain and psychotic medication amongst military clientele is ideal as programs such as CAT might have the potential to do this (Alers & Simpson, 2012).

**Dog Tags and Washington Humane Society at WRNMMC**

Dog Tags is an additional AAT offered by the Washington Humane Society (WHS) in collaboration with WRNMMC. The program offers enlisted service members receiving treatment at WRNMMC to participate in canine training for dogs that await adoption at WHS (Alers & Simpson, 2012). All dogs that are selected into the program are fully screened for both health and temperament. The screening process signifies a dog’s potential for adoption, given the training from the soldiers.

The trauma of serving in a war, whether mental, cognitive, or both, is often the factor(s) that inhibits a veteran’s productivity and ability to cope when deployment is complete. Dog Tags was originally designed and constructed around WHS’s vision of generating ways for animals and individuals to help heal one another (Alers & Simpson, 2012). Encouraging the human/animal
connection, Dog Tags remains unique because it is customized specifically for the veterans participating in treatment at WRNMMC. WHS is the only open-access animal shelter in the District of Columbia (DC). Every possible attempt is made to place dogs in homes as WHS believes that the dogs can learn and improve their behavior, increasing their chance for adoption (Alers & Simpson, 2012).

Evaluating dogs and implementing individual behavior plans can be difficult, based on the dog’s specific needs. Participants in the program are also struggling with individual needs, whether PTSD, agility, coordination, or various issues related to self-doubt, independence, or confidence. Most of the dogs come from traumatic situations, having suffered either emotional or physical wounds. Others might display puppy characteristics such as chewing, urinating on carpets, or testing boundaries. Whatever the circumstance might be, the dogs must learn how to cooperate so that they can be adopted in the near future. They need service members to train them, due to the large number of canines that enter the premises each year. The dogs are evaluated and treated as unique individuals, while the soldiers are given tools to help the dogs recover to the best of their ability (Alers & Simpson, 2012).

Dog Tags is a three-level certificate program as veterans learn and practice challenging components of canine training. Each level consists of 8 weeks, entailing 1.5 hours twice a week, totaling 24 weeks altogether. Each sector poses unique skills and knowledge that build at each stage, making every sector more challenging and demanding on both soldier and dog. All individuals volunteering within the program do not have to complete each module; the program was originally designed to provide participants such skills that would allow one to work in the field of animal services (Alers & Simpson, 2012).
According to Alers and Simpson (2012) existence and treatment at WRNMMC can be very mundane and tedious. Providing an activity such as Dog Tags improves outlook for both soldier and dog. It forms a mentally and physically stimulating environment where self-autonomy and self-confidence is renewed, having been lost for both individuals. The article suggests that the soldiers enter the program to break the usual cycle of therapy provided at WRNMMC. Yet, throughout time they discover that there are several physical, mental, and emotional challenges the program provides to both Veteran and dog.

Dog Tags has helped the veterans re-discover new talents. Since 2008, some have established dog training businesses, while other have gone back to school to either further their education or enter the animals services industry (Alers & Simpson, 2012). Volunteering at WHS has helped soldiers reinvent their work habits, provide new careers, restore patience, improve social skills, decrease their stress, and increase happiness versus when having entered the program (Alers & Simpson, 2012). Their volunteer service at the kennels not only helps them restore a new outlook on their life, but it also saves the life of the dog, making a significant difference for the families that eventually adopt the animal.

The willingness of WRNMMC to initiate nontraditional approaches such as CAT has had a positive impact on many returning soldiers suffering from PTSD (Yeager & Irwin, 2012). Successful experiences need to be evaluated extensively and further recognized so that programs are initiated in system. Research being conducted for CAT during this time is limited to the VA agency and whatever resources are dedicated towards CAT research. One government agency alone cannot expect to provide all answers and outcomes for CAT. Moreover, since 2001 over 520,000 service members deployed to Iraq or Afghanistan have or may develop PTSD (Taylor, Edwards, & Pooley, 2013). If the government were to
authorize CAT as a form of treatment for their impaired service members, cost of healthcare connected to medication and psychological and physical treatment could be significantly reduced. Should CAT be an accepted form of therapy in the near future, an increased need for advanced research regarding a multidisciplinary approach is required in future practice.

The pet industry in the U.S. has tripled in the past 15 years (Gourdreau, 2009). Animals are an important part of American society. Yet, a scientific approach is desired to fully comprehend how CAT and similar programs can continue to benefit disabled and able veterans alike (Ritchie & Amaker, 2012). Without scientific research, EB guidelines, and appropriate funding to support canine programs, medical providers are more likely to focus their attention on costly equipment, medication, and surgeries. Based on the examples and controlled amount of research provided to date, CAT programs primarily function given very limited government support and outside financial funding. The significance from HAI must continue to derive from stronger foundations of investigational research, so that awareness increases and policies are placed into future practice.
CHAPTER 3: METHODOLOGY

Soldier’s Best Friend and History of Nonprofit

Soldier’s Best Friend (SBF) is devoted to helping US veterans living with combat-related PTSD or TBI with managing their symptoms by offering CAT. Initially, it was founded to help Veterans establish more confidence, while reducing and eliminating PTSD symptoms connected from combat experience.

The organization was founded by Doctor of Veterinary Medicine (DVM), John Burnham. Dr. Burnham had several US Veterans that had been clients within his practice throughout the years. He enjoyed working with them and treating their dogs. He took a special interest in them, in part, because his father had been a US Veteran (Soldiersbestfriend.org, n.d.). Burnham began to take special notice to the therapeutic bond established between the Veterans and his or her canine during veterinarian visits. He was certain that the HAI was the key factor for his veteran clientele that allowed them to integrate back into society. He felt compelled to establish an organization that was committed to not only reducing the issue of overpopulation of dogs, but even more so, to acquire, train, and place rescue dogs that would help veterans cope with their anxiety and PTSD related issues. Since forming as a non-profit corporation in January 2011, there has been no cost whatsoever on behalf of the Veterans while acquiring their animals and or the initial training phase. All animals received are either spayed or neutered, and have access to free veterinary care during their training phase at SBF. A veteran becomes responsible for their animal’s care once training is complete. The only cost involved during the process is a veteran’s meal(s), transportation, and possible re-location and/or lodging needed if not living in the immediate region during training. Training sessions vary between 3 to 5 months
for a therapy dog, while a service dog entails 9 months as it will be accepted into public locations in accordance with the Americans with Disabilities Act (ADA). A majority of the organization’s financial support is derived from both personal and charitable donations (Soldiersbestfriend.org, n.d.).

The study took place at SBF during the timeline of August 18, 2014 until October 15, 2014. SBF is a 501(C)3, tax exempt, non-profit corporation located in Phoenix, Arizona. SBF provided the veteran participants in this study that is to be used for a thesis project at California State University, Fresno (CSU, Fresno). The veterans are graduates of SBF and currently own a service or therapeutic canine that was provided to them by SBF. They have been previously diagnosed with combat-related PTSD. Veterans initially contacted for study were either male or female and had served within a foreign war. However, the 15 surveys received for the study were identified as male respondents only. A minimum age of 18 years was required, as an informed consent was required to participate in the study. All of the veterans in the study had originally resided and or been living in Arizona during the time of the study.

**Thesis Development**

The information disclosed from each veteran via the surveys was used for the requirements towards completing the thesis for the Masters of Science in Nursing (MSN) Program at CSU, Fresno. Once the thesis is submitted to CSU, Fresno in March 2015, it will be presented to SBF on behalf of the investigators, Annie Fagundes and Dr. Keitha Mountcastle. The study will be used towards supporting and identifying the qualitative evidence regarding the attitudes and perceptions about CAT. It will also serve to increase the awareness of SBF, as the corporation continues to increase in numbers and recognition each year.
The investigator had been officially communicating and working with Brenda Meir, employee of SBF since February 2014. Emails and conversations consisted of appropriate subject matter, questions, consents, and eventual approval from the Board Members in May 2014 so that the study could be conducted. No medical and or special procedures were conducted for the purpose of the thesis.

Approval was obtained through the IRB Committee within the School of Nursing at CSU, Fresno in June 2014 (Appendix A). The study expires on June 20, 2015. Investigator Annie Fagundes is to maintain proper data control and confidentiality at all times during the investigation.

Each veteran participating in the study had signed a consent and completed one, hand-written, multiple-choice and short-answer survey. There were a total of 40 surveys sent by mail that were stamped prior to transmission on behalf of the investigator, as the survey estimated 15-30 min in length. This was done before sending the individual surveys to SBF. Once at SBF, the individual surveys were labeled and mailed out to the veterans. This process was performed in order to maintain the veterans’ confidentiality. The official date set for completion of the study was scheduled for October 15, 2014. Additional reminders and surveys to the non-participating veterans were sent out on behalf of investigator and SBF, due to initial lack of responses by the initial deadline. Prior to the reminders being sent, the investigator had designated an official list of veterans that had responded to Brenda Meir, SBF. An additional 20 survey reminders were mailed on October 20, 2014 to the veterans who had not participated. The study officially closed on November 15, 2014. A total of 15 surveys were received.

Prior to participating in the study, informed consent was required so that information received from the veterans was confidential. Confidentiality was maintained for each subject, as data was used for creation of the thesis. No
potential problems and or risks were involved nor reported to the IRB during the study. Storage of data remains under the control of the researcher at the following: 8093 N. Angus Avenue, Fresno, California. Data will be held for 5 years following the study and destroyed in 2020.

Compensation of Subjects Participating in Study

The compensation for a few subjects participating in the study is to receive a copy of the thesis per their request once it is completed in April 2015. Veterans received a $5 Starbucks gift certificate enclosed within their consent and survey during the first mailing dated August 18, 2015. Veteran participation in the study serves to evaluate improvements in moods and therapeutic advantages for those diagnosed with combat related PTSD. SBF’s involvement was mandatory and remained critical towards the completion of the qualitative thesis per investigator.

Consent was obtained prior to the beginning of study (Appendix B) as a survey (Appendix C) had followed in both official and additional mailings. Both consent and survey was mailed back to the home of the investigator in a provided, pre-stamped envelope prior to November 15, 2014
CHAPTER 4: RESULTS

As providers continue to prescribe medication and advanced PTSD treatments such as hyperbaric oxygen chambers, CBT, individual and group therapy and or exposure therapy, a lower-tech and cost-effective alternative has emerged within the form of the man’s best friend. And, for the participants at SBF, such forms of treatment are facilitated by service or therapy dogs. As we begin to thoroughly investigate and understand the influence that animals can have in bringing about improvements in the lives of veterans who suffer from physical and or emotional disabilities.

The study was designed to be qualitative, evaluating the improvements in both mood and lifestyle per Veteran graduate at SBF. Individual benefits experienced per soldier living with PTSD were calculated from the survey. The researcher discovered that providing nursing care that is patient-centered and intended towards a veteran’s specific needs, is essential for growth and standard practice of CAT. Patient-centered care between veteran and PCP can enhance recovery from a PTSD diagnosis, according to the results discovered in the investigation at SBF. Continued need for stable and effective treatments is critical considering each veteran has their specific needs in recovery.

All participants were male and of retired status, either released from active duty, medically discharged, and or a combat veteran. The mean age was 41.2 years and ranged from 30 to 70 years of age. Years of service per soldier varied from 4 to 24 years, with an overall mean of 10.2 years. The Army remained as the most popular military branch amongst the participants. Nine out of the 15 contributors were Army veterans. Results regarding military branch and years of
service are connected to lack of participation within the study, along with possible geographies of those veterans who received a dog and training at SBF.

Operation Iraqi Freedom (OIF) led the way within the foreign wars served, along with a 2.3 as the average tour completion rate. PTSD diagnosis years per veteran averaged at 12.1 years. This elevated figure in years is a direct result of a participant’s age of 63 years. He is a Vietnam veteran and has lived with his diagnosis for 43 years as opposed to the other veterans who had either served in OIF or Operation Enduring Freedom (OEF). OIF and OEF veteran ages ranged from 30 to 49 years, contrary to the two Vietnam veterans participating in the study who were of 63 and 70 years, respectfully.

The vast majority of the participants had initially obtained information about SBF and a service or therapy dog from a provider, whether social worker, nurse practitioner, case manager, or psychiatrist. Psychiatrists had the most votes among the veterans for a total count of four. The process of receiving a dog and the training involved at SBF was easy, according to the 15 participants. Certain individuals had been provided a shelter dog from SBF prior to their training, while others had received their dogs beforehand, most likely as a previous household pet.

Prior to joining SBF, 10 out of the 15 respondents, a mere 67% had sought outside help regarding their PTSD diagnosis at an undetermined VA facility or provider. The help received was not explicitly named, such as medication, CBT, exposure therapy, individual or group counseling, or other various forms of PTSD medical treatment. Sixty percent of the individuals had mentioned their spouse as the leading source of encouragement towards receiving a service or therapeutic dog. A promising statistic partially due to the support needed for a majority of returning Veterans. Family and spousal support is a key factor for most veterans
suffering from a PTSD diagnosis. After all, Seal et al. (2009) deemed lack of social support as the major risk factor identified with suicide and substance abuse among PTSD diagnosed veterans. Sixty percent serves as a promising number, due to the emotional support needed on behalf of spouses and or loved ones, while assisting the veterans throughout their recovery process.

Eighty percent of the respondents had encountered a significant life changing experience at SBF. Twelve out of the 15 veterans had recalled a major lifestyle change which consisted of purpose, productivity, increased exercise and improvement in mood. Respondent #1 who was 30 years old and had served in one OIF tour of 12 months did not have a life changing experience. He wrote the following:

I am not like a lot of people at SBF. I hate talking my dog out because it makes people want to approach me and talk about the dog as to why I have her, what breed she is, and what is her name. I have a dog now. That is really the only thing that has changed. However, at home, it’s a different story though.

Respondent #7, who is 32 years old and served in 1 OIF tour for 12 months, had a similar experience as he wrote the following in his survey:

I love my dog and he loves me, but I really like to keep to myself and I am not very social. I’ve found that having a service dog brings unwanted attention from people while I’m out with him. They want to pet him and talk to me why I have him. This is a conversation that I really don’t want to have.

Respondent #14 who is 35 years old and served in OIF and Kosovo completing 4 tours undetermined in length, experienced a significant life change since owning a
dog from SBF. He has lived with his PTSD diagnosis since 2007. His survey revealed:

I don’t stay at home as much. My dog gives me a purpose. I’m not nervous. I feel secure when he is with me and I’m not as angry as before. He gives me a foundation to build future goals.

Respondent # 15 is 39 years old and completed 14 years of military service in the Army, along with 4 completed tours also undetermined at length in OIF and OEF. His dog makes him feel happy, loved, and calm. He stated:

Rocco has been a saving grace. I go wherever I want. Before I would not have wanted to go out due to stress or anxiety. Best thing I have ever did was get the dog. It is not the answer, but it is a tool to find the answer. As a veteran, we need counseling to deal with past issues so that we can work through them, especially a war. He has been a great help to me, as I recapture my life. I have been riding my motorcycle a lot more. I have even been able to go on dates with my wife without Rocco. My dog has saved my life. Soldier’s Best Friend has saved my marriage.

Respondent #11 is 30 years old and served in one, 15-month tour. Diagnosed with PTSD since 2010 and having served four years active and four years reserve in the Army he stated the following:

My dog is able to make me smile and talk to more people than I would have been able to, while being on my own. I know he needs me and is very attached to me. He keeps me going knowing that he would be lost without me. My service dog can distract or calm me when I get anxious. He will touch my ear or rest his head on my shoulder when I get irritated while driving. That is all it takes to change my outlook. I don’t think a person in
the car with me could say anything that would get such a quick reaction as his touch.

Since Respondent #11 received his dog he also replied that his PTSD symptoms had improved drastically. Here are his scripted thoughts:

I have experienced suicidal thoughts and my service dog gave me a reason not to act on those thoughts. The longer I have my service dog, the less I even have those types of thoughts. I have more confidence and get out of the house more with my service dog. Before I would just get what I needed at the store and leave without saying a word to anyone. Now, I will have conversations with people and actually be outgoing at times. I feel like I can actually be a functional member of society with my service dog’s assistance.

When evaluating the life changes amongst each veteran, every single individual had particular encounters related to their military and or combat experiences, along with specific desires for their dog. Individual physical and emotional needs along with personal war accounts would alter overall results in various categories. Owning a dog significantly changed the lives of the majority at 80%, according to the 12 out of the 15 veterans that participated in the study.

**Recommendations for CAT in Military Medicine**

The investigator had a considerable amount of support regarding recommendations for CAT as a therapeutic form of treatment for veterans with PTSD. Eighty-seven percent agreed that CAT should be established as an official form of treatment in military medicine. The testimonies provided indicate that the relationship between a veteran and dog can have a significant, therapeutic impact towards treating PTSD. Respondent #12 stated:
It would be wonderful if the VA made canine assisted therapy official. As it is now, the mental health doctors at the VA do not do therapy with us. They just monitor our meds. Anything the VA would do in the form of therapy, including canine therapy would be a blessing. I have seen the difference in other veterans’ behavior because they have a service dog.

Service dogs would definitely assist other veterans with PTSD.

Respondent #12 provided concise information in terms of building and supporting a solid future in terms of CAT. As veterans resume overall improvements in mood and behavior when participating in CAT, EB investigation and documentation is advantageous while building from current CAT programs. Once we are able to establish EB theory, we can begin to offer non-traditional forms of therapy such as CAT or AAT in military medicine.

Respondent # 7 had similar, therapeutic responses and he too recommended CAT as an official, therapeutic form of treatment. He stated:

They [the dogs] provide something that is a soothing, calming, and constant. By focusing on the dog, you can kind of ‘forget’ other issues that are bothering you. When I adopted my dog, the shelter told me that he was abused as a 3 month old puppy by his previous owner. He had PTSD too, so we can help each other heal. I feel like we share that special connection.

Respondent # 14 had an interesting response, but had also suggested similar beliefs. He stated:

Dogs are neutral, they do not care about how you look and they do not judge you based on your condition. They just want to be your friend. Having a service or therapeutic dog is a stepping stone for recovery. Because my dog also suffers from PTSD due to his past we are on common
ground. He has been abused, was a stray, and experienced shelter life before we united.

Respondent #11 had a unique experience. Prior to having his dog trained, he took notice to the service and therapy dogs at the VA in the waiting rooms. He felt that his anxiety and stress decreased when he would touch or watch the dog with his handler. Now that he has his own service dog he realizes this power and how his own dog has helped him manage his PTSD symptoms. He scripted the following:

I believe veterans with PTSD could benefit from having a service or therapeutic dog. I have seen how much mine has helped me and have seen friends improve with their dogs as well. Getting the right dog and good training is important. But with CAT, I think a large majority of veterans with PTSD would see improvement in their symptoms and quality of life versus medication and other forms of irrelevant therapy. My service dog is very attached to me and can read body language better that I can at times. He will alert me to my anxiety and help reduce it. I am not always able to show or express my feelings, so my therapist has been able to watch how my service dog reacts to their questions. Since my dog shows more external reactions to sensing my feelings and emotions that I tend to show myself, it helps with counseling purposes.

His testament confirms Dr. Boris Levinson’s proposition mentioned previously (Levinson & Malon, 1997). Dr. Levinson took notice towards the child’s interest to participate in therapy once a dog was present. Dr. Levinson had been unable to establish a relationship with the child prior to the exposure of the dog. The dog provided great comfort for the child. Levinson claims to have discovered this on accident. Therefore, the dog can often be the spark needed to facilitate the foundation for a therapeutic relationship between the counselor and
patient. Service and therapeutic canines are trained to do this, which is obvious based on responses in the investigation. Lives of individuals are transformed and improved once a dog is involved. Animals deliver stress relief that is achieved from a mind-body connection. This is a powerful instrument as one works in recovery to restore mental and physical wellness.

Respondent #5 recommended CAT for combat veterans, too. He stated:

Dealing with PTSD is a life altering challenge. A service animal can provide comfort in the face of flashbacks and night terrors. The dog serves as a physical reminder of present moments versus past moments. Most importantly a service animal is a constant battle buddy. Knowing that I always have my back covered is a priceless feeling. Lastly, a service animal brings with it responsibility which is very empowering when recovering from the ugly scars of combat. It gives me a sense of purpose and makes me feel that I am still useful and worthy of my life.

Respondent #5 felt that if he can personally benefit from a service dog, anyone can benefit from a service dog. According to his survey, the dog continues to keep him attuned to his condition, moods, and needs that allow him to feel safe and in control of his circumstances, throughout most days. Since having Kazu, his dog, he can go into public places and feel relatively safe while being social to a point. He wrote that he is able to go to the grocery store, professional football and baseball games. He has been unable to do this since 2002, according to his writings.

Respondent #8 had a different view versus most of the veterans that participated in the study. He stated:

Not everyone is good with this type of therapy. Sometimes the symptoms, especially anger, can be projected towards the animal. This creates a
dangerous environment for the animal. You almost need to have a dog-love prior to getting a dog from SBF. I think that a service or therapy dog can help a veteran. After 5 years or later and the training has resolved, maybe the veteran no longer needs the dog for his PTSD symptoms? The dog has to remain at the house and the dog can suffer from depression because he no longer can do the job for the veteran.

This Veteran had a valid point. CAT is not meant for every individual diagnosed with PTSD. A study led in 1994 (Zasloff & Kidd, 1994) regarding loneliness among pet ownership and single women, revealed that certain individuals should not own dogs just because they are lonely. The women within the study had confessed that they were not a responsible nor reliable pet-owner for the dog. Either because they were not available physically and emotionally and could not find the time to tend to the dog’s needs. CAT does not always have positive results. Therefore, it is important that a clinician realizes this prior to recommending CAT as a form of therapy, so that the animal is not injured nor exposed to harmful situations.
CHAPTER 5: CONCLUSION

Given the Conservation Model’s outcome-driven information, successful outcomes can be enhanced as veterans are provided tools for rehabilitation purposes upon return from deployment. Evidence Based Practices (EBPs) that decrease PTSD and help with physical disabilities are desired in both civilian and VA settings. However, these types of interventions do not distinguish effective treatment for the individual as discovered in the Investigation at SBF. The CM is selective in that it focuses on creating therapeutic, patient and partner-centered relationships that are recovery focused and stronger than EBPs (Orem, 1995). Once trust has been established, delivering nursing care that is patient-focused and approved per client can enhance recovery, as practitioners empower clients to gain control over life circumstances, providing hope. Past studies, along with the study conducted at SBF verify that the function in mood and outlook of the individual is improved, whether physical or mental. CM has the ability to establish a positive transformation and meaningful life for each veteran treated based on its foundation of health promotion, health maintenance, rehabilitation, and recovery (Seed & Torkelson, 2012).

Discussion

Due to continuous advancements and developments in the medical field, helpful, holistic treatments such as CAT are often misunderstood and discounted. As previously mentioned, without EBP’s of non-traditional forms of treatment such as AAT and CAT, clinicians are more likely to focus on medication, pricey equipment, and surgical procedures. The procedures generate revenue for most prescribing providers outside of the VA system. A significant amount of responsibility is involved due to the monitoring needed after prescribing
psychotropic medications. Adversely, a dog is a much more cost-efficient option. It empowers the patient and encourages responsibility as the veteran can gain a sense of fulfillment through the developed bond with their dog.

Medical facilities such as the WRNMMC and nonprofit organizations like SBF that encourage CAT continue to improve the lives of those veterans who struggle with physical and psychological difficulties. Veterans exposed to such therapy have benefited from their experience, based on the positive outcomes reviewed in such investigations. Yet, positive experiences have been difficult to measure due to lack of support, research, and funding. Research that is currently being conducted in military medicine remains minimal. Unless more qualitative and quantitative investigations are conducted, within inpatient or outpatient military medical settings, positive results will remain uncounted. Veterans that have not been offered CAT do not get to experience the positive effects.

Limitations

VA provides funding and animal care for veterans with visual and hearing disabilities and/or mobility impairments, but it does not cover the costs related to therapeutic dogs for mental health disorders. As previously mentioned throughout the thesis, there is not enough scientific investigation to support a dog’s ability to provide therapeutic support. Therefore, VA will not warrant coverage for companion dogs. Consequently, the VA continues to treat veterans with established forms of treatment that consist of medication, group therapy, and individual counseling.

The limitations within the study include not measuring the outcomes from other non-profit or service dog organizations specializing in providing training dogs to veterans with PTSD. A limiting element within the investigation was that
only one organization, SBF, was investigated. Future research would benefit from investigating multiple organizations that specialize in treating veterans with CAT. An individualized self-assessment test of PTSD symptoms, per veteran, prior to and after undergoing dog therapy could help with measuring symptom improvements. Since veterans participating in the study will have already graduated from CAT training, performance evaluations from the veterans’ spouses, family members and loved ones, can serve to enhance the calculation of therapeutic benefits. The conclusions discovered at SBF contribute to the growing amount of research on CAT conducted in military medicine to date.

Recommendations for Future Research

As investigations continue in military medicine, it is important that nonprofit organizations such as SBF remain available for those veterans struggling with PTSD for various reasons. Encouraging CAT within military medicine must continue to be derived from multidisciplinary research. It takes a team of individuals (social workers, case managers, medical doctors, psychologists, spouses, behaviorists, and animal trainers) to assist in a veteran’s recovery. Without a team-effort and awareness of CAT, research and funding will continue to be insufficient. It is imperative that nonprofit and academic researchers continue to advocate and build awareness regarding its therapeutic benefits.

Veterans at SBF diagnosed with PTSD benefited from having a service or therapy dog. The veterans’ noted that their trained dogs assisted in decreasing their symptoms related to fears, stress, anxiety, and tension. The canines were said to enhance the veterans’ moods in relation to self-acceptance, responsibility, and physical activity. Therefore, the participants recommended CAT as an established form of treatment within military medicine. They had felt that many
PTSD diagnosed veterans could benefit from having a service or therapy dog, based on their healing experiences at SBF.

Although the results provided noteworthy findings towards the advantages experienced in both mood and outlook for the participating veterans at SBF, further studies are needed to duplicate the results of this investigation. Evaluating the moods and outlooks of those veterans who have participated within similar non-profit and/or service organizations would contribute to future investigations, too. Studies should also serve to examine veterans of various demographics, consisting of age; gender; and financial status. Additionally, studies should evaluate combat experiences based on military duty, and living situations that are favorable or detrimental for a dog living with a veteran. Furthermore, studies should appraise the coinciding effects of other therapeutic interventions that veterans have previously participated in and/or while concurrently partaking in CAT.

Despite the benefits expressed by the veterans, it is essential to consider the physiological effects, whether positive or negative that it might possibly have on the dogs. It is critical to identify characteristics of veterans for which CAT might not be helpful so as to avoid possible harm to both dog and individual. Future studies within military medicine could continue to significantly benefit veterans who suffer from a physical and/or psychological disability. Investigations can also serve to increase our society’s understanding, appreciation, acceptance, and perhaps integration of CAT into military medicine as an official and accepted form of treatment for veterans.
REFERENCES
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APPENDICES
APPENDIX A: CALIFORNIA STATE UNIVERSITY, FRESNO
DEPARTMENT OF NURSING IRB APPROVAL
Date: June 20, 2014


Dear Annie Fagundes,

As the Chair of the Department of Nursing Research Committee, serving as the Institutional Review Board for the Department of Nursing, I have reviewed and approved your review request for the above-referenced project for a period of 12 months. I have determined your study to meet the criteria for Minimal Risk IRB review.

Under the Policy and Procedures for Research with Human Subjects at California State University, Fresno, your proposal meets minimal risk criteria according to section 3.3.7: Research in which the risks of harm anticipated are not greater, probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

The Research Committee may periodically wish to assess the adequacy of research process. If, in the course of the study, you consider making any changes in the protocol or consent form, you must forward this information to the Research Committee prior to implementation unless the change is necessary to eliminate an apparent immediate hazard to the research participant(s).

This study expires: June 20, 2015

The Research Committee is authorized to periodically assess the adequacy of the consent and research process. All problems having to do with subject safety must be reported to the Research Committee. Please maintain proper data control and confidentiality.

If you have any questions, please contact me through the CSU, Fresno Department of Nursing Research Committee at tereag@csufresno.edu.

Sincerely,

Terea Giannetta, DNP
Department of Nursing, Research Committee, Chair
APPENDIX B: INFORMED CONSENT
Informed Consent: “Soldier’s Best Friend

Dear Participant,

My name is Annie Fagundes and I am a Master’s student at California State University, Fresno under the supervision of Dr. Keitha Mountcastle. You are invited to participate in a research study entitled: Outcomes for U.S. Veterans with Combat-Related Post-Traumatic Stress Disorder: Use of Certified Service and Therapeutic Companion Dogs. This study has been approved by California State University’s Institutional Review Board.

The purpose of the qualitative study is to gain insight into reasons U.S. veterans prefer trained service and or therapeutic dogs as a form of treatment based on their physical and or mental condition. The study will be used to identify and support the use of canine assisted therapy within the military medical setting so that U.S. veterans can continue to make improvements with their physical and psychological health.

Your participation within this study will involve a written survey with an estimated length of 15-30 minutes. Participation in this research is completely voluntary and you may refuse to participate without any consequence. Your information will be used only for the completion of this research study. Each participant’s personal information and records will be kept confidential in the secure possession of the researcher. Participants will not be identified by their name within the final product.

This study poses little to no risk to you. Your privacy will be maintained at all times. You may choose to leave the study at any time, and may also request that any data collected from you not be used within the study.

Your signature below indicates that you have read the above information, are at least 18 years of age and agree to participate in the study at Soldier’s Best Friend. Thank you for your time and help to make this research study a success.

_______________________________________________
Printed Name

_______________________________________________
Signature Date
APPENDIX C: SURVEY FOR USE OF CERTIFIED SERVICE AND THERAPEUTIC COMPANION DOGS AT SOLDIER’S BEST FRIEND, PHOENIX, ARIZONA
Survey
Use of Certified Service and Therapeutic Companion Dogs at Soldier’s Best Friend: Phoenix, Arizona

1. What is your age?

2. What is your gender?
   A. Female
   B. Male

3. What is your current military status?
   A. Active
   B. Retired
   C. Reserves

4. How many years did you serve in the military?

5. What branch in the military did you serve? Please select from the following:
   A. Army
   B. Air Force
   C. Navy
   D. Marines
   E. National Guard

6. What foreign war(s) did you serve in?

7. How many tours did you complete?

8. How long have you been living with your diagnosis?

9. Do you have a service or therapeutic dog?

10. How did you find out about the service or therapeutic dogs for veterans? Please explain your answer in detail.
11. Was the process of receiving your dog difficult or easy? Please explain your answer in detail.

12. Did you receive outside help or help at the VHA for your diagnosed condition prior to receiving your dog? Please select from the following:
   A. Yes
   B. No

13. Who or what encouraged you to get a service or therapeutic dog? Please select from the following and explain your answer in detail.
   A. Spouse
   B. Family Member
   C. Close Friend
   D. Medical Team Member: Doctor, RN, Psychologist, Social Worker, Physical Therapist, Occupational Health Therapist or Counselor
   E. Other

14. Has your life significantly changed since receiving your dog? Please select from the following:
   A. Yes
   B. No

15. How does your service or therapeutic dog make you feel? Please select as many answers that apply to you and give a brief explanation regarding your selected answers.
   A. Happy
   B. Responsible
   C. Important
   D. Loved
   E. Calm
   F. Stressed
   G. Sad
   H. Mad
   I. Worried
   J. Irritable

16. Since receiving your dog how have your symptoms improved regarding your diagnosed condition? Please describe all the ways that having a service dog has changed your life in detail.
   A. Very Little
B. Little
C. Average
D. Above Average
E. A LOT

17. Would you recommend canine assisted therapy as a form of therapeutic treatment within the military medical setting while treating veterans who suffer from PTSD? Please select from the following and explain your answer in detail.
   A. Yes
   B. No

18. Do you think that other veterans who have been diagnosed with PTSD would benefit from having a service or therapeutic dog? Please select from the following and explain your answer in detail.
   A. Yes
   B. No

19. What do you think makes your service or therapeutic dog special based on your situation and diagnosed condition? Please explain your answer in detail.

   Thank you for your time and help to make this study a success!
Fresno State

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**Annie Fagundes**

Type full name as it appears on submission

**June 1, 2015**

Date