



Barking Up the Right Tree: A Qualitative Study of Health Outcomes Among Military Veteran Handlers who Receive Service Dog Assistance

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Abstract

Background: Post-traumatic stress disorder (PTSD) remains a significant challenge among military veterans, often unresponsive to standard treatments. Psychiatric service dogs have emerged as a complementary intervention, yet little is known about how veterans perceive their impact on daily functioning, emotional stability, and overall well-being.

Objectives: The present study aimed to explore the lived experiences of veterans with PTSD who received psychiatric service dogs and to understand how these partnerships affect emotional, psychological, and social health outcomes in everyday life.

Methods: This qualitative study, part of a broader mixed-methods project, included semi-structured interviews with 42 veterans and 10 service dog program leaders from nine organizations across the United States. Veterans were selected based on elevated emotional distress identified through PTSD and depression screening tools. Interviews were transcribed, coded, and analyzed using inductive thematic analysis to identify key patterns in perceived health outcomes and symptom changes over time.

Results: Veterans reported substantial improvements in PTSD symptom clusters, including reductions in hyperarousal, avoidance, negative mood, and intrusive memories. Service dogs were credited with enhancing emotional regulation, social engagement, and daily functioning. While most experiences were positive, a few participants reported minimal changes or early adjustment challenges. Organizational leaders validated these themes and highlighted observed behavioral and psychosocial transformations among veterans in their programs.

Conclusions: Psychiatric service dogs play a significant supportive role in the mental health recovery of veterans with PTSD. These findings support their inclusion as a viable adjunct to conventional treatment and point to the need for broader access, integration, and long-term support within veteran healthcare systems and clinical care pathways.

Keywords: Mental Health, Veterans, Service Dogs, PTSD, Traumatic Brain Injury

1. Background

Post-traumatic stress disorder (PTSD) poses ongoing challenges for military veterans, often disrupting daily life through symptoms such as intrusive memories, hyperarousal, emotional dysregulation, and social withdrawal. Although treatments like cognitive behavioral therapy (CBT), prolonged exposure, and pharmacotherapy are common, many veterans face

barriers to care, including stigma and limited access. These gaps have fueled interest in complementary interventions that support both psychological and social well-being.

Psychiatric service dogs, as defined by the Americans with Disabilities Act (ADA), are individually trained to perform tasks that mitigate disability, with public access rights granted under federal law (1-3). Veterans receive these dogs through programs requiring extensive

training and behavior standards (4). The resulting human-animal bond supports emotional, psychological, and physical health (5).

Service dogs assist with PTSD-specific tasks, including interrupting panic attacks and responding to nightmares. Quantitative studies, including our prior analysis (6), have shown meaningful improvements in PTSD symptoms.

2. Objectives

Yet such data often overlook the deeper, subjective impacts of service dog partnerships. Few qualitative studies have explored how veterans perceive these effects on their overall well-being. The present study addresses that gap by analyzing first-hand narratives from veterans and service dog program leaders. Situated within a mixed-methods framework, our findings provide insight into the therapeutic value of service dogs and inform future efforts to improve access and outcomes.

3. Methods

This qualitative study was part of a broader mixed-methods investigation examining the impact of psychiatric service dogs on veterans with PTSD. Guided by Donabedian's quality of care framework, we explored how structural aspects of service dog programs, such as staffing, resources, and training infrastructure, influence therapeutic processes and health outcomes, including PTSD symptoms, depression, quality of life, and social functioning.

We used a phenomenological approach to understand veterans' lived experiences with service dogs, focusing on how they perceived changes in physical, psychological, and social well-being. This design emphasized the personal meaning and transformative impact of the partnerships.

3.1. Subjects

Veterans were recruited from nine service dog organizations across the United States. Interview invitations were extended to those who completed all study surveys and showed elevated emotional distress, based on baseline PCL-5 and PHQ-9 scores. Interviews continued until thematic saturation was reached, totaling 42 veteran participants. Each received a \$50 Amazon gift card. To provide programmatic context, we also interviewed 10 organizational leaders. Eligibility required participants to be U.S. military veterans aged 18 or older with a formal PTSD diagnosis and active enrollment in a participating program. Veterans who

had previously been certified with a service dog or had animal-related offenses were excluded to maintain sample consistency.

3.2. Procedures

A semi-structured interview guide was developed with input from expert service dog trainers to ensure detailed, open-ended responses. Interviews were conducted between June 2021 and July 2022. Verbal consent was obtained in accordance with ethical approval from the Johns Hopkins Bloomberg School of Public Health IRB. In total, 52 interviews generated approximately 810 pages of transcript data. All recordings were transcribed verbatim and de-identified.

3.3. Analysis

We conducted an iterative, inductive coding process using Atlas.ti, codes were grouped into subthemes and synthesized into overarching thematic domains that reflected key elements of the veterans' experiences. The analytic process followed qualitative standards described by Garrido, incorporating reflexivity, triangulation, and rigor throughout (7).

4. Results

Table 1 presents the demographic and clinical profile of the veteran cohort. The sample reflects the broader veteran population in terms of ethnicity and includes a majority with higher education and upper-middle income levels, offering insight into socioeconomic factors influencing service dog utilization. Clinically, many veterans reported co-occurring conditions such as anxiety, depression, traumatic brain injury (TBI), military sexual trauma (MST), and bipolar disorder, highlighting the complex health context in which service dogs operate.

Interviews averaged 79 minutes, with veterans having partnered with their service dogs for 3 to 22 months (mean = 10 months). Thematic analysis captured how veterans experienced changes in PTSD symptoms, offering a deeper understanding of service dogs' roles in mental health support.

4.1. Thematic Categories and Key Insights

4.1.1. Changes in Physical and Emotional Reactions

The DSM-5 characterizes changes in physical and emotional reactions with symptoms like challenges in focusing, a propensity to be startled easily, irritability, and episodes of anger. Leaders from the participating

Table 1. Characteristics of Participants^a

Characteristics	Veterans (N = 42)
Age (y)	42.4 ± 9.1
Gender (female)	18 (42.9)
Race/ethnicity	
Asian	3 (7.1)
American Indian or Alaskan Native	1 (2.4)
Black or African American	2 (4.8)
Mexican or Latino	5 (11.9)
Native Hawaiian or Pacific Islander	1 (2.4)
White or European American	29 (69.0)
Other	1 (2.4)
Education	
High school or GED	1 (2.4)
Some college	8 (19.0)
Bachelor degree	21 (50.0)
Graduate degree	12 (28.6)
Employment status	
Employed, full-time	20 (47.6)
Employed, part-time	5 (11.9)
Not employed, not looking for work	3 (7.1)
Retired	4 (9.5)
Disabled, not able to work	3 (7.1)
Other	7 (16.7)
Household income	
Less than \$29,999	4 (9.5)
\$30,000 - \$59,999	5 (11.9)
\$60,000 - \$89,999	15 (35.7)
\$90,000 or more	18 (43.0)
Marital status (married)	24 (57.1)
Children in household	32 (76.2)
Urbanicity (urban)	26 (61.9)
Health insurance	38 (90.5)
Mental health conditions	
TBI	9 (21.4)
MST	9 (21.4)
Depression	32 (76.2)
Anxiety	36 (85.7)
Bipolar	2 (4.8)

Abbreviations: TBI, traumatic brain injury; MST, military sexual trauma.

^aValues are expressed as No. (%) or mean ± SD.

organizations narrated successful strategies employed using service dogs to mitigate such symptoms:

... if they are hyper-vigilantly walking into [a crowded store] ... if you say yes to this, what are you saying no to? ... if they say "yes" to focusing on the dog, they are saying "no, I cannot pay attention to this person walking up behind me and pushing the cart by."

Ninety-five percent of veterans reported reduced emotional distress and reactivity with their service dogs.

One shared, "I have these feelings, my head is always thinking...when I have my dog in front of me, I think of my dog and not those things." Another described how their dog responds during panic episodes, "... if I feel a panic attack coming, I am able to give her a command that allows her to put all of her body weight on me... like giving somebody a big hug."

Another veteran shared how their service dog helps prevent escalation:

He cues me when I need to calm down... I started to get agitated... Usually, I just lose it, but my service dog noses my knee and pulls me in a different direction... I went inside my house rather than just having a shouting match.

Another veteran described less of a change in physical and emotional reactions, but noted some calming benefits:

I don't think the hypervigilance, per se, has changed... I still watch everyone's movements... But if I'm feeling stressed out, I can reach down and pet her... she helps calm me down quite a bit.

Negative outcomes for changes in physical and emotional reactions were noted, which singled out difficulty concentrating:

It is harder to concentrate because I am constantly worried about my service dog. I don't think it is supposed to be that way... As best as I try, and I can multitask and do a bunch of different things, but the concentration piece, when it comes to having a service dog, half of my attention is on what I am doing and the other half is on my dog.

4.1.2. Avoidance

The DSM-5 describes avoidance as efforts to evade trauma-related memories, emotions, or cues, often accompanied by emotional numbness and disinterest in activities. Program leaders noted that service dogs helped reduce these behaviors:

They are constantly getting out... you're going to need to get your dog out... We took [veteran] to lunch and a shopping area... he said, "That is my wingman."... They are living their life... enjoying their family, their friends... That is a complete success.

The narratives from 38 veterans, making up 90% of our study's cohort, displayed a significant reduction in avoidance symptoms. Their personal accounts offer compelling testimony to the therapeutic benefits of service dogs in easing the avoidance behaviors that are commonly symptomatic of PTSD:

A lot of my situation is avoiding thoughts or things... that remind me of people or places... I have spent more time than I ever have this past year looking through old photos... I don't even avoid going out for a walk... which is good for me... and my health.

Veterans also described improved social interactions with friends and family. One shared that conversations with "family members usually end up in yelling arguments and name-calling," but their service dog helped them stay calm. Others noted re-engaging in

public activities: "I'm actually able to go out to restaurants now... he sits under the table," and "I would talk to the leader of the church and make sure that it is okay with them." These accounts reflect reduced avoidance and renewed interest in meaningful activities. As one veteran explained, "I don't lose interest that much anymore... when out hiking, I have pulled my camera back out and done some photography... I would say he has definitely helped motivate me... to do things that I love to do and enjoy."

A minority of the study group, representing 10% of participants, reported no significant change in their avoidance symptoms after receiving service dog assistance:

One of the dog's purpose is to reclaim that social integration, I am having quite a bit of trouble actually getting back out into public with the dog, and really fighting those urges of avoidance, and fear of having panic attacks. Even though I know I have the dog, and this is unexpected, but I am just being honest, this is just something I'm struggling with and working through actively with my organization, [social] support, and my therapist's support.

4.1.3. Negative Changes in Thinking and Mood

According to the DSM-5, negative changes in thinking and mood include persistent fear, guilt, shame, isolation, emotional numbness, and self-blame. Program leaders described how service dogs help alleviate these symptoms by providing non-judgmental support and emotional grounding.

When we are fearful, we have the naturally changing biomarkers in our body, which changes our smell, and the dogs can pick up on that... So, the alerting on that, that is what... they can bring to the class if they want to, but the depth of that emotion, they connect with their dog, and there is no judgment there. So, we see big changes in that, because the dog will stay with them.

Among the accounts collected, 86% of veterans (36 out of 42) reported beneficial shifts in cognitive and emotional well-being.

You don't really have the opportunity to get yourself into that mindset. It is like he already knows when I am going to go there and he beats me to it. He does something stupid or he will just come up and bump my leg with his nose and look at me [as if to say], "You are going to pet me and you are not going to let your mind go there."

Many veterans acknowledged that negative feelings persisted, but use of the dog was "grounding," and could help them process:

I feel like the feelings are still there... but I am able to acknowledge the feeling, understand what I am feeling, and know that I should probably not feel that way, grab the leash and get outside, or go play fetch or go do something, or simply just pet him... but yeah, the actual root emotions are still there. It is just better handling of them... I was able to go to Arlington [National Cemetery] with my service dog, and that is not something I was able to do before... And now... just me and my service dog, it was incredible to finally... feel like I could go... My service dog does not help me get rid of the survivor's guilt, he just makes it easier to address it, to not want to die because of it, to show me that I can get out of the house now.

Seven of the 42 veterans (17%) explained less change in cognitions and mood, for example:

I don't think it has changed... It is still there and I still deal with it, it is just that it is not as bad because when it happens, she is there and she gets me out of it quick. So, it is not going to be as prolonged or as hard. Before having a service dog, a lot of crying, and that has stopped tremendously... it is just more of the emotional roller coaster that I go through, and not staying on that roller coaster as long, and getting out of it quick.

Less typical narratives voiced caution in receiving service dog assistance:

I think it would almost be essential to add as a disclaimer... "This is going to suck. This is going to be extremely hard to go through and you are going to want to make sure that your supports are there and you have friends and relatives, and you have got your shit in order before you start this because it is going to be rough." ... but there should be some kind of disclaimer to say that it is going to bring up some stuff.

One veteran described heightened fearful emotion as a result of being separated from their service dog:

Going into surgery was one of the hardest things I've had to do in a long time, and that is the longest I have been without her, because they would not let her in the surgery room, but she was able to do everything else with me, x-rays, before going into surgery. I wish I had had my dog with me because I felt like I was afraid that if something happened to me, she would not understand and so that made it tough.

4.1.4. Intrusive Memories

The DSM-5 defines intrusive memories as recurrent, involuntary memories, dreams, or flashbacks of trauma. Program leaders shared examples of how service dogs help manage these episodes during waking hours, such as:

In those moments, there is that grounding of the dog... The grounding meaning, I am here now, I am not there anymore, and the dog being persistent is a big one, because in that moment, [the veteran is] gone. The pilot has left.

Another executive leader explained intrusion, while asleep, as:

So, I want that dog to be able to wake them up before that hits. So, what is the thing, before the thing, before the thing? Do they start breathing heavily? Do they start twitching? What physical or physiological cue is happening so that the dog can recognize, so that they do not go into that full-blown night-terror.

Improved intrusive symptoms were reported by 79% of participants. One veteran described how the sensation of touching their dog's fur helps "ground" their mental and physical orientation:

I would say that I still re-experience things, but my service dog is very good at reorienting me in time and space... if I do re-experience, he can help me realize where I am at for real... I am here... I am safe... and then there's other times when he's asleep... as things start to happen in my head, whatever, I can reach out to him and then, like that touch can help me to stop disassociating or whatever it is I'm doing, so he can be like a touchstone that can keep me here, and whether that's him realizing it's happening... or me realizing that it's happening and go over to him and be able to ground myself, with his fur.

One veteran shared, "I used to have things that just triggered memories, and of course there was the nightmares, but I can't remember the last time I had a nightmare." Another described how their service dog interrupts night terrors:

Yeah, they are still there, but they are not as hard as before. In the past, when I dream, it would be like, I am really there. It is like being physically there. I could smell the air, but with him, what happens is when I am in the situation, he wakes me up. He will tap me until I wake up, so it is still there, but it is shorter because he wakes me up.

Nine of the 42 veterans (21%) described less of a change in intrusion, "Slightly less present, but more towards no change... I need to get with my service dog organization and... talk to them about it." Similarly, another participant explained:

It really hasn't changed that much, but what has changed is, subconsciously, or if I do wake up [on my own] instead of being stuck in that mindset when you wake up in a cold sweat or whatever, she will come over and nudge me or if I wake up, she is right there. So,

instead of me trying to figure out what's going on, she is right there and immediately, I start petting her and talking to her. It dissipates a lot quicker.

5. Discussion

This study offers an in-depth exploration of how military veterans with PTSD experience and interpret the health impacts of psychiatric service dog partnerships. Through narrative accounts from 42 veterans and insights from organizational leaders, we found that service dogs play a pivotal role in mitigating core symptom clusters of PTSD, including changes in physical and emotional reactivity, avoidance, negative cognition and mood, and intrusive memories. These findings complement our prior quantitative analysis, adding contextual depth and highlighting variability in how service dog support is perceived and internalized.

Consistent with previous research, most participants described noticeable reductions in hyperarousal symptoms, including startle responses, irritability, and emotional volatility. Veterans frequently cited their service dogs as grounding agents that helped interrupt spiraling thought patterns, reduce emotional overwhelm, and provide tactile comfort in moments of distress. This aligns with Yarborough *et al.*, who noted similar reductions in hyperarousal symptoms such as difficulty concentrating, sleep disturbances, and exaggerated startle responses among veterans partnered with service dogs (8).

Avoidance behaviors, a hallmark of PTSD, were also markedly improved. Veterans recounted re-engaging in activities once avoided, such as visiting restaurants, attending church, or traveling to emotionally charged locations like Arlington National Cemetery. These findings suggest that service dogs may function as both motivators and facilitators of community reintegration. This aligns with prior work identifying avoidance as a primary barrier to PTSD recovery (9-11), and adds to the literature by demonstrating how service dogs can catalyze re-engagement with meaningful activities.

Cognitive and emotional shifts, including reductions in guilt, shame, and emotional numbing, were also described. While these changes were often subtle and took time to unfold, many participants noted increased self-awareness and improved emotion regulation. The dogs did not eliminate these emotions, but appeared to make them more manageable, offering veterans a way to process rather than suppress psychological experiences. These findings support the view that service dog assistance should be integrated into a broader treatment plan that may include psychological therapy and pharmacological support. This integrative

approach helps address persistent negative emotions, particularly during the emotionally intense training period.

Perhaps most striking were the narratives around intrusive memories and nightmares. Several veterans described the calming or interruptive presence of their service dogs during night terrors, with some reporting a complete cessation of nightmares. Others referenced their dog as a "touchstone" that could reorient them in time and space during dissociative episodes. While Stern *et al.* found no significant reduction in nightmares when veterans were paired with non-service canines (12), our findings suggest that task-trained psychiatric service dogs offer therapeutic benefits beyond companionship, specifically through their ability to anticipate, interrupt, or help veterans recover from intrusive episodes.

Despite these positive experiences, a minority of veterans expressed challenges. Some described limited improvements in hypervigilance or persistent avoidance despite service dog support, while others noted logistical or emotional burdens, such as difficulty concentrating due to monitoring their dog. One participant offered a reminder that service dog training itself can be emotionally taxing and that prospective recipients may require preparatory support to navigate the early adjustment phase. These insights underscore the importance of personalized care models and setting realistic expectations during onboarding.

The inclusion of organizational leader perspectives was instrumental in validating and contextualizing these themes. Leaders often described observable shifts in veteran engagement, emotional expression, and public participation, reinforcing the idea that service dogs can act as both clinical tools and catalysts for broader social recovery. The congruence between veteran and provider perspectives strengthens the credibility of our findings and highlights opportunities for refining training approaches.

Notably, these qualitative findings extend our earlier quantitative study, which demonstrated statistically and clinically meaningful improvements in PTSD, depression, and quality of life among service dog recipients. Together, the mixed-methods findings suggest that service dogs can deliver both measurable and personally meaningful benefits to veterans with PTSD. Given the ongoing national concern surrounding veteran suicides and mental health care access, expanding availability of service dog programs, particularly those with rigorous task training, should be a key focus for Veterans Affairs and related health systems.

5.1. Conclusions

This qualitative study offers compelling evidence of the therapeutic value of psychiatric service dogs in supporting veterans with PTSD. Through firsthand narratives, we observed meaningful reductions in core symptoms, including hyperarousal, negative mood, avoidance, and intrusive memories. These findings highlight the strength of the human-animal bond as a mechanism for psychological healing. Veterans consistently described their service dogs as essential to regaining autonomy, reducing isolation, and re-engaging with daily life. The results suggest that service dogs can serve as a valuable complement to traditional PTSD treatments. They also point to the importance of expanding trauma-informed interventions that include animal-assisted care. The narratives presented in this study support the need for broader policy recognition and greater investment in service dog programs as part of an integrated approach to veteran mental health care.

5.2. Limitations

This study has several limitations. The absence of perspectives from clinicians, family members, or peers may have constrained a more comprehensive view of service dog impacts. While efforts were made to ensure rigor, a larger coding team could have reduced interpretive bias. Lastly, a more diverse sample, particularly regarding co-occurring conditions like TBI and MST, might have revealed additional insights.

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Footnotes

Authors' Contribution: J. R. handled the conceptualization, methodology, software, validation, formal analysis, investigation, resources, data curation, writing of the original draft, project administration, and funding acquisition. J. M. was involved in conceptualization, methodology development, software use, validation, formal analysis, and supervision. J. G. contributed to the conceptualization, methodology, validation, formal analysis, and supervision of the study. J. B., L. M., L. E., C. E., and S. F. supported the methodology,

validation, and formal analysis. All authors read and approved the final manuscript.

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Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication. The data are not publicly available due to restrictions related to participant confidentiality and ethical considerations as outlined by the Institutional Review Board (IRB) of Johns Hopkins Bloomberg School of Public Health. Data sharing is limited to protect sensitive information and ensure compliance with ethical research guidelines.

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