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# Effect of Dog Ownership on Mental Health Disorders and Quality of Life in Veterans

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**SIGNATURE PAGE**

This thesis for honors recognition has been approved for the

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Effect of Dog Ownership on Mental Health Disorders and Quality of Life in Veterans

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## Abstract

Approximately 1 in 5 returning service members from Iraq and Afghanistan report symptoms of Post-Traumatic Stress Disorder (PTSD) (Tanielian & Jaycox, 2008), and 22 percent of veterans suffering from PTSD also report symptoms of Social Anxiety Disorder (SAD). Mental health disorders such as PTSD have been shown to reduce the overall self-perceived quality of life in Vietnam veterans (Hansson, 2002). The effectiveness of using animals in therapeutic settings for mental health disorders has proven to be successful, specifically demonstrated to be therapeutic and beneficial in treating disorders such as anxiety and PTSD (Chandler, 2005). It is unclear whether veterans who own a pet would report fewer symptoms of PTSD and SAD and perceive a higher quality of life than veterans who do not own a pet. This study examined the relationship between companion dog ownership on veteran mental health and perceived quality of life. Seventy nine veterans (58 male, 21 female) were recruited from Facebook's veterans groups who completed an online survey gathering information on dog ownership, symptoms of PTSD and SAD, perceived quality of life, and several demographics. No significant relationships were observed between these variables after conducting Pearson's  $r$  correlational analyses. However, a significant correlation was found between veterans who have an "indifferent" view of pet dogs and levels of SAD. Implications of the findings are discussed in how to design future studies that research the relationship between the human-animal bond and mental health disorders in returning service members.

## Effect of Dog Ownership on Mental Health Disorders and Quality of Life in Veterans

### Background

As of 2009, over 1.8 million U.S. troops have been deployed to war zones in Iraq and Afghanistan since the war on terror began in October, 2001. Additionally, thirty-seven percent of these soldiers have been deployed more than once (Litz & Schlenger, 2009). Rates of soldiers returning home with mental health problems is staggering. Roughly 29 percent of returned veterans from Iraq and Afghanistan have enrolled in VA health care, a historically high rate compared to the 10 percent of Vietnam veterans who are enrolled (Department of Veteran Affairs, 2006). A study done by Hoge, Castro, Messer, McGurk, Cotting, and Koffman (2004), found that in returning Operation Iraqi Freedom (OIF) veterans, 18 percent met the screening criteria for Post Traumatic Stress Disorder (PTSD), generalized anxiety, or major depression. In 2007, Hogue, Clark, and Castro published a commentary on more recent studies being done on the rate of PTSD in returning veterans. Their review found rates of PTSD symptoms in veterans returning home to be comparable to the results in their 2004 study. Results showed 16.6 percent of returning OIF veterans one year post deployment, met the screening criteria for PTSD using the Post Traumatic Checklist (PCL). In 2008, the RAND cooperation published results of a large-scale psychological assessment of 300,000 OIF and Operation Enduring Freedom (OEF) veterans and found that nearly 20 percent of the veterans reported PTSD symptoms. The RAND study shows that almost one in five returning service members

from Iraq and Afghanistan report symptoms of PTSD (Tanielian & Jaycox, 2008). The prevalence of PTSD among returning service members has created a need for research to find effective means of treatment for veterans suffering from the disorder.

The American Psychiatric Association defines PTSD as an anxiety disorder that can develop following a traumatic experience, such as war or natural disasters. Symptoms may include intrusive memories of the traumatic event, flashbacks, nightmares, use of avoidance measures to cope, and an overall more anxious state than before the traumatic experience. There are several tools used to assess the level of PTSD symptoms in people who have experienced a traumatic event. The PTSD Checklist (PCL), a commonly used instrument by the Veterans Administration, is a 17-item self-report measure of the symptoms of PTSD found in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). The PCL is commonly used in screening veterans for PTSD, diagnosing PTSD, and monitoring the change in symptoms before and during mental health treatments (Weathers & Ford, 1996). The PCL military version asks veterans about symptoms related to stressful military experiences. The PCL has been demonstrated to be an accurate tool in detecting PTSD in returning veterans; however, veterans also suffer from many other mental health problems. .

In addition to dealing with symptoms of PTSD, some returning veterans are faced with co-occurring disorders. Seal, Bertenthal, Miner, Sen, and Marmar (2007) conducted a study of 103,788 OIF and OEF veterans who served from 2001-2005. The study gathered data on mental health diagnoses in veterans. Twenty-five percent of the veterans surveyed received one or more distinct mental health diagnosis. However, twenty-nine percent had two different diagnoses, while twenty-seven percent had three or

more. Thirteen percent of these diagnoses were for PTSD. In the study conducted by the RAND Corporation in 2008, which interviewed 289,328 OIF/OEF veterans, 36.9 percent had some type of a mental health diagnosis, PTSD included. Of that 36.9 percent, 26 percent had a comorbid diagnosis, and one third of the veterans had a comorbid diagnosis of three or more different mental health disorders (Tanielian & Jaycox, 2008). It is evident that veterans are not suffering from just one type of mental health disorder.

Often comorbid with PTSD, social anxiety disorder is a problem afflicting service members. A study done by Kashdan, Frueh, Knapp, Hebert, and Magruder (2006) interviewed, via telephone, 733 veterans with a diagnosis of PTSD and veterans absent of the diagnosis, and found that twenty-two percent of veterans with PTSD had comorbid social anxiety disorder or SAD, compared to 1.1 percent of the veterans without PTSD that met the criteria for SAD. Their findings show that veterans with PTSD have a much greater rate of SAD than those veterans without PTSD. In assessing the symptoms of SAD, the Liebowitz Social Anxiety Scale is commonly used among many clinicians. It measures the range of social interactions and performance situations that persons with SAD tend to fear and avoid. It is also an appropriate measure of avoidance that a person uses to cope with social phobias (Heimberg, Horner, Juster, Safren, Brown, et al., 1999).

Social anxiety disorder, or SAD, which is the extreme fear of being scrutinized and judged by others in social or performance situations, severely limits the social well-being of the veteran. Kashdan, Julian, Merritt, & Uswatte (2006) found, using self-report scales, that veterans with PTSD reported lower levels of global and daily well-being and character strengths such as hope and optimism. Veterans who fear being judged in social or performance situations cope by practicing avoidance of the situation

or avoid social interactions. These social fears keep the veteran from experiencing positive social experiences and relationships, and lead in a cyclical way to more social impairment (Kashdan, Frueh, Knapp, Hebert, & Magruder, 2006). The veteran is not able to experience positive social interactions which foster social support, intimacy, and laughter. Lack of these benefits lead to psychological difficulties in the veteran, and as a result, leads to diminished well-being. Results from Kashdan et al., (2006) showed that veterans with PTSD had significantly less emotional well-being, positive social activity, and self-esteem than non-PTSD veterans. They also found that male veterans with PTSD exhibited greater social anxiety and lower well-being and character strengths, such as hope, optimism and forgiveness, compared to non-PTSD veterans.

Little research has been conducted on the quality of life of persons suffering from PTSD and social phobia. Hansson (2002) found that studies conducted on Vietnam veterans revealed that veterans with a diagnosis of PTSD were more likely to receive disability payments and reported lower health, role functioning, and emotional health than non-PTSD veterans. There are few studies showing veterans with a social phobia disorder suffer a lower quality of life. However, a survey conducted by Stein and Kean (2000) of over 8,000 non-veteran participants, using the University of Michigan Composite International Diagnostic Interview to assign DSM-III-R diagnoses, took measures of psychiatric disorders and measures of disability caused by the disorder. Questions were asked about how much the person could not perform their daily life tasks in work or school because of mental health problems. Besides measuring dysfunction, this survey also assessed the person's level of dissatisfaction in life, functioning in daily life, troubled relationships, and quality of life. The results from this study found that on

almost every index of functional impairment and life satisfaction, persons with social phobias scored worse than persons without social phobia. The findings from this study found that people with social phobia reported extensive functional disability, less life satisfaction, and a lower quality of well-being compared to persons without social phobia

Quality of life (QOL) in a person can be measured using many different scales. The McGill Quality of Life Questionnaire, for example, can measure the trajectory of QOL in persons suffering from a life threatening illness. Physical symptoms, psychological symptoms, outlook on life and meaningful existence are components in a person's life that are measured (Cohen, Mount, Strobel, & Bui, 1995). This scale can be used to measure the existential well-being and social support that a person with a life changing illness self-reports. The resulting symptoms of PTSD following a traumatic experience would also be considered a life-changing illness. PTSD and related mental health disorders could be measured in how much they affect a person's perceived quality of life.

The effectiveness of using animals in therapeutic settings for mental health disorders has proven to be successful. Animals used in psychotherapy, or Animal Assisted Therapy (AAT) have been shown to have an effect on autism spectrum symptoms, medical difficulties, behavioral problems, and well-being (Nimer & Lundahl, 2007). AAT has also been demonstrated to improve mental health functioning in people suffering from mental health problems. Chandler (2005) describes over 14 clinical diagnoses from the DSM-IV that AAT can be effective in treating. Among the diagnoses were general anxiety disorder and post-traumatic stress disorder. In a therapeutic setting, Chandler recommends slow breathing exercises while in the company of a pet, or

walking a pet while listening to relaxing music to help with anxiety disorders. In treating PTSD, it is recommended that the patient be in the presence of their pet while recounting traumatic memories, or use the pets' natural flight or fight response as an analogous way of explaining the patients PTSD symptoms to them.

Nimer and Lundahl (2007) believe the reason that animals benefit patients in a therapeutic setting is the animal's natural tendency to bond with people. The animal creates a warm and safe environment for the patient to talk about their mental health afflictions. The patient is more receptive and open to treatment interventions while in the presence of a therapy pet. Another reason why animals work so well in this type of setting could be explained using E.O Wilson's biophilia theory (Kruger & Serpell, 2006). Wilson believes that humans have a genetic attraction to other living things and have the ability to attend to them because of their evolutionary interdependence (1984). Biologically, humans are attracted to animals, and this can be used to a therapeutic advantage; taking what is already hardwired in humans and using that in a therapy setting. Fine (2004) believes that pets work so well in therapy because a person only needs but a few social skills to gain positive interaction with the animal. Veterans who normally avoid interaction in social situations due to fear and distress may be more inclined to open up to an animal that is naturally socially receptive.

Many studies have been conducted which have investigated the depth of the therapeutic benefits of the human-animal bond. A study conducted by Vormbrock and Grossberg (1988) found extensive cardiovascular benefits for a person petting a dog. They found tactual contact with the dog was a major component in correlating with the person's heart rate. A nursing home with a resident dog saw its patients socially interact

more with staff and peers since the arrival of the dog onto the unit (Winkler, Fairnie, Gericevich, & Long, 1989). And in social facilitation effects, studies have shown that pets have had a positive effect on college students, the elderly, dog owners, adult and adolescent psychiatric inpatients, and children with disabilities (Kruger & Serpell, 2006). A study done by Barker and Dawson (1998), investigated the effects of AAT on anxiety in psychiatric patients. Results found statistically significant reductions in anxiety scores in patients who had psychiatric and mood disorders that were treated in an AAT setting.

Studies have shown that interaction with a dog increases the level of oxytocin in a person. In a study done by Odendaal and Meintjes (2003), results found that, in 18 participants, levels of oxytocin almost doubled as they interacted with their pet dogs, gently petting and speaking to them. Oxytocin plays an important role in social interaction in nonhuman mammals (Heinrichs & Domes, 2008). Oxytocin plays a key role in the animal's ability to overcome their natural fear and avoidance of close proximity and decreases defensive drive, which allows the animal to adjust in social environments. Recent studies have found that, in humans, after administration of oxytocin, participants showed less amygdala activation to fear-provoking visual stimuli (Kirsch, Esslinger, Chen, Mier, & Lis, 2005). Results suggest a relationship between oxytocin and its stress-reducing properties in social anxiety (Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003). It is shown that oxytocin plays a biological role in stress protective effects in positive social interactions. More research is also showing the relationship between oxytocin and social behavior in humans (Donaldson & Young, 2009).

Social support is important for the veteran, and pets can provide this for the veteran suffering from PTSD and the symptoms of social anxiety disorder. Esnayra and Love (2009) conducted a study on the use of psychiatric service dogs (PSD) with persons who have PTSD. Persons who were utilizing PSD were surveyed, and 82 percent of those with a PTSD diagnosis reported decreased symptoms, and 40 percent of those with PTSD reported that their medication use has also decreased since they came into partnership with their psychiatric service dog. The psychiatric service dogs (PSD) were with the handlers 24 hours a day, 7 days a week, ready to provide assistant behaviors to mitigate the handlers' PTSD. Some of the assistant behaviors that the PSD can provide to persons with PTSD are waking up the person when they have a night terror, and turning on the lights for them. PSDs can also assist in reclusiveness, which many veterans use to cope with their PTSD, by accompanying the person outdoors. Also, the PSD can assist in social withdrawal by facilitating interpersonal interaction with others when the dog-handler team goes out into the community. Reintegration back into the community can be assisted with the use of a PSD (Love, 2009). The partnership between handler and dog serves as a tool that can improve the quality of life of persons suffering from PTSD. The human-animal bond between dog and handler can be assessed using several different surveys and questionnaires. One appropriate measure of pet attachment is the Lexington Attachment to Pets Scale (LAPS), which assess the emotional attachment a person has to their pet (Johnson, Garrity & Stallones, 1992). Attachment to a pet is a variable in the human-animal bond that determines the effectiveness of the bond on a person's mental health (Budge, Spicer, Jones, & St. George, 1998).

Because psychiatric service dogs have been shown to improve the mental health of persons suffering from PTSD, it could be generalized that not just psychiatric service dogs assist in PTSD, but all pets, including non-service dogs. The present study attempted to examine the relationship between veterans who own companion dogs and the number of PTSD symptoms from which the veteran suffers. It is believed that if persons with PSD's report fewer PTSD symptoms, then veterans who own pets would also experience fewer PTSD symptoms, and fewer comorbid social anxiety disorder symptoms would be experienced by those veterans who own pets. Additionally, because of fewer symptoms of PTSD and social anxiety disorder, the veteran may also express a higher perceived quality of life, overall. The strength of the bond or attachment veterans have to their dog may predict the effect the pet has on its owner.

This study proposed that veterans who reported a higher attachment toward their companion dog would report fewer symptoms of PTSD and Social Anxiety Disorder, as well as reporting a higher perceived Quality of Life than veterans who have a lower attachment to their dog. Symptoms of PTSD and SAD would negatively correlate with the degree of attachment the veterans have toward their dog, whereas quality of life would positively correlate with the degree of attachment to their dog.

## Methods

### *Participants*

One hundred twenty-five veterans were recruited from veteran's groups on Facebook to participate in an online survey, posted on *SurveyMonkey.com* from September 2012 to January 2013. Incomplete surveys were eliminated from the study,

resulting in a final sample of 79 participants. The study protocol was approved by the Carroll College Institutional Review Board.

Veterans of all ages, sex, branch of service, and time of service were invited to participate in an online survey. From the sample of 79 participants, 58 males and 21 females completed the survey, with the average age being 39.3 years. There was a wide range of time in service reported (2-28 years), with a mean of 9.2 years.

### *Measures*

*PTSD.* The Posttraumatic Stress Disorder Checklist- military version (PCL-M) (Weathers, Litz, Herman, Huska, & Keane, 1993) was used to assess the level of PTSD symptoms in the veteran.

*Social Anxiety.* To measure symptoms of social anxiety the Liebowitz Social Anxiety Scale (LSAS) (Heimberg, Horner, Juster, Safren, Brown et al., 1999) was used.

*Pet Attachment.* The degree of bond or attachment veterans have to their dog was measured using the Lexington Attachment to Pets Scale (LAPS) (Johnson, Garrity, & Stallones, 1992). The wording of this scale was modified, omitting the word “pet”, which was replaced with “dog”.

*Quality of Life.* Quality of life was measured using the McGill Quality of Life Questionnaire (MQOL) (Cohen, Mount, Strobel, & Bui, 1995). This questionnaire was modified from the original form in that the first three questions from Section B and the last section D were omitted. The questions omitted asked for the participant to write in and describe details of their symptoms. This information was not needed for the study.

*Demographics.* Information relating to sex, age, and time in military service was also collected.

### *Procedure*

A script was posted on both public and private Facebook group pages for veterans and military service members. Veterans clicked on the link provided on the Facebook page which took them directly to the survey posted on *SurveyMonkey.com*. After reading the informed consent page and electronically giving their consent, veterans completed the survey and were debriefed after completion.

### Results

The data collected for the measure of social anxiety (LSAS) for each participant was divided into two different groups, social-fear and social-avoidance. Final results from the Lexington Attachment to Pets Scale were placed into two different groups as well, depending on the type of question that was asked; either a positive view about dogs (DogPos) or an indifference towards dogs (DogIndiff). The questions from the MQOL were put into two different categories based on whether they were measuring a positive or negative outlook on life. These two groups were labeled: low-quality of life and high-quality of life. A Pearson's  $r$  correlation coefficient was used to determine if there were correlations between the variables of social anxiety, PTSD, quality of life, attachment to dog, and the demographics gathered: age, sex, and length in military.

As anticipated, PTSD positively correlated with social-fear and social-avoidance, as well with low-quality of life ( $p < .01$ ). Social-fear and social-avoidance both positively correlated with low-quality of life ( $p < .01$ ). However, no correlations were found

between the hypothesized variable of PosDog and the variables of PTSD, social-fear and social-avoidance, and QOL.

Interestingly though, a relationship was found between the variables of DogIndiff and SAD. DogIndiff positively correlated with both social-fear and social-avoidance at a significant level ( $p < .05$ ).

### Discussion

Failure to find significance in the hypothesized variables prompted further investigation of the data to find significant correlations between variables that were not initially explored. Of interest and possible importance is the finding that veterans who scored high on indifference towards their dog also scored high on measures of SAD, both social-fear and social-avoidance. One explanation of this positive correlation is that veterans who feel indifferent about their companion dog, believing that their dog is just a dog, are lacking an adequate bond with their dog, thus preventing any therapeutic benefit to take place. In fact, those who felt more distant from their dog were also those who were more afraid of performing in public and who avoided social situations. However, veterans who scored high on attachment with their dog did not show an improvement in scores of SAD.

Overall, failure to show that veterans who were highly attached to their companion dog would have lower scores of PTSD, Social Anxiety Disorder, and a higher Quality of Life does not negate the possibility that companion dogs can help reduce the symptoms of PTSD and lower social anxiety disorder in veterans. The mean age of veterans taking the survey was 39.3 years, suggesting that the sample collected was not

an accurate representation of the current U.S. veteran population. According to a report by the Substance Abuse and Mental Health Services Administration (SAMHSA, 2012), as of the summer of 2012, over 2 million U.S. veterans have served in Iraq or Afghanistan since 2001. The mean age from the above study does not reflect the massive population of young veterans in the U.S. (ages 18-30) indicated by the SAMHSA report. A possible explanation for this could be that younger veterans who are fresh from the battlefield are not ready to fill out a questionnaire pertaining to military experience. Older veterans who are comfortable participating in the survey might be experiencing lower symptoms of PTSD and SAD, and a higher perceived QOL. More debilitating symptoms of PTSD and SAD could prevent younger veterans from participating, creating an unequal representation of the veteran population.

Changes to this study should include a different method of soliciting participants, where younger veterans can also be included in the study. No incentives were used to recruit veterans to complete the survey. Using an incentive such as money or a chance to win a raffle might appeal to younger veterans who might be reluctant to participate in the survey. A voluntary survey might not be the best method for future studies. Accessing veterans through organizations such as the Veteran's Administration, Veterans of Foreign Wars, or other military fraternities might be a better approach.

With more veterans returning home, we can expect more diagnoses of PTSD and comorbidity with social anxiety disorder. We can also expect the quality of life for these veterans to be lower when they have a diagnosis of PTSD and other accompanying mental health disorders. Pets, specifically dogs, could be seen as a breakthrough in the barriers that are restricting the veteran from reintegrating back into society. Psychiatric

service dogs (PSD) not only mitigate the disabilities that accompany PTSD, but they have been shown to reduce symptoms of PTSD in the handler (Esnayra & Love 2009).

Research in this area of the human-animal relations is strongly needed to show that dogs can be an appropriate treatment for returning veterans suffering from PTSD and other mental disorders. Future research efforts are needed to support the anecdotal claims that companion dogs are healing our returning veterans and to understand how and why healing occurs.

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