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A Logic Model as the Sequence of Needs and Experience that Lead PTSD Patients to Seek a Service Dog and Concerns Related to It: A Stakeholders' Perspective

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Abstract

Health professionals are hesitant to recommend psychiatric service dogs (PSD) to veterans with post-traumatic stress disorder given that there is no scientific evidence to support their effectiveness. In recent years, new dog training schools for PSD have emerged in the community with different approaches. The objective of this study is to propose a logic model that examines how service dogs assist veterans with post-traumatic stress disorder and that shows concerns related to PSD. A participatory design through a consultation with stakeholders across Canada was realized (dog trainers=12, veterans having a PSD=2, veterans from advocate organizations=4, medical doctors=3, Canadian general standard board=1). They were interviewed in February 2015 via a phone qualitative interview. Questions were about tasks for which the dog should be trained to help the veteran, disadvantages, difficulties and concerns related to having a PSD, promotion and standardization of PSD, difficulties regarding the evaluation process, dog allocation and follow-up/abandonment of the dog. A qualitative thematic content analysis was achieved with the interview's materiel. A logic model was created to classify the theory related to diagnosis and treatment for post-traumatic stress disorder as well as the results of the consultation (n=30 themes). These included 4 dog roles (detection and intervention when the veteran is anxious, contributing to a feeling of safety, promoting a sense of relaxation, socialisation), 2 potential major undesirable events with the PSD, 9 potential effects of the PSD, 3 potential organizational impacts of the service dog and 12 co-factors affecting the accessibility and efficacy of the intervention with PSD. Some themes contradict the legal acceptance in the literature. Testimonies about the reported efficacy of PSD are enthusiastic compared to what was found in the literature. Future research is needed to validate how and when PSD's roles and task make the differences in everyday life of the veterans with PSTD.

What is Known about this Topic?

- A survey in mental health and testimonies from veterans in public media indicate reduction in psychological symptoms and medication as result of psychiatric service dogs.

- Broad definition of a service animal from Americans with Disabilities Act.

- No standardized operational definition of the roles and tasks a psychiatric service dogs for PTSD must do.

What this Paper Adds?

- A logic model as the sequence of needs and experience that lead PTSD patients to seek a psychiatric service dogs, as well as concerns related to psychiatric service dogs.

- Operational definition of roles and tasks of the psychiatric service dogs are exhaustive for health and social care professionals interacting with veterans with PTSD.

- Co-factors affecting the accessibility and the efficacy of the intervention with psychiatric service dogs can be used by policy makers.

Introduction

There has been a dramatic rise in the number of veterans and Canadian Armed Forces members who have accessed services provided by veterans Affairs Canada (VAC) for post-traumatic stress disorder (PTSD) since the mission in Afghanistan [1]. Of the 14,111 individuals diagnosed with a psychiatric condition, 70.4% were identified as having PTSD, representing a 350% increase from March 2004 to March 2011 (n=2,824 vs. 9,928). In March 2004, some 4,894 individuals received a favourable disability benefit decision for a psychiatric condition. As of March 3, 2011, the number had risen to 14,111 representing nearly a three-fold increase [1]. These statistics may be different for other countries, depending on military missions and deployments.

Although pharmacotherapy and psychotherapy are recognized as the current best practices for the treatment of PTSD [2-5], a significant proportion of people with PTSD do not seem to respond to these treatments. In this regard, a report produced by the Anxiety Disorders

Association of America [6] notes that 39% to 60% of those who received a form of cognitive-behavioural therapy still meet the criteria for PTSD 12 months after the treatment. Furthermore, there is research that suggests that some of these treatments are less effective in veteran populations than with civilians [7,8]. Veterans often have symptoms of chronic PTSD, which presents as a comorbid condition with other disorders (e.g. substance abuse, major depressive disorder, generalized anxiety disorder), as well as difficulties in the social and occupational domains [7]. Considering the limits of recognized treatments for PTSD, some began to consider that service animals (such as psychiatric service dogs) may be a way forward for improving the quality of life of persons with PTSD in addition to psychotherapy and pharmacotherapy, although this remains to be verified empirically. Yount et al. [9] and Krause-Parello et al. [10] highlight this scientific gap. Unfortunately, there is no recognized guideline recommending the specific attributes of psychiatric service dogs (PSD). There is no evidence that PSD is effective and there is no possible funding from the Canadian Armed Forces or veterans Affairs Canada before proving the efficacy of PSD. Moreover, healthcare professionals in psychology, in social care, including psychiatrists, are hesitant to recommend PSD dogs given the actual level of evidence for PSD. Most health and social care professionals do not know how PSD can really help veteran with PTSD. Sometimes, they are not aware of new dog training school for PSD in their community and how it could be helpful for any patients with PTSD or with another mental health disease. Despite lack of scientific evidence with PTSD clientele, veterans do obtain PSD and want to receive financial support the same way as other treatments. Before conducting a study on the effects of PSD, it is necessary to first identify the variables of interest to be taken into account for an eventual longitudinal research design. The **main objective** of this study is to propose a logic model that examines how service dogs assist veterans with post-traumatic stress disorder and that shows concerns related to PSD.

Actual Scientific Evidence Concerning PSD

In the Americans with Disabilities Act of 2011 [11], service animals are defined as "dogs that are individually trained to do work or perform tasks for people with disabilities. Examples of such work or tasks include […] calming a person with PTSD during an anxiety attack, or performing other duties […]. Dogs whose sole function is to provide comfort or emotional support do not qualify as service animals under Americans with Disabilities Act". Despite this broad definition of a service animal, there is no standardized operational definition of the tasks a PSD for PTSD must do.

Since this is a developing field, there is little in the literature that would suggest norms related to training requirements for PSD to manage PTSD. There is however international norms and standards related to service dogs trained for persons with physical disabilities (motor, visual and hearing impairments). Assistance Dogs International (ADI) estimates that it takes approximately 120 h over 6 months to train service dogs to support persons with physical disabilities [12]. According to ADI, it requires 1 to 2 hours of training per day over a period of 6 months or 180 to 360 h to produce a well-trained service dog [12]. A different training regimen is proposed by the Mira Foundation in order to train dogs for family and children with autism: there is no training for physical and orientation tasks. The dog is trained for tasks that consist of "detecting behaviors that are problematic" and "reacting in consequence, for example, to facilitate social interactions between the kid and his family…" [13]. More research is required to determine where the training requirements for PSD will fit in this spectrum of persons living with mental or psychological difficulties in everyday life (e.g. PTSD).

In some of the existing research, Krause-Parello et al. [10] only found 3 empirical studies from a narrative review on Military veterans and canine assistance for post-traumatic stress disorder. Unfortunately, those studies did not address the use of PSD, but companion dog and canine. The scientific literature has shown evidences of the effects of PSD only in young people with autism and their parents [13,14]. With a timeline experimental design, salivary cortisol level and perception of parental stress were measured, twice a day, before and after the introduction of PSD in the family. The stress decreases in children [13] as well as for parents [14], facilitating family dynamics (parents' adaptation to caregiving demands). In a mental health survey realised in 2008, civilians with eight different diagnoses have participated; 82% of the 45 persons who have a PSD to manage their PTSD have reported that their psychological symptoms decreased as result of the assistance and support their service animal provided [15]. Also, 39% of them reported that there medication was reduced [16]. For veteran population, after analysis of testimonies published in various public media, Taylor et al. [17] identified psychological benefits of PSD on several levels for veterans: Improvements in maladaptive emotional states, a greater ability to bond and trust, and a reduction in psychological symptoms overall. Furthermore, a study of PSD training programs by Yount et al. [9] identified similar self-reporting benefits among veterans who were diagnosed with PTSD and were using a service animal as a means of managing their condition.

Still waiting for scientific evidence, there is a need for a logic model that will inform health professionals and other stakeholders about issues and concerns related to PSD for veterans with PTSD, **specific objectives** have been formulated for the present study: to exemplify (1) disadvantages, difficulties and concerns related to having a PSD; (2) changes after receiving a service dog for the veteran and family members; (3) roles and tasks for which the dog should be trained to help the veteran; (4) promotion of PSD programs, standardization and regulations for PSD allocation and training; (5) evaluation of the relevance and needs of the veteran before being given a dog (criteria for a good fit); (6) difficulties regarding the evaluation process, dog allocation and follow-up of the dog/abandonment of the dog; and (7) suggestions for future research orientations.

Methods

Study design

A participatory research method through a consultation with stakeholders across Canada was proposed to meet such objectives [17,18]. Cook [19] shows that, in the United Kingdom at least, public and patient involvement in research is sometimes even explicitly required by funding bodies. This is exactly the case here, the Canadian Institute for Military and Veteran Health Research (CIMVHR), the funding body, called for a consultation regarding PSD with different stakeholders for two reasons: documenting community issues and gathering ideas on the type of project that is needed to produce scientific evidence. The government seems to evaluate the possibility to support financially veterans to obtain a PSD if the effectiveness of the service dog and the clinical and psychosocial effects among veterans with PTSD are demonstrated. Bergold and Thomas [18] underlined that the stakeholders diversity (e.g. funders, clients, other organizations impacted, researchers) in participatory research might be a difficulty for quality criteria. VAC gave a list of various stakeholders that were known to be implicated in the PSD field, to an independent research team. "In participatory research, all the perspectives and voices of the participants should be granted equal rights of expression, and that each group possesses qualitatively different knowledge about the social world

under study, then it is to be expected that the participants will also have different views on the quality of the research process and its results" (extracted from Bergold and Thomas, section 4.7 [18]). Ethics approval was obtained from the Research Ethics Committee of the Université Laval (SIRUL 109779).

Data collection

The data collection with stakeholders regarding issues and concerns related to PSD for veterans with PTSD consisted in qualitative interviewing [19]. For that, a telephone questionnaire was developed by the independent research team composed of two medical doctors (a psychiatrist and a physiatrist), one psychologist, the vice-president of R&D of a dog training school to provide assistance to persons who are blind and motor impaired, and three researchers with a background in psychology, occupational and physical therapy. The telephone questionnaire was developed in French and English, and included nine questions for all stakeholders and four extra questions for dog trainers. All questions covered the content of the specific objectives formulated for the consultation. For the calling method and sampling, a research professional contacted 20 people in February of 2015 from a list of stakeholders provided by veterans Affairs Canada. Since there were very few clinicians on that list, e-mails were sent to recruit 5 external psychiatrists known by the research team and potentially interested in the main research objective. One psychiatrist agreed to participate in the consultation. Interviews were audio-recorded. Verbal consent was obtained for the audio-recording to maintain confidentiality. The consultation took 15 to 30 min to complete, except for the dog trainers who had to answer the extra questions.

Analysis procedures

For the data analysis, each interview recording was transcribed. All opinions were synthetized verbatim for each question in accordance with the principles of thematic qualitative analysis [20] and listening to hear the meaning of what is said [19]. The results of the consultation were classified and categorized as was the theory related to the diagnosis and treatment for PTSD with a theory-oriented logic model [21,22]. According to that, a diagram (logic model) was created to link the theoretical connections, the population's needs, the intended services and the expected outcomes [21-23].

Results

We learned from this consultation that service dogs have been provided to veterans with PTSD in Canada since 2005, and that there is at least one training school working specifically in this area. Table 1 presents the participant profile of the 22 stakeholders interviewed. Some of them played two roles. For example, 12 were service dog trainers and four of the trainers were veterans with PTSD.

Table 1: Participant profile (n=22).

Stakeholder's experience with service dogs as	
Service dog trainers talking about their role as trainers for dog (4 are veterans with PTSD)[1]	12
Other veteran's advocates from Canadian organizations	4
Veterans with PTSD talking about their experience with their service dog (1 Veteran is also a veterans' advocate)	2
Medical doctors (2 from VAC and 1 external psychiatrist)	3
Canadian General Standards Board	1

[1]The trainers are from 12 different Canadian dog training schools (see acknowledgments section)
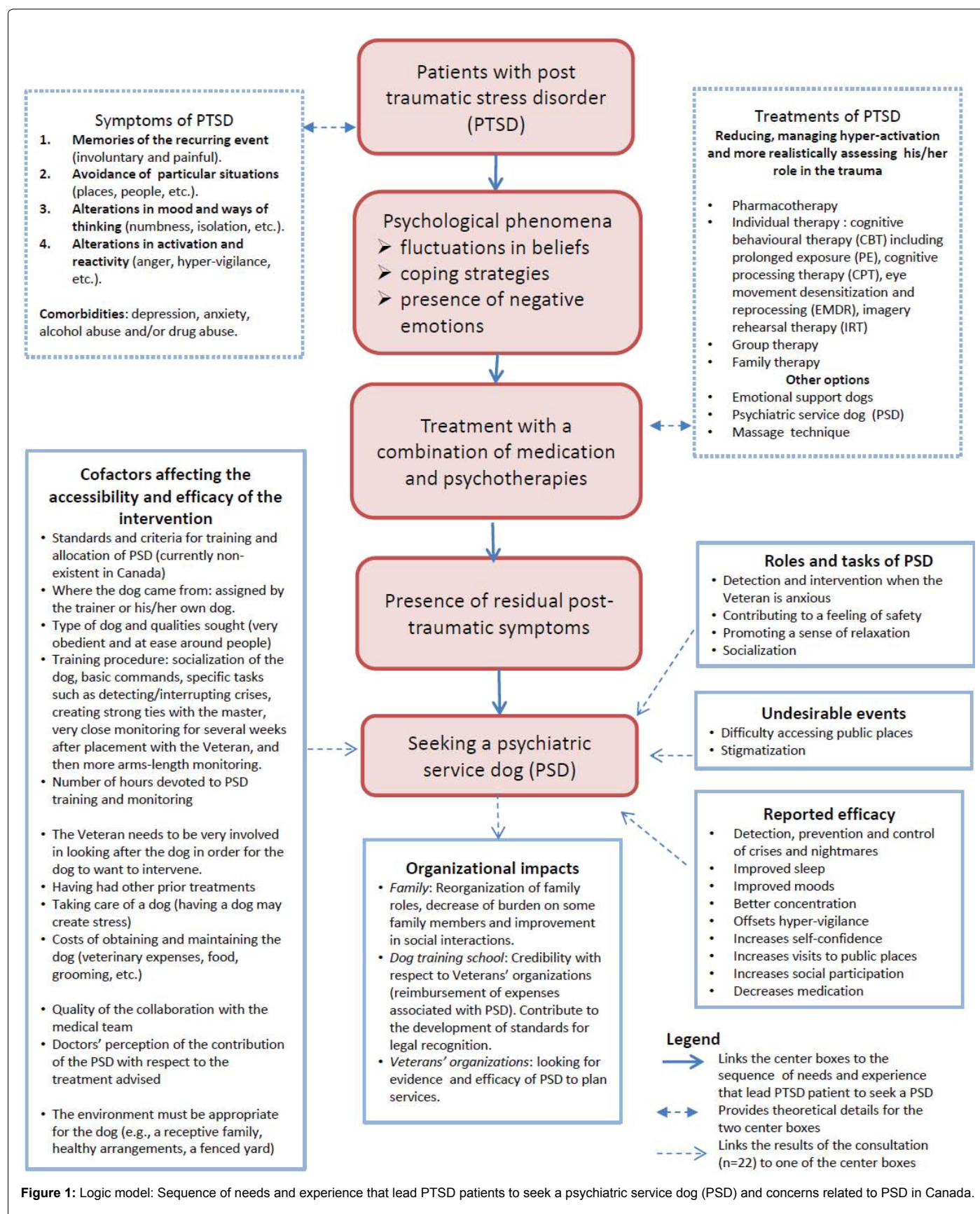
Theory-oriented logic model

Figure 1 illustrates the logic model entitled "Sequence of needs and experience that lead PTSD patients to seek a PSD," and concerns related to PSD in Canada. This sequence is central to the model. A diagram outlines this sequence using five boxes. The theoretical aspects of symptoms and treatments of PTSD are connected to this sequence with directional dotted arrows. The final box "Seeking psychiatric service dog (PSD)" links the results from the consultation as the intended services and expected outcomes, with unidirectional dotted arrows. The results are 30 themes that correspond to the issues and concerns related to PSD. They are located in five boxes entitled: "Roles and tasks of PSD", "Undesirable events", "Reported efficacy", "Organizational impacts" and "Co-factors affecting accessibility and efficacy of the intervention."

The "**sequence of needs and experience that lead PTSD patients to seek a PSD**" is central to the logic model. It demonstrates that the patient with PTSD (middle of diagram, Box 1) will experience psychological phenomena like fluctuations in beliefs, will adopt coping strategies (e.g. avoid anxiety-inducing situations) and will present negative emotions (Box 2) [24,25]. These correspond to some extent to some physical reactions, emotional reactions and helpful coping strategies proposed by the psychologist Levin [26], about responses to trauma in general. As a result, the patient will seek treatment and will typically be treated with a combination of medication and psychotherapies (as suggested in theory) (Box 3). Some patients will still have residual post traumatic symptoms after psychotherapy and medication (Box 4) and will seek a PSD (Box 5) to help them cope with their symptoms and increase their social participation and quality of life.

The "**symptoms of post-traumatic stress disorder**" are divided into four broad categories (upper left dotted box) in the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) published by the American Psychiatric Association [6]. Category #1 of symptoms includes cognitive intrusions or recurring memories of the event. These are thoughts and involuntary images related to the trauma, which occur frequently and cause great distress to the person. It can be repetitive memories, distressing dreams or physiological responses when the person finds himself or herself in a situation that reminds him/her of a part of the trauma. Category #2 of symptoms includes manifestations of avoidance. Avoidance may be behavioral (e.g. a person who refuses to drive after an accident), or cognitive (as in cases where a victim attempts to stop thinking about the traumatic event). Category #3 of symptoms is related to alterations in mood and ways of thinking (cognition). These can occur in several ways, but often present as a neutral or negative mood and a feeling of detachment of the victim from those around her or him. Category #4 of symptoms is alterations in activation and reactivity (also called hyper-arousal). This includes symptoms such as anger, difficulty concentrating, memory loss, hyper-vigilance, sleep disorders, exaggerated startle response.

Concerning the "**treatments of PTSD**" (upper right dotted box), research has provided sufficient empirical evidence to recommend medication or evidence-based psychotherapy as first-line treatment. For the person with PTSD, Richardson et al. [27] reveal a number of pharmacological treatments prescribed to treat PTSD. They point out that selective serotonin reuptake inhibitors (SSRIs) have the most empirical evidence for efficacy in treating all three PTSD symptom clusters and are usually considered as first-line treatment for PTSD. SSRIs are also effective agents for the treatment of co-morbid mood and anxiety disorders commonly associated with PTSD. Both paroxetine and sertraline have received FDA approval for the treatment of PTSD in the United States. In Canada, only paroxetine has received

Figure 1: Logic model: Sequence of needs and experience that lead PTSD patients to seek a psychiatric service dog (PSD) and concerns related to PSD in Canada.

Health Canada approval for the treatment of PTSD. Regarding psychological treatments, Belleville outlines a number of evidence based psychotherapy modalities for people with PTSD including cognitive behavioural therapy (CBT), prolonged exposure therapy (PE), cognitive processing therapy (CPT), eye movement desensitization and reprocessing (EMDR) therapy, imagery rehearsal therapy (IRT), group therapy and family therapy [26]. In clinical practice, despite limited empirical evidence, most veterans with PTSD receive psychotherapy in combination with pharmacotherapy either concurrently or sequentially (one modality after another) [8,27-30].

Other treatment options for PTSD not yet documented for their effectiveness are also reported in the logic model such as emotional dogs, PSD and massage techniques. Fine [31] reports that PSD were introduced and are now involved more extensively to help address the emotional and mental health needs of veterans. Tasks (or roles) performed by the PSD involve providing psychological and emotional support, lending assistance in medical crises, providing security, engaging cognitive behaviour skills and prompting strategies for self-regulation [15,28-32]. To distinguish a PSD from an emotional support animal, which does not receive specialized training, Tedeschi et al. [33] emphasize that PSD do not simply help their human companions cope or provide them with support, but fulfil a specific series of functions that contribute to the management of mental health. Further to this, Vredenburgh and Zackowitz [34] argue that unlike emotional support dogs, PSD are legally recognized and given special rights to accompany their human companion in places that would normally not allow access to "pets" in order to provide assistance and care. There have been few studies on this topic to confirm or refute such assertions, and it is clear that more studies with sound experimental designs are required to evaluate the clinical effects of PSD on PTSD. In a research study published, following a combination of interventions, significant improvement in life was reported among 43 veterans with PTSD after returning from Afghanistan [32]. Their treatment consisted of guided meditative, contemplative and relaxation exercises and instruction in simple massage techniques to promote stress reduction and interpersonal connectedness (CD and DVD formats). In a randomized control trial conducted by the same authors in 2016, 120 veterans presented significant improvements in many symptoms at 8 and 16 weeks [33]. The treatment consisted of a web-based and mobile app video and audio instruction of a set of mindfulness-related stress reduction and contemplative practices, as well as partner massage for reciprocal use.

Participants in the consultation reported "**roles and tasks of PSD**" that are helpful for veterans with PTSD in four major ways: (1) Detection and intervention when the veteran is anxious. For example, the dog could detect lowered shoulders and bodily substances (e.g. perspiration) and interrupt anxiety attacks, flashbacks and night terrors (by waking up the veteran); (2) Contributing to a feeling of safety. For example, the dog could monitor the environment (watching the veteran's back so that no one can take him or her by surprise). The dog could also stand in front of the veteran to create a sort of security bubble, or it could go to check out a new location and return to position himself close to the veteran; (3) Relaxation. For example, the dog could calm the veteran by climbing on top of him, so that the veteran could try and synchronize his or her breathing with that of the dog. The dog could be stroked, which has a calming effect on the veteran who focuses on something else. The dog could also be a reassuring presence during sleep; (4) Socialization. For example, the dog could walk with the veteran as a companion in public and commercial places, making the veteran less isolated and more comfortable speaking with people. This excerpt illustrates three tasks or roles a PSD can do:

"…the veteran having a dissociative episode, so the dog will lick or tap on the veteran's hand which helps to bring him back to reality."

"…spatial increase, if they are in a crowded situation, the dog can do a circle around the veteran to increase the space he has between himself and other people."

"…we have been told that a lot of time the night terror does not progress because the dog climbs on the bed and pushes against them providing the pressure therapy and they are able to reach out and stroke the dog and calm themselves down. I mean by pressure therapy, the ability of the dog to lean up against the veteran or to provide pressure against the veteran…very useful to reduce stress."

There are two major "**undesirable events**" that can occur with the service dog: (1) Difficulty accessing public places with a PSD. For example, veterans need to learn how to react when they are approached by strangers and store managers on the subject of the presence of the dog. They must learn responses to cut conversations short; they may also show their trainer's accreditation and refer to the dog's accreditation register; (2) Stigmatization. For example, having an accredited service dog could identify the person as someone with a health problem.

Others may be too curious, pose disturbing questions and create stigmatization. This excerpt illustrates these two events:

"We are talking about people with temper issue, we cannot ask them to argue with people (for accessibility)…no no no. You go out and you call me (dog trainer). I will deal with it."

"The service dog identifies that they have a problem. People can ask them why they have a dog, then it is hard for them to say that "I have PTSD." Because it is an invisible problem, it can be a shame factor at the beginning but with the training process it becomes less and less."

"**Reported efficacy**" consisted of nine positive effects of service dogs on symptoms of PTSD. Participants told us how PSD changes the life of veterans with PTSD. For them, the positive changes are synonymous with the efficacy of service dogs. This includes detection, prevention and control of crises, reduction of nightmares, improved sleep, improved mood, better concentration, reduced hyper-vigilance, increased self-confidence, increased visits to public places, increased social participation, and decreased dependence on medication. Two excerpts are eloquent about the positive effects of PSD:

"The biggest two impacts we noticed is sleep issues and getting out of the house…they improved dramatically within days (they feel safer and they have to walk their dog)."

"It gives them a chance to talk to people having a dog in between… For the first time they can have a conversation because it is based on the dog not on them."

Living with a service dog implies potential "**organizational impacts**" on family, dog training schools and veteran organizations. Examples are presented in Figure 1. In the logic model, the dotted arrow starts from the PSD to indicate that organizational impacts are consequences of the PSD. These excerpts illustrate two impacts:

"Once we have standards we can fit this in laws for public access."

"We interview also the family because having a PTSD impacts on everybody."

The stakeholders reported 12 "**cofactors**" affecting the accessibility and the efficacy of the intervention with PSD presented in Figure 1. Listed top to bottom (lower left box) are concerns regarding the law,

the dog itself, dog training schools, the veteran, the clinicians and the environment. Two excerpts illustrate the problem with the training procedure and the capacity to manage new responsibilities associated with taking care of a dog.

"I have tried to train dogs with a difficult past and it is not a good idea to give an anxious dog to an anxious person. I want very mentally sturdy dogs…"

"They must be aware that it is a 24/7 responsibility!"

Discussion

The main objective of the consultation was to develop a better understanding of how PSD could suit the issues patients with PTSD encounter and to explore concerns related to PSD. Our logic model proposed in Figure 1 offers a great overview of these issues and concerns as well as the consequences of PSD. The vocabulary, the schematics and content are suitable for health and social care practitioners in community as well as for policy makers. The results concerning the role and tasks of PSD are close and more contextual to what was found in the literature [15,28-31]. In the logic model, the roles and tasks are formulated in such a way that we can objectively observe the dog interacting with the veteran (e.g. detection and intervention when the veteran is anxious); in the literature, the roles are presented as psychosocial strategies without a link between the veteran and the PSD (e.g. engaging cognitive behaviour skills and prompting strategies for self-regulation). The cofactor "Standardization of criteria for training and allocation of dogs - currently non-existent in Canada" and the undesirable event "difficulty accessing public places" contradict the legal acceptance mentioned by Vredenburgh and Zackowitz [31] considering the special rights PSD are given to accompany their human companions. This is perhaps particular to Canada, since the development of a national standard of Canada for service dogs is just beginning with the Canadian General Standards Board [34]. Since all the cofactors and undesirable events outlined in the logic model were not addressed in the scientific literature, these are new co-variables that should be considered in future research on PSD. Testimonies regarding positive potential effects of the PSD in our study are enthusiastic compared to what was found in the literature (efficacy is not proven), but we still need a more rigorous experimental research design to confirm the efficacy of PSD. In addition, we still need to distinguish the effect of a service dog (which is more expensive) in comparison with an "emotional dog" or "a companion dog" even a simple pet. Regarding the reported effects of PSD, those results are congruent with other responses received from stakeholders for the following question: "In your own words, state two specific objectives that could be incorporated into a research project about service dogs for veterans with post-traumatic stress disorder" [question #9]. We identified seven specific objectives that represent stakeholders' "top of mind" priorities in relation to the demonstration of significant PSD effects. For example, is the dog effective: -to reduce nightmares and to improve sleep? To decrease post traumatic symptoms such as cognitive intrusions, avoidance, alteration in mood, intrusive thoughts, and hyperarousal? -to decrease depressive symptoms and medication usage of anxiolytic and hypnotic drugs? -to improve quality of life? -to improve social integration in the community? -to improve comfort in public and commercial places? -to decrease the caregiver burden, dependency on a family member or other caregiver?

Strengths and Limits of the Study

For financial, geographical and confidential considerations, the choice of data collection method was strategic (one telephonic consultation with a predetermined list of stakeholders). There were no selection criteria for the population being studied: the researchers used the list of stakeholders provided by VAC. The data obtained are wholly based on the perception of the participants (30 inductive themes), as they may not be totally disinterested in their responses.

Since there was great divergence in the transcripts for each answer, since there was a huge diversity in stakeholder's titles, even with a predetermined list of participants, this is valuable for the content validity of the study [35] in that results may be representative of the different opinions among veterans. Future research is needed to validate how and when PSD's roles and task make the differences in everyday life of the veterans with PSTD.

Conclusion

The results of this consultation offer a theory-oriented logic model illustrating the sequence of needs and experience that lead PTSD patients to seek a PSD and concerns related to PSD in Canada. It also includes symptoms and treatments of PTSD as theoretical aspects, and intended services and expected outcomes linked to the PSD as emergent results [36-38]. From the stakeholders' perspective, there are four roles and tasks of PSD (detection and intervention when the veteran is anxious, contributing to a feeling of safety, a sense of relaxation and socialisation), two major undesirable events that can occur with the service dog (public access and stigmatization), nine potential effects of the PSD, three potential organizational impacts of the service dog and 12 co-factors affecting accessibility and efficacy of the intervention with PSD. The results of this consultation also provide a solid rationale for an innovative study to assess effects, over time, of a PSD on PTSD-related symptoms, daily/social functioning and quality of life of veterans.

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