LENDING A HELPING PAW FOR AUSTRALIANS WITH POST-TRAUMATIC STRESS DISORDER

A Thesis submitted by

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BSc (Hons), BAppSc (Animal Science)

For the award of

Doctor of Philosophy

2023

ABSTRACT

An expanding field of inquiry is the use of specially trained psychiatric assistance dogs (PADs) to assist in mitigating an individual's challenges with Post-Traumatic Stress Disorder (PTSD). The purpose of this research is to explore the feasibility of PADs as a complementary intervention to traditional PTSD treatment approaches for Australian adults. First, a mixed-method systematic review was conducted to identify the roles of PADs in assisting recovery and examine the facilitators and barriers of the use of PADs in achieving therapeutic outcomes for defence and first responders living with PTSD. A convergent data-base framework was employed and the results from 40 studies were contextualised through the lens of a broad recovery model. Findings from the review, identified PADs play a unique, multi-facilitative role in supporting PTSD-related challenges in five clinical and nonclinical recovery dimensions (clinical, social, existential, physical, and functional domains), as well as recognising challenges of the provision of a PAD for PTSD. The second study explored the experiences of Australian adults with PTSD integrating their PADs into current PTSD practices. The data extracted from a single qualitative question in an online survey from 104 participants was conceptualised through a reflexive thematic analysis. The findings illustrated the inclusion of PADs into concurrent treatment was attributed to goal-oriented progress, improved clinician-patient alliance, and engagement. Exclusion of PADs from professional practice was found to have had a negative influence on participants' therapeutic experiences, creating clinician-patient barriers, disengagement, and for some, termination of treatment. The third study sought to understand factors influencing the acquisition of PAD and the type of PAD training model completed. Of the 88 Australian respondents, 90% of participants self-trained a dog to become an accredited PAD and defence and first responders are four times more likely to acquire a pre-trained than the Australian general population. Findings revealed several inhibitive aspects of the acquisition, eligibility, availability, and accessibility of receiving and training a PAD. Implications of this research identified PADs can be positively augmented in concurrent PTSD treatments for best practice outcomes and this thesis contributed to a better understanding of the enabling and inhibiting aspects that Australians with PTSD face when seeking to use a PAD for their invisible injury.

CERTIFICATION OF THESIS

I, Karina Heyworth declare that the Thesis entitled *Lending a Helping Paw for Australians with Posttraumatic Stress Disorder* is not more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. The thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Date: 14th August 2023

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Student and supervisors' signatures of endorsement are held at the University.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my supervisors, Dr Carla Jeffries, and Associate Professor Gavin Beccaria for generously investing your time and knowledge into this project. I am profoundly grateful for your guidance, insightful and honest feedback, and endless encouragement, which has been invaluable throughout this journey. I feel extremely fortunate to have you both as my supervisors.

I would like to extend my sincere thanks to my family, in particular my wonderful husband Clinton – my rock. Thank you for all your unwavering support for my studies, which has absorbed much of my time and energy over the past few years. To my beautiful children, Will and Izzie, your belief in me provided the morale booster I needed to complete this thesis. I truly hope I have inspired you to believe in yourselves and follow your dreams. I am so proud of you both.

To my parents and close friends, thank you for believing in me and providing endless positive affirmations- encouraging me to be all I can be. Finally, my golden retriever Baloo, my loyal companion, who has literally been by my side throughout this entire academic journey, providing a paw when I needed emotional support and ensuring I have a study-life balance, through gentle nudges that act as reminders to take little breaks to scratch his belly.

This research has been supported by the Australian Government Research Training Program Scholarship.

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ABBREVIATIONS

ABS Australian Bureau of Statistics

AHRC Australian Human Rights Commission

APA American Psychiatric Association

CAM Complementary and Alternative Medicine

DVA Department of Veterans Affairs

GHDA Guide, Hearing and Assistance Dogs

MMSR Mixed-Method Systematic Literature Review

NDIS National Disability Insurance Scheme

NDIA National Disability Insurance Agency

PADs Psychiatric Assistance Dogs

PRISMA Preferred reporting items for systematic reviews

PTSD Post-traumatic Stress Disorder

SAMHSA Substance Abuse and Mental Health Services Administration

CHAPTER ONE: INTRODUCTION

I love a sunburnt country,
A land of sweeping plains,
Of ragged mountain ranges,
Of droughts and flooding rains.
I love her far horizons,
I love her jewel-sea,
Her beauty and her terror –
The wide brown land for me!
Dorothea Mackellar (1908).

One of Australia's evocative and patriotic poems "My Country" by Dorothea Mckellar, cited above, personifies a nation's stoic connection to the land and all its contrasts. This poem is as relevant today as it was back in the early 1900s, as Australia is prone to volatile extremes and paradoxes of flood and fire are part of our Australian culture. It is particularly poignant right now, with the 2019/2020 catastrophic *Black Summer* bushfires igniting the Australian landscape, resulting in 33 lives lost, over 3000 homes destroyed, and over 20 million hectares of community, farming and national parks being burnt (Heffernan et al., 2022; Lawrence et al., 2021). This was further compounded by the ongoing impact of the COVID-related pandemic issues, including enforced lockdowns with lengthy isolation periods, elevated levels of negative emotions, and employment and economical disadvantage (Rossell et al., 2021). Alongside, annual widespread flooding events, saw over 18,000 people evacuated from their homes in 2021, some of whom were already impacted by bushfires (Black Dog Institute, 2021). In the wake of these recent natural disasters and the pandemic, it is vitally important that the mental wellbeing of Australians is the focus of healthcare providers and a priority research area.

It is widely recognised that the aftermath of natural disasters has a significant impact on ongoing mental health issues. The increased risk of psychological distress, depression, anxiety, and PTSD is heightened in flood-affected, and bushfire-affected communities (Fernandez et al., 2015; Heffernan et al., 2022; Zhang et al., 2022). This climate has been reported to trigger or exacerbate PTSD, where

one-in-five Australians directly exposed to the Black Summer bushfires, met the clinical cut-off for PTSD diagnosis, and the number of men reported to experience PTSD, was double the national population rates of PTSD (Heffernan et al., 2022). Research also reported that of the 82,480 personnel (i.e., local, interstate, and overseas fire services [volunteers and employed] and emergency personnel, parks and wildlife services, police, and other relevant organisations), that responded to the Black Summer bushfires 5.1% of employed first responders and 4.5% of volunteers were found to have probable PTSD, as well as higher psychological distress and/or suicidal ideation (Lawerance et al., 2021). These findings are alarming and likely to exceed the already disproportionate prevalence rates of PTSD for Australian first responders

However, despite robust evidence for the effectiveness of traditional trauma-based treatment approaches, not all individuals respond to these treatments, while others struggle to engage and/or dropout from conventional PTSD treatments. Accordingly, there is a pressing demand to evaluate adjunct and integrative approaches to traditional PTSD interventions to improve mental health and wellbeing outcomes for Australians, including first responders (i.e., police, fire and emergency services, and paramedics) living with this injury.

This program of research examines the feasibility of psychiatric assistance dogs (PADs) as a complementary intervention to support individuals experiencing difficulties engaging in or benefiting from conventional evidence-based PTSD treatment practices. The purpose of this introductory chapter is to provide a brief overview of the prevalence of PTSD and provide a rationale behind three pertinent areas of inquiry aimed at addressing the overarching objective. It will also describe the influence of my own background forging the narrative lens of this research and conclude with the overall research objectives and thesis structure. The subsequent chapters will delve deeper into these areas of inquiry, through a narrative review (Chapter Two) and a comprehensive mixed-method systematic review (Chapter Three).

1.1. Post-traumatic stress disorder

Post-traumatic stress disorder (PTSD) is defined as a pervasive trauma-and-stressor-related disorder (American Psychiatric Association [APA], 2020), estimated to effect 5.7% of the Australian population (Australian Bureau of Statistics [ABS], 2022) with higher prevalence rates amongst former Australian first responders (29%,

Beyond Blue, 2018) and defence personnel transitioned from full-time service (17.7% 12-month prevalence, Van Hooff et al., 2018). Healthcare professionals currently address PTSD through several differing treatment modalities, including pharmacological interventions, behavioural approaches, and trauma-focused therapeutic methods. Yet historically, the delivery of trauma-based interventions has been met with numerous challenges, including high nonresponse rates and treatment dropout (Schottenbauer et al., 2008), treatment disengagement, and clinician-related barriers (Forbes et al., 2019). To address these treatment barriers, a growing number of individuals with PTSD are incorporating a variety of complementary and alternative medicine approaches (CAM) to support symptomology severity and daily functioning challenges (Wynn, 2015). One emerging intervention, increasingly popular for individuals with PTSD, is the partnership with a highly trained psychiatric assistance dog (PAD).

1.2. Psychiatric assistance dogs

Psychiatric assistance dogs are a form of assistance dog (also termed PTSD service dogs internationally), that are specifically trained to perform tasks tailored to the psychiatric needs of their handler to mitigate their PTSD challenges (Assistance Dogs International, 2023), thereby protected under public access legislation to accompany their handler within the public domain in accordance with the *Disability Discrimination Act 1992* (Cth). Prominent assistive tasks PADs perform include detecting somatisation cues of their handler and alerting them to and interrupting anxiety, flashbacks, periods of disassociation, and waking individuals from nightmares. Psychiatric assistance dogs are trained to apply tactile pressure to provide calm and comfort during heightened distress, as well as positional cues (i.e., standing behind the handler to watch their back or positioning themselves to create personal space around the handler) which are thought to provide a sense of safety when out in the public domain and reduce vigilance (Rodriguez et al., 2020). In addition to these trained tasks, the innate (untrained) characteristics of the dog interacting with their handler are also important for helping PTSD symptoms, by providing companionship and a source of reciprocal love and non-judgemental support (Rodriguez et al., 2020).

This novel intervention has gained significant scholarly attention in recent years, advocating PADs as a promising complementary intervention for defence personnel with PTSD. Recent empirical studies identified the provision of a PAD

fostered clinically significant changes in PTSD symptom severity, and meaningful improvements in depression, anxiety, psychosocial aspects, and quality of life parameters (e.g., Bergen-Cico et al., 2018; Kloep et al., 2017, Krause-Parello & Morales, 2018; O'Haire & Rodriguez et al., 2018; Yarborough et al., 2017).

1.2.1. Current evidence of PADs

Despite scholarly growth, the evidence surrounding the efficacy and roles of PADs in supporting individuals with PTSD could be described as a psychiatric assistance 'dog's breakfast.' Preliminary studies have presented an extensive list of multi-facilitative roles of PADs in addressing PTSD challenges in a variety of contexts and conditions, making it difficult to have a clear and holistic understanding of this novel intervention. This is complicated further when the sole review examining PADs for PTSD found empirical studies are incomparable due to heterogenous methodologies and results, and disparity of outcomes measures, making it difficult to draw definitive conclusions regarding PADs as an intervention for PTSD (van Houtert et al., 2018). Yet, this finding is not surprising, as methodology challenges are notorious in the study of Human-Animal Interactions (HAI) examining health and welfare (Rodriguez, Guérin et al., 2018). Indeed, evidence of the efficacy of PADs needs to be established through rigours experimental studies, yet, when undertaking a review of the literature, experiences of individuals utilising a PAD will provide a complete and comprehensive understanding of the complexity of the PAD intervention for PTSD. Accordingly, adapting the review typology to synthesise efficacy outcomes alongside interpretive experiences is warranted. Subsequently, this thesis employed a mixed-methods systematic review typology to assist in achieving a comprehensive understanding of the PAD intervention and utilised a broad recovery model (Whitley & Drake, 2010) to holistically map the PADs' role in multidimensional life domains.

1.2.2. Integration of PAD into professional settings

Empirical evidence commonly refers to PADs as a plausible complementary intervention to traditional PTSD treatments. According to Wynn (2015), complementary practices refer to those that augment traditional interventions, yet are unlikely to be a standalone treatment. Indeed, evidence identified that the PAD alongside 'usual' PTSD treatment provided clinically significant reductions in PTSD severity, reduced depression and improvements in psychosocial functioning and quality of life aspects compared to those without a PAD (O'Haire & Rodriguez,

2018). Inferences of the term ‘complementary’ could also insinuate that the PAD and ongoing treatment efforts work synergistically both within and outside of the professional context for best practice outcomes. However, this notion may allude to PADs role moving beyond that of an assistive aid to alleviate symptoms of PTSD, to also playing a role in augmenting therapeutic outcomes in a professional context.

There is limited understanding of whether and how PADs are integrated into their handlers' usual PTSD treatment plans and processes. For instance, a sole case study denoted that the PAD was not actively integrated into therapeutic sessions nor included in goal-directed plans and processes (Glintborg & Hansen, 2017). This finding raises questions as to whether all PADs are integrated into their handlers' ongoing PTSD treatment efforts and the potential roles PADs play within therapeutic plans and process context. The provision of a PAD in supporting individuals with PTSD will continue to increase in popularity, therefore, a focused effort on advancing our understanding of integrating PADs into PTSD treatment practices in the professional context is important for holistic person-centred support.

1.2.3. Accessing PADs to support PTSD

For PADs to be considered a feasible complementary intervention to traditional PTSD treatments, they must be accessible for people with PTSD wishing to use this novel intervention. The challenge in Australia is that the demand for PADs outweighs the supply of trained PADs for people with PTSD.

Assistance Dog International (ADI) is a world-wide confederate of accredited, non-profit organisations that train and place assistance dogs (guide, hearing, and service dogs [including PADs]). In 2022, there were eight ADI-accredited assistance dog organisations in Australia, yet only two of those provided services specifically for Australians with PTSD with a trained PAD. An additional 23 Australian non-for-profit assistance dog trainers and training organisations are approved under the *Guide, Hearing and Assistance Dog Act, 2009* (Qld), however upon closer inspection, less than one-third of these approved organisations provide services for PAD for PTSD.

Despite thesmall number of PAD organisations, the true number of PAD-handler teams is likely to be considerably greater, as there appears to be an extensive number of non-ADI accredited or non-GHAD approved organisations and trainers/assessors across Australia offering various avenues to obtain a PAD and PAD training models. This rationale reflects findings from a study examining ADI-accredited and non-ADI accredited U.S and Canadian assistance dog facilities,

identifying that psychiatric dogs account for the majority of placements from non-ADI accredited organisations that often acquire dogs from shelters or work with an owner to train their companion dog (Walther et al., 2017). It is also plausible that some PAD handlers self-trained their dogs, without the support of an organisation/provider. In Australia there is no national register of the total number of PAD training organisations nor the number of PAD-handler placements, accordingly, it is difficult to establish the prevalence of PAD-handler teams in Australia and the type of training model undertaken.

Furthermore, due to the high level of training involved in developing a fully trained PAD, training a PAD is costly (AUD$40,000-60,000, Assistance Dogs Australia, 2022). Whilst the costs associated with a PAD can be subsidised for some eligible Australians through the Department of Veteran Affairs (DVA) PAD programs, National Disability Insurance Scheme (NDIS), or other non-for-profit organisations, acquiring a PAD and conducting training may be an out of pocket expense for others. Eligibility restrictions are also enforced regarding the availability of trained PADs to only specific subpopulations (first responders and defence personnel with PTSD). Additionally, due to the high demand, PAD organisations have temporarily ceased to accept applications for a trained PAD in an attempt to reduce lengthy waiting times. Other non-for-profit organisations providing self-training support have also felt the pressure of this demand and restricted applications to certain times of the year (MindDog, 2018). With these restrictions in place, it is unknown whether these barriers impact the ability of Australians with PTSD to access support from PADs. To address this, this thesis aims to explore decision-making factors surrounding how individuals acquired a PAD and the type of training program undertaken, for a better understanding of facilitators and barriers that Australians face when seeking to use a PAD to support PTSD challenges.

Finally, the majority of literature surrounding PADs is based on Defence veterans populations from an international context. We argue that there are similarities in defence and first responder vocational culture to be able to draw directly from defence veterans' experiences and quantitative studies for the benefit of first responders, in addition to opening up our exploration by examining experiences from non-defence populations with PTSD using a PAD in an Australian context.

1.3. Reflexivity

It is important to establish how I position myself in relation to this thesis early, as my background narrative was the driving force behind pursuing this program of research and steered the topic areas examined and justification for methodology approaches outlined in Chapter Two. The amalgamation of my academic background (degrees in companion animal and psychological sciences), a professional career (veterinary animal health industry and outpatients clerk), and the professions of my immediate family (first responders and defence personnel), were the pertinent motivations for me to study this field.

Exploring the unique handler-PAD partnership, initially stemmed from observing the special relationship between defence clientele and their PADs during consultations at the veterinary hospital. Listening to clientele share their stories of how their PADs support their invisible injury but also the adversities they faced, framed my desire to obtain a deeper understanding of this unique intervention. I also shared the heartache with my clients of heavy decisions surrounding hardship and cost restraints of providing emergency care for their pets and the grief of losing a four-legged family member. Yet, these experiences allow me to have a deeper understanding of how these aspects of pet ownership can negatively impact mental health and well-being and are relevant to my current studies, an awareness of the feasibility of acquiring and ongoing maintenance costs of a PAD.

In regard to the populations of interest in this research, originally my thesis was primarily focused on defence veterans, however after the devastating bushfires of 2018-2019 and the beginning of the COVID pandemic and the impact on the lives of many Australians, I needed to broaden my populations of interest. Furthermore, the vocational roles of my immediate family include fire and rescue, police and armed forces, and emergency and medical services, who were on the frontline when the bushfires lit the landscape and during the COVID-19 pandemic. I have witnessed first-hand the toll that their vocational roles have on their mental well-being and the tribulations of seeking and receiving, or lack of, support during their working careers and post-employment. This was the driving force for me to raise my voice in highlighting topical matters first responders and other Australians with PTSD face when seeking treatment and steered the focus to exploring novel-interventions that are easily accessible to support these challenges.

Overall, the amalgamation of my academic, professional, and lived experiences forged the framework of this thesis, conceptualised areas to address and formed the lens of my interpretations throughout the analysis. What this means for this program of research is my position comes from a pragmatic approach, where my beliefs emanate from actions, situations, and consequences (Creswell, 2009). I am focused on understanding and addressing the research problem at hand and am not committed to any one philosophy and/or reality, instead, I prefer to be inclusive to various paradigms and assumptions, as well as methods, data collection and analysis (Morgan, 2007). In other words, I use pluralistic approaches to best meet and understand the purposes of addressing the research objective/problem. In this study, I am investigating a novel complementary intervention to seek clarity on what PADs' roles are and how they support PTSD symptoms and functioning in a variety of life domains. I explore whether and how PADs are integrated into professional therapeutic contexts with the aim of providing help and support for those individuals with PTSD who have difficulties engaging or are not responsive to conventional therapies. I also examine whether PADs are feasible and easily accessible for all Australians with PTSD wishing to use this novel intervention, as to date, there is a dearth of research examining non-defence populations and numerous challenges navigating an unregulated field with little understanding of how Australians with PTSD acquire a PAD, the type of training program they completed and the facilitating and inhibiting factors behind those choices.

1.4. Research objectives

Congruent with the forementioned pertinent areas of inquiry and consistent with my pragmatic paradigm, a mixed method approach was the most appropriate design to address the overarching aim of this program of research of investigating whether PADs are a feasible complementary intervention to traditional evidence-based treatments for Australian adults with PTSD. To explore this aim, three research objectives were outlined:

Research objective 1: Conduct a comprehensive mixed-method systematic assessment of the current state of evidence-based research that pertains to (1) identifying the roles of PADs in assisting recovery and (2) the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in first responders and defence personnel with PTSD..

Research objective 2: Explore Australian adults' experiences of incorporating their PADs into their ongoing PTSD treatment practices and examine the type of PTSD treatments they have used in the past and currently utilising alongside their PADs.

Research objective 3: Explore underlying factors that influence how Australians with PTSD acquire a PAD and the type of PAD training modality undertaken.

This program of research will contribute to (1) a clearer and comprehensive understanding of the role of PADs and the appropriateness of PADs to support handlers' PTSD challenges,(2) the potential impacts of PAD integrated into the professional therapeutic context, for best practice models and person-centred care, and (3) inform decision-makers of healthcare planning and policy of the enabling and inhibiting aspects that Australians with PTSD face when seeking to use a PAD for their invisible injury.

1.5. Thesis structure

This introductory chapter provided an overview of the rationale for this thesis, my background experience forging the lens of areas examined and the broad aim and research objectives. In Chapter two, a narrative review begins by discussing the historical origin of the inclusion of animals into psychiatric treatments. This is followed by delving deeper into the challenges of traditional PTSD treatment approaches. The evolution of assistance dogs in the context of veterans with PTSD and the prevalence of PADs including challenges surrounding the use of PADs in the Australian context is discussed. A brief synthesis of past research into the efficacy of PADs and a justification of the need for an updated systematic review of the literature is provided. The methodological approach for addressing the overall aim and research objectives is also presented. Accordingly, Chapter three conducts the first comprehensive systematic assessment of the current state of evidence pertaining to identifying the roles PADs play and the facilitators and barriers of the use of PADs for PTSD, through the lens of a recovery model (Whitely & Drake, 2010). Chapter four explores Australians' experiences of integrating their PADs into current PTSD treatment and investigates PTSD treatment trends by examining the type of treatments participants used prior to PAD and current treatments used alongside PADs. In doing so, this chapter addresses the second objective of this program of research. Chapter five addresses the third research objective by

examining how Australians with PTSD acquire their PADs, the type of training modality undertaken and explores factors that influence this choice. Finally, Chapter Six presents a collective discussion of the main findings and the theoretical, practical and policy implications of this program of research. Notably, Chapters Three, Four and Five are three modified manuscripts currently being prepared for journal submission, therefore thesis structure is similarly formatted to a thesis by publication, but an adapted version to support a traditional thesis.

CHAPTER TWO: LITERATURE REVIEW

"The fidelity of a dog is a precious gift demanding no less binding moral responsibilities than the friendship of a human being."
(Konrad Lorenz, n.d)

The connotations of 'man's best friend' have stood the test of time, from the origins of European hunter-gathers domesticating wolves dating over 18,000 to 32,000 years ago (Thalmann et al., 2013) to the present day where our unique kinship with dogs enriches our lives and dogs are considered part of the family. In a more formal capacity, dogs can be incorporated into therapeutic contexts or play an instrumental role in providing personalised assistance to individuals with disabilities. More recently, the placement of highly trained dogs with individuals with PTSD is gaining significant scholarly attention, with literature advocating psychiatric assistance dogs as a promising novel-intervention for people with PTSD.

In this chapter, we begin by presenting a history of the pioneers of animal-assisted interventions. Followed by an outline of PTSD and current evidence-based treatments, then a discussion of the barriers surrounding the delivery and success of evidence-based PTSD treatments, providing the overarching rationale of this thesis. Next, a historical perspective on the role of assistance dogs for veterans is provided, followed by detailing the current worldwide and national prevalence of handler-assistance dog teams and organisations, and various channels to acquire suitable dogs and training models. We then unpack national legislation, and challenges surrounding navigating an unregulated industry, identifying potential inhibitory issues surrounding the accessibility of PADs for the Australian populations with PTSD. Followed by highlighting concerns about whether assistance dogs are integrated into the professional context. Finally, the current evidence of the efficacy of psychiatric assistance dogs for PTSD is outlined, justifying the need for a comprehensive systematic review.

2.1. History of animal-assisted intervention for trauma

Prior to the specialised working dog role as assistance dogs, dogs and animals in general have also been instrumental as a psychotherapeutic aid, dating back to the 17th century, pioneering what we know call animal-assisted interventions.

The first instance of animals being employed to support mental health sufferers was during the 17th century in York, England. This was a period of time when people experiencing mental health issues were disregarded and isolated from the community and placed in lunatic asylum institutions, where they were often poorly neglected and physically and emotionally abused. In 1791, an incident occurred at the York asylum, which saw a young Quaker woman die unexpectedly and circumstances surrounding her death were suspicious. This young female was a member of the Society of Friends and after her death, the society questioned the treatment of 'insane' persons. Following this incident, William Tuke pioneered a more humane and gentler approach to caring for people with mental disorders through moral treatment, and with his associates at the Society of Friends, founded the 'York Retreat' in 1792, and opened in 1796 (Hooker, 2002; Kibria & Metcalfe, 2016; Tuke, 1814). The therapeutic environment provided enriching activities including gardening, exercise, and the presence of animals in treatment programs (Hooker, 2002; Tuke, 1814). Patients were able to interact and care for small animals (dogs inclusive) with the belief that "patients may learn to control their behaviour if they bonded with the weaker creatures, and then developed an understanding that the weaker creatures were dependent on their impulse control" (Mardon et al., 2021, p.29). The patients' pleasurable interactions with these animals were described as having the capacity to: "awaken the social and benevolent feelings" (Tuke, 1814, p.96).

During the 19th century, the inclusion of dogs for psychological and physical support was evolving in the United States. Secretary of the Interior Franklin K. Lane suggested incorporating dogs to provide companionship and promote kinship to psychiatric patients, with the intention of reducing loneliness at Saint Elizabeth's Hospital in Washington DC (Bethesda, 1988). In 1942, Howard Archibald Rusk founded a rehabilitation facility in Pawling, New York for wounded and disabled veterans. Rusk's facility included a working farm and part of the rehabilitation program incorporated veterans interacting with predominantly farm animals and livestock as part of the treatment. Yet one patient was not responding to treatment with these types of animals and requested a dog (Mardon et al., 2021). From this encounter, dogs were introduced to the Pawling hospital to assist wounded veterans' recovery progress (Krause-Parello, Boyrer, & Padden, 2019). The inclusion of a dog in treatment grew in popularity from initially treating 30 veterans to housing over four

hundred patients, consequently, during the course of the Second World war, eleven other rehabilitation centres were opened (Mardon et al., 2021).

In the early 1960s, child psychiatrist Dr Boris Levinson was the first to document the presence of his golden retriever, Jingles, who served as a catalytic agent in his sessions with children. Levinson noted a withdrawn boy, with a history of unsuccessful treatments, inadvertently started interacting with Jingles. This interaction created a positive initial communication between Levinson and the child and ongoing sessions were based around the child interacting with Jingles with Levinson joining in. Gradually, the rapport between the boy and Levinson was established, leading to the eventual rehabilitation of the boy (Levinson, 1962). Levinson's experiences created the fundamental framework for the use of dogs as a psychotherapeutic aid, which eventually evolved into animal-assisted interventions as an adjunct to treatment. In the 1970 following in Levinson's footsteps, psychiatrists Samuel Corson and Elizabeth O'Leary Corson were the first researchers to empirically study canine-assisted intervention, incorporating interactions with dogs as an adjunct of therapy for hospitalised psychiatric patents, who were nonresponses to traditional forms of therapy (Corson et al., 1977). This research documented positive improvements in patients participating in 'pet-facilitated psychotherapy' (PFP), leading to positive social interactions (with other patients and staff) in the presence of the dog (Corson et al., 1977).

The use of animal-assisted interventions (AAI) has transformed from inadvertent humble beginnings in psychiatric hospitals and therapeutic context to nowadays where AAI has evolved to encompass several distinct types of animal-related interventions, all heterogeneous in a number of parameters including their purpose, target population needs, host settings, and species involved (Fine, 2019). Specifically, AAI are being increasingly implemented for individuals with PTSD. A recent systematic review and meta-analysis comprised of 41 studies examined the efficacy of AAI in children and adults with PTSD. Results indicated that AAI was more effective in reducing PTSD symptomology and depression severity compared to control groups (waitlist to receive a dog) and AAI was comparable to standalone PTSD psychotherapy practices at reducing PTSD symptoms severity and depressive severity outcomes (Hediger et al., 2021).

2.2. Post-traumatic stress disorder

Most people will experience a traumatic event during their lifetime, and subsequently, a degree of psychological distress accompanies this exposure. This distress is considered a common response in the aftermath of exposure to a traumatic event. In most cases, symptoms will subside shortly after, however for others, this distress and accompanying symptoms of distress are persistent and interfere with daily functioning. In this instance, it is no longer considered a normal response and could be the development of post-traumatic stress disorder (APA, 2013; Phoenix Australia, 2021).

Post-traumatic stress disorder is a pervasive trauma-and-stressor-related disorder that can occur after direct or indirect exposure (hearing adverse details of trauma) to a single event or repeated exposure to a series of traumatic events (American Psychiatric Association [APA], 2020). Post-traumatic stress disorder is a common and disproportionality prevalent disorder amongst first responders worldwide (Berger et al., 2012) and defence veterans in every service era (Richardson et al., 2010; Seal, et al., 2007) compared to the general adult population (Koenen et al., 2017). In the Australian context, PTSD is highly prevalent in the Australian community, estimated to affect approximately 5.7% of the Australian population, with females experiencing higher rates (7.6%) of PTSD compared to males (3.6%; Australian Bureau of Statistics [ABS], 2022). The estimated rates of PTSD are disproportionately prevalent amongst former Australian first responders (29%; Beyond Blue, 2018) and defence personnel who transitioned from full-time service (17.7% for 12-month PTSD prevalence, 24.9% lifetime PTSD prevalence; Van Hooff et al., 2018) subpopulations, due to the inherent vocational risk of exposure to traumatic experiences, increasing the risk of developing PTSD (Smid et al., 2009).

2.2.1. PTSD symptoms, consequences, and comorbidities

Whilst the presentation of symptoms and onset after exposure (immediate or gradual) varies across individuals, behavioural symptoms that accompany PTSD consist of four diagnostic clusters:

1. Persistent re-experiencing of the trauma/s (e.g., intrusive thoughts, recurrent nightmares, flashbacks, emotional distress, and physical reactivity to traumatic reminders).

2. Effortful avoidance of trauma-related thoughts, feelings, and reminders (e.g., places, people, situations, and activities that could be a reminder of the trauma).

3. Negative cognitions and mood (e.g., dissociative amnesia of the event, negative beliefs or expectations about oneself or the world, exaggerated blame, negative emotional state, difficulties experiencing positive emotions, diminished interest in activities, feelings of detachment or estrangement to others).

4. Heightened arousal, and reactivity (e.g., irritability or aggression, hypervigilance, heightened startle reaction, difficulties concentrating and/or sleeping) (APA, 2020).

Consequently, the symptoms of PTSD can be disabling and negatively affect daily functioning, including social reclusion, disengagement from relationships, and inability to work and undertake everyday tasks (APA, 2020). Additionally, individuals with PTSD are at greater risk of developing comorbid disorders. Post-traumatic stress disorder commonly co-occurs with other psychiatric disorders such as depressive disorder, substance use disorders and other anxiety disorders, which may have developed in response to the traumatic event or after the onset of PTSD (Brady et al., 2000; Creamer et al., 2001). Post-traumatic stress disorder is also associated with suicide ideations and behaviours (Panagioti et al., 2009; McFarlane et al., 2011) and recent research has found that affective depression mediated the relationship between PTSD and suicidality for first responders with PTSD (Whitworth et al., 2023).

2.2.2. Current evidence-based PTSD treatments

Healthcare professionals currently address PTSD through several differing treatment modalities, including pharmacological interventions, behavioural approaches, and trauma-focused therapeutic methods incorporating individual and group therapy settings. The Australian PTSD and complex PTSD treatment guidelines endorse trauma-focused cognitive behavioural therapy (TF-CBT) and variants including cognitive therapy (CT), cognitive processing therapy (CPT), eye movement desensitisation and reprocessing therapy (EMDR) and prolonged exposure (PE), as first-line PTSD treatments (APS, 2023, Phoenix Australia, 2021). These guidelines also urge that internet-based and telehealth delivery of TF-CBT should be used when accessibility to face-to-face practitioners is unattainable (i.e., in rural and remote locations, Phoenix Australia, 2021).

Cognitive therapy (CT) addresses the excess negative appraisal of trauma and the explicit memory of the event, resulting in involuntary reexperiencing of the trauma. Specifically, CT addresses maladaptive beliefs, attitudes, and behaviours that individuals may have developed to control reexperiencing symptoms and perceived threats, whereby the patient and clinician work collaboratively to modify these thoughts and beliefs.

Cognitive processing therapy (CPT) a refined version of CT, is specifically for PTSD, focusing on the impact of the trauma, by addressing facets of self-esteem, control, trust safety and intimacy. The patient identifies maladaptive thoughts and beliefs, reappraises the trauma experience, and replaces the maladaptive thoughts and beliefs with rational alternatives (APS, 2023; Phoenix Australia, 2021). Cognitive processing therapy can also include imaginal exposure elements (i.e., an individual writes an account of the traumatic event; APS, 2023, Phoenix Australia, 2021).

Eye movement desensitisation and reprocessing (EMDR) focuses on trauma-related cognitions, images, and bodily sensations while the patient's eyes are tracking the movement of an object (i.e., the therapist's finger moving back and forth). The assumption of this approach is that during exposure to the trauma, the overwhelming emotions interfere with information processing and as such some experiences of the event remain unprocessed and disconnected from the existing memory of the event (APS, 2023; Phoenix Australia, 2021). Research suggests this focus, whilst being sensorily stimulated, assists in unlocking unprocessed trauma memories and integrates with existing memory networks (APS, 2023, Phoenix Australia, 2021).

Prolonged exposure (PE) works on supporting the individual to ‘face’ memories and situational reminders of their traumatic experience/s, to change their thought processes and develop helpful coping strategies (psychoeducation, breathing retraining, behavioural exposure, and cognitive processing; Phoenix Australia, 2021). The underlying assumption of PE is if the patient is exposed to their trauma through habituation for long enough, the associated anxiety and distress are likely to reduce (Phoenix Australia, 2021).

Trauma-focused CBT (TF-CBT) is an umbrella term that integrates the general principles of CBT and incorporates a form of trauma processing, including arousal reduction strategies (breathing exercises, psychoeducation), imaginal exposure (confronting memories and repetitively retelling the experience) and in vivo

exposure (confronting the feared trauma-related setting; Phoenix Australia, 2021). Whilst pharmacological treatments are commonly used in conjunction with empirically validated psychotherapy treatments, the Australian PTSD guidelines recommend the use of medication to be considered as a second-line option. The rationale of this recommendation is due to the lack of robust evidence to support the sole use of medication or the combination of medication and psychotherapy for the treatment of PTSD (Lee et al., 2016; Phoenix Australia, 2021). The exception to this recommendation is when PTSD is comorbid with depression or risk of suicide. In these comorbid conditions, the guidelines recommend maintenance doses of antidepressants; including Selective Serotonin Reuptake Inhibitors (SSRI), which have the strongest evidence of efficacy to support comorbidities and PTSD in adults alongside trauma-focused therapy (Phoenix Australia, 2021).

2.2.3. Barriers to evidence-based practices and recovery

Whilst there are numerous evidence-based approaches to support PTSD, historically, the delivery of trauma-based treatments has been met with numerous challenges and barriers to their success, highlighting that not all individuals with PTSD respond to current treatment approaches. Psychological therapies require the patient/client to sit with distressing memories as part of treatments. Consequently, challenges include high nonresponse rates, with 60-72% of veterans retraining their PTSD diagnosis posttreatment after treatment with CPT or PE (Steenkamp et al., 2015). Treatment engagement barriers have also been identified, where poor response to treatment have been found, including premature dropout and/or unresponsive to CBT and EMDR treatments in up to 50% of Defence veterans (Schottenbauer et al., 2008). Moreover, difficulties establishing a therapeutic relationship with the practitioner and avoidance or delay in help-seeking behaviours (Beyond Blue, 2018; Forbes et al., 2019) continue to be problematic in defence veteran and first responder populations where stoic ethos culture may be dominant.

Underlying contributing factors for non-response, disengagement and help-seeking issues can be partly explained by the perceived stigma, including self-stigma and anticipated public stigma (i.e., own beliefs of shame, looking ‘weak,’ or treated unfairly and avoided) and perceived barriers (i.e., prefer to deal with the issue themselves, harm career prospects; perceptions of inadequate treatment and support; Beyond Blue, 2018; Forbes et al., 2808; Hoge et al., 2014; McFarlane et al., 2011, Naifeh et al., 2016; Sharp et al., 2015). These are often masked by the

underreporting of PTSD symptomology and denial in addressing traumatic experiences (Beyond Blue, 2018; Sayer et al., 2009; Fragedakis & Toriello, 2014). Furthermore, sociocultural, personal, and environmental aspects influence treatment response, experience, and management of an individual's post-traumatic stress injury (Sharp et al., 2015; Yehuda & McFarlane, 1995). Overall, PTSD itself is a complex and multidimensional mental health injury, and due to the aforementioned barriers, PTSD can be difficult to diagnose and treat. Nevertheless, without effective engagement of evidence-based interventions, there is the risk of chronic and longevity of illness, as well as the prospect of negative consequences for people with PTSD and their loved ones (Forbes et al., 2019).

Accordingly, there is a pressing demand to evaluate the use of adjunct and integrative approaches to support individuals experiencing difficulties in engaging or benefiting from traditional interventions. An emerging novel intervention is the use of psychiatric assistance dogs (PADs) for PTSD. The overarching objective of this program of research is to explore the feasibility of PADs as a complementary approach to traditional PTSD treatments.

2.3. Assistance Dogs

The consensus of the definition of an assistance dog is one who is trained to perform highly specialised tasks, uniquely tailored to mitigate the impacts of their handler's disability (Assistance Dogs International [ADI], 2020). In Australia, assistance dogs are protected under federal legislation, stating it is unlawful to discriminate against a person with a disability who uses an assistance animal to accompany them in the public domain (*Disability and Discrimination Act, 1992,* (Cth). This legislation defines assistance animals (dogs or other animal) that:

"(a) accredited under a law of a State or Territory that provides for the accreditation of animals trained to assist a person with a disability to alleviate the effects of disability; or

(b) accredited by an animal training organisation prescribed by the regulations for the purposes of this paragraph; or

(c) trained:

(i) to assist a person with a disability to alleviate the effect of the disability, and

(ii) to meet standards of hygiene and behaviour that are appropriate for an animal in a public place" (*DDA*, Section 9).

Traditionally assistance dogs were predominantly trained to be assistive aids to help blind or visionally impaired persons (guide dogs) and hearing-impaired persons (hearing dogs) navigate their environment safely and independently. Nowadays the role of an assistance dog has evolved to support a range of physical and mental conditions, including mobility issues, diabetes and seizures, autism, and psychiatric conditions (i.e., PTSD, complex-PTSD, generalised anxiety disorder, agoraphobia, depression, panic disorder, and schizophrenia). Notably, these latter conditions all fall under the banner of specialised dogs' roles (i.e., mobility assistance dogs, seizure alert dogs, medic alert dogs, and psychiatric assistance dogs). Accordingly, psychiatric assistance dogs (PADs; otherwise, termed PTSD service dogs or psychiatric service dogs), are working dogs, exclusively trained to perform tasks tailored to the unique psychiatric needs of their handler to mitigate the impact of everyday PTSD challenges (Assistance Dogs International [ADI], 2022; Krause-Parello et al., 2016).

2.3.1. Evolution of the modern-day service dog

'Solider Heart', 'Shell Shock', 'Battle Fatigue' and 'Vietnam Syndrome' diagnoses are terms from every service era, from the American Civil War, World War 1, World War 2, and Vietnam War, which describe what we now know as PTSD. However, it was not until the Iraq and Afghanistan Wars, that veterans sought support for both physical and emotional injuries (O'Brien, 2022).

Historically, assistance dogs stemmed from the guide dog movement, founded in Germany in World War 1, when thousands of German soldiers were left blinded by mustard gas. It was during this time whilst Dr. Gerhard Stalling was working at the veterans hospital, that he discovered his German Shepard was aiding a blind veteran. From there Dr. Stalling began training German shepherds to serve as guides for the blind (Ostermeier, 2010). In 1929, Morris Frank pioneered the guide dog movement in the USA and 'seeing eye' dog facilities were established (Fishman, 2003). In the 1970s, following the guide dogs, assistance dogs for the hearing impaired (hearing dogs) and the use of mobility dogs were formed. Dr Bonita Bergin is often credited with inventing the concept of a service dog to assist people with mobility limitations, derived from her travels in Europe and Asia, where people with mobility injuries were using donkeys as physical aids (Eames & Eames, 2001). In 1975, Bergin founded the world's first mobility service dog organisation and helping to write the Americans with Disabilities Act (ADA) which was inclusive of

mobility service dogs (Eames & Eames, 2001). In parallel, Agnes McGrath was establishing a program for dogs to assist the hearing impaired. Since then, the roles of assistance dogs have diversified to support various disabilities for returning veterans.

The evolution of the modern-day psychiatric service dog entered the spotlight when wounded veterans returned from the Iraq and Afghanistan wars, with not only service-related injuries but also PTSD. Mobility injuries such as amputation and spinal cord injuries in addition to hearing and vision loss associated with traumatic brain injury were common and highly skilled service dogs were placed with wounded veterans to initially mitigate their physical disabilities. From there, veterans admitted to not only utilising the service dogs as an assistive aid for physical injuries but also to support their PTSD injuries sustained from service. As a result of these personal narratives, describing how these mobility service dogs performed tasks beyond mitigating physical disability to support PTSD challenges was common, a pilot program was developed in 2007 examining service dogs for PTSD. Subsequently, in 2009, the first psychiatric service dog placement with a veteran for PTSD occurred (O'Brien, 2022).

While PADs are most often associated with veterans with PTSD, in recent years, sexual assault and domestic violence survivors with PTSD have described the positive benefits of the use of PADs (Jacobson, 2015, Moore, 2020). However, to date, there is a dearth of evidence on the efficacy of PADs for non-veteran populations, limiting the generalisability of research outcomes. Nevertheless, this unique phenomenon is gaining unprecedented popularity, consequently, the expansion of organisations that train and place PADs globally has been established to meet this demand (Walther et al., 2019).

2.3.2. Assistance dog placement prevalence

Assistance Dogs International (ADI) is a worldwide confederacy of accredited, non-profit organisations that train and place assistance dogs. Assistance Dog International is renowned for the development of best-practice psychiatric assistance dog (that is, psychiatric service dogs in Northern America) standards, laying the foundation for training standards and placements of highly trained psychiatric service dogs with veterans with combat-related PTSD worldwide. As of June 2023, this leading authority reported there were 154 accredited assistance dog organisations worldwide, and 52 organisations undertaking the candidature programs to become

accredited providers. In 2022, the total number of assistance dog teams globally was 28,372, comprising of an almost equivalent number of service dogs (47%) and guide dogs (45%) placements, followed by hearing dog teams (8%). Amongst the differing types of service dogs (i.e., mobility, autism, diabetes, seizure, medical and PADs), 18% were comprised of PTSD veteran service dogs, while 5% were psychiatric service dogs (ADI, 2023).

In Australia and New Zealand (Oceania region), the number of ADI assistance dog organisations currently stands at 15 (12 accredited providers, 3 within the candidate program) representing 1,088 handler-dog teams (49% guide dogs, 34% service dogs, and 17% hearing dogs; ADI, 2023). Of the eight Australian ADI accredited providers (excluding four from New Zealand and candidate providers), only two of those provide services specifically for Australians with PTSD with a trained PAD. One potential explanation for the limited number of organisations catering for PADs is that ADI-accredited facilities must meet specific standards for training and placing dogs for veterans with PTSD, and facilities are required to have licenced mental health professionals available (Walter et al., 2017).

In addition to ADI providers, an additional 23 Australian not-for-profit assistance dog trainers and training organisations (non-ADI accredited) are approved under the *Guide, Hearing and Assistance Dog Act, 2009* (Qld), however less than one-third of these approved organisations provide support for PTSD. Based on these findings, the number of accredited and/or GHAD-approved training organisations in Australia catering for people with PTSD is limited. This raises concerns regarding whether PADs and suitable training programs are easily accessible for people with PTSD.

Despite these small numbers of PAD organisations, the true number of PAD-handler teams is likely to be considerably greater, as there appears to be an extensive number of non-accredited or non-GHAD approved organisations and trainers/assessors across Australia offering various avenues to obtain and train PADs. Indeed, findings from Walther et al. (2017) study examining ADI-accredited and non-accredited U.S and Canadian assistance dog facilities, supported this assumption, identifying that psychiatric dogs account for the majority of placements from non-ADI-accredited organisations that often acquire dogs from shelters or work with an owner to train their companion dog (Walther et al., 2017). It is also plausible that some PAD handlers self-train their dogs, without the support of an

organisation/provider. In Australia there is no National register of all PAD organisations nor the number of PAD-handler teams, accordingly, it is difficult to establish the exact prevalence of PAD-handler teams in Australia.

Despite the lack of prevalence data on the number of PAD organisations and handler-PAD teams across Australia, there appear to be various channels for people with PTSD to acquire a PAD and undertake the relevant training model:

1) Accepted into an organisation that matches pre-trained PADs to handlers' specific needs, and depending on the organisation, people either undertake initial PAD training classes within the first 3 months (Assistance Dogs Australia, 2022) or longer training model ranging from 6 to 12 months (Integra Service Dogs Australia, 2023).

2) Self-train their own dog or a suitable dog in a formalised training context (state-approved or non-approved organisations and/or trainers) to pass the organisation's own public access test (PAT) or state governing requirements for public access.

3) Self-train their own dog to meet the standard of hygiene and behaviour that are appropriate in a public place and employ an independent PAT assessor to certify the dog.

2.4. PADs in the Australian context

Despite assistance dogs (PADs inclusive) being protected under federal legislation for public access rights (*DDA*; AHRC, 2016), this framework is ambiguous and contentious, with no official national model or mandates for regulations and standards of assistance dog accreditation and training standards. Instead, the onus is on each Australian state and territory to self-govern regulations and standards, consequently, this has led to inconsistencies. These disparities between the states and territories have caused significant confusion, barriers, and discrimination challenges of the use of assistance animals in areas such as travel, accommodation, and access to premises. This is particularly pertinent for people with invisible disabilities. For instance, 126 Australians with assistance dogs were discriminated against over a three-year period (2012-2015) with 42% of those being persons with invisible psycho-social disabilities (AHRC, 2016). Refusal of entry or manner of treatment at café/restaurants and shopping centres was the most prevalent complaint for people with assistance dogs (excluding guide dogs), followed by residential housing, airline travel and medical/health service access (AHRC, 2016).

It is plausible these challenges are due to discrepancies in the jurisdiction of accessing the community between the states of Australia. Victoria, Queensland, South Australia, and New South Wales issue assistance animal 'passes' permitting the handlers' assistance animal on public transport (terminology of permits and validity period varies between states) whereas Australian Capital Territory, Northern Territory, Western Australia, and Tasmania do not issue specific dog passes. Accordingly, issues of travelling interstate may become difficult, particularly for individuals in the Australian Capital Territory, Northern Territory, Western Australia, and Tasmania travelling to states that do require passes.

At this stage, Queensland is the only state to have specific legislation for assistance dogs, providing more clarity surrounding access to the public domain under the *Guide, Hearing and Assistance Dog Act 2009* (Qld) and *Anti-Discrimination Act 1991* (Qld) (Department of Child Safety, Seniors, and Disability Services, 2023). The state of Queensland provides a list of assistance dog training services and institutions approved under the *Guide, Hearing and Assistance Dog Act 2009* (GHAD) to train and certify assistance dogs for state accreditation (Queensland Government, 2023). However as forementioned, out of the 23 approved GHAD organisations, less than one-third of these provide support for people with PTSD. Potential implications for these disparities could be quite inhibitory to providing equal accommodation for people with PTSD wishing to use this novel intervention. For example, the endorsement of specific organisations (GHDA approved) to train and certify PADs may restrict the accessibility of PADs for some Australians (i.e., only a few organisations cater for PTSD, location constraints, lack of choice in organisations), and potentially overload those organisations with demand. Moreover, these restrictions of organisation endorsement, neglect to attribute the work of smaller non-GHDA and/or non-ADI accredited providers fostering PAD-handler partnerships through alternative training models (i.e., self-training). It is important this program of research identify whether these barriers impact the ability to access PAD, through the lived experience of Australians with PTSD using a PAD.

The consequences of a lack of mandated regulations and standards promote inconsistent (or non-existent) state sanctions and regulations on PADs accessing the public domain causing issues for the handler/s, the public, and organisations. Currently, these issues have not gone unnoticed with AHRC announcing "to improve certainty for people with disability using assistance animals, the Commonwealth,

state and territory governments are working together to develop options for a nationally consistent approach to the regulation and accreditation of assistance animals" (Department of Social Services, 2023). Accordingly, a national survey was deployed in March 2021, to explore opinions surrounding the issues of regulation and legislation between Australian states and territories, although findings from the survey are yet to be published. Nevertheless, until a national uniform approach to these standards is worked through, challenges for individuals using an assistance animal, particularly for invisible injuries such as PTSD in the public domain, as well as inhibited issues of accessing a PAD, may continue to be contentious.

2.4.1. Inhibitors to accessing PADs and training models

Due to the unprecedented popularity of the use of PADs, the demand outstrips the supply in the number of pre-trained PADs available to Australians with PTSD. Several PAD organisations have temporarily ceased to accept new applications in an attempt to reduce lengthy waiting times (Assistance Dogs Australia, 2023). Other not-for-profit organisations providing self-training support have also felt the pressure of this demand and restricted applications to certain times of the year (MindDog, 2018). Moreover, some organisations restrict eligibility of obtaining trained PAD and undertaking training to specific subpopulations where PTSD is more prevalent (i.e., defence veterans and police personnel, Assistance Dogs Australia, 2022; defence veterans and all first responders personnel, Integra Service Dogs, 2023). A high level of training is involved in developing a fully accredited PAD and accordingly, the costs associated with training and receiving a pre-trained PAD can cost up to $40,000 to 60,000AUD (Assistance Dogs Australia, 2022). Indeed, there are a handful of not-for-profit PAD organisations that provide accredited PADs free of charge or ask for a contribution to the costs of training fees ($3000 to $5000AUD; Integra Service Dogs Australia, 2023). Subsidies for the acquisition of a trained PAD and ongoing maintenance and husbandry care costs are available for eligible Australian defence personnel through the Department of Veterans Affairs (DVA) Psychiatric Assistance Dog Program (Department of Veterans Affairs, 2022). Other Australians with PTSD may be eligible for funding support through the National Disability Insurance Scheme (NDIS, 2022) for ongoing PAD costs (estimated as $2600AUD per year, Assistance Dogs Australia, 2022) however this is on a case-by-case basis and PADs must be obtained from an approved list of providers. However, for others, financial aid to acquire a trained PAD

is likely to be an out-of-pocket expense if they do not qualify for the subsidies listed above. Such restrictions suggest that PADs may not be accessible for all Australians with PTSD wishing to use this novel intervention.

The alternative option previously detailed is to self-train a suitable dog to become an accredited PAD, with the assistance of a PAD training organisation and/or qualified trainer or self-training a dog and employing an independent PAT assessor to certify the dog as a PAD. There are significant savings in upfront costs, with a self-training program estimated to be a tenth of the cost of receiving a trained PAD (estimated as $445 - $3,000AUD; Canine Essentials, 2023). This option is supported by research proposing that self-training a suitable dog alongside a formalised PAD training program, was a positive adjunctive to promote participation in conventional PTSD treatments (Whitworth et al., 2019). However, the self-trained model is not recognised through Australian governing funding bodies yet, therefore the self-training model and ongoing maintenance costs remain ‘out of pocket’ expenses. With these restrictions in place and/or potential inhibitors, it is unknown whether these barriers impact the ability of Australians with PTSD to access support from PADs.

2.4.2. PAD accreditation and training standards

At the minimum, the public access test (PAT) is a set of standards assistance dogs can obtain to be considered safe and effective in accessing public areas, public transport, and places of accommodation and meet the hygiene and behavioural expectations outlined in commonwealth law. This is in addition to training the dog to perform tailored tasks to mitigate the handlers' PTSD. There is, however, no overarching sanction surrounding training standards and accreditation, and in general, the government (on all three levels [federal, state/territories, local councils]) rely on the onus of the training organisation and/or trainer to train and certify PADs as meeting the PAT for public access (Bremhorst et al., 2018) and as well as self-regulated training of the dog to be proficient to support the persons disabilities. Since there is no national accreditation and a set of training standards to adhere to, there is no external authority ‘policing’ these standards and no independent assessor for accreditation. Consequently, the quality of PAD training could be disparate between the organisations and a heightened risk of certifying dogs that may not meet the behaviour requirements to be effective for the unique needs of the hander.

Whilst there are various sources to obtain a PAD and resources to undertake the relevant training, there is a lack of understanding of what the preferred method is for Australians with PTSD to acquire a PAD and the reasoning behind the choice of training modality source. It is important that research contextualises these areas of inquiry for a better understanding of the facilitators and inhibitors Australians face when seeking the use of PADs to support PTSD challenges.

2.5. Integrating PADs Into PTSD treatment plans and processes

Past research advocates for the clinical utility of PADs as an assistive aid to support PTSD symptomology and functional challenges, yet cannot be considered a standalone treatment, prompting the PADs to be referred to as a 'complementary' and 'integrative' approach to conventional PTSD treatments. At the same time, we have little understanding of whether and how PADs are intentionally incorporated into their handlers' ongoing PTSD treatment practices. One assumption could be the inclusion of PAD in the professional context may share similarities to a therapy dog's role, of being incorporated into the therapeutic process with the intent to provide structured and goal-directed treatment outcomes (ADI, 2023; Howell et al., 2022). Yet, consideration of PADs playing a role augmenting therapy, as well as an assistive aid, blurs the distinction between the role of an assistance animal and the role of a therapy animal. Past literature describing animal-assisted interventions (AAI, particularly animal -assisted therapy [AAT]) purposely exclude assistance dogs, as they are viewed as tools to support the individual's disability, rather than a therapeutic intervention (Howell et al., 2022; Kruger & Serpell, 2010). For example, guide dogs provide invaluable support to their owners with vision impairment in navigating the world, yet they are not expected to help 'treat' the vision impairment. Thus, consideration of PADs potentially playing a dual role as an assistive aid and a therapeutic intervention may be a controversial point of view.

Regardless, according to Forbes et al. (2019) research should continue to focus on strategies that support better engagement in treatment for people with PTSD. To advance our understanding of integrating dogs into professional contexts, the research aims to explore the integration of clientele PADs to PTSD treatment plans and processes. We argue exploring the use of PADs in a professional context is important for holistic person-centred support. Psychiatric assistance dogs are frequently described in the literature as a promising 'complementary' and an 'integrative' novel approach to traditional PTSD treatments. One interpretation could

be that of synergism, where both the PAD and the individual's ongoing PTSD treatment efforts work synergistically for positive PTSD outcomes, both within and outside of therapeutic sessions. Yet there appears to be limited research examining the integration of PADs into evidence-based treatment approaches in a professional context.

A sole case study of a civilian with PTSD using a PAD, provided the scope of this area of inquiry. The aim of Glintborg and Hansen's (2017) case study was to explore how the person's PAD was incorporated into rehabilitation practices in mental health and professional reactions to the use of PAD. The analysis portrayed the PAD as not actively involved in goal-directed treatment and rehabilitation procedures, and there was a lack of collaboration and communication between affiliated support providers (social services, PAD provider, health rehabilitation services and clinician) to support the person in rehabilitation and mental health services (Glintborg & Hansen, 2017). Yet, this study was limited to inferences from a single experience, therefore it is difficult to generalise whether this applies to all people with a PAD or a single experience. One assumption raised in a scoping review suggested the absence of including the PAD is likely due to the practitioner's lack of knowledge of the therapeutic benefits of PAD and/or hesitancy to incorporate the PAD due to limited empirical support of PADs for PTSD (van Houtert et al., 2018). Despite this initial research, there are gaps in our understanding of how PADs are integrated into PTSD treatment regimens including the implications for the individual and/or the success of the evidence-based treatment if the PAD is not included in the treatment plan, and if integrated, the role the PAD plays in therapeutic plans and processes. The focus of this thesis is to explore lived experiences of whether and how PADs are integrated into Australians' ongoing PTSD treatment.

Recent studies have proposed that the use of PADs alongside 'usual' PTSD treatment was found to reduce the severity of PTSD symptomology and depression as well as improve functioning outcomes compared to 'usual' treatment only (O'Haire & Rodriguez, 2018). However, a pertinent limitation was the type of 'usual' PTSD treatment participants were undergoing was unspecified, which may include participants not receiving any additional PTSD treatment. It is important to understand the type of treatment participants are undertaking alongside the PAD in order to have a comprehensive understanding of the impact of a PAD on specific

treatment modalities. A systematic review of the current research will help to identify the therapeutic value of the integration of PAD into conventional PTSD treatment efforts and the concurrent treatments participants were receiving.

2.6. Evidence of the efficacy of PADs for PTSD

The use of PADs to support people with PTSD challenges is gaining popularity, and consequently, an increase in the number of organisations that either train and place certified PADs and/or provide training support for those undertaking the self-train model is expanding to keep up with this demand (Walther et al., 2017, 2019). Consequently, there is an increasing prevalence of research examining PAD for people with PTSD.

To date, the therapeutic efficacy of PADs for PTSD has only been examined by one scoping review for articles published prior to September 2017 (van Houtert et al., 2018). Whilst the review was limited to defence veterans with PTSD using a PAD and peer-reviewed articles only, the review highlighted anecdotal evidence of the promising benefits of PADs for improving veterans' welfare and quality of life. However, there was limited empirical evidence to draw conclusions about the efficacy of PAD as an intervention for PTSD due to several methodological shortcomings (van Houtert et al., 2018). Specifically, heterogeneity in designs and outcome measures inhibited the ability to aggregate and analyse data using statistical methods. van Houtert et al. concluded the need for further rigorous research in the form of objective measures unique and intrinsic to PADs in order to evaluate the underlying mechanism and efficacy of PAD intervention for PTSD. These conclusions are not uncommon for research in the field examining the effects of human-animal interactions (HAI) on health and well-being. Methodological challenges and heterogeneous outcome measures are often criticised in reviews examining this field, limiting review findings to inferences (Rodriguez, Guèrin et al., 2018).

Whilst it is evident from the review findings there is limited empirical evidence to establish the efficacy of PADs for PTSD, it is arguable that personal experiences and context complexities need to be considered alongside efficacy outcomes, for a more inclusive understanding of the PAD intervention and "produce guidance encompassing best practice at the population, systematic and individual levels" (Shaw et al., 2014, p.203). To obtain such depth, considerations surrounding the review typology to incorporate diverse types of evidence will provide a more

comprehensive understanding of the role PADs play in supporting the handler's everyday PTSD challenges. Furthermore, since the van Houtert et al. (2018) scoping review, the number of published studies examining the PADs for PTSD has tripled in size, and a current comprehensive systematic review is warranted.

In 2010, the US Department of Veterans Affairs (VA) were instructed to perform a randomised control trial examining whether defence veterans with PTSD overall disability and quality of life improved with the provision of a PAD. Whilst numerous design and methodological challenges and study considerations were identified throughout this period (Saunders et al., 2017), a report of the VA findings was published in 2020 amongst a number of published studies examining PADs for veterans with PTSD. The results of the VA study identified that whilst the provision of PADs did not improve veterans overall disability and quality of life, reductions in PTSD symptom severity and fewer suicidal behaviours and ideations were found for veterans with a PAD compared to veterans with an emotional support dog (ESD; Richerson et al., 2020). Subsequently, in 2021, the *PAWS for Veterans Therapy Act* (US) was introduced, initiating the VA to develop and launch a 5-year pilot grant program providing PADs for eligible veterans with PTSD.

Alongside the VA report, a growing body of evidence demonstrated the benefits of PADs in reducing the severity of PTSD symptomology, PTSD-related symptoms (depression, anger) and improving psychosocial and daily functioning for Defence veterans (e.g., Kloep et al., 2017, O'Haire & Rodriguez et al., 2018; Scotland-Coogan et al., 2022; Vincent et al., 2017; Yarborough et al., 2017). Furthermore, the companionship and nonjudgmental support PADs provide have been described as a source of emotional value (i.e., reduced feelings of isolation and loneliness, connection, something to live for and regain control of their lives), therapeutic value (i.e., positive diversion from maladaptive coping strategies [substance misuse, suicidal ideation] and improved sleep quality and quantity), and familial value (social catalyst for improving social family structure) for veterans with PTSD (Krause-Parello & Morales, 2018). Psychiatric assistance dogs have also been attributed to a sense of safety and self-confidence, supporting independence and increases in community engagement (Crowe et al., 2018; Floore-Guetschow, 2020' Nieforth et al., 2021; Yarborough et al., 2018).

Psychiatric assistance dogs appear to play a complex and multi-facilitative role in supporting the handlers' PTSD-related challenges in numerous health and life

domains, yet it is difficult to have a comprehensive understanding of the impact that PADs play within various contexts as there are no set parameters or contextual frameworks of these domains. Additionally, the published studies have focused on the defence veteran population and are international in context. This thesis advocates examining the utility of PADs for the Australian general population with PTSD.

2.6.1. Psychiatric assistance 'dogs' breakfast'

Whilst PADs have been advocated as a promising adjunctive intervention for PTSD, conclusions regarding the efficacy of PADs for PTSD are limited due to the methodological challenges and heterogenous measures, procedures, and results (Saunders et al., 2017; van Houtert et al., 2018). Furthermore, due to the exponential growth in scholarly attention of the PAD paradigm in recent years, the influence of PADs role in clinical and nonclinical aspects in an array of multidimensional life domains requires uniformity through a theoretical lens. This thesis proposes the lens of a recovery model, to update our current knowledge base and inform future areas of inquiry. Finally, in the Australian context, navigating an unregulated novel intervention is difficult to comprehend and may be inhibitive for Australian adults with PTSD wishing to use PADs to support their invisible injury. Overall, our current understanding of the influence of PADs on PTSD is becoming a tangled web of knowledge or as my supervisor stated a psychiatric assistance 'dogs' breakfast.' Until we can disentangle this information and holistically map the impact of PAD on PTSD symptomology and daily functioning, the PAD will remain the 'underdog' in novel PTSD interventions.

2.7. Recovery framework

The definition of recovery for mental illness is an ongoing debate, with scholars positing diverse concepts of recovery models, often focusing on specific components within the recovery processes or recovery outcomes. Whilst examining the diverse concepts of recovery models is beyond the scope of this review, a holistic definition and multidimensional framework would be a preliminary starting point to examine the role of PADs in fostering recovery. Accordingly, for the purpose of this review, recovery is described as:

> "… a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves

> the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness (Anthony, 1993, p.15).

To conceptualise this paradigm, the review employed a broad approach to recovery posited by Whitley and Drake (2010) who augmented influential models of recovery to propose five superordinate dimensions of recovery, based on five life domains: (1) clinical recovery, (2) existential recovery, (3) functional recovery, (4) social recovery, and (5) physical recovery. *Clinical recovery* is characterised as the reduction and management of symptom severity typically in the form of a combination of psychotropic medications and therapy sessions (behavioural and/or talk). *Existential recovery* incorporates intrapersonal and psychosocial factors that provide the individual with a sense of self-control in their life. Whitley and Drake assimilated their definition with several components illustrated within a prominent trauma-related recovery model (i.e., SAMHSA: responsibility, hope, empowerment, self-direction) by incorporating, self-efficacy, personal empowerment as well as religion and spirituality. *Functional recovery* encompasses the individuals' ability to effectively participate in daily life activities and integrate into society. This includes obtaining and maintaining employment and completing educational programs. Interpersonal and community functioning falls under the banner of the social recovery dimension, illuminating connectedness to others (i.e., establishment and maintenance of relationships with family, friends, and peers) and engaging in meaningful and rewarding activities (i.e., leisure and sporting activities), and increase outreach and integration within the community. Finally, *physical recovery* encompasses enhancements in physical health and well-being, including promoting physical exercise as well as a reduction/cessation of negative lifestyle factors (i.e., alcohol and substance abuse).

Parallel to empirical evidence on the impact of social support on PTSD (Simon et al., 2019), Whitley and Drake (2010) also stipulated the importance of peer support, family and friends, religious and spiritual leaders, professional clinicians, and other supportive networks that could be involved within these dimensions to promote recovery. The researchers posited that there is considerable overlap and synergistic interactions between the dimensions, where one dimension may be influenced by other dimensions (Whitley & Drake, 2010). This review postulates that this recovery model is a suitable framework to assign synthesised findings from the review into

one of these five dimensions, to conceptualise the multi-complexities of the facilitating role PADs play in post-traumatic recovery progress and outcomes.

2.8. Methodological approach to thesis

A mixed-method research design was employed to address the overarching research aim of exploring whether PADs are a feasible complementary intervention for Australian adults with PTSD. This approach to inquiry was based on the intersection of my pragmatic paradigm, and integrating both quantitative and qualitative evidence, enabling me to examine the PAD intervention from different perspectives and research lenses (Creswell, 2009; Shorten & Smith, 2017) producing a more complete picture and holistic view of PAD intervention for Australians with PTSD.

To begin to address the overall aim of this program of research, chapter three focuses on the need for clarity and uniformity surrounding the use and influence of PADs to support PTSD symptomology and functioning challenges. Accordingly, I conducted a comprehensive systematic assessment of the current state of research pertaining to the roles of PADs in assisting recovery and the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in first responders and defence personnel with PTSD.. A mixed-method systematic literature review (MMSR) was conducted in accordance with Joanna Briggs Institute (JBI) theoretical framework (Lizarondo et al., 2020) using a convergent data-base typology for a formalised approach to integrating diverse types of evidence for a more comprehensive understanding of the PAD paradigm. A broad multi-dimensional recovery model (Whitely & Drake, 2010) was also implemented during data synthesis to assist in contextualising the multi-facilitative role of PAD in five life domains. The outcomes of the systematic literature review informed the scope of the parameters to address and investigate in the subsequent studies.

The second research objective outlined in Chapter Four, examined whether the incorporation of PADs assisted in improving treatment engagement and response, for those having difficulties in the professional context as well as trends in conventional treatments alongside a PAD. I explored Australian adults' experiences of incorporating their PADs into their ongoing PTSD treatment practices and examined the prevalence of PTSD treatment modalities participants have used in the past and currently utilising alongside their PADs. The third and final research objective (outlined in Chapter Five), sought to examine whether PADs are feasible

and easily accessible for all Australians with PTSD wishing to use this novel intervention. Accordingly, I examined how Australians with PTSD acquired their PADs and the type of training modality undertaken and explored factors that impacted participants' decisions regarding the training modality option selected.

Consistent with my pragmatic approach, a concurrent mixed methods form of inquiry (Creswell, 2009) addressed the second and third research objectives through the form of a large-scale online survey using both open and closed-ended questions. I collected both quantitative data and qualitative data at the same time and integrated the findings to interpret outcomes (Creswell, 2009). Furthermore, as the second and third research objectives we more exploratory based, the qualitative strand was predominant, whilst the quantitative data was embedded to support the qualitative strand, by identifying aspects that may have influenced the qualitative responses (i.e., treatment trends and how respondents acquired a PAD). Accordingly, the second and third research objectives were addressed through a constructivist lens for analysis (Braun & Clarke, 2022). By adopting constructivism as the orientation for analysis, I was able to explore and understand participants meaning, perspectives and experiences whilst acknowledging how my background and experiences shaped interpretation (Creswell, 2009).

Subsequently, reflexive thematic analysis (RTA) was the most appropriate approach, enabling data-driven reflection on participants' experiences generated by both semantic and latent patterns of meaning across the dataset, while also recognising my reflexive influence on interpretations of these meanings as a valid resource throughout the study (Braun & Clarke, 2022). Moreover, RTA is a flexible approach, suitable for large-scale qualitative components of online surveys (Braun et al., 2021) and in line with a constructivist orientation, the open-ended qualitative components of the online survey were purposively broad to enable participants to construct their own meaning (Creswell, 2009). Furthermore, Braun et al. (2021) advocate that the anonymity of responding to a qualitative question via an online survey may be less obtrusive and facilitate more explicit disclosure surrounding sensitive topics, compared to face-to-face methods. Therefore, this was viewed as a strength of the current methodological approach considering the population of interest in this program of research.

CHAPTER THREE: THE FACILITATORS OF AND BARRIERS TO THE USE OF PSYCHIATRIC ASSISTANCE DOGS FOR PTSD: A MIXED-METHOD SYSTEMATIC REVIEW

There is a pressing demand for novel evidence-based PTSD approaches to support defence and first responder personnel experiencing difficulties engaging in traditional trauma-based interventions. An expanding field of inquiry is the use of psychiatric assistance dogs (PADs) to support individuals in addressing their PTSD challenges. Based on the findings from the narrative review, the objective of Chapter Three is to conduct a comprehensive mixed-method systematic assessment of the current state of evidence-based research that pertains to (1) identifying the roles of PADs in assisting recovery and (2) the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in first responders and defence personnel with PTSD..

For the purpose of this review, we refer to first responders as those who work in an emergency response front-line role, representing a cohort of various helping professions (i.e., police officers, firefighters and state rescue and paramedics). We also refer to Defence force personnel, as those who work in military services consisting of the army, navy, and air force, also more commonly referred to as “the military” or “the armed forces” internationally.

3.1. Same injury, different battlefield

The nature of traumatic exposures and environmental stressors experienced by first responders and defence personnel are an inherent part of their vocational role. The cumulative and perpetual exposure to traumatic events conduces the risk of developing post-traumatic stress disorder (PTSD) in these populations (Smid et al., 2009). This is disparate to the general population, where an onset of PTSD symptoms commonly occurs after an isolated traumatic incident. Post-traumatic stress disorder is disproportionality prevalent among first responders (10% of ambulance personnel, firefighters, rescue workers, and police officers, (Berger et al., 2012) and defence veterans in every service era (Richardson et al., 2010; Seal, et al., 2007) compared to the general adult population (Koenen et al., 2017). In 2018 a national Australian survey examining the health and well-being of 21,000 first

responder personnel reported that the prevalence of probable PTSD amongst current serving first responders was estimated at 10% with rates considerably higher among former first responders with 29% reporting a current diagnosis of PTSD (Beyond Blue, 2018). Post-traumatic stress disorder prevalence rates for Australian Defence Force (ADF) members who transitioned from full-time service were estimated at 17.7% 12-month and 24.9% lifetime of PTSD prevalence (Van Hooff et al., 2018). This is in contrast to an estimated 5.7% of the general adult Australian population diagnosed with PTSD (Australian Bureau of Statistics [ABS], 2022).

Behavioural symptoms that accompany PTSD consist of four diagnostic clusters (1) persistent intrusive symptoms related to the traumatic event, (2) effortful avoidance of trauma-related stimuli, (3) negative cognitions and mood, and (4) heightened arousal and reactivity symptoms (APA, 2020). Consequently, PTSD can be disabling, interfering with daily functioning including social and occupational impairment (APA, 2020). Additionally, individuals with PTSD are at greater risk of developing negative comorbidities (i.e., depression, alcohol, and substance abuse), in addition to a heightened risk of self-harm and suicidal cognitions (Beyond Blue, 2018; Harvey et al., 2016; McFarlane et al., 2011). In Australia and internationally, suicide has been identified as a significant issue among veterans. For instance, in Australia, there were over 1600 certified suicide deaths of serving and ex-serving ADF personnel between 1997 to 2020 (Australian Institute of Health and Welfare [AIHW], 2022). According to the National Coronial Information System (NCIS) in 2015, one first responder takes their own life every six weeks and between 2001 to 2016, there were 197 intentional self-harm deaths for first responders across Australia, comprising 60.9% of police, 20.8% ambulance and 18.3% fire personnel, the majority of which were employed at the time of their death (77.2%, National Coronial Information System [NCIS], 2019).

Post-traumatic stress disorder is addressed through several differing treatment modalities including individual therapy, group therapy, and pharmacotherapy. Primarily, trauma-focused psychological interventions such as cognitive processing therapy (CPT), prolonged exposure (PE), as well as eye-movement desensitisation and reprocessing (EMDR), are endorsed as first-line trauma treatments to promote recovery progress (Phoenix Australia, 2021). However, not only is PTSD pervasive, but the disorder is also difficult to treat in these populations, with numerous challenges and barriers encountered in existing

gold-standard evidence-based treatments. Challenges include high nonresponse rates, with 60-72% of veterans remaining symptomatic post-treatment of CPT or PE (Steenkamp et al., 2015), treatment engagement issues, including high dropout rates from CBT and EMDR treatments (Schottenbauer et al., 2008), and avoidance or delay in help-seeking behaviours in both first responders and military personnel (Beyond Blue, 2018; Forbes et al., 2019). Research has identified treatments that focus on working through the confronting of the trauma memory and/or exposure-based therapies were associated with greater dropout, compared to treatments that focus on reducing PTSD symptoms rather than directly targeting trauma cognitions (Lewis et al., 2020). This is not surprising given therapies that are trauma-focused can be temporarily distressing and uncomfortable (Murray et al., 2022). Two distinct underlying contributing factors for dropout and disengagement issues can also be partly explained by the perceived stigma (i.e., shame, looking 'weak' or treated unfairly and avoided) and perceived barriers (i.e., prefer to deal with the issue themselves, harm career prospects; Beyond Blue, 2018; Hoge et al., 2014; McFarlane et al., 2011). These are often masked by the underreporting of PTSD symptomology and denial in addressing traumatic experiences (Beyond Blue, 2018; Sayer et al., 2009) in these populations. Consequently, PTSD prevalence in these populations could be higher than estimated.

Accordingly, novel evidence-based PTSD treatment with the objective encouraging engagement and retention in traditional treatments, while addressing the comorbidities of the diagnosis (indirectly or directly) is spotlighted as a matter of precedence in these populations. An emerging paradigm gaining significant scholarly attention is the partnership with psychiatric assistance dogs (PADs).

3.2. Psychiatric assistance dogs

Assistance dogs are defined as performing trained tasks tailored to alleviate the impact of the handler's disability in everyday living (Assistance Dogs International [ADI], 2020) and held to a high standard of behaviour and hygiene, enabling access to accompany handler in public spaces (Howell et al., 2022).In Australia, under the *Disability and Discrimination Act, 1992* (Cth)*,* it is unlawful to discriminate against assistance dogs accompanying their handler/s in the public domain. Traditionally assistance dogs were predominantly trained to be an assistive aid to help blind or vision-impaired persons (guide dogs) and hearing impaired persons (hearing dogs) navigate their environment safely and independently.

Nowadays, the role of assistance dogs has evolved to support a range of mental and physical conditions, including mobility issues, diabetes and seizures, autism, and psychiatric conditions (i.e., PTSD, complex-PTSD, generalised anxiety disorder, agoraphobia, depression, panic disorder, and schizophrenia). Notably, these latter conditions all fall under the banner of specialised dogs roles (i.e., mobility assistance dogs, seizure alert dogs, medic alert dogs, and psychiatric assistance dogs). Accordingly, psychiatric assistance dogs (PADs) are working dogs, exclusively trained to perform tasks tailored to the unique psychiatric needs of their handler to mitigate their everyday PTSD challenges and are protected under public access legislation (ADI, 2023; Krause-Parello et al., 2016).

To date, a single review exclusively examining the therapeutic efficacy of PADs with PTSD has been undertaken for articles published prior to September 2017 (scoping literature review, van Houtert et al., 2018). Of the 19 peer-reviewed articles, the review found limited empirical evidence to draw definitive conclusions about the efficacy of PADs as an intervention for PTSD. Despite identifying promising benefits of PADs to support symptom reduction and improve well-being, the evidence was based on anecdotal and self-reported subjective evidence, subsequently increasing the risk of biases and the validity of results. Heterogeneous methodologies and results, as well as the disparity of outcome measures of the eligible controlled studies, inhibited the ability to aggregate and analyse data using statistical methods (van Houtert et al., 2018). Overall, the researchers concluded that due to methodological shortcomings, the need for higher methodological rigour was emphasised for a definitive understanding of efficacy outcomes to support PADs as evidence-based interventions (van Houtert et al., 2018). Since van Houtert et al. (2018) review, scholarly attention to this field has grown, in addition to published results from the US Department of Veteran Affairs mandated control trial (Richerson et al., 2020).

With the high prevalence of PTSD, non-response and engagement difficulties encountered with conventional PTSD treatments, and the upsurge in the use of PADs in veterans and first responders alongside a growing body of evidence examining this unique intervention, an updated review of the current evidence is warranted. However, due to the unique methodological complexities and heterogenous outcomes measures associated with reviewing literature of the efficacy of PADs for people with PTSD (van Houtert et al., 2018) adapting the review

typology to a narrative synthesis to ensure continued progress in our understanding of PADs for PTSD is recommended

Specifically, clarity and definitive understanding concerning central concepts surrounding the use and role PADs play in differing environmental contexts, and the appropriateness of these to support the handlers' PTSD challenges should be considered. Accordingly, individual experiences and context complexities need to be considered alongside efficacy outcomes, for a more inclusive understanding of PADs and to better inform best practice guidelines (Shaw et al., 2014). To obtain such depth, this review employs a mixed method systematic review typology, enabling a formalised approach to integrating diverse types of evidence for a more comprehensive understanding of the role PADs play in supporting the handler's everyday PTSD challenges. Furthermore, the review will conceptualise the findings through a holistic person-centred recovery lens to consider the extent to which the provision of a PAD contributes to PTSD recovery progress and outcomes.

The aim of this review is to conduct a comprehensive systematic assessment of the current state of evidence-based research that pertains to (1) identifying the roles of PADs in assisting recovery and (2) the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in first responders and defence personnel with PTSD.

3.3. Method

To address the research objective, the theoretical methodology employed was conducted in accordance with the Joanna Briggs Institute (JBI) guidance for mixed methods systematic reviews (MMSR, Lizarondo et al., 2020), alongside The Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). An a-priori protocol was developed to assist in pre-defining the objective and proposed methods of the review, consisting of review objectives, search strategy, eligibility criteria, study selection, the extraction process, quality assessment and approach to synthesis and resolving disagreements between reviewers. Registration of review protocol was obtained from PROSPERO (registration number. CRD42020149845). No current or in-progress reviews were found on the topic when consulting the following databases: PROSPERO, MEDLINE, Cochrane Database of Systematic Reviews, and JBI Database of Systematic Reviews and Implementation Reports.

3.3.1. Eligibility criteria

Inclusion criteria for population and phenomenon*.* This review considered articles that included (a) current and former defence personnel (all branches) and/or first responders (including police, fire and rescue, ambulance, and State Emergency Services), (b) those diagnosed with PTSD, (c) investigate the use of psychiatric assistance dogs, and (d) all contexts (i.e., at home, community, PAD training organisations, therapeutic settings). Studies that examined other species of assistance animals, or other canine assistance interventions (i.e., emotional therapy dogs) not specifically focused on psychiatric assistance dogs for PTSD were excluded from the review. Studies examining support persons/caregivers, clinicians, trainers, or other persons were also excluded.

Inclusion criteria for study type*.* This review sought to identify studies that reported primary data and considered quantitative, qualitative, and mixed methods designs from peer-reviewed journal articles and research dissertations. Eligible quantitative studies included randomised control trials, quasi-experimental, and cross-sectional designs. Eligible qualitative studies included case studies, case reports, observational and interviews. Mixed method studies where data from the quantitative or qualitative components could be clearly extracted were also considered. All relevant studies regardless of publication date were reviewed and studies published in English only with full-text access were included. Books, newspaper articles, commentaries, conference abstracts, editorials, chapters, or literature reviews were excluded.

3.3.2. Literature search strategy

In consultation with a specialised research librarian, an initial search of EBSHOST platform, Scopus, Google Scholar, Web of Science, CINAHL and PsycARTICLES databases was undertaken in August 2019, to assist in identifying keywords contained within titles and abstracts and index terms used to describe articles. Keywords were refined and incorporated into the search strategy to capture relevant articles, with consideration of differences in terminology and indexing from differing databases. The search string consisted of ("post-traumatic stress disorder*" OR "PTSD") AND ("service dog*" OR "assistance dog*") AND ("first responder*" OR "emergency service*" OR "veteran*").

In December 2019, a systematic search by two independent reviewers was undertaken, simultaneously searching the following databases for qualitative,

quantitative, and mixed-method articles, using the preceding keywords and subject headings identified in the search strategy. The electronic bibliographic databases that were searched included: Scopus; Web of Science; CINAHL, PsycARTICLES, Psychology and Behavioural Sciences Collection and PsycINFO. Sources of gray literature were searched using the ProQuest Dissertations and Theses database. In addition to the electronic search method, an ancestral search was undertaken by manual searches of the peer-reviewed journals reference lists pertained within the selected studies for critical appraisal. Manual searches of the peer-reviewed journals' reference lists and searches from alerts created on the Google Scholar platform for newly published studies were continually undertaken throughout the data extraction and manuscript preparation process for the acquisition of additional studies. However, due to a significant increase in the number of articles published, a second review for additional articles was warranted. Accordingly, in November 2022, two researchers repeated the search strategy and critical appraisal process for the inclusion of additional articles.

3.3.3. Study inclusion

Citations of the identified studies from the search were assembled and uploaded into EndNote X9 referencing software (Clarivate Analytics, US) and duplicates were removed. Two independent reviewers then screened and assessed article titles and abstracts against eligibility criteria, and studies that met the inclusion criteria were retrieved in full and imported into EndNote XP (Clarivate Analytics, US) as well as the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information package (JBI SUMARI, Munn et al., 2019). Two independent reviewers assessed the eligibility of the remaining full-text articles against the inclusion and exclusion criteria. Twenty-eight full-text articles were further excluded based on the population, intervention or study type not meeting the inclusion criteria (refer to Figure 1 for reasons for exclusion).

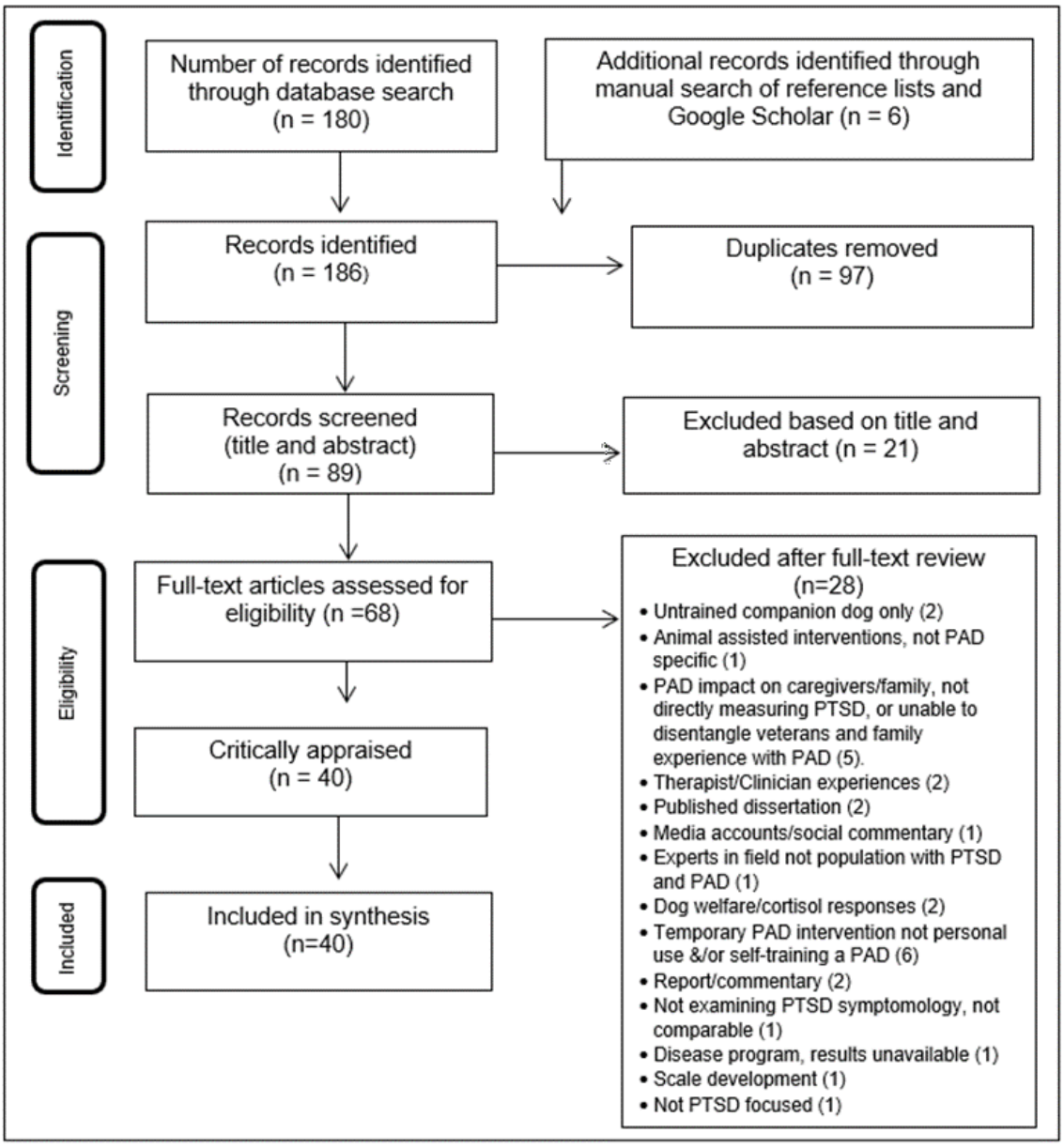
Any discrepancies between reviewers were resolved through discussion at each stage of the study process, yielding consensus on eligible studies. Figure 1 presents a flow diagram of the review inclusion process according to PRISMA guidelines (Moher et al., 2009). Prior to inclusion in the review, 40 of the remaining articles were assessed for methodological quality.

3.3.4. Assessment of methodological quality

Prior to inclusion into the review, the 40 eligible studies selected for retrieval, were critically appraised by two independent reviewers for methodological validity, using standardised critical appraisal instruments (Joanna Briggs Institute, 2020a, 2020b, 2020c, 2020d, 2020e, 2020f, 2020g) in JBI SUMARI system (Munn et al., 2019). Discrepancies that arose between the reviewers were resolved through discussion, or with a third reviewer, which ultimately yielded 100% consensus on methodological validity for all eligible studies. Refer to Appendix A, for JBI checklist questions and reviewers' responses.

Figure 1

PRISMA Flow Diagram for Article Inclusion



Quantitative studies. The single RCT article and 11 quasi-experimental design studies were critically appraised and demonstrated high methodological quality (refer to Appendix A Table A1, A2). Whilst some of the quasi-experimental studies lacked a comparison group and/or control group, this did not reflect a weakness of the studies, instead represented the specific studies design type (i.e., one-group interrupted time-series studies/ pretest-posttest). Of the 10 cross-sectional studies appraised (Table A3), 70% identified potential confounding variables, however, only 30% of studies provided strategies to account for confounding variables in either the study design or data analysis. Several studies did not clearly define the inclusion criteria, while others only provided ambiguous details of the measures used.

Qualitative studies. Methodological congruity for qualitative studies determined by the JBI critical appraisal checklists indicated high validity, and participants' voices were adequately represented in all 12 studies. However, the credibility of 67% of studies was weakened by the lack of clarity surrounding the influence of the researcher's cultural and theoretical orientation on the qualitative process, and 33% of studies neglected to acknowledge and address the influence of the researcher on the research and the potential of the research process to influence the researcher interpretations (refer to Table A4). One case report was assessed and whilst methods, results and takeaway lessons were clearly described, participant characteristics and history (i.e., medical, family, and psychosocial history and past interventions) were neglected to be identified (Table A7). The five case series studies demonstrated sound methodology, however, the reporting of clinical information about the participants and the reporting of the presenting site/clinic demographic information was unclear (refer to Table A5).

Mixed method studies*.* A single mixed method study was critically appraised by relevant JBI appraisal tools (qualitative and prevalence tools). Both the qualitative and quantitative components and demonstrated sound methodological validity yet were weakened by a lack of a statement locating the researchers' cultural or theoretical predisposition in the qualitative analysis in addition to an inadequate sample size in the prevalence critical appraisal (Hyde, 2015; Table A4 and Table A6).

Overall, irrespective of methodological quality it was determined that due to the explorative nature of the review, all 40 articles were considered significant to the

review objectives and retained to undertake data extraction and synthesis. However, due to the known complexities of study constraints of PAD research, the recommendation of interpreting analysis with caution to acknowledging the inherent risk of bias in this field that cannot be rectified easily.

3.3.5. Data extraction

Primary data obtained from quantitative, qualitative, and mixed methods studies were extracted concurrently by a single reviewer using the standardised JBI data extraction tool in JBI SUMARI (Munn et al., 2019). Data extracted included study methodology, characteristics of the population, the phenomenon of interest, context, and outcomes. Themes and illustrations from qualitative studies were also assigned a level of credibility based on the congruency with findings. Only findings designated as either (1) unequivocal (evidence beyond doubt [i.e., directly reported/observed]), or (2) credible (interpretations, logically inferred from data results and/or theoretical frameworks) were included (Lizarondo et al., 2020). Refer to Table 2 for the overview of study characteristics.

3.3.6. Data transformation

As the broad review objective can be addressed by both quantitative and qualitative research, a convergent data-based approach was utilised (Lizarondo et al., 2020). A convergent approach involves data transformation, enabling the reviewer to combine quantitative and qualitative data to address the research objective (Lizarondo et al., 2020). Accordingly, following data extraction, the next phase involved transforming data into a mutually compatible format through either ‘qualitising’ (e.g., the narrative synthesis of quantitative data results) or ‘quantising’ the data (e.g., transforming qualitative data into a quantitative format, and assigned numerical values; Lizarondo et al., 2020). As the research objective was to facilitate a richer understanding of the PAD intervention, a descriptive approach of qualitising quantitative data was the most appropriate transformation format. Accordingly, a single reviewer repeatedly examined the data and converted quantitative data into a ‘qualitised’ format. This process involved generating narrative interpretations of the extracted quantitative outcomes found in the included studies, which would assist in addressing the review objective.

3.3.7. Data synthesis, integration, and conceptual framework

Following the transformation of quantitative data into qualitised format, a single researcher assembled the qualitised data with the extracted qualitative data

and aggregated findings into categories based on similar meanings using the JBI SUMARI. To assist in the systematisation and conceptualisation of identified findings drawn from the analysis of extracted data, we drew on a broad multidimensional mental health recovery framework posited by Whitley and Drake (2010). This framework supported the holistic mapping of the findings of the use and role PADs play within various contexts and the appropriateness of these to support PTSD challenges. Accordingly, the categories were further pooled together and integrated in line with one of the five broad dimensions of recovery domains (clinical, social, existential, physical, and functional; Whitely & Drake, 2010) or assigned to the challenges and barriers category. Table 1 outlines the descriptors of the dimensional approach to recovery used to conceptualise and contextualise findings.

Table 1

Five Dimensions of Mental Health Recovery in Context

Dimension	Description of Recovery Facets
Clinical	Reduction or management of symptoms and incorporation of therapeutic interventions (medical care, psychotropic medication, talking and behavioural therapies)
Social	Interpersonal and community engagement. Examples: Meaningful relationships with family, friends, peers, community, and social activity
Existential	Psychosocial factors that make a person feel more in control of their lives. Examples: Sense of personal empowerment, hope, agency, and self-efficacy. Religion and spirituality wellbeing
Physical	Positive improvements in self-care and pursuing healthy lifestyle factors. Examples: diet, exercise, substance abuse.
Functional	Participate in everyday life aspects and in society. Example. Vocational and educational attainment, improved morale, self-esteem, and community integration.

Note. Adapted version of Whitley and Drake (2010) Dimension of Recovery in Context table (Whitley & Drake, 2010, p.1249).

3.4. Results

3.4.1. Characteristics of Included Studies

Table 2 presents an overview of the study characteristics of the 40 studies included in the review. The majority of articles were predominantly based in the United States (75%, n = 30), followed by Canada (17.5%, n = 7), Australia (2.5%, n=1), Netherlands (2.5%, 1) and Denmark (2.5%, n= 1). All articles examined current and/or former defence veterans with PTSD, with only two studies incorporating first responder participants (Husband et al., 2019; van Houtert et al., 2022). The studies were primarily comprised of peer-reviewed publications in academic journals (77.5%, n = 31/40) with the remaining comprised of dissertations (22.5%, n = 9/40), conducted between 2014-2022 demonstrating research into this phenomenon is still relatively new. Noting 75% (n = 30/40) of studies have been published since the last scoping review examining studies prior to September 2017 (van Houtert et al., 2018), indicating the significant growth in scholarly attention in the past 5 years.

Overall, 22 quantitative studies, 17 qualitative studies and one mixed-method study were examined. Qualitative methodologies studies predominantly collected data via individual interviews, whilst quantitative studies primarily gathered data using standardised self-reported checklist questionnaires. Four studies used a combination of self-reporting and objective measures. A single randomised control trial (RCT) was identified comparing PADs and emotional support dogs (Richerson et al., 2020), 15 studies utilised a comparator group (Bergen-Cico et al., 2018; Goetter et al., 2022; Hansen, 2019; Jensen et al., 2021; Kegel, 2018; Kopicki 2016; Marston, 2016; Nieforth et al., 2021; O'Haire & Rodriguez, 2018; Rodriguez et al., 2018, 2020, 2021; van Houtert et al., 2022; Whitworth et al., 2019; Yarborough et al., 2017) and nine studies were one group pretest-posttest study designs (Galsgaard & Eskeland, 2020; Jensen et al., 2022; Kloep et al, 2017; Lessard et al., 2020; O'Haire & Rodriguez, 2018; Scotland-Coogan et al., 2022; Vincent et al., 2017; Vincent, Dumont et al., 2019; Yarborough et al., 2017).

High variability between PAD intervention study designs, recruitment and PAD organisations' format context was identified. This included disparity between how participants obtained the PAD for the study (i.e., acquired a pre-trained PAD or self-training a PAD), type of training program modality (ADI and non-ADI accredited facilities and duration differences), and single site PAD training facility and/or multi-site PAD organisations to examine outcomes.

Table 2. *Study Characteristics of Included Studies*

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
Bergen-Cico et al. (2018)	USA	US veterans with PTSD (N=48)	Investigated the impact of participating in a veteran dog owner-trainer program on PTSD symptoms, perceived stress, self-compassion, self-judgment, and isolation.	Dog owner-trainer intervention group (n = 34) Wait-list comparison group (n = 14).	Quasi-experimental non-equivalent pretest – post-test design. Participants train a dog (own dog or provided an untrained dog) and participate in an owner-trained PAD training program for a single-site PAD organisation. Examined group differences at baseline and 12-month post-intervention, utilising standardised self-report assessments.
Brown (2015)[T]	USA	Veteran with PTSD (N = 1)	Examined veterans' experiences of the impact of PAD on their overall sense of wellbeing		Single case report (n=1). Participants already partnered with a trained PAD prior to participating in the study. Semi-structured interview via telephone. ** Compiled a case study database consisting of videos from media resources (n=15) to compare with the case report. Conducted a content analysis.
Crowe & Nguygen (2018)	USA	Veterans with PTSD (N= 6)	Explored how veterans' partnerships with their PADs influence occupational performance in their homes.		Qualitative design. Semi-structured interviews guided by an interview guide created/refined by the researchers. Researchers created a codebook with categories. Participants were graduates of an owner-trained PAD training organisation.
Crowe et al. (2018)	USA	Veterans with PTSD (N = 9)	Explore veterans' perspectives on their partnership with PAD related to daily functioning (impact on emotional well-being, physical well-being, and general benefits)		Qualitative design. Two focus groups (3 veterans/group) and 3 individual interviews guided by reviewing existing PAD literature. Created a codebook and utilised qualitative analytic software. Participants were graduates of an owner-trained PAD training organisation.
Dell et al. (2022)	Canada	Canadian veterans with PTSD recovered or recovering from substance abuse (N=16)	Explored veterans' perceptions on if and how PADs are a source of support in their recovery from substance use harms and the challenges experienced.		Qualitative design. Semi-structured interviews via telephone or online platform. Content analysis was performed followed by the application of SAMHSA four dimensions framework. Participants were already partnered with a PAD prior to participating in the study.
Floore-Guetschow (2020)[T]	USA	Veterans with PTSD (N = 7)	Explore the use of PADs for veterans with PTSD and understand how the presence of PAD changes daily life/functioning.		Qualitative design. Semi-structured telephone interviews guided by a phenomenological approach and utilised thematic analysis. Participants already partnered with a PAD prior to participating in the study.

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
Galsgaard & Eskeland (2020)	Denmark	Danish combat veterans with PTSD (N=4)	Examining whether PAD companionship increases control over PTSD symptoms, daily functioning, and quality of life.		Qualitative case report design. 16-month study. Three-time point assessments – standardised PTSD measures assessed at baseline, end of training and follow-up. During monthly group meetings with clinical psychologists, semi-structured interviews were undertaken for three months, and case reports were complied. Interviews examined challenges before entering intervention, adjustment and training PAD and longer-term changes in symptoms and quality of life. Participants received an untrained dog (puppy) and participated in the PAD training program.
Goetter et al. (2022)	USA	Veterans with PTSD (N = 682)	Examine differences between veterans and service members with and without a PAD completing a 2-week intensive CBT for PTSD	Veterans own a PAD (n= 93) of those (n=33) brought a PAD to the program. Veterans without a PAD (n=589)	Quasi-experimental design. Veterans completed a 2-week intensive outpatients' CBT program. Compared veterans with a PAD and without a PAD on self-reporting of PTSD symptomology at baseline and treatment outcome differences. Participants already partnered with a PAD prior to participating in the study.
Hansen (2019)[T]	USA	Veterans with PTSD (N = 64)	Compare the impact of PADs for combat and non-combat veterans with PTSD-related symptoms and evaluate the relationship between handler and PAD.	Non-combat veterans using a PAD (n= 33) Combat veterans using a PAD (n=31)	Cross-sectional study design. Online self-report questionnaires measured PTSD symptoms, PAD tasks, and attachment styles in relation to PAD tasks. Participants already partnered with a PAD prior to participating in the study.
Husband et al. (2019)	Canada	Canadian Veterans (n = 3) and first responders (n = 1) with PTSD and problematic substance use (N=4)	Examined whether PAD assists with addressing problematic use of substances (illicit, licit, and prescribed medication).		An exploratory case study examined whether and how the introduction of a PAD assists in addressing the problematic use of substances. Prescription histories were reviewed pre- and post-intervention (receiving PAD). One-time, structured interviews were also conducted at post-intervention time points (2 years post receiving PAD). Thematic Analysis within and across cases was employed.
Hyde (2015)[T]	USA	Combat veterans with PTSD (N=7)	Explored the impact of PADs for social and occupational functioning, PTSD symptomology and veteran experiences of using PAD		Mixed method design. Participants already partnered with a PAD prior to participating in the study. Structured telephone interviews guided by phenomenological therapy. Standardised self-reported PTSD assessment and piloted MD3Q questionnaire and analysed as descriptive statistics. Qualitative and Quantitative data were integrated and reported thematically.

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
Jensen et al. (2021)	USA	US military members and Veterans with PTSD (N=186)	Replication of previous cross-sectional studies (O'Haire & Rodriguez, 2018; Yarborough et al., 2017) using the updated PTSD checklist for DSM-5, rather than the PTSD checklist for DSM-IV.	Paired with PAD (n=112) Wait-list control group (n = 74)	Cross-sectional study design investigating the association between using a PAD and PCL-5 total and symptom cluster scores. Participants already partnered with a PAD prior to participating in the study.
Jensen et al. (2022)	USA	US military members and veterans with PTSD (N=82)	Explored potential predictors of efficacy and mechanisms involved in the partnership between veterans and PADs for PTSD, depression, and anxiety.		Quasi-experimental one group pretest – posttest design. PAD and Veteran baseline assessments for inclusion into the program. Participants were paired with a trained PAD and completed a 3-week veteran/PAD structured training program, and follow-up assessment three months after completing the program. Standardised self-report survey measures, Bluetooth proximity and ecological momentary assessment.
Kegel (2016)[T]	USA	Veterans with PTSD (N = 66)	Compared quality of life, management of PTSD and alcohol use in veterans with PTSD with and without PAD.	Using a PAD (n = 43) Comparison group – without a PAD (n = 23)	Cross-sectional study design. Self-administered online survey. Standardised self-report assessments. Participants already partnered with a PAD prior to participating in the study.
Kloep et al. (2017)	USA	Veterans with PTSD (N = 13)	Examine the effects of an intensive 3-week resilience and life skills training program using trained PADs for veterans with PTSD		Quasi-experimental pretest-post-test design. Standardised self-reporting assessments. Two separate cohorts enrolled in the program at two different time points (n = 7 and n = 5). Participants were paired with a trained PAD and completed the program. Participants completed pre-assessment 1 month prior to the program, initial training day, weekly (three weeks), one month post-treatment and six months post-treatment.
Kopicki (2016)[T]	USA	US Veterans with PTSD (N = 22)	Evaluated the efficacy of PADs for reducing PTSD severity and quality and quantity of sleep. Explore the length of time paired with a PAD has on symptom outcomes.	Paired with PAD (n = 12) Wait-list comparison group (n = 6)	A cross-sectional comparison group design (post-test only). Standardised PTSD and sleep quality self-reported questionnaires. Participants already partnered with a PAD prior to participating in the study.
Krause-Parello & Morales (2018)	USA	US Veterans with PTSD (N = 21)	Experiences of veterans who trained/utilise PADs for PTSD		Qualitative design. Semi-structured interviews with veterans using a PAD. Interpretive phenomenological approach. Participants already partnered with a PAD prior to participating in the study.

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
LaFollette et al. (2019)	USA	Veterans with PTSD (N = 111)	Examine associations between reported training methods, PTSD severity, the bond between handler and PAD and dog behaviour.		A cross-sectional study using a self-reported online survey. Standardised PTSD assessment as well as an IOS scale (human-animal bond) and modified questionnaires regarding training methods and dog behaviour and character were used. Participants already partnered with a PAD prior to participating in the study.
Lessard et al. (2018).	Canada	Canadian Veterans with PTSD (N= 10)	Veterans' perspectives of the usability of PADs as a tertiary prevention modality from veterans paired with a PAD for 2-4 years.		Case study series. Semi-structured interviews. Utilised a content and thematic analysis approach. Participants already partnered with a PAD prior to participating in the study. Multi-site PAD organisations.
Lessard et al. (2020)	Canada	Canadian Veterans with PTSD (N= 18)	Examined the changes in physical activity and sleep after the acquisition of a PAD.		Quasi-experimental design. One group pretest-posttest assessment. Pre (3m) and post (9m) acquisition of a PAD. Actigraphy-based measures and standardised self-report measures. Paired with a trained PAD during the study period.
Marston (2016)[T]	USA	US Combat Veterans with PTSD (N = 22)	Examined the impact of PAD on quality of life for combat veterans with PTSD.	Paired with PAD (n = 12) Wait-list comparison group (n = 6)	A cross-sectional comparison group design (post-test only). Standardised self-reported assessment completed via a paper version of the survey. Participants already partnered with a PAD prior to participating in the study.
McLaughlin & Hamilton (2019)	AUS	Australian Veterans with PTSD (N = 7)	Explored the influence of PADs on PTSD symptom management and daily occupation participation		Qualitative design. Two semi-structured focus groups at a single-site PAD organisation. Utilised a Thematic analysis. Participants were already partnered with a PAD or dog in training to become accredited PAD.
Moore (2014)[T]	USA	US Combat Veterans with PTSD (N = 8)	Examined the impact of PADs on veterans with PTSD		Qualitative design. Semi-structured interviews. Utilised an Interpretive Phenomenological analysis approach. Participants already partnered with a PAD prior to participating in the study.
Newton (2014)[T]	USA	US Veterans with PTSD (N = 6)	Examining the positive and negative experiences of veterans using a PAD as part of their treatment.		Qualitative design. Semi-structured interviews via telephone. Utilised Thematic Analysis. Participants already using a PAD for PTSD support (participants either received trained PAD and participated in formalised training or owner-trained PAD that participated in non-formalised training programs)
Nieforth et al. (2021)	USA	Veterans with PTSD (N = 128)	Examined veterans' perspectives of the benefits and challenges of using a PAD and compared these experiences with	Paired with a PAD (n = 69) Wait-list group (n=59)	Qualitative survey data was collected from open-ended online survey questions. An inductive content analysis was undertaken. Participants already partnered with a PAD prior to participating in the study.

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
			expectations of PAD from veterans on the waitlist to receive a PAD.		
O'Haire & Rodriguez (2018)	USA	Veterans with PTSD (N = 141)	Evaluate the effects of PADs on PTSD symptomology, depression, quality of life and social and employment functioning. Comparing usual treatment with and without a PAD.	Veterans receiving usual PTSD care and paired with PAD (n = 75) Veterans receiving usual PTSD care only (Waitlist; n = 66)	Quasi-experimental nonrandomised efficacy trial. Participants were already paired with a trained PAD and attended a 3-week PAD training program. Standardised self-report assessments of PTSD symptomology, depression, quality of life and social and employment functioning. Longitudinal PTSD assessments included pre-PAD PTSD assessments on file at PAD organisation and post-receiving a PAD PTSD assessment. Five time points (three time points while on the waitlist and two time points with a PAD). Cross-sectional assessments -compared groups at a single time point.
Richerson et al. (2020)	USA	Veterans with PTSD (N = 227)	Effectiveness of PAD pairing compared to ESD in improving overall disability and quality of life for veterans with PTSD. Secondary objectives included the effectiveness of PAD and ESD for PTSD severity, suicidal ideation, and behaviour.	Veterans paired with PAD (n=97) Veterans paired with ESD (n = 84) Terminated *prior* to pairing (n=46) Terminated *after* pairing (PAD n = 9; ESD n = 19)	Multicentre (three) parallel, two-arm, randomised clinical design. Participants were randomly assigned to either a PAD or ESD. An observation period of three months then followed for 18 months. Self-report measures of overall disability and quality of life (primary outcomes). Secondary assessments included PTSD symptom severity, suicidal ideation, depression, sleep, and anger assessments.
Rodriguez et al. (2018)	USA	Veterans with PTSD (N= 73)	Examine physiological and arousal-modulating effects of the placement of PAD with veterans with PTSD	Paired with PAD (n = 45) Wait-listed comparison group (n = 28)	A cross-sectional design that has compared group differences on the effect of PAD on cortisol awakening response (CAR) and survey assessments. Veterans self-collected saliva samples on two consecutive weekdays at awakening and 30 minutes later. In conjunction with completing standardised self-report survey assessments. Participants were already paired with a trained PAD and attended a 3-week PAD training program.
Rodriguez et al. (2020)	USA	Veterans with PTSD (N=217)	Quantify the therapeutic use of PADs on several parameters to assist in defining the PAD intervention. Comparing expectations versus everyday experiences of veterans with a PAD.	Paired with PAD (n = 134) Waitlisted to receive PAD (n = 83)	A cross sectional design that includes a self-administered online survey, measuring the importance of trained and untrained PAD behaviours assisting PTSD symptomology, the frequency of trained tasks used to help with specific PTSD symptoms, and the relationship between symptom severity, length of time with PAD and veterans-PAD closeness relating to importance and frequency task outcomes. Group

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
					differences of expectations vs everyday experiences of using a PAD were analysed. Participants already partnered with a PAD prior to participating in the study.
Rodriguez et al. (2021)	USA	Veterans with PTSD (N=96)	Examined the effects of PADs on medication use (medicine regimens and changes) amongst veterans with PTSD.	Veterans with a PAD (n= 44) Wait-list to receive PAD (n = 52)	A cross sectional design. Self-administered (online or mail -in) survey assessing PTSD severity and medication use, changes, and type of medication/reason for use. Group differences in changes to medication and medication use were analysed. Participants already partnered with a PAD prior to participating in the study.
Scotland-Coogan (2019a).	USA	Combat veterans with PTSD (N = 15)	Examined the impact of receiving and training a PAD on interpersonal relationships, socialisation, and anger management		Collective case study design. Semi-structured interviews with veterans participating in a 14-week PAD training program for receiving and training their own PAD. Utilised Stake's case model to examine differences and commonalities between cases. Within and across case analysis was conducted. Participants train a dog (own or provided untrained dog) and participate in a 14-wk PAD training program
Scotland-Coogan (2019b)	USA	Combat veterans with PTSD (N = 15)	Examined veterans' experiences of PAD on their impact on PTSD symptoms, and residual effects of anxiety symptoms and sleep disturbance		Collective case study design. Semi-structured interviews. Utilised Stake's case model to examine differences and commonalities between cases. Within and across case analysis was conducted. Participants train a dog (own or provided untrained dog) and participate in a 14-wk PAD training program
Scotland-Coogan et al. (2022)	USA	Veterans with PTSD (N = 71)	Evaluated a 14-week PAD training program for PTSD-related outcomes.		Quasi-experimental (nonrandomized) one group, pretest-post-test design. Self-reported measures were administered prior to the first session and after the final session of the program. Participants train a dog (own or provided untrained dog) and participate in a 14-week PAD training program (n = 55).
Van Houtert et al. (2022)	Netherlands	Veterans and first responders (N=65)	Examined the impact of PAD on veterans and first responders with PTSD.	Four comparative groups: 1. PTSD and PAD (n = 20) 2. PTSD without a dog, on waitlist to receive a PAD (n= 12) 3. PTSD with companion dog +	A cross sectional design that examined and compared physiological parameters (cortisol levels and activity levels) and subjective responses to standardised measures (PTSD symptoms, wellbeing, and sleep quality) of four groups. Self-administering salivary samples were collected at set time points over two days, accelerometers were worn and self-reported questionnaires. Participants in the PTSD and PAD group had already been paired with a trained PAD prior to participating in the study.

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
				waitlist to receive a PAD (n = 10) 4. Without PTSD (n = 23)	
Vincent et al. (2017)	Canada	Veterans with PTSD (N = 15)	Investigated the short-term effectiveness of PAD for veterans with PTSD.		Quasi-experimental (non-randomised) design. One-group multiple time-series design. Participants were paired with a trained PAD during the study period. Self-administered measures were taken at intervals of six, three and zero months before and three-months after receiving PAD.
Vincent, Dumont et al. (2019)	Canada/USA	Veterans with PTSD (N = 31)	Evaluated the longitudinal impact of acquiring a PAD on various PTSD-related symptoms and functioning outcomes.		Quasi-experimental (nonrandomised) design. Multi-site one-group interrupted time-series analysis over an 18-month period (three months before, and four months after receiving SD). Self-report measures. Participants were paired with a trained PAD during the study period.
Vincent, Gagnon et al. (2019)	Canada/USA	Veterans with PTSD (N=31)	Evaluated and compared processes and services of dog training schools and the impact on effectiveness as a tertiary prevention modality.	Veterans (n = 31) ** School delegates (n= 7) ** Dog trainers (n = 7) ** Dogs (n =23)	Exploratory case study. Contact reports and face-to-face questionnaires (veteran group only). Content analysis. Participants were paired with a trained PAD during the study period.
Whitworth et al. (2019)	USA	Combat veterans with PTSD (N = 30)	Evaluated the feasibility of conducting controlled trials in a 14-week PAD training program to examine PTSD symptomology, intra/interpersonal difficulties, and daily functioning	Attended PAD training program (n = 15) Wait-list comparison group (n = 15)	Quasi-experimental design. Pretest-post-test design with comparison group. Participants train a dog (own or provided untrained dog) and participate in a 14-wk PAD training program Waitlist group at a different PAD organisation. Standardised self-report measures
Yarborough et al (2017).	USA	Veterans with PTSD (N = 78)	Examined tasks performed/expected to be performed by a PAD to support veterans PTSD-related needs.	Veterans paired with a PAD (n = 24) Wait-list for a PAD (n= 54)	Quasi-experimental design. Multi-site study (5 PAD training organisations). Compared baseline characteristics of veterans already paired with a PAD and those on the waitlist to receive a PAD using self-report measures. Subset study – compared pre-post characteristics among 22 veterans who were on the waitlist and received a PAD as part of the study.

Author	Country	Population	Research Objective	Comparative group/s	Intervention / Analysis
Yarborough et al. (2018)	US	Veterans with PTSD (N = 41)	Investigated veterans' experiences of the benefits and challenges of using PADs for PTSD	** interviews were also with veterans' caregiver (n=8) ** interviews with trainers from participating organisations (n=6)	Qualitative design. Semi-structured in-depth interviews. Thematic analysis. Interviews explored how the PAD had/had not met expectations, affected their quality of life, important tasks they perform, and challenges of using a PAD. Participants had either already been partnered with a PAD or received a trained PAD as part of a larger study.

Note: Type of Article: [T] = thesis/dissertation for PhD or Master's degree; PAD (Psychiatric assistance dogs); Sample: N = total number in sample, n = size of sample group/s. ** sample responses not included in review. ESD: Emotional support dog. DSM IV = Diagnostic and Statistical Manual of Mental Disorders Fourth edition. DSM-5 = Diagnostic and Statistical Manual of Mental Disorders Fifth edition. PCL-5 = PTSD Checklist for DMS-5. MD3Q: Military Demographic, Deployment, and Dog Questionnaire. IOS = Inclusion of Other in the Self Scale.

Specifically, twenty-two studies were comprised of participants partnered with a trained PAD prior to participating in the studies (Brown, 2015, Dell et al., 2022; Floore-Guetschow, 2020; Goetter et al. 2022; Hansen, 2019; Husband et al. (2019) Hyde, 2015; Jensen et al., 2021; Kegal, 2016; Kopicki, 2016; Krause-Parello & Morales, 2018;, LaFollette et al., 2019; Lessard et al., 2018; Marston, 2016; Moore 2014; Newton, 2014; Nieforth et al., 2021; Rodriguez et al., 2020, 2021; van Houtert et al., 2022; Yarborough et al., 2017; 2018). Nine studies examined participants who were paired with a trained PAD as part of the study or paired during the study period (Jensen et al., 2022; Kloep et al., 2017; Lessard et al., 2020; Richerson et al., 2020; Vincent et al., 2017; Vincent, Dumont et al., 2019; Vincent, Gagnon et al., 2019; Yarborough et al., 2017; 2018). Two studies consisted of participants who had already partnered with a PAD prior and completed a formalised training program O'Haire & Rodriguez, 2018; Rodriguez et al, 2018). Eight studies examined outcomes from participants who trained a dog (their own dog or provided an untrained dog) and either participated in/graduated from a formalised PAD training program (Bergen-Cico et al., 2018; Crowe et al., 2018, Crowe & Nguygen, 2018; Galsgaard & Eskeland, 2020; Scotland-Coogan, 2019a; 2019b; Scotland-Coogan et al., 2022; Whitworth et al., 2019), and one study explored experiences of self-training in a non-formalised training format (Newton, 2014). One study recruited a mixture of participants that have either partnered with trained PAD or at the time had a PAD in training (McLaughlin & Hamilton (2019). Overall, these disparities void the ability to compare potential effect outcomes from training programs due to confounding effects such as PAD application procedures, placement criteria, training standards and handler-PAD pairing.

3.5. Findings of the review

The synthesised and integrated findings produced evidential constructs of PADs' multi-faceted role underpinning the holistic framework of five recovery dimensions and challenges and barriers of the utilisation of PAD for PTSD recovery. The subsequent section provides extensive detail of the underlying constructs identified in the data compromised within the six broad categories, (1) clinical recovery, (2) social recovery, (3) existential recovery, (4) physical recovery, (5) physical recovery, (6) challenges and barriers to recovery progress and outcomes.

The first category, clinical recovery, encompasses evidence for how the PAD assists in facilitating the reduction and management of the psychiatric symptoms of

PTSD as well as exploring the therapeutic outreach of PADs and PAD interventions in differing modality contexts and impact on symptoms and functioning. The second category, social recovery, explores PADs' role in supporting interpersonal functioning and connectedness to others, engagement in social activities and their influence on integration within the community. The third category, existential recovery, considers how PADs contribute to intrapersonal growth in order to disarm the individual from being succumbed to their injury. The fourth category, physical recovery, explores how the PAD contributes to the physical health and well-being of the handler. The fifth category, functional recovery, describes how PAD assists with daily life activities and assimilation into society through societal roles (i.e., educational and employment). The final category discusses the challenges and barriers of utilising a PAD that may impede recovery progress and outcomes.

For uniformity, each recovery category consists of a summary table, outlining the impact of PADs on PTSD and PTSD-related symptom outcomes, descriptions of the type of roles and tasks PADs perform, the therapeutic appropriateness of these roles, and the holistic impact these roles have for the handler. Within the challenges and barriers category, the review identified and described the challenges/barriers, the consequences of these for the handler and some of the strategies to counteract these issues uncovered from the data findings.

3.5.1. Clinical Recovery Domain

There is evidence to suggest that PAD plays a role in the reduction and management of PTSD-related symptom severity. Whereby underlying mechanisms of PAD performing numerous trained tactile and positional cues were reported to directly impact symptoms of arousal and reactivity, intrusive cognitions, negative moods and cognitions and avoidance. Moreover, untrained/ innate characteristics of the PAD alongside the handler/PAD relationship appeared to play an integral role in supporting symptom severity (refer to Table 3 for Clinical Domain summary). The studies also highlighted therapeutical opportunities of PADs and associated PAD interventions that appear to support changes in symptomology, these include (1) PAD the practitioner, (2) PAD co-practitioner augmented in current treatment, (3) Formalised PAD training programs, and (4) Nonconventional PAD training programs.

PTSD severity outcomes*.* Clinically meaningful changes in participants overall PTSD symptom severity were associated with the utilisation of a PAD (Jensen et al., 2022; Kloep et al., 2017; Lessard et al., 2020; O'Haire & Rodriguez,

2018; Richerson et al., 2020; Scotland-Coogan et al., 2022; Vincent et al., 2017; Vincent, Dumont et al., 2019; Yarborough et al., 2017). Significant differences between veterans partnered with a PAD and comparator groups were identified, including veteran-PAD teams reporting fewer PTSD-related symptoms over time compared to veterans partnered with an emotional support dog (ESD, Richerson et al., 2020). Van Houtert et al. (2022) also found that veteran-PAD partnerships resulted in significantly less PTSD-related symptomology, and better sleep quality and wellbeing compared to veteran-companion dog partnerships. Similarly, lower PTSD symptom severity outcomes were reported for veteran-PAD team compared to participants without a PAD with large effect sizes noted (Bergen-Cico et al., 20218; Jensen et al., 2021; Rodriguez et al., 2018; 2020; O'Haire & Rodriguez, 2018; Whitworth et al., 2019; Yarborough et al., 2017, van Houtert et al., 2022). Beneficial longitudinal effects of being paired with a PAD were also evident at follow-up (Jensen et al., 2022; O'Haire & Rodriguez, 2018) which continued to decrease over time (Kloep et al., 2017; Richerson et al., 2020; Vincent, Dumont et al., 2019).

Notably, the sole RCT identified 32% of veteran-PAD and 26% of veteran-ESD teams' PTSD severity no longer met the clinical criteria for PTSD at the 15-month mark (Richerson et al., 2020). Similarly, two studies reported that the overall reduction in post-traumatic stress symptomology was below the diagnostic threshold at six months (Kloep et al., 2017), and nine months and 12 months (Vincent, Dumont et al., 2019). The remaining studies found the severity of PTSD did not fall below the diagnostic threshold, therefore reinforcing perceptions and justification that the use of PADs must be considered and recommended as a complementary PTSD intervention, used in addition to and not in place of traditional PTSD treatments. Contradictory to the findings above, two studies found there to be no difference in the reduction of PTSD symptoms for participants with or without a PAD (Kegel, 2016) and the length of time with a PAD was not associated with a reduction of PTSD symptoms (Kopicki, 2016).

Functional trained tasks of PAD for PTSD symptom severity*.* Evidence from the studies supported the facilitative role PADs play in the reduction and management of PTSD-related symptom severity. The underlying mechanisms of PADs performing numerous trained tactile and positional cues were perceived to directly impact symptoms of arousal and reactivity, intrusive cognitions, negative moods and cognitions, and avoidance behaviours (Brown, 2015; Crowe et al., 2018;

Dell et al., 2022; Floore-Guetschow, 2020; Galsgaard & Eskeland, 2020; Hyde, 2015; Kloep, 2017; Kopicki, 2016; Krause-Parello & Morales, 2018; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Moore 2014; Newton 2014; Rodriguez et al., 2020; Scotland-Coogan 2019a; 2019b; Yarborough et al. 2017; 2018). Specifically, these trained tasks serve as grounding techniques to deescalate the intensity of psychological and physiological responses and provide biofeedback to signal to the handler to redirect their focus and initiate metacognition, self-regulation, and self-monitoring of psychological and physiological responses. These trained tasks also assisted in prolonging exposure in a public environment and enabled a realistic appraisal of the surrounding environment.

Grounding handler through tactile cues. The synthesis of studies detailed how the PAD played an integral role in symptom severity, by grounding the handler to deescalate heightened psychological and physiological responses by performing tasks to cue the handler to initiate skills to self-manage emotional overload and heightened cognitive states (Brown, 2015; Crowe et al., 2018; Hyde, 2015; Kloep, 2017; Kopicki, 2016; Krause-Parello & Morales, 2018; McLaughlin & Hamilton, 2019; Moore 2014; Newton 2014; Nieforth et al., 2021; Rodriguez et al., 2020; Scotland-Coogan, 2019b; Yarborough et al., 2017, 2018).

Specifically grounding tactile techniques performed by the PAD (i.e., licking, nudging, nuzzling, leaning, deep pressure, petting, jump on lap) were reported to calm and comfort the handler, providing reprieve from escalating symptoms (Brown, 2015; Crowe et al.,2018; Krause-Parello & Morales, 2018; Newton, 2014; Scotland-Coogan, 2019b) and assisting the handler to remain or re-orientate to the present (Hyde, 2015; Yarborough et al., 2017; 2018). Evidence from the studies portrayed that the PADs' ability to calm and comfort hander was perceived to be the most important and frequently used trained task (Jensen et al., 2022) assisting all four diagnostic clusters of PTSD symptoms (intrusive symptoms, avoidance, negative alterations in mood and cognitions as well as arousal and reactivity; Rodriguez et al., 2020). Furthermore, objective evidence demonstrated physiological improvements in salivary cortisol awakening response (CAR) indicating participants with a PAD had reduced stress and arousal (Rodriquez et al., 2018).

Psychiatric assistance dogs also detect the onset of an emotional overload (i.e., arousal and anxiety, irritability and anger, and depressive moods; Moore, 2014; Nieforth et al., 2021; Scotland-Coogan, 2019b) and subtle somatisation changes

(Crowe et al., 2018) before the handler is consciously aware of their state (Crowe et al., 2018; Moore 2014; Scotland-Coogan, 2019b; Yarborough et al. 2017; 2018). Accordingly, the PAD uses these subtle changes as cues to provide early alerts of escalating symptoms, aimed to reduce/prevent symptom intensity becoming unmanageable and signal the handler to engage in self-regulating and self-monitoring of physiological and psychological responses (Kloep, 2017; McLaughlin & Hamilton, 2019; Moore, 2014; Newton, 2014; Rodriguez et al., 2020; Scotland-Coogan 2019a; Yarborough et al. 2017; 2018). Psychiatric assistance dogs' ability to alert and interrupt was frequently used (Jensen et al., 2022, Nieforth et al., 2021) and reported to assist with several intrusive symptoms (i.e., memories, flashbacks, cued distress, and physical reactions), as well as symptoms of arousal and reactivity (i.e., irritability, aggression, and hypervigilance; Rodriguez et al. 2020).

In the instances where the handler is not responding to early alerts to redirect their focus; commonly reported during dissociative/flashback states, the PAD demands the handler's attention through progressively more forceful tactical distraction (i.e., consistently moving to different positions, persistent nudging or jump on handler chest, nip/bite, bark, face licking) in order to rouse the handler, until such time that the handler reconnects with the present moment/reality (Brown, 2015; Lessard et al., 2018; Moore, 2014; Scotland-Coogan, 2019b). However, conversely, Whitworth et al., (2019) found no differences in dissociated states after a 14-week PAD group training program, between participants with or without a PAD.

> He actually is helping out, I mean, cause I not when I get kind of squirrely when I start spacing out, I don't even realise I am spacing out and I'll look at my watch and it's twenty or thirty minutes later and I'm like, wow, I've been spacing out that much and there he is, really just tugging on me and I have a bunch of bite marks from it…he'll be guarding me and he'll be tugging the heck out of me, he's like, uh, master, it's time for you to get back out of this (Scotland-Coogan, 2019b, p.2665).

These tactile distractions were also reported to reduce aggression, hypervigilance, startled reactions, and improvements in concentration on tasks and sleep issues. The PAD distracts the handler during heightened arousal and aggressive outbursts with relentless tactile distraction until such time that the handler redirects their focus away from the provoking source and fully focuses on the PAD, enabling a moment of metacognition and focus on controlling emotional state (Crowe

et al., 2018; Hyde, 2015; Lessard et al., 2018; Moore, 2014; Nieforth et al., 2021, Scotland-Coogan, 2019a).

> He's [the service dog] 42 pounds and he has physically [dragged] me out of a garage where I was going to beat a man … since I was in a state of chaos where it was imminent danger present and he [dragged] me out. He gives me a second… he alerts me and gives me a second to think what my next action is going to be (Crowe et al., 2018, p.2959).

Redirecting the focus from personal symptoms to focusing on PAD has also assisted in prolonging exposure in the public domain—a key therapeutic outcome of PTSD treatment—where handlers are able to block out external potential triggers and prising public interactions (Moore, 2014; Newton, 2014; Scotland-Coogan, 2019a), and remove the handler from stressful environments by guiding them to a safe location, where the handler can calm down (Crowe et al., 2018; Krause-Parello & Morales, 2018). Additionally, the PAD leads the handler to a designated location if disorientated in public settings (Lessard et al., 2018).

> … when you're in Walmart by yourself and you don't have those five guys, you're really trying to concentrate on everything...heightened sense of awareness, and that is very tolling on the body... very stressful, very emotional...trying to watch and remember every little detail about every little thing. So, uh, just being able to just focus off of all that and put it onto [Dog], ... brings me down dramatically, like - whew - just focus on the dog...it lets everything calm down... There's been a couple [of] instances where I sat down in the middle of the aisle, and she'll like pretty much crawl on my lap, you know, and I'll start petting her and talking to her... Now... walking down the aisle, I'll flip her leash to her and she'll catch it in her mouth and start pulling or something, and we'll just play and it keeps me in that aisle, not all over the whole store (Moore, 2014, p.68).

Wake from nightmares. Reexperiencing the trauma/s can manifest through frequent nightmares, often intense and violent in nature taking both a physical and psychological toll on individuals. It was commonly reported that PADs played an important role in providing early detection and/or disruption of nightmares by waking the handler up at the onset of a nightmare or during a nightmare (Floore-Guetschow, 2020; Hyde, 2015; Galsgaard & Eskelund, 2020; Husband et sl., 2019; Krause-Parello & Morales, 2018; Lessard et al., 2018; Moore, 2014; Newton 2014; Nieforth

et al., 2021; Rodriguez et al., 2020; Yarborough et al., 2017) by licking their handlers face, whining, barking, nudging jumping on them, turning on light switch, and pulling the blankets off to wake their handler (Floore-Guetschow, 2020; Hyde, 2015; Krause-Parello & Morales, 2018; Moore, 2014; Scotland-Coogan, 2019b). Potential benefits of early detection and waking the handler from a nightmare were reported to improve several other sleep parameters (sleep quality and quantity, ease of falling back to sleep; Krause-Parello & Morales, 2018; McLaughlin & Hamilton, 2019; Moore 2014; Nieforth et al., 2021; van Houtert et al., 2022; Vincent, Dumont et al., 2019; Yarborough et al., 2018), yet this MMSR review and within standalone studies found conflicting results on several sleep parameters as well as disparity between objective sleep measures and subjective experiences (Rodriguez et al. 2018; Vincent, Dumont et al., 2019; Lessard et al., 2020). For example, sleep parameters examined through actigraphy-based monitoring reported no improvements in sleep efficacy, nor changes in the frequency of waking after sleep onset or duration, yet despite these findings, the same participants self-reported positive changes in efficiency, quality, and disturbance (Lessard (2020). Nevertheless, the early waking from a nightmare was reported to reduce the violent nature of the nightmare (Krause-Parello & Morales, 2018) but also limited the potential incident of violence towards their partner, if their partner attempted to wake them (Scotland-Coogan, 2019b). Furthermore, waking the handler up from nightmares was also reported to have residual effects in reducing fatigue, destructive behaviours, and improving mood (McLaughlin & Hamilton, 2019).

> When I wake up, I'm pouring sweat, I'm crying. I still smell jet fuel. I still smell black powder . . . once the dream starts I know I'm moving in my sleep. And I know I'm yelling out. And that's what he reacts to. He's like, wait a minute, something's wrong. And he's putting his cold nose right on my neck and it wakes me up. . .I went from less than two and a half hours [of sleep] to close to five. . .I can relax (Yarborough et al., 2018, p.121).

Grounding handler through positional cues. Numerous studies reported significant changes in participants' severity of avoidance symptoms after the acquisition of a PAD (Lessard et al., 2020; O'Haire & Rodriguez, 2018; Rodriguez et al., 2018; Vincent et al., 2017; Vincent, Dumont et al., 2019; Whitworth et al., 2019). Avoidance of going out into public appeared to be primarily due to handlers preventing heightened states of arousal and reactivity the participants experienced

(Scotland-Coogan, 2019a). Several studies concurred that PAD assisted in reducing the severity of arousal and reactivity states (Kopicki, 2016; Lessard et al., 2020; O'Haire & Rodriguez, 2018; Rodriguez et al., 2018; Vincent et al., 2017; Vincent, Dumont et al., 2019; Whitworth et al., 2019; Yarborough et al., 2017) with the most significant reductions from all PTSD symptoms were explicitly "being super alert or watchful on guard" and "feeling jumpy or easily startled" (Vincent, Dumont et al., 2019). These studies highlighted that the PAD assisted in reducing the handler's vigilance of their surroundings and startled responses by performing specific positional tasks and providing calm and comfort to the hander (Dell et al., 2022; Floore-Guetschow, 2020; Rodriguez et al., 2020).

Specifically, the PAD is trained to respond to handlers' positional cues, including creating and maintaining physical space around handlers in public or crowded places to prevent strangers from violating personal boundaries or accidental bumping (Brown, 2015; Floore-Guetschow, 2020; Lessard et al., 2018; Nieforth et al., 2021, Yarborough et al., 2018). This barrier was reported to provide breathing room to cope with the environment (Newton, 2014), enabling the handler to self-focus and realistically appraise their surroundings (Hyde, 2015; Newton, 2014). Psychiatric assistance dogs also watched handlers back and provided subtle tactile cues to alert the handler to people approaching from behind (Crowe et al., 2018; Floore-Guetschow, 2020; Hyde, 2015; McLaughlin & Hamilton, 2019; Moore, 2014; Newton, 2014, Rodriguez et al., 2020; Scotland-Coogan, 2019a, Yarborough et al., 2017) this not only reduced vigilance and void startle (Rodriguez et al., 2020) but enabled the handler to concentrate on tasks at hand (Newton, 2014). The PAD is attuned to external influences that could trigger handlers stress and conducts threat assessments of the surrounding environment (Dell et al., 2022; Hyde, 2015; Newton, 2014; Crowe et al., 2018) and alerts handler to the presence and/or absence of potential threats (Lessard et al., 2018; Moore, 2014; Yarborough et al., 2018). Psychiatric assistance dogs can also be cued to check around corners, where the handler reads the subtle body language of the PAD to avoid a startled state (Crowe et al., 2018). Inclusive, these positional tasks foster a sense of personal safety and security (Dell et al., 2022; Floore-Guetschow, 2020; McLaughlin & Hamilton, 2019; Moore, 2014; Scotland-Coogan, 2019a), reducing fear and generating feelings of ease and comfort when out in public (Moore, 2014), enabling the handler to safely

navigate the environment and concentrate on the task at hand (Hyde, 2015; Newton, 2014).

> He'll always put his head on my foot, and so I can relax until the weight of his head comes up. And then I'll know that there's someone entering the room. And I'll look to see. That way I don't have to be as alert. I don't have to be keeping my eyes open and watching all exits and entrances and stuff, because he always does that, because as an animal, he's always on alert. Even when his eyes are closed. So it takes away my need of (sic) being alert, a lot of the time (Yarborough et al., 2018, p.121).

Overall, there is evidence to suggest that these underlying mechanisms of PAD providing tactile and positional cues, serve to ground the hander to subsequently initiate self-monitoring of the psychological and physiological state that accompanies PTSD symptom severity. In addition to PAD fostering the handler's ability to make reality-informed decisions about the environment to assist in reducing hyperarousal (in the form of hypervigilance and startle responses) and subsequently minimising avoidance in the public domain.

Handler/PAD dyad and innate characteristics*.* This subcategory was comprised of unique attributes PAD provides to the handler to foster progress in their recovery journey. Specifically, multiple studies depicted that innate characteristic of a canine alongside the handler/PAD relationship played a pivotal role in supporting PTSD-related symptom severity (Bergen-Cico et al., 2018; Crowe et al., 2018; Crowe & Nguygen, 2018; Dell et al., 2022; Floore-Guetschow, 2020; Krause-Parello & Morales, 2018; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Moore, 2014; Newton, 2014; Rodriguez et al., 2020; Scotland-Coogan, 2019a; Yarborough et al., 2017; 2018).

Handler-PAD partnership. Underpinning all the positive benefits outlined within this review, was the nurturing bond between the handler and PAD. A reoccurring perception when describing the partnership with the PAD was likened to military experiences of having a teammate, a battle buddy, resemblance of another solider; where the constant companionship, reciprocal safety and trust, reliance on one another and wellbeing of team members are precedence (Floore-Guetschow, 2020; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Moore, 2014; Scotland-Coogan, 2019a). Accordingly, a PAD nurtured the handler's feelings of trust and personal safety (Crowe et al., 2018; Crowe & Nguygen, 2018; Lessard et al., 2018;

McLaughlin & Hamilton, 2019; Moore et al., 2014; Newton, 2014) and was described as a loyal and patient companion (Crowe et al., 2018) and a constant source of joy and happiness (Bergen-Cico et al., 2018; Crowe et al., Nieforth et al., 2021, Rodriguez et al., 2020; Yarborough et al., 2017). Furthermore, the use of bond-based training methods (positive reinforcement), was associated with veterans reporting a high level of closeness and attachment to PADs (Jensen et al., 2022, La Follette et al., 2019).

Multiple studies depicted the importance of companionship, non-judgemental acceptance and unconditional and reciprocal love received from the PAD which cultivated numerous aspects of reducing and managing PTSD injury (Crowe et al., 2018; Floore-Guetschow, 2020; McLaughlin & Hamilton, 2019; Newton, 2014; Rodriguez et al., 2020). For instance, the companionship and constant presence that the PAD provided were found to have positive connotations in reducing loneliness and associated depressive feelings (Bergen-Cico et al., 2018; Newton, 2014; Moore, 2014), supporting the handler to tackle challenges together, rather than going at it alone (Moore, 2014). Evidence from the studies also suggests that PAD acts as a form of social surrogacy to fill the gap of limited friendship, lessening the feelings of loneliness (Moore, 2014; Scotland-Coogan, 2019a) and this closeness provides social support which in turn promotes reductions in anxiety (Jensen et al., 2022). The unconditional and reciprocal love between the handler and PAD appears to be an integral aspect in helping reduce symptomology (Moore, 2014; Rodriguez et al., 2020) with the psychosocial benefits of reconnecting with something-someone (Newton, 2014). Something to love and take care of provided handlers a reason to live, in turn, perceptions of reduced depression and suicide ideation were highlighted (Krause-Parello & Morales, 2018).

> The biggest thing is, he [service dog] gave me a reason to live more than anything in the world, he gave me something to take care of, he gave me something to love and he shows me unconditional love and because of that it brought me out of a deep depression, gave me a reason to live and to love again and to be a whole person. If it wasn't for him I honestly believe I would have killed myself (Krause-Parello & Morales, 2018, p.68).

Table 3. *Summary of the Facilitative Role of PAD within the Clinical Recovery Domain*

PTSD Symptom-related Severity Outcomes	PAD Approach (How)	PAD Appropriateness for Handler	Holistic Outlook for Progress and Outcomes	Limitations / Contradictory Evidence
•↓ Arousal/ reactivity (irritability, aggression, hypervigilance, startled reactions) •↓ Intrusive cognitions (memories, flashbacks, dissociative states, cued distress, physical reactions, nightmares) •↓ Negative mood & cognition •↓ Avoidance of internal and external reminders •Longitudinal Changes in PTSD symptom severity at six, nine, 12 & 18months post PAD. • ↓ symptomology below the diagnostic threshold in three studies (including RCT) for some participants. •Positive changes in sleep disturbances and quality (latency, duration) •↓ Loneliness •↓ Suicidal behaviour, ideation, and attempts • ↓ PTSD symptom severity over time for veteran/PAD vs veterans/ESD	**Tactile Stimulation/Distraction Cues** • Early alerts and interrupt escalating symptoms • Provide calm and comfort (licking, nudging, leaning, deep pressure, petting) • More forceful and/or distracting cues to redirect the focus and block out external triggers (consistently moving, persistent nudging, jumping on chest, nipping/biting, barking, face licking, tugging/dragging). • Wake from nightmares (licking their handler's face, whining, barking, nudging jumping on them, turning on the light switch, and pulling the blankets off to wake their handler) •Demand attention to redirect the focus from personal symptoms to focus on the PAD. **Positional Tasks and Threat Assessments** • Creating and maintaining physical space/boundary around the handler. • Watch the handler's back and alert the handler to people approaching from behind. • Provide subtle cues of people approaching. • Check corners • Alert handler to the presence/absence of potential threats. • Alert bark if the handler needs help •Remove the handler from triggering environments and guide them to a safe location. **Innate Dog Characteristics** • Constant companionship -24-hour presence • Unconditional and reciprocal love •Loyal and patient •Source of joy and happiness •Non-judgmental acceptance •Reciprocal dependency •PAD-related responsibility/husbandry •Detect and intervene when the handler is depressed •PADs presence/distraction from suicidal ideations and attempts.	• Detect early onset of cognitive and emotional overloads and subtle somatization changes. • Deescalate heightened psychological and physiological responses • Reorientate, Refocus and Reappraise the situation • Early waking from the onset of a nightmare, reduction in the violent nature of the nightmare, limited potential incidence of violence toward partner, and a residual effect in reducing fatigue, destructive behaviour and improving mood. • Attuned to external influences that could trigger stress and conduct threat assessments. • Foster a sense of personal safety and security at home and in the public domain • Assists in focusing and accomplishing tasks when out in public • Increased comfort in public spaces, increased public outing durations/frequency • Ability to leave home as PAD provided confidence in their ability to control negative emotions and arousal Increased comfort in public places • Ability to make reality-informed decisions about the environment and assist in reducing hypervigilance and avoidance of public places. • Attending crowded public settings that the handler previously avoided • Anthropomorphised - likened to a team member/battle buddy (reciprocal safety and trust, and reliance on one another). • Form of social surrogacy to lessen the gap of limited friendships • Something to love and take care of. • Nurtured feelings of personal safety and trust • Positive diversion from suicidal ideations • Provided a reason to live • Support the handler to tackle challenges together rather than alone.	• Grounding handler to initiate skills for metacognition, self-regulation, and self-monitoring of psychological and physiological responses • Prolonging exposure in the public environment and reengagement in the community. • Reconnecting with someone/something.	• No difference in the reduction of symptoms with/without a PAD (Kegel, 2016). • No difference in symptom severity between combat and noncombat veterans with a PAD (Hansen, 2019) • PAD made no impact on intrusive cognitions or avoidance symptoms, nor was the length of time not associated with the reduction of PTSD symptoms (Kopicki, 2016). • PAD-trained tasks were not helpful with participants with symptoms of amnesia (Rodriguez et al., 2020). • No differences in dissociative states post-14 week PAD training compared to participants without a PAD (Whitworth et al., 2019). • No significant decreases in the impact of suicidal behaviour/ideation post-14wk PAD training compared to participants without a PAD (Whitworth et al., 2019). • Conflicting results on sleep parameters and the disparity between objective sleep measures and subject experiences (Lessard et al. 2020) and sleep efficacy (Vincent, Dumont et al., 2019) • Unclear whether reduced depression is ascribed to underlying factors such as the acquisition of a PAD, symptom support, improved sleep, and engagement in physical activity (Lessard et al., 2020). •PTSD severity is not associated with PAD behaviour, character, or veteran-PAD bond (LaFollette et al., 2019)

Note. Bergen-Cico et al. 2018; Brown, 2015; Crowe et al., 2018; Crowe & Nguygen, 2018; Dell et al., 2022; Floore-Guetschow, 2020; Galsgaard & Eskelund, 2020; Hansen, 2019; Husband et al., 2019; Hyde, 2015; Jensen et al., 2021, 2022; Kegal, 2016; Kloep et al., 2017; Kopicki, 2016; Krause-Parello & Morales, 2018; LaFollette et al., 2019; Lessard et al., 2018; 2020; McLaughlin & Hamilton, 2019; Moore 2014; Newton 2014; Nieforth et al., 2021; O'Haire & Rodriguez, 2018; Richerson et al., 2020; Rodriguez et al., 2018; 2020; Scotland -Coogan 2019a; 2019b; Scotland-Coogan et al., 2022; van Houtert et al., 2022; Vincent et al., 2017; Vincent, Dumont et al., 2019; Whitworth et al., 2019; Yarborough et al., 2017; 2018.

Depressive Symptomology. It is plausible that the companionship attributes as well as the PADs' ability to detect and distract from depressive cognitions, play a role in the reduction of depression. One study highlighted the PADs' ability to detect and intervene when the handler was depressed and described this as an important functional task (Lessard et al., 2018). Furthermore, the same study noted that the improvements in depression severity may be ascribed to underlying factors such as the acquisition of a PAD, symptom support, improved sleep, and engagement in physical activity (Lessard et al., 2020). Self-report studies have also identified changes in participants' depressive symptomology after the acquisition of a PAD (Jensen et al., 2022; Lessard 2020; O'Haire & Rodriguez, 2018; Vincent et al., 2017). Similarly, there was significantly lower depression symptomology when paired with a PAD compared to participants without a PAD (O'Haire & Rodriguez, 2018). One study found a decreasing trend over time, resulting in depressive severity downgraded from 'severe' to moderate' 12 months post-acquisition of a PAD (Vincent, Dumont et al., 2019).

Suicide ideation and attempts. Compared to emotional support dogs (ESD), fewer suicidal behaviours and ideations were reported for the veteran-PAD partnership at 18 months post-pairing (Richerson et al., 2020). There is evidence to suggest PADs serve to protect the hander against suicidal ideations and attempts (Floore-Guetschow, 2020; Hyde, 2015; Krause-Parello & Morales, 2018; McLaughlin & Hamilton, 2019; Moore, 2014; Whitworth et al., 2019; Yarborough et al. 2018). The handlers' love for the PAD and PAD-related responsibilities provided a reason to live (McLaughlin & Hamilton, 2019; Yarborough et al. 2018).

> I had a loaded forty-five next to me. And I found myself thinking more about suicide than I thought about anything else. And when I got [Dog], it was pure love, pure joy. He forced me to get out of bed to feed him, to walk him, to throw a Frisbee for him, to brush him, to interact with him. Many times I would wake up screaming, crying, and he would come up and lick my face. And, I mean, I'm getting just kind of emotional even thinking about it, thinking about what he did for me without him even knowing he was doing it, I guess (Yarborough et al., 2018, p.121).

Moreover, the PAD provided a diversion from suicidal ideations (McLaughlin & Hamilton, 2019) ". . . he knows before I'm going there, so he'll come and just poke his nose at me and it just provides that distraction . . . and it's just enough you know. . . just enough so that you don't hurt yourself" (McLaughlin & Hamilton, 2019, p5) and it was also acknowledged that the sheer presence of the PAD prevented a suicide attempt.

> She literally stopped me a couple of weeks ago. I was all set (clicks fingers) and I turned around, ready to go, and there she was, just sitting there, and I was like, oh shit. . . I just grabbed hold of her and I cried all over her and . . .yeah, she has done an awful lot. . .she takes the thoughts away (McLaughlin & Hamilton, 2019, p.5).

Therapeutic opportunities of PADs and associated PAD interventions.

Augmented into the clinical recovery category, the review identified numerous therapeutic opportunities of the clinical utility of PADs and associated PAD interventions, contributing to a comprehensive understanding of the influence these may have on an individual's PTSD recovery journey. Four subcategories were found, including (1) PAD the practitioner (2) PAD co-practitioner - augmenting PAD into current treatment, (3) formalised PAD training programs and (4) self-training non-formalised training format. Refer to Table 4 for a summary of PAD and associated interventions).

PAD the practitioner. Several studies depicted that the PAD served as a type of therapist/practitioner, fostering self-talk of difficulties participants were experiencing. Founded on PADs' innate characteristics of being nonjudgmental and a trusted confidant, PADs were considered a refuge for handlers to exhibit their emotional vulnerabilities, surfacing bottled-up distressing cognitions and emotions (Crowe et al., 2018) and generate self-monologue of troubled cognitions, enabling the handler to share and explore what is on their mind, seldomly disclosed to others (Moore, 2014; Newton, 2014; Scotland-Coogan, 2019a).

> There are things that I still haven't talked about to a person, where I've talked to [Dog] about... And those things that I've talked to him about have started to either ease or are just more seldom... there are things that I'm not ready to talk to people about, where…I don't want to accept that I've done what I've done or I don't want to relive it or rethink it…So I get to talk to him about it...about everything that I really have to deal with, including some of my nightmares and the reasons behind my nightmares, I was - I had tears in my eyes, and I was very emotional thinking about everything and talking about it, even though it was a dog. And the more emotional I got, the closer he got. And when it came to me finishing everything that I needed to go over with him, he was in my lap (Moore, 2014, p. 73).

The uniqueness of this form of intervention is the PADs' constant 24/7 personalised support, dissimilar to other psychotherapy or psychopharmacological interventions (Hyde, 2015; Newton, 2014), with participants expressing that the PAD was the most constant and effective intervention they had used (Newton, 2014) and less invasive compared to other forms of treatment (Floore-Guetschow, 2022). Similarly, participants voiced that other

treatments did not provide sufficient support for symptom relief or functional changes, in addition to reporting higher compliance and commitment to utilising a PAD as an intervention (Hyde, 2015). While others have exhausted treatment options and/or lost interest in trying new interventions and advocate the use of PAD as a monotherapy treatment (Floore-Guetschow, 2020).

> It's just a lot easier for me to manage some of my PTSD symptoms than it was earlier. I think that having Amy there with me every day, everywhere I go, has been better treatment than any group that I could've gone to, than any psychiatrist or psychologist that I could have seen, [than] any medication that I could've taken. She's been the best form of treatment that I've gotten" (Newton, 2014, p.34).

Others perceived the PAD as a 'tool' not a cure (Crowe et al., 2018; Floore-Guetschow, 2020; Newton, 2014), used as a catalyst to assist the handler in learning to self-manage symptoms (Newton, 2014), foster self-change and growth; working together towards recovery (Crowe, et al., 2018). Moreover, participants strongly expressed that the PAD should be used in conjunction with other interventions (Crowe et al., 2018; Newton, 2014).

> The dog is a mirror, not a cure – a tool bag…It's not like the service dog actually fixes that problem. They are only a small part that can be used as that tool to help push the use of that huge bag but they help you fix it…they help push you (Crowe et al, 2018, p.2959).

Augmenting PAD into current treatment. The second therapeutic opportunity was PADs' role as a 'co-practitioner' in the therapeutic setting. Studies reported the therapeutical benefits of PAD when used in conjunction with current PTSD treatments. Findings identified the integration of PAD into the therapy session was reported to enhance therapeutic efficacy and recovery speed (Lessard et al., 2018; Moore, 2014) as well as working less on the reliance on medication with more focus on the handler in the sessions (Newton, 2014). The trusting relationship with the PAD was reported to enable the handler to better accept other interventions (Crowe et al. 2018). In addition to therapeutic outcomes, PADs were portrayed as playing a significant role in generating a dialogue between handler and therapist through behavioural actions of the PAD, cueing the therapist to the handlers' subliminal responses and/or the use of the PAD to support specific techniques (Moore, 2014).

> Integrating her into therapy has been critical um to making it more effective, to be honest. Um, so for example, if we're doing - so right now I'm working on some Cognitive Processing Therapy, and uh doing the trauma account, and doing all of that. Um, if you tend to want to do the numbing symptoms or the avoidance, or you're

> having a hard time, [name of Psychiatric Service Dog] will let the therapist know because she's a stinker, and she will literally let the therapist know that something's not right and that whatever that point is needs to be addressed or that I need to stop or whatever it is. So that she makes that process sooo much more effective...if it's too overwhelming to be helpful, or if I can do more and I'm not doing it. So for example, if I start doing something and I numb out because I don't want to deal with that particular topic, um, you know, a lot of individuals with PTSD, including myself, can be pretty good about doing that, 'yeah, it's okay,' kind of thing when it's not. And she'll literally let the therapist know that it's not okay. And so those kind of things so that they can address that topic when it comes up. Like well, 'you're saying one thing, but your dog is telling me another'.... Um, also when you're having those highs and lows of having to talk about things, she'll kind of help you breathe through it and focus on it so you can continue the therapy process in a better way. So that's been pretty neat to see her do that. Breathing techniques, to be able to use her to get the relaxation and the breathing techniques and do it in time with her is pretty neat (Moore, 2014, pp.82-83).

As illustrated above, the presence of a PAD and their ability to respond to subtle changes in the handler during therapeutic sessions, not only provided support to the handler during difficult discourse but also cue the practitioner to the handler's current state. Psychiatric assistance dogs' behaviour was perceived to support the therapist to address a specific issue or divert the discussion to a topic less triggering and reduced incidences where the veteran attempts to 'bluff' the practitioner to diverge from specific discussions, as the PADs' behavioural responses portray this discrepancy in words and actions of the veteran (Moore, 2014).

Whilst veteran subjective experiences identify numerous therapeutic benefits of the inclusion of PAD into treatment, the type of treatment veterans were receiving was not disclosed. Furthermore, incongruent results between subjective and self-reported measures were found. Where the presence of PAD made no difference to treatment outcomes in an intensive 2-week CBT program (Goetter et al., 2022). Furthermore, based on the evidence, PADs were unable to assist with handlers' recollection of the traumatic event (Kopicki, 2016; Rodriguez et al., 2020; Vincent, Dumont et al. 2019), it is plausible the combination of PAD and PTSD intervention may serve to assist in this area.

Formalised PAD training programs. The primary objective of PAD training programs is to establish the handler-PAD bond and learn to execute specific tasks/commands required to successfully utilise a PAD to mitigate symptomology challenges. Often, these training

programs consist of a small cohort of handler-PAD teams and either receive a pre-trained PAD or self-training a suitable dog to become accredited. Below are detailed the findings captured during the acquisition of a PAD and the group training outcomes.

PTSD-related symptomology. Indeed, the disparity between the PAD organisation training program modalities (i.e., paired with a trained PAD or self-training a dog to become a PAD), facilitators (i.e., facilitated by mental health practitioners or peer-led trainers), accredited or non-accredited training facilities and duration (i.e., duration differences 3-weeks to 12-months) were identified from the studies characteristics (refer to study characteristics table 2). Yet regardless of study disparities, evidence of positive changes in PTSD, PSTD-related symptomology, psychosocial functioning, and well-being were reported after undertaking a formalised PAD group training (see Bergen-Cico et al., 2018; Kloep et al., 2017; O'Haire & Rodriguez; Scotland-Coogan, 2019a, 2019b; Scotland-Coogan et al., 2022; Whitworth et al., 2019). For example, after veterans completed a 14-week self-training PAD program, significant decreases in acute and chronic PTSD and interpersonal and intrapersonal growth were found (Scotland-Coogan et al., 2022). Results include significant decreases in post-traumatic stress, somatisation, externalisation, and self-disturbances being reported, as well as reductions in a number of psychological parameters including suicidality and interpersonal difficulties (Scotland-Coogan et al., 2022). Furthermore, better engagement and low dropout rates (77% completion rate) were noted (Scotland-Coogan et al., 2022). Similarly, significant decreases in depression and anger compared to participants on the waitlist were identified after a 14-week self-training PAD program, although training participation was not associated with suicidal ideation or behaviours (Whitworth et al., 2019). Comparable results were found when the use of the PAD was coupled with a 3-week intensive trauma and life skills training program (Kloep et al., 2017). Reporting all individuals participating in the study had clinically significant decreases in PTSD symptoms and associated symptoms of depression, anger, and anxiety at the end of the program and at the six months follow-up (Kloep et al., 2017). Participants' perceptions of improvements in their quality of life were also reported (Kloep et al., 2017). Furthermore, the review identified several underlying active components of participating in a group training environment, which may play a role in conducing these positive symptomology and functioning outcomes, including leaving home and attending training sessions, social and peer support, and group exposure in the public domain.

Table 4. *Summary of Therapeutic Opportunities of PADs and Associated PAD Intervention Modalities with Clinical Domain*

PTSD-Symptom Related Severity Outcomes	PAD/ PAD Intervention Approach (How)	PAD Invention Appropriateness for Handler	Holistic Outlook for Progress and Outcomes	Limitations
		PAD Practitioner		
• Reduced suppression of disclosing trauma experiences and/or difficulties. • Working together towards recovery • Achieve symptoms/functioning reduction after failed attempts of all other treatments.	• Non-judgemental acceptance • Trusted confidant • Emotional support via physical contact • Constant presence	• Ability to talk openly and explore what's on their mind/ share things about their trauma story, that they cannot/will not disclose to others. • PAD brings to the surface bottled-up and distressing cognitions and emotions • Provides tactile reassurance whilst disclosing experience. • PAD is viewed as a 'tool' or a 'mirror' (not a cure).	• The PAD as a type of therapist facilitating self-talk of difficulties experienced and providing emotional and physical reassurance. • Constant 24-hour support for symptom relief or functional changes dissimilar to other interventions. • Higher compliance and commitment to utilising PAD as an intervention (less stigma). • Learn to self-manage symptoms • Foster self-change and growth • Exhausted all treatment options with no success – PAD monotherapy	• Unclear how this form of self-talk transfers to therapy and its influence on recovery progress and outcomes.
		PAD Co-Practitioner Augmented with Current Treatment		
• Combination of PAD and treatment ↓ symptom severity compared to usual treatment alone.	• PAD is attuned to subtle changes in the handler and responds accordingly. • PAD's response to the handler's state assists the practitioner to understand the handler's current state. • Use of PAD to support specific techniques.	• A trusting relationship with PAD allowed the handler to better accept other interventions. • Useful for trauma-focused CBT sessions to disable numbing or avoidance of detailing trauma scenarios, as PAD will indicate whether a specific point needs addressing or if it is too overwhelming to help. • Reduces the handler's ability to bluff that everything is okay when the handler is not okay.	• Integration of PAD into therapy sessions enhances therapeutic efficacy and recovery speed. • Less reliance on medication with more focus on the handler in sessions. • PAD assisted the therapist in digging a bit deeper into the underlying issues of the handler.	• Three studies identified the PAD was unable to assist with the handler's recollectio of the traumatic event. • Unclear about the frequency, duration, type of treatment received. • The PAD's presence was not associated with treatment outcomes in intensive CBT programs (Goetter et al., 2022)
		Formalised PAD Training Programs		
• ↓ severity of PTSD symptoms • Reliable changes in depression 6-month f/up. • ↓ perceived stress • ↓ anger severity • ↓ intrapersonal and interpersonal challenges • ↑ perceived social support • ↑ quality of life • ↓ isolation and secluded lifestyle	• Establish a bond with PAD • Learn to execute specific PAD tasks/commands • Leaving home • Attending training sessions • Group cohesion and peer support built into all components of training.	• Provided a reason to venture out in public. • Less reliance on carers to transport them to training • The group environment contributed to positive engagement in social interactions • Sense of camaraderie and shared understanding of experiences and belonging. • Peer-to-peer support and learning together. • The organisation provided ongoing support and was perceived as a safe environment. • Trainers/Mentors – committed to support the handler.	• The group training environment is depicted as a 'therapeutic community' • ↑ independence & self-efficacy • A sense of personal empowerment. • Goal creation and attainment • Establish and maintain friendships • Positive influence on social and relationship functioning. • Participate in society • Built trust in others	• Disparity between PAD organisation training program modalities (i.e., duration 3-to-14wk; receiving a trained PAD or Self-training a dog to become accredited PAD) • No association between the program and suicidal ideation/behaviours (Whitworth et al., 2019).
		Formalised PAD Training Cont'd		
			• Establish a support network	

PTSD-Symptom Related Severity Outcomes	PAD/ PAD Intervention Approach (How)	PAD Invention Appropriateness for Handler	Holistic Outlook for Progress and Outcomes	Limitations
• Improvements in relational avoidance, rejection sensitivity, insecure attachment and 'getting along with others	• Multiple group exposure-based outings	• Handlers trusted the trainers' judgement and worked with them to take risks. • Longer duration training program useful for voiding 'overtaxing' handler – own time and pace.		• No difference in dissociated states with/without a PAD (Whitworth et al., 2019). • Unclear whether underlying active components of group training environment influence PTSD-related outcomes.
		Non-Conventional Training Approach		
	• Closer partnership • Bonding experience • Tailored tasks	• Daily commitment • Feelings of responsibility towards the dog • Steep and stressful learning curve but worth it • Tasks tailored to the specific needs of the handler	• Renewing handler's sense of purpose	• Minimal assistance with self-training difficulties • Limited studies.

Note. **PAD Practitioner:** Crowe et al., 2018; Floore-Guetschow, 2020; Hyde, 2015; Moore, 2014; Newton, 2014; Scotland- Coogan, 2019a. **PAD Co-Practitioner Augmented with Current Treatment:** Goetter et al., 2022**;** Kopicki, 2016; Lessard et al., 2018; Moore, 2014; Newton, 2014, O'Haire & Rodriguez, 2018; Rodriguez et al., 2020; Vincent, Dumont et al., 2019). **Formalised PAD Training Program:** Bergen-Cico et al., 2018; Crowe & Nguygen, 2018; Kloep et al., 2017; Galsgaard & Eskelund, 2020; Newton, 2014; O'Haire & Rodriguez; Scotland-Coogan, 2019a, 2019b; Scotland-Coogan et al., 2022; Whitworth et al., 2019. **Non-Conventional Training**: Floore-Guetschow, 2020; Krause-Parello & Morales, 2018; Newton, 2014.

Attending training sessions. Several positive benefits of attending frequent PAD training sessions were found. Handlers were required to leave the house and travel to the PAD organisation training facility (Bergen-Cico et al., 2018; Newton, 2014; Scotland-Coogan, 2019a) which can be initially challenging for individuals who had been living a secluded lifestyle. Specifically, studies reported that attending the training sessions created a goal to work towards and provided the strength and reasoning to venture out into the public (Newton, 2014). Moreover, after a few weeks into the program, studies reported that some handlers no longer relied on carers to transport them to the organisation, instead, they were able to travel to the organisation on their own (Scotland-Coogan, 2019a). Consequently, this enhanced their independence, and self-efficacy and provided a sense of personal empowerment (Newton, 2014; Scotland-Coogan, 2019a).

Perceived peer and social support from group training. The group training environment was depicted as a supportive 'therapeutic community' where group cohesion and peer support were reported to play an instrumental role in all components of the programs (i.e., dog-training activities, skills-based practice, public exposure activities etc. Kloep et al., 2017; Newton, 2014). Accordingly, this contributed to positive engagement in social interactions amongst participants of the program and changes in their ability to form relationships with others (Crowe & Nguygen, 2018; Scotland-Coogan, 2019a). Studies reported camaraderie was formed with participants in group training programs, where participants felt they had a shared understanding of experiences and provided peer-to-peer support to one another, in turn enabling friendships to form and even be maintained after finishing the training program (Crowe & Nguygen, 2018; Scotland-Coogan, 2019a). Furthermore, being approved and taking part in a group training environment alongside being given the responsibility to train a dog was perceived to produce a sense of acknowledgement of their every PTSD struggle and belonging to a like-minded group providing motivation and comfort (Galsgaard & Eskelund, 2020). It is plausible that these underlying aspects of the programs have a positive influence on the social aspects of recovery (Crowe & Nguyen, 2018). Accordingly, changes in relationship functioning were reported (i.e., improvements in relational avoidance, rejection sensitivity and insecure attached) alongside improvements in 'getting along with others' and participating in society were found, after a 14-training program, compared to others on the waitlist (Scotland-Coogan et al., 2022; Whitworth et al., 2019).

Group cohesion also played an integral role when participating in multiple exposure-based outings (Kloep et al., 2017; Newton, 2014). Whilst the concept of public exposure is to assist individual handlers in learning how to work with the PAD to assist in managing their

heightened symptoms in an array of differing environments (Kloep et al., 2017), there were also positive benefits of conducting these outings initially as a group, where peer to peer support and learning together was highlighted as helpful (Newton, 2014).

> I've been able to learn how to, number one, give back to others in a way that doesn't overtax myself, which has been good.... Knowing, when you go out, that you have a strong working team with you has been amazing, and then, in addition, the revelation that not only does your dog help you but you have a whole host of other veterans and other individuals with the same symptoms that are dealing with the same stuff. We all kind of help each other. Honestly, we built a community. So not only do our dogs help us, but if you want it, you have a bunch of other people that are going to be beside you as you're learning, too (Newton, 2014, p.45).

The PAD training organisation was also considered a source of ongoing support, and people involved in the organisation were perceived as inspiring due to their commitment to helping others (Newton, 2014). Furthermore, it was reported that participants felt the organisation was a safe environment, which facilitated the handler to trust the trainer's judgement and work with them to take risks, knowing the trainer would be there to support them (Newton, 2014). Organisations that had a longer training duration, in comparison to a short training period (two-week training program), were reported to be useful, avoiding 'overtaxing' the handler as they were able to do it in their own time and pace (Newton, 2014).

Self-training in a non-conventional format. Undertaking PAD training through formalised training organisations is not the only way for a PAD to become certified to obtain public access. In most countries, for PADs to be granted public access, the handler-PAD team must pass a public access test and perform tasks to mitigate the handler's disability and have a high standard of hygiene and behaviour whilst out in public. Accordingly, alternate forms of obtaining and training a suitable dog to become accredited is permitted. Findings from the review identified participants utilised their own pet dog and undertook basic obedience classes and with the support of trainers, trained the dog to assist in performing specific tasks to help the handler with symptom-related challenges (Floore-Guetschow, 2020). Participants described the positive benefits of self-training in a nonconventional format, including perceptions of establishing a closer partnership, the tailored approach of learning to execute tasks the handler wants/needs the dog the perform, served as a bonding experience and perceived the building of a stronger relationship when compared to receiving a fully trained PAD (Floore-Guetschow, 2020, Krause-Parello & Morales, 2018). Self-training was also depicted as a steep and stressful learning curve but perceived as rewarding and

worth it (Newton, 2014). Yet, a few participants, acknowledged that access to a formalised training format and context (travelling to the facility and intensive training period) would be advantageous (Newton, 2014). Additionally, obtaining a fully trained PAD and participating in training programs may have alleviated time spent working through difficulties (Newton, 2014).

3.5.2. Social Recovery Domain

Evidence from the review provided support for the PADs' role in fostering psychosocial growth and integration. Social recovery encompassed studies that examined PADs' impact on psychosocial aspects, such as the handler's interpersonal functioning and connectedness to others (i.e., establishment and maintenance of relationships with family, friends, and peers) as well as PADs influence on social integration, including engagement in meaningful and rewarding social activities and active outreach within the community (i.e., peer to peer support). The studies below describe how the close relationship with the PAD appeared to knock down walls of disconnect and reclusive behaviour and transfer interpersonal relationship skills learnt from the close partnership with the PAD to assist in reconnecting with others and engaging in society. Refer to Table 5 for a summary of the PADs' role in the social domain.

Interpersonal functioning and reconnecting to family. Founded on the close bond with the PAD, there was evidence to suggest PADs are a catalyst for improved interpersonal functioning. Handlers assimilate direct and indirect learnings from their connection with the PAD and subsume these to assist in closer more meaningful relationships with family (Crowe & Nguygen, 2018; Newton, 2014). For example, studies demonstrated how the physical and emotional connections with the PAD, facilitated affection towards family (Newton, 2014, Yarborough et al. 2018). Additionally, the reciprocal care and learned patience from the PAD were reflected in the handler's development of a calmer, more patient and understanding demeanour towards family members (Crowe & Nguygen, 2018; Scotland-Coogan, 2019a) and was attributed to an increased confidence in their ability to communicate and reconnect with loved ones (Crowe et al., 2018).

> It got to a point where I couldn't be close or affectionate to my wife. I couldn't give my kids a hug. Because [Dog is] always reaching to me with her paw, I'm forced to grab her paw. She loves her paw scratched. And by knowing how good that makes me feel, and how relaxed it makes me feel, it helped me to be affectionate to my wife and kids. . . I was able to start . . . holding my wife's hand, reaching for my wife's hand or putting my arm around her or hugging the kids (Yarborough et al., 2018, p.121).

The externalisation of anger and irritability were also suppressed by PADs ability to snap the handler out of the negative emotion and reappraise the situation (Scotland-Coogan, 2019a). This reduction in anger outbursts was perceived to improve relationships and feelings of belonging within the family (Scotland-Coogan, 2019a). Accordingly, PADs were described as a social catalyst enabling the handler to engage and reconnect with the family and portrayed as a pivotal connection in improving the family structure and connectedness (Galsgaard & Eskelund, 2020; Krause-Parello & Morales, 2018; Nieforth et al., 2021; Scotland-Coogan, 2019a). Gratefulness and adoration of the PAD by family members also arose due to visible changes in the handler as well as the positive impact they had on the family (Crowe, et al., 2018; Scotland-Coogan, 2019a). Other studies echo these findings, reporting that PADs' ability to assist in nurturing a greater connectedness with family was perceived as quite helpful for handlers with PTSD symptoms (Rodriguez et al., 2020). Also, compared to individuals without a PAD, studies reported handlers with a PAD had better interpersonal relationships (Yarborough et al., 2017). An additional study also concurred, highlighting that participants' satisfaction with personal relationships and social support increased over time (Vincent, Dumont et al., 2019).

Social integration*.* Prior to obtaining a PAD, PTSD-related symptomology induced reclusive and disengaged behaviour, and the probability of having to engage in public social interactions was coupled with withdrawing from heading out into the public domain (Krause-Parello & Morales, 2018). Indeed, multiple studies uncovered the beneficial impact of PAD on social integration (Bergen-Cico et al., 2018; Crowe et al., 2017; Dell et al., 2022; Floore-Guetschow, 2020; Galsgaard & Eskelund, 2020; Krause-Parello & Morales, 2018; Vincent, Dumont et al., 2019) and general improvements in participating on society (Whitworth et al., 2019). Specifically, Vincent, Dumont et al. (2019) reported that being paired with a PAD significantly lessened the feelings of being distant or cut off from others and reported improvements in social integration within the community (particularly mobility within the neighbourhood) in addition to feeling more comfortable in public places over time (Vincent, Dumont et al., 2019).

Several studies reported that the PAD enabled new opportunities to initiate and engage in positive social interactions with others in the community, which in turn increased self-confidence and comfortableness in their ability to communicate and enhanced the development of social skills (Crowe et al., 2018; Hyde, 2015; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Moore 2014; Newton, 2014; Nieforth et al., 2021; Scotland-Coogan, 2019a).

I didn't socialise with anybody but then when I got him, I guess because everybody wants to say hi to a dog or a service dog so that kinda breaks the ice and it forces me into the social aspects of things (Lessard, et al., 2018, p.46).

Table 5.

Summary of the Facilitative Role of PAD within the Social Recovery Domain

Outcomes	PAD Approach (How)	PAD Appropriateness for Handler	Holistic Outlook for Progress and Outcomes
		Interpersonal Functioning and Connectedness	
• ↓ feeling of being distant/cut off from others • ↓externalisation of anger and irritability outbursts affecting relationships • ↑ satisfaction about personal relationships and social support increased over time.	Close relationship/bond: • Physical and emotional connection • Reciprocal care • Patience and understanding Functional Tasks: • Disrupt externalised negative emotions and heightened distress	• Transfer learnt behaviours from bond with PAD to facilitate affection towards family • Development of handler being calmer, more patient and understanding toward family members • Increased confidence in the ability to communicate and reconnect • Reduction of anger outbursts improved relationships • PAD positive impact on improving family structure -adoration of PAD from family members.	• Growth in interpersonal skills • Greater connectedness with family was perceived as helpful for PTSD-related symptomology • Increased feelings of belonging
		Social Integration	
• ↓ Reclusive and disengaged behaviour to avoid public social interactions • ↓ Negative alterations in cognition and mood • ↓ avoidance • ↓ hypervigilance • ↓ distress engaging with members of the public • ↑ interest in social and enjoyment in leisure activities • Changes in negative beliefs about oneself and others	• 'Ice breaker' -initiated positive social interactions with others in the community. • Focal distraction/ diverting attention to PAD • Provided the motivation to engage in social activities • Husbandry needs of PAD (physical activity) • Functional tasks – alert and intervene during heightened distress and positional cues when out in the public domain. • Social greeting to others in group mentor settings – offer physical contact, and solace for others experiencing difficulties.	• Enhanced the development of social skills • Increased self-confidence and comfortableness in the ability to communicate • Meaningful interactions with the public • A positive view of others and the world • Focal distraction voided unpleasant conversations of illness allowing the handler to be less anxious/ on guard yet opening up communication channels. • PAD created more opportunities as well as motivation to engage in social activities. • Facilitated opportunities for social networking due to an increase of physical activity (walking the PAD). • Opportunities to enjoy leisure activities (i.e., attend loud football games). • Feeling more comfortable in public places over time. • Felt capable of increasing outreach within the community (i.e., including volunteering to assist/mentor others with similar illnesses, and advocating the use of PAD to the public). • PAD assisted the handler in group mentor settings to break down the communication barriers and increase participation in the sessions	• Improvements in social integration and social functioning within the community. • Greater ability to engage in rewarding social and leisure activities • Increased public exposure • Increased outreach within the community: (1) supported personal recovery plan, (2) provided a sense of purpose and direction, (3) increase generativity, (4) opportunities for reciprocal trust in others.

Note. Bergen-Cico et al., 2018; Brown, 2015; Dell et al., 2022; Crowe et al., 2018; Crowe & Nguygen, 2018; Dell et al., 2022; Floore-Guetschow, 2020; Galsgaard & Eskelund, 2020; Hyde, 2015; Kegel, 2016; Krause-Parello & Morales, 2018; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Moore 2014; Newton, 2014; Nieforth et al., 2021; O'Haire & Rodriguez 2018; Rodriguez et al., 2020; Scotland-Coogan, 2019a; Scotland-Coogan et al., 2022; Vincent et al., 2017; Vincent, Dumont et al., 2019; Whitworth et al., 2019; Yarborough et al. 2017, 2018).

Consequently, studies reported that handlers adopted a positive view of others and the world (Crowe et al., 2018; Hyde, 2015; Moore, 2014). Indeed, this supports studies which reported reductions in negative alterations in cognitions and mood symptom severity, specifically changes in negative beliefs about oneself and others (Vincent et al., 2017).

> …I always felt people had an ulterior motive, they were always trying to get me or something they were always against me, and um I had a little bit of that still, but not so much I wasn't really, I don't feel that the world is unsafe and so I don't have a cause against that. I just always, before (dog name) came around was kind of a nutcase where I felt like oh everything has some reason against me for something… (Floore-Guetschow, 2022, p.101).

Psychiatric assistance dogs were also described as a focal distraction in social communication situations, enabling avoidance of unpleasant conversations of illness, allowing the handler the be less anxious or on guard, yet opening the communication channel by diverting the attention to the PAD (Brown, 2015; Crowe et al., 2018; Newton, 2014). Furthermore, this increased exposure of being of this invisible injury being visible due to the PAD's presence, was helpful in educating others about the PAD and their potential role in assisting with PTSD (Hyde, 2015).

Social activities. A symptom of PTSD is diminished interest and participation in enjoyable activities. After the acquisition of a PAD, there was evidence to suggest that participants had a higher social functioning, including a greater ability to engage in social activities (O'Haire & Rodriguez 2018). Delving deeper, studies highlighted that the PAD created more opportunities as well as motivation to engage in social activities, including family and friend-orientated activities (Floore-Guetschow, 2020' Lessard et al., 2018; McLaughlin & Hamilton, 2019; Nieforth et al., 2021). There was also evidence to suggest that PAD facilitated opportunities for social networking due to the PAD husbandry needs of physical activity (Crowe et al., 2018).

> Because I have been going [walking] every day for like a month now, I see the same people and I am starting to wave at people. That's another thing about walking with him because I don't necessarily have friends yet, but I have people I see every day and say hi … it's only just started this year but I can see how this is benefitting me not only in health but in social benefits down the road (Crowe et al., 2018, p.2958).

Additionally, studies reported the presence of the PAD and the ability to intervene during heightened distress facilitated opportunities to enjoy leisure activities once again (Crowe et al., 2018) and engagement in sporting activities (Galsgaard & Eskelund, 2020). For

instance, one participant voiced that with a PAD by their side, they were able to attend a crowded football game drenched in loud noises and banging (Crowe et al., 2018).

Increased outreach and peer support. With this newfound confidence in their abilities to communicate and the meaningful interactions in the public domain, studies reported handlers felt capable of increasing their outreach in the community by volunteering to assist and mentor fellow veterans with this injury, as well as, raising awareness and advocating the use of PAD (Floore-Guetschow, 2020; Moore, 2014; Newton, 2014). This increased outreach was reported to play an integral role in supporting their own personal recovery plan, providing a sense of purpose and direction (Newton, 2014) and motivation to help others avoid the struggles they previously dealt with prior to using a PAD (Floore-Guetschow, 2020).

> I'm also coming to realize that helping others is the way that I'm going to continue to recover. If I'm not helping somebody else then I tend to focus on myself, and that's usually not a very good place for me to be. And, you know, I do a lot of news interviews and magazine interviews, and [I've] spoken at different VA [Veterans Association] functions and spoken with several different groups at the VA. I'm doing stuff that I'm not comfortable doing, but at the same time, it's kind of one of those things where if I don't do it then my recovery stops (Newton, 2014, p.44).

Studies also reported that engaging peer support renewed their sense of generativity and provided opportunities for meaningful interactions as well as providing opportunities for reciprocal trust in other veterans (Moore, 2014). Furthermore, helping others was considered an investment in their life, with participants expressing gratefulness and a greater appreciation for life (Hyde, 2015; Moore, 2014). Congruently, there was evidence to suggest that handlers with a PAD reported a higher degree of life satisfaction by supporting others (Kegal, 2016), as well as a sense of pride and satisfaction for caring for and working with highly trained dogs (Hyde, 2015). The PAD played an integral role in assisting the handler in a group mentoring setting, by moving around the group to greet others and responding to other veterans who may be experiencing difficulties by offering solace and physical contact, which in turn resulted in positive responses from the individual (Moore, 2014). The PADs' ability to interact in this way was reported to help break down the communication barriers and increase participation in the session (Moore, 2014).

3.5.3. Existential Recovery Domain

Existential recovery incorporates psychosocial factors that provide the individual with a sense of self-control of their life rather than feeling succumbed to their injury (Whitley &

Drake, 2010). Intrapersonal facets of hope, self-direction, empowerment, and autonomy have been illustrated in prominent trauma recovery models (i.e., Substance Abuse and Mental Health Services [SAMHAS]) and assimilated into the existential recovery dimension (Whitley & Drake, 2010). There was evidence to suggest PADs played an integral role in fostering positive changes in these intrapersonal facets, primarily founded on the unconditional support and reciprocal handler/PAD bond, alongside other innate characteristics of the PAD and the trained tasks the PAD performs to reduce and manage symptom severity. Ultimately this facilitated opportunities for personal growth, building confidence and strength, and personal empowerment in reclaiming important aspects of their lives (Crowe et al., 2018; Newton, 2014). For example, "they [service dogs] put the power in our hands" (Crowe et al., 2018, p.2959) in the recovery journey and "… [the service dogs], allow us to live, to the best that we could ever hope to be, considering our issues" (Crowe et al., 2018, p.2958).

Specifically, there was evidence to suggest PADs supported self-confidence in handler's capabilities to combat challenges and provide opportunities to focus on building on self-reformation including goal creation and attainment (Crowe et al., 2018). Subsequently, as self-confidence grew there was a residual effect on a renewed sense of self-worth and purpose, as well as self-direction (Bergen-Cico et al., 2018; Brown, 2015; Crowe et al., 2018; Newton, 2014) "I couldn't sit here and talk to you right now if it wasn't for [service dog] sitting next to me, reminding me that I am bigger than I think I am. You know, I'm bigger than I feel" (Crowe & Nguygen, 2018, p.8) with individuals expressing feelings of hope and optimism for future opportunities (Brown, 2015; Crowe et al., 2008; Hyde, 2015) with one participant describing that with the PAD by their side "… the world is your oyster" (Crowe et al., 2018, p. 2958).

> I mean, it's been life-changing. It's given me more of a clear path and direction as to where I want to be a few years from now. It's given me more hope and light at the end of the tunnel. I can accomplish things; I can get back to some type of normalcy. I mean, there's not much we don't do together. There's a few things we can't do together that I have to kind of muddle my way through by myself, but for the most part, I mean she supports just about anything and everything… (Newton, 2014, p.31-32).

As illustrated above, having a PAD in their life provided new aspects of hope and confidence, which enabled the handler to regain feelings of normalcy (Crowe et al., 2018; Newton, 2014, Nieforth et al., 2021) as well as a renewed sense of autonomy (Crowe et al., 2018; Floore-Guetschow, 2020; Rodriguez et al. 2020). Studies depicted that a sense of independence improved after 12-month post-acquisition of the PAD (Vincent, Dumont et al.,

2019). Primarily based on the handler PAD partnership, regaining autonomy was perceived as a source of personal empowerment and accompanied by feelings of freedom (Rodriguez et al., 2020; Newton, 2014). Consequently, reducing their dependency of others (Crowe et al., 2018; Crowe & Nguygen, 2018; Rodriguez et al. 2020), support other positive functioning opportunities (Crowe et al., 2018; Newton, 2014) as well as a renewed ability to go out in public (Scotland-Coogan, 2019a).

Additionally, cognitive changes in the reduction in self-judgement and increase in participants' self-compassion were found, with researchers attributing these changes to the unique human-PAD bond. For example, the nonjudgmental demeanour of the PADs may strengthen the emotional attachment and perceived support, which is likely to be attributed to the reduction in self-judgement (Berger-Cico et al., 2018). Refer to Table 6 for a summary of PADs' role within the existential domain.

Table 6

Summary of the Facilitative Role of PAD within the Existential Domain

PTSD-related Outcomes	PAD Approach (How)	PAD Appropriateness for Handler	Holistic Outlook for Progress and Outcomes
• Intrapersonal growth • Reduced feelings of being succumbed to their injury • Sense of independence improved after 12 months post-acquisition of a PAD. • ↓ self-judgement • ↑ self-compassion	•Unconditional support •Reciprocal handler/PAD bond/companionship •The constant presence of PAD •Tackle challenges together •Trained tasks to reduce and manage symptomology •Non-judgemental entity for emotional attachment and support	•Built self-confidence and strength in the handler's capabilities to combat challenges. •Provide opportunities to focus on self-reformation including goal creation and attainment. •Regain autonomy •Reduced dependency on others in turn supported other positive functioning opportunities and a renewed ability to go out in public.	• Sense of self-control of their life • Reclaiming important aspects of their lives • ↑ Self-confidence • Renewed sense of self-worth and purpose • Renewed sense of self-direction. • New aspects of hope and optimism for future opportunities • Regain feelings of normalcy • Renewed sense of autonomy. • Personal empowerment accompanied with feelings of freedom • Increase in self-compassion led to being more kind to oneself whilst acknowledging that perceived inadequacies/ failures are part of life

Note. Bergen-Cico et al., 2018; Brown, 2015; Crowe et al., 2018; Crowe & Nguygen, 2018; Floore-Guetschow, 2020; Hyde, 2015; Newton, 2014; Nieforth et al., 2021; Rodriguez et al. 2020; Scotland-Coogan, 2019a; Vincent, Dumont et al., 2019; Whitworth et al., 2018.

3.5.4. Physical Recovery Domain

Physical recovery encompassed findings from the studies that detailed PADs' impact on the physical health and well-being of handler, facilitated by positive coping skills and lifestyle factors such as promoting physical activity, in addition to a reduction/cessation of negative lifestyle factors (i.e., problematic alcohol, illicit and licit substance use). Refer to Table 7 for the summary of PADs' role within the physical recovery domain.

Physical activity*.* Evidence of the impact of PADs on physical activity was contentious. Lessard et al. (2020) objectively measured the impact of PADs on activity levels with participants with PTSD, and the results identified an increase in the number of steps and time spent undertaking moderate exercise for veteran-PAD partnership. Results from van Houtert et al. (2022) found no difference in activity levels (i.e., number of steps/day, time walking/stillness) between participants with or without a PAD, yet participants with PTSD using a PAD reported a higher total number of steps taken compared to individuals without PTSD. Furthermore, the activity level between participants with a PAD and participants with a companion dog demonstrated these groups walked more than those without a dog (van Houtert et al., 2022), suggesting the dog's presence or innate characteristics of requiring physical activity is the reason for increases in activity level.

Significant increases in physical activity were identified three months after the acquisition of a PAD (Vincent, Dumont et al., 2019) and greater activity levels were reported compared to participants without a PAD (Yarborough et al., 2017). There is contradictory evidence about sedentary behaviour during the day not changing after the acquisition of a PAD (Lessard et al., 2020). Subjective experiences illustrated PADs assist with the deterrence of reclusive and sedentary behaviours, by increasing the handler's motivation to get moving and head outside for 'play' activities (Crowe & Nguygen, 2018), exercise and socialising, which consequently increases the handler's pleasure of being outside and enhance environmental exposure (Hyde, 2015). The increase in the number of steps taken per day as well as an increase in the time spent undertaking 'moderate' exercise, generated changes in mobility patterns within proximity to their home, outside of their community, as well as sleep quality and psychiatric symptoms (Lessard et al., 2020). Furthermore, the combination of a daily routine to meet PAD husbandry needs and the increase in the handler's physical activity level, was reported to positively impact mood and self-esteem alongside associated physical health benefits (Hyde, 2015; Moore, 2014).

> Well, I can't lay in bed and get depressed. In the morning I have to get up, and I have to feed her, I have to let her out. So it gets my day moving… I come home, I just can't mope around, I just can't lay on the couch and watch TV. We go out, we play, I feed her. You know - she keeps me moving all day. Making sure she's got water, taking her out. Really doesn't let me have time to get static and start to think. Because when I get in trouble is when I think too much about something (Moore, 2014, p. 61).

Positive changes in the physical activity within the quality-of-life domain were also reported (i.e., activities of daily living, medication dependence, mobility etc. Vincent, Dumont

et al., 2019). However, despite these findings, a discrepancy arose across other studies, reporting no difference between individuals with or without a PAD and no difference between a PAD and an ESD in the physical components of health-related quality of life (O'Haire and Rodriguez, 2018; Richerson et al., 2020). Although, notably, different instruments were used to measure physical facets of quality-of-life outcomes, which may contribute to the findings.

Alcohol, substance, and medication use*.* The use of pharmacotherapy for physical, mental, sleep and pain medication for veterans with PTSD is not uncommon (Rodriguez et al., 2021), however, the companionship, constant presence, and trained tasks PADs perform to support the severity of PTSD-related challenges were attributed to the reduction of intake and/or cessation of prescribed and other illicit and licit substances (Brown et al., 2015; Dell et al., 2022; Husband et al., 2022; Krause-Parello & Morales, 2018; Lessard et al., 2018; Yarborough et al., 2018). For example, a decrease in problematic use of prescribed and other illicit and licit substances was attributed to the acquisition and companionship with PADs (Husband et al., 2019). Specifically, the trained tasks PADs performed to support the severity of PTSD-related challenges, also meant the need for problematic substance use was minimised (Dell et al., 2022; Husband et al., 2019). "I had a major problem with hypervigilance. So another reason [for] the Clonazepam. [I had a] dissociat[ion] problem, the dog helped with the episodes and then the Seroquel stopped. It decreased to a low point and then it stopped" (Husband et al., 2019, p.3).

The presence and responsibility of taking care of a PAD was also considered a positive diversion for substance use and/or the heavy intake of psychotropic medication (Brown, 2015; Dell et al., 2022; Krause-Parello & Morales, 2018; Lessard et al., 2018; Yarborough et al., 2018) and/or excessive alcohol use (Crowe et al., 2018; Dell et al., 2022; Krause-Parello & Morales, 2018). The PAD's non-judgemental, constant presence was perceived to support the ups and downs of substance use recovery (Dell et al., 2022). Other studies reported that the PAD assisted in reducing and/or stabilise medication use (Nieforth et al., 2021, Rodriguez et al., 2021), with subjective experiences reporting an increased ability to function, feeling less 'snowed' and improved mood (Krause-Parello & Morales, 2018; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Yarborough et al., 2018). Additionally, discontinuation of medication for physical comorbid conditions (e.g., diabetes) was attributed to owning the PAD and the increase in physical activity levels (Yarborough et al., 2018).

> I'm not on diabetes medication anymore. Because I think having a dog made me more physical, getting me up every day and walking, being with him, brushing him, going out

with him. All that made me more active, so I don't have to even check my blood anymore … And I'm not on any sleep medication. So I only take one Wellbutrin, just one twelve-hour relief pill in the morning and one in the evening for depression. So that's a lot better than taking two or three medications for it. I don't anymore" (Yarborough et al., 2018, p.121).

Table 7

Summary of the Facilitative Role of PAD within the Physical Recovery Domain

Outcome	PAD Approach (How)	PAD Appropriateness for Handler	Holistic Outlook of Progress and Outcomes	Limitations / Gaps
• ↑ physical activity (at 3m post-acquisition of PAD and/or compared to without a PAD) • ↑ number of steps/day • ↑ time spent undertaking moderate exercise • Changes in mobility patterns (within proximity to home and outside in the community) • Changes in sleep quality and psychiatric symptoms. • ↓ the time for negative cognitions and mood • Positive changes in physical activity within QoL domain • Reduction and/or cessation of heavy alcohol consumption • Reduce and/or stabilise medication use	• Responsibility for the PAD • Exercise • Play activities • Socialise • Daily routine • Presence of a PAD • Positive diversion for heavy intake of psychotropic medications and/or excessive alcohol use. • Unconditional love, non-judgemental and trust and constant presence. • Trained/untrained tasks supported symptom and functioning challenges leading to a reduction in substance use.	• Assist with the deterrence of reclusive and sedentary behaviours • Motivation to get moving and head outside for 'play' activities • Increase handler's pleasure about being outside • ↑ ability to function, feeling less 'snowed' and improved mood. • Discontinuation of medication for physical comorbid conditions (e.g., diabetes) • PADs non-judgement re. up/downs related to substance use. • Reduce the need to use substances to socialise. • Better control of symptoms no longer needed substance support.	• Improved physical health and wellbeing • Enhanced environmental exposure within the community. • Positively impacted mood and self-esteem. • Development of coping strategies, healthy lifestyle choices and a positive outlook • PAD helped improve mental and physical health which directly helped the management of substance use.	• No change in sedentary behaviour during the day, after the acquisition of a PAD (Lessard et al., 2020), yet subjective experiences contradict these findings. • No difference between participants with/ without a PAD or PAD vs ESD in physical components of health-related QoL (O'Haire & Rodriguez, 2018, Richerson et al., 2020). • Disparity of measures used within the studies. • No difference in alcohol use or medication intake for participants with/ without a PAD (Kegel, 2016; Rodriguez et al., 2021).

Note. Brown, 2015; Crowe et al., 2018; Crowe & Nguygen, 2018; Dell et al., 2022; Floore-Guetschow, 2020; Husband et al., 2019; Hyde, 2015; Kegal, 2016; Krause-Parello & Morales, 2018; Lessard et al., 2020; McLaughlin & Hamilton, 2019; Moore, 2014; Nieforth et al., 2021; O'Haire & Rodriguez, 2018; Richerson et al., 2020; Rodriguez et al., 2021; van Houtert et al., 2022; Vincent, Dumont et al., 2019; Yarborough et al., 2017; 2018.

The responsibility of looking after the PAD facilitated the reduction and/or cessation of heavy alcohol consumption and augmented the development of coping strategies, healthy lifestyle choices and a positive outlook (Crowe et al., 2018; Krause-Parello & Morales, 2018; McLaughlin & Hamilton, 2019).

I am really proud to say that for almost a year I haven't had a drink of alcohol and I don't know if I can emphasise it enough that having [my service dog] has changed my lifestyle and I tell people and I know it's corny but he's like my kid. I am responsible for him and we are responsible for each other so I can't be sitting there wasting my time and money on drinking, and my health (Crowe et al., 2018, p.2958).

Additionally, as PADs were considered a social catalyst for opening up communication channels with other people, this extended into supporting substance recovery as veterans no longer required substances to socialise (Dell et al., 2022). Abstaining from or limiting substance use was also due to the PADs' trained tasks of interrupting anxiety attacks and waking from nightmares to support improved sleep and less hypervigilance, thus reducing the need for substance use (Dell et al., 2022; Husband et al., 2019).

Conversely, other studies reported that the PAD had no significant effect on medication regime or alcohol use for participants with or without a PAD (Kegal et al., 2016; Rodriguez et al., 2021), although the studies noted veteran-PAD teams are more likely to report that their doctor decreased dosage or removed some medication from regimens since the introduction of the PAD (Rodriguez et al., 2021) and participants quality of life was enhanced for individuals using a combination of psychiatric medication and PAD (Kegal, 2016).

3.5.5. Functional Recovery Domain

Findings from the review denoted a PAD fosters the development of the handler's ability to function by effectively participating in all facets of daily life activities and assimilation into society through societal roles. Identifying the combination of PADs trained tasks, innate characteristics, and the interpersonal relationship between the handler-PAD all played a facilitative role in nurturing higher morale, self-esteem and positive functional outcomes in employment and educational contexts. Furthermore, there was evidence to suggest PAD supported the handler's self-confidence in their ability to overcome the negative stigma of PTSD and accomplish aspirations. Refer to Table 8 for a summary of the facilitative role of PAD within the functional recovery domain.

Daily functioning*.* Numerous studies identified that the responsibility of taking care of the PAD creates structure and facilitates a daily routine (Floore-Guetschow, 2020; Hyde, 2015; McLaughlin & Hamilton, 2019; Rodriguez et al., 2020), which promotes a sense of purpose in their day (Dell et al., 2022; McLaughlin & Hamilton, 2019). Structure, routine, and responsibility were perceived as important untrained characteristics of the PAD (Rodriguez et al., 2020). Additionally, caring for the PAD brought a sense of accountability and satisfaction to their lives (Moore, 2014). Furthermore, subjective experiences highlighted how the constant presence of the PAD and the various functional tasks PAD performed, provided confidence and reassurance in their ability to assist in managing emotional and cognitive states, enabling them to leave the house and focus on accomplishing daily tasks and activities when out in public (Krause-Parello & Morales, 2018; Lessard et al., 2018; Moore,

2014; Newton, 2014; Scotland-Coogan, 2019a). This enabled a sense of independence (Floore-Guetschow, 2020; Scotland-Coogan, 2019a), improving comfort in the public domain (Newton, 2014; Scotland-Coogan, 2019a), in addition to increasing the handler's courage and motivation to integrate into the community (Newton, 2014). This in turn prolonged the handler's exposure time to public outings when accompanied by PAD (McLaughlin & Hamilton, 2019; Newton, 2014) and facilitated opportunities to go to more places that would normally be avoided (Newton, 2014; Scotland-Coogan, 2019a).

Psychiatric assistance dogs were also reported to play a significant role in daily functioning by encouraging confidence in the handler's own subjective sense of worth and abilities, where increases in self-esteem, competence and adaptability were reported after 6 months and maintained at 12 months after the acquisition of the PAD (Vincent, Dumont et al., 2019). It is plausible that these findings play a role in integrating into society and contribute to employment and educational contexts.

Assimilation into society via societal roles*.* Evidence suggests PADs safeguard the handler's ability to manage PTSD-related symptomology, facilitating opportunities to return to work, remain employed and enhanced their performance and productivity (Crowe et al., 2018; Dell et al., 2022; Floore-Guetschow, 2020; Hyde, 2015; Newton, 2014). Participants with a PAD reported lower absenteeism from work and a lower rate of activity impairment (O'Haire and Rodriguez, 2018), which in turn elicited optimism in their ability to progress in their lives (Hyde, 2015). These results suggested the handler's higher morale is associated with the use of PAD.

Successfully returning and completing educational programs was associated with the sense of security handlers felt with the presence of a PAD (Crowe, et al., 2018; Newton, 2014), where they can shield the handler from stressful activities around them, to assist the handler to have a momentary cognitive break: "He [the service dog] makes sure I get a break so that my mind can shut down for a minute because it is exhausting to have that motor mind that comes with PTSD" (Crowe et al., 2018, p2958). Additionally, with the support of the PAD, participants were able to overcome the negative stigma of their injury and build self-confidence in proving to themselves and others that they were capable of returning and/or advancing in their educational aspirations, sequentially providing the handler with a sense of accomplishment and a gratifying life (Crowe et al., 2018).

> We have had way too many veterans in this country be told you can't do this, you can't do that, don't bother going back to school because you will never accomplish it. Don't bother getting a job, you'll get fired. Like I said, we proved them wrong . . . They are

saying screw you, I proved you wrong. We have graduates that are going to college, we have graduates that have gotten law degrees, and I mean who the hell wants to go against a lawyer with a service dog? (Crowe et al., 2018, p2958).

Another participant described the drastic change within themselves with the help of their PAD, “I went from a suicidal mess to president of my college’s honour society, published writer, student senator and my family life is better than it has ever been” (Nieforth et al., 2021).

Table 8

Summary of the Facilitative Role of PAD within the Functional Recovery Domain

Outcome	PAD Approach (How)	PAD Appropriateness for Handler	Holistic Outlook of Progress and Outcomes
• ↑ daily functioning • ↑ self-esteem, competence, and adaptability after six months; maintained at 12 months • ↓ absenteeism from work and a lower rate of activity impairment	• Responsibility of taking care of PAD • Constant presence and support • Sense of security • Various functional tasks to support symptomology difficulties.	• Created structure • Facilitated a daily routine • Sense of accountability • Promoted a sense of purpose to their day. • Satisfaction with their lives • PAD safeguards the handler's ability to manage emotional and cognitive states, providing reassurance and self-confidence. • Enabled handler to leave home • Focus on accomplishing daily tasks when in public • Sense of independence and improved comfort in the public domain • Increase courage and motivation to integrate into the community • Facilitated more opportunities to go more places that they would have normally avoided. • Facilitated opportunities to return to work and remain employed • Enhance vocational performance and productivity. • Successfully returning and completing educational programs • Shield handlers from stressful activities around them for a momentary cognitive break	• Accomplish daily tasks • Prolonged exposure time in the public domain • Integrate into society through societal roles and responsibility. • Positive functional outcomes in employment and educational contexts. • Elicited optimism in the ability to progress in their lives • Overcome the negative stigma of injury and build self-confidence in proving to themselves and others that they are capable to return to/advance in educational aspirations • Sense of accomplishment and a gratifying life.

Note. Crowe, et al., 2018; Dell et al., 2022; Floore-Guetschow, 2020; Hyde, 2015; Krause-Parello & Morales, 2018; Lessard et al., 2018; McLaughlin & Hamilton, 2019; Moore, 2014; Newton, 2014; Nieforth et al., 2021; Scotland-Coogan, 2019a; Newton, 2014; O’Haire and Rodriguez, 2018; Rodriguez et al., 2020; Scotland-Coogan, 2019a; Vincent, Dumont et al., 2019.

3.5.6. Challenges and Barriers to Recovery Progress and Outcomes

Whilst PAD is portrayed as a positive and helpful tool in mitigating PTSD-related symptomology and functioning, several challenges and/or barriers to utilising a PAD and the consequences of those for the handler were identified. These were primarily focused on five facets: (1) the stigma of public scrutiny associated with the use of PADs, (2) navigating an unregulated industry, (3) obstacles surrounding the acquisition, training, and relationship with PAD; and (4) PAD training organisation challenges, and (5) PAD welfare issues and residual

effect on the handler. Despite the challenges outlined below, positive facets emerged from the barriers, for example, heightened public attention, and exposed handlers to positive social interactions, where they used this opportunity to educate the public in the use and benefits of PADs. Another example is veterans avoid the extended wait times to receive a trained PAD, by self-training a dog to become an accredited PAD. Refer to Table 9 for a summary of the challenges, consequences, and resolution of the use of PADs.

Stigmatisation and public scrutiny associated with the use of PAD. Several negative connotations when out in the public domain were based on stigmas that are associated with the general public's unfamiliarity and hypocrisy of the handler's invisible injury alongside the visibility of the PAD. Specifically, the dog's presence in public elicited unwanted attention, unsolicited interactions, and invasive questioning about the PADs' use (Dell et al., 2022; Floore-Guetschow, 2020; Hyde, 2015; Lessard et al., 208; Moore, 2014; Nieforth et al., 2021, Vincent, Gagnon, et al., 2019; Yarborough et al., 2018). This resulted in negative consequences for the handler's emotional and mental state as well as making daily tasks more difficult to perform (Hyde, 2015; Yarborough et al., 2018). Furthermore, the intrusive questioning by the public exasperated the handlers who reported that they felt they needed to defend the privacy of their injury and the reasoning behind the use of a PAD (Dell et al., 2022; Krause-Parello & Morales, 2018; Lessard et al., 2018; Yarborough et al., 2018) adversely affecting handlers desire to interact due to the stigma associated with others insincerity and hurtful ignorance of their injury (Krause-Parello & Morales, 2018; Moore, 2014).

Additionally, insufficient knowledge of public access laws surrounding the use of PADs and the subsequent intrusive questioning often led to handlers being denied public access to public amenities (Lessard et al., 2018; Vincent, Gagnon et al., 2019). Whilst for some it was a slight inconvenience, for others it was reported as extremely distressing and/or frustrating, expressing that they were faced with innuendo and/or hostility (Krause-Parello & Morales, 2018; Newton, 2014). Stemming from the public's lack of understanding about the role and function the PAD plays for the handler's invisible injury, is the disrespect people have for the 'working dog.' Two ends of the spectrum are evident, where some public members are of the opinion that it is inappropriate to use a dog in this context (i.e., assisting with PTSD) or simply feel the dog is unsuitable to be in a specific environment (i.e., colleagues within the workplace and barrier for employment opportunities; Vincent, Gagnon et al. 2019) whereas others disrespect the boundaries by patting and interacting with the dog whilst it is working (Dell et al., 2022; Floore-Guetschow, 2020; Newton, 2014).

Table 9. *Summary of the Challenges, Consequences and Resolutions of Using a PAD*

Challenges and Barriers	Consequences	Potential Resolutions
	Stigmatisation and public scrutiny	
• Elicited unwanted attention • Unsolicited interactions • Intrusive questioning about the PAD's uses and the handler's injury • Insufficient knowledge of public access laws surrounding the use of PAD. • The public's lack of understanding of the role and function of the PAD. • Disrespect for the 'working dog' (i.e., inappropriate to use a dog in this context (assisting with PTSD); unsuitable to be in a specific environment; disrespect boundaries [patting and interacting with PAD whilst working]).	• Negative consequences for the handler's emotional and mental state • Making menial daily tasks more difficult • Handler feels they need to defend their privacy and reasoning behind the use of PAD • Adversely affecting the handler's desire to interact due to the stigma associated with others' insincerity and hurtful ignorance. • Denied access to public amenities • Slight inconvenience for some, others reported as extremely distressing and/or frustrating when faced with innuendo and/or hostility. • Barrier to employment opportunities.	• Educating and raising awareness of the role and function of the PAD, legislation of public access rights, and public conduct around a PAD and its handler.
	Navigating an Unregulated Industry	
• Inconsistent legislation • Lack of regulations	• Creates confusion about where a PAD can/can't go with the handler • Impedes the ability to travel across the country • Some states/territories require PAD to be certified by specific organisations – limiting access to certain areas of the country. • Issues of untrained 'fake PADs' wearing illegitimate vests accessing the public domain. • Fake PADs cause issues for legitimate PADs to access public areas.	• Public education campaigns • Changes in Federal legislation and local regulations • Standardised accreditation/certification • Identification and PAD vest regulations across provinces and territories
	Obstacles surrounding the acquisition, training, and relationship with PAD	
• The process of acquiring a PAD was described as frustrating and difficult to navigate. • Acquiring a pre-trained PAD was reported to be costly and, in most contexts, an out-of-pocket expense. • PADs for veterans with PTSD were not eligible to receive financial aid. • Lengthy wait times (1-3yrs) to receive a fully trained PAD • The housing environment is not conducive to supporting a PAD • Underestimate the level of preparedness and mental health stability they need to support a PAD	• Financial strain and distress • Lack of resources to meet demand perceived as inadequate and "not good enough". • Potential negative implications of being placed on a lengthy waitlist • Frustration and misunderstanding of being denied a PAD • PAD training - requires concentration, practice, and perseverance, causing fatigue and distress • Inability to distinguish differences in PAD cues/responses, impeding the efficacy of the PAD for mitigating symptoms • Establishing a bond can be initially difficult during the first 6 months of the relationship.	• The expense of purchasing a trained PAD was viewed as relative/cost-saving when compared to societal health costs. • To offset the high expense and void waiting times, some individuals have chosen to self-train a PAD instead. • Longer, self-paced training programs to counteract short-term training distress.

Challenges and Barriers	Consequences	Potential Resolutions
• demands of the training sessions: pressure to learn and competently execute PAD commands in a relatively short time frame. • Delays in positive gains/benefits of using the PAD (within first 6 months) • Pairing a PAD with Handler fails • Handler lack of discipline in doing the training • PAD inadequate behaviour	• PAD being poorly trained or having unsuitable characteristics (overreactive, predatory behaviour) causes distress to the handler and implicates bonding.	
PAD training organisation challenges		
• Discrepancies in PAD training standards and procedures (i.e., moderately reflected the criteria; not accredited with ADI) • lack of communication between the handler and the organisation • inconsistencies of program expectations • organisations inability to recognise the difference and/or lack of tailored training programs for psychiatric disabilities versus physical disabilities	• Disparity in training standards may have an impact on the effectiveness of a PAD in mitigating the handler's symptoms and functioning • issues surrounding the organisation's deficient planning, training follow-ups and unexplained delays • Poor dog selection (i.e., inadequate behaviour/training or poor health/unwell • Lack of consideration regarding an individual's emotional and psychological predisposition may have a negative effect or be less beneficial for the individual.	• Establish standardised PAD programs and involve mental health practitioners throughout the pre/post acquisition and training program.
PAD welfare issues and the residual effect on the handler		
• PAD has underlying health issues or fallen ill unexpectedly • Imminent retirement and/or death of PAD • Feasibility of the costs, time and energy spent on the responsibilities associated with the upkeep of caring for a PAD (ongoing skills training, husbandry needs) and the costs of professional care (i.e., veterinary care)	• Impedes the PAD's ability to perform tasks and impacts the handler's mood • Considerations of obtaining and training a replacement PAD • Dog's death met with avoidance and residual effect on the emotional and mental health of the handler • Financial strain and distress, conducive to a negative and unsafe home environment and/or impede progress in training success if handlers fail to provide adequate care.	• Government bodies offset costs associated with the use of PAD for PTSD (mainly veterans), yet this is not applicable to other populations

Note. Dell et al., 2022; Floore-Guetschow, 2020; Hyde, 2015; Krause-Parello & Morales, 2018; Lessard et al., 208; McLaughlin & Hamilton, 2019; Moore, 2014; Newton, 2014; Nieforth et al., 2021, Vincent, Gagnon, et al., 2019; Yarborough et al., 2018.

Navigating an unregulated industry. Inconsistent legislation and a lack of regulations surrounding the use of PAD in the public domain created significant challenges for participants. Stemming from a lack of public information regarding the rights and regulations of handler-PAD teams, created confusion for handlers on where they could and could not go, this was particularly difficult for first-time handlers using PADs (Dell et al., 2022). Inconsistent regulations between provinces and territories also impeded the handler-PAD teams' ability to travel across the country, as some parts of the country require PADs to be certified through specific organisations, limiting access to certain areas of the country (Dell et al., 2022). One participant in Dell et al. (2022) detailed the lack of regulations across provinces and territories in Canada: "If I go into Saskatchewan I can go into any store, any place…if I go to Alberta or [British Columbia] I have to be certified by those organisations…it becomes completely difficult for me to go anywhere" (p.8). Challenges of airline travel were also reported, logistics of airline regulations and confronting issues from fellow passengers seated near the PAD whilst in the air were noted as causing undue stress (Floore-Guetschow, 2020).

Moreover, some people took advantage of this unregulated industry, by bringing untrained ‘fake PADs’ wearing illegitimate vests into the public domain. Issues surrounding fake PADs include incidences such as the dog displaying poor behaviour and potentially causing injury to people and other PADs, as well as creating false information for the public (Floore-Guetschow, 2020). This deception is problematic for legitimate PAD to access public areas, resulting in handler-PAD teams being denied access, invasive questioning to attest authenticity and humiliation from wary business owners due to prior experiences with fake PADs (Dell et al., 2022; Floore-Guetschow, 2020). Accordingly, these confronting situations can trigger participants and hinder progress (Floore-Guetschow, 2020). Resolutions to address these barriers and challenges were also highlighted, including public awareness campaigns, deployment of federal legislation which includes standardisation for accreditation, regulations for identification and vests across all states and territories (Dell et al., 2022). For other veterans, working with local and federal politicians to advocate and pass legislation to prevent ‘fake’ PADs from accessing the public domain (Floore-Guetschow, 2022).

Obstacles surrounding the acquisition, training, and relationship with PAD. Several obstacles surrounding the acquisition of PADs, training program structure and initial relationship issues with PADs were identified. Specifically, the overall process of acquiring a PAD was described as difficult and frustrating (Krause-Parello & Morales, 2018). For instance, acquiring a pre-trained PAD from a PAD organisation compared to other sources

(i.e., not-for-profit dog training [veteran-related conditions] organisations) was reported to be costly and, in most contexts, an out-of-pocket expense. Specifically, PADs for veterans with PTSD were not eligible to receive medical financial aid compared to other types of assistance dogs for other disabilities (vision, hearing, and mobility; Krause-Parello & Morales, 2018). Yet compared to societal health costs, this expense was perceived as relative and cost-saving (Krause-Parello & Morales, 2018). Additionally, lengthy wait times of approximately 1 to 2 years to receive a fully trained PAD were also emphasised as a barrier. Reasons for this delay were based on the unprecedented number of applicants with the demand surpassing the ability of organisations to supply trained PADs, with one individual describing this lack of resources to meet this demand as inadequate and "not good enough" (Krause-Parello & Morales, 2018, p.70). Alternative methods to acquiring a PAD were identified, where studies reported some veterans self-trained their own companion dogs or obtained a suitable dog elsewhere (dog shelters and rescues) alongside the support from a not-for-profit training organisations (Krause-Parello & Morales, 2018). Moreover, there was an underlying sense of immediacy to obtain a PAD, with negative implications of being placed on a waitlist for an extensive amount of time, therefore some individuals choose to offset these obstacles by self-training a dog instead (Krause-Parello & Morales, 2018).

Other obstacles surrounding the acquisition of a PAD to consider, are certain components comprised within the organisation' pre-screening of candidates, for example, the housing environment may not be conducive to supporting a PAD (i.e., living arrangements [small apartment], allergies, other pets; Vincent, Gagnon, et al. 2019; Yarborough et al., 2018). Furthermore, it was identified that potential candidates for a PAD, underestimate the level of preparedness and mental health stability they need to support a PAD (Yarborough et al., 2018). Also, frustration and misunderstanding of being denied a PAD due to a lack of readiness or mental stability to take on a PAD were also highlighted (Yarborough et al., 2018).

Another challenge portrayed was the demands of the training sessions, where the pressure to learn and competently execute PAD commands in a relatively brief time frame, required concentration, practice and perseverance, causing fatigue and distress (Yarborough et al. 2018). Furthermore, if the handler lacks the discipline to complete the training regime, a consequence could be the inability to distinguish differences in PAD cues/responses and thus impede the efficacy of the PAD for mitigating symptoms (Vincent, Gagnon et al 2019).

Delays in positive gains/benefits of using the PAD were reported, where establishing a bond can be initially difficult and handlers inability to recognise subtle cues of the PAD during

the first 6 months of the relationship (Yarborough et al., 2018). Moreover, whilst in essence the pairing of the appropriate PAD to the handler is meticulously assessed, instances of pairing failures can occur primarily due to difficulty in bonding, based on the absence of establishing a reciprocal attachment between the handler and PAD (Yarborough et al., 2018).

> I'd been talking to [Trainer] about [Dog]'s behaviours. And she was going to take her and kind of retrain her for a couple [of] weeks, and then get back with me and give me a temporary dog. And when we met and I told her what [Dog] did at the assembly, she had already decided to permanently swap out [Dog] with me . . .And my therapist had told me to be honest with [Trainer] and tell her that [Dog] and I weren't . . .We just weren't bonding. We just weren't. And I mean, I was panicking going into public because she got so loud and barky and I couldn't control her . . . she just needed to be on the move all the time. And she didn't get used to . . . We just didn't click" (Yarborough et al. 2018, p.122).

As identified in the illustration above, the PADs' inadequate behaviour has also been shown to pose a challenge, which may stem from being poorly trained or unsuitable characteristics (overreactive, predatory behaviour; Vincent, Gagnon et al. 2019).

PAD training organisation challenges*.* Whilst there is an abundance of assistance dog training organisations globally, discrepancies between the differing PAD organisations' training standards and procedures have been highlighted. Guided by the Assistance Dog International (ADI) criteria, Vincent, and colleagues (2019) reported dog training organisations only moderately reflected the criteria, posing implications to whether these disparities have an impact on the effectiveness of a PAD to mitigate handlers' symptoms and functioning (Vincent, Gagnon, et al. 2019). Furthermore, not all training organisations are accredited with ADI (Newton, 2014). The need to establish standardised PAD programs was reported, with studies highlighting issues during the acquisition and training of PAD, which would support these guidelines (Lessard et al., 2018). Namely, issues surrounding the organisations' deficient planning, training follow-ups and unexplained delays (Lessard et al., 2018) as well as the acquisition of PADs exhibiting inadequate behaviour and training or poor health/unwell (poor dog selection; Lessard et al., 2018; Vincent, Gagnon et al., 2019). An interesting finding from the review was that veterans with dogs that had a less excitable demeanour lessened PTSD severity outcomes compared to dogs with a more excitable personality (Jensen et al., 2022). These results suggest that pre-screening dog temperament based on less excitability may be better suited to assist in reducing PTSD symptoms

compared to an excitable dog temperament, which may require additional support post-placement (Jensen et al., 2022).

Other concerns are lack of communication between handler and organisation, inconsistencies of program expectations, and reimbursement issues (Vincent, Gagnon et al. 2019). The incorporation of psychological components into PAD training organisations was also a prominent area that was perceived as deficient in some organisations (Floore-Guetschow, 2020), where Lessard et al. (2018) highlighted the need to involve mental health practitioners throughout the pre and post-the acquisition and training program, in addition to obtaining a sound understanding of incorporating the PAD within the therapeutic process. Additionally, findings identified organisations' inability to recognise the difference and/or lack of tailored training programs for psychiatric disabilities versus physical disabilities and considerations regarding individuals' emotional and psychological predisposition are warranted (Lessard et al., 2018; Newton, 2014).

> I think the biggest part of the equation is you have to teach someone how to use a psychiatric service dog a lot differently than you teach someone how to use a wheelchair service dog. They have different needs. Being able to pick up a bottle that I've dropped from my wheelchair and put it back in my lap is not the same as learning (Newton, 2014, p.52).

PAD welfare issues and the residual effect on the handler. Issues surrounding the welfare and feasibility of PAD as well as the residual emotional and mental health effects for the handler emerged throughout the studies. For example, the reciprocal dependency between the PAD and the handler can be askew when the PAD has underlying health problems or has fallen unexpectedly ill, which not only impedes the PAD's ability to perform tasks but impacts the handler's mood (Lessard et al., 2020). Prospective planning about PAD's imminent retirement was also raised, highlighting considerations of obtaining and training a replacement PAD (McLaughlin & Hamilton, 2019). Discussions surrounding the death of PAD were met with avoidance and the belief that the dog's death would have a residual effect on the emotional and mental health of the handler (Floore-Guetschow, 2020; McLaughlin & Hamilton, 2019).

The feasibility of the costs, time and energy spent on the responsibilities associated with the upkeep of caring for a PAD (i.e., ongoing skills training, husbandry needs) as well as the costs of professional care (i.e., veterinary consultations), caused not only a financial strain and distress (McLaughlin & Hamilton, 2019) but also likely to be conducive to a negative and unsafe home environment and/or impede progress in training success, if

handlers fail to provide adequate care (Lessard et al., 2018). Whilst PADs are granted public access to accompany handlers and provide a sense of safety when out in public, participants raised the point that at times it would be easier to not have the PAD come along all the time, for instance:

They're going with you all the time and sometimes, iit seems like a little bit of a hassle if you're just going in to, let’s say you gotta run in the gas station and get a coke or something, and every once in a while I'll think Susie wait here and I'll go, and I'll start to go and go nope you're going with me (Floore-Guetschow, 2020, p.71).

3.6. Discussion

The purpose of this review was to systematically examine the current state of literature pertaining to identifying the roles of PADs in assisting recovery and the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in first responders and defence personnel with PTSD.. This mixed method review sought to amalgamate differing forms of evidence to generate a comprehensive understanding of this unique and complex paradigm. Forty articles met the inclusion criteria (including 31 peer-reviewed publications and nine unpublished dissertations), conducted between 2014 to 2022 and comprised 2698 defence and first responder participants. Of the 40 articles, 30 of those were published in the past 5 years, indicating that scholarly attention to the clinical utility of the placement of PADs with individuals with PTSD has markedly risen in recent years and coincides with the unprecedented growth in popularity of PAD placements worldwide (Walther et al., 2017, ADI, 2023). Most articles were conducted in the United States and participants were predominantly defence personnel, with only two articles including first responder participants pointing to an important gap of including non-defence populations with PTSD, utilising PADs for symptom and functioning support.

3.6.1. Methodology rigour

Prior to commencing the review, we were aware of the unique methodological challenges and study constraints surrounding this novel intervention. For example, Saunders et al. (2017) addressed these methodological design considerations and stated studies surrounding PAD were atypical of an RCT due to the complexities associated with this unique intervention (i.e., the safety of participant and dogs; the relationship between participant and intervention [PAD]; factors influencing the control intervention) limiting interpretation of results and difficulties measuring effect size changes. Lack of methodological rigour was also outlined by van Houtert et al. (2018), limiting the ability to conduct statistical inferences in the scoping review. Considerations of these constraints were discussed prior to protocol write up

and review typology was adapted to ensure progress in our understanding of PADs for PTSD.

Upon assessing methodological quality, variation between the articles was evident. Indeed, numerous quantitative articles incorporated a form of the comparative condition (generally participants on a waitlist to receive a PAD) or pre/post designs, yet the inability to randomly assign participants to conditions does not meet the level of study rigour required of a clinical efficacy trial. Furthermore, self-selection bias continues to be a constraint as recruitment of participants is limited to individuals who have applied for/and accepted to PAD programs, limiting generalisability to only individuals interested in receiving the support of a PAD and those who meet the specific eligibility criteria of PAD organisations. The inability to account for various confounding variables (i.e., PAD group training environment) was a prominent finding when assessing article quality and could influence outcomes and potentially inaccurate conclusions. Similarly, no studies collected historical data about participants' past and ongoing PTSD treatments, so it is plausible co-occurring PTSD treatment efforts may also significantly influence and even inflate outcomes in the studies. Furthermore, it is plausible that changes in symptomology are primarily due to maturation rather than the PAD itself, accounting for variations and confounding factors limits a comprehensive understanding of the efficacy of PAD for PTSD. The single RCT conducted, randomly assigned participants to either a PAD or ESD, although it is questioned whether the ESDs provided are a suitable comparative group considering ESD had previously undertaken some form of obedience training. A pet companion dog or no dog just standard care may have been a better choice in order to minimise confounding variables. Ultimately, until an RCT with an appropriate comparative group is undertaken, PADs cannot be considered an evidence-based complementary intervention for individuals with PTSD.

3.6.2. Outcomes

A convergent-integrated approach was used to transform, synthesise, and integrate data and the review drew on a broad multidimensional mental health recovery framework (Whitley & Drake, 2010) to conceptualise a holistic blueprint of influence of PADs for their handlers within various contexts/domains. The evidence conceptualised PAD as playing a unique hybrid-like role where PADs trained tasks alongside innate dog characteristics and companionship, were all instrumental in mitigating PTSD challenges. Psychiatric assistance dogs' multi-facilitative role was found to nurture the handler's PTSD recovery progress in clinical, social, physical, existential, and functional life domains, yet the findings also

identified numerous challenges encountered when utilising the PAD and associated PAD interventions. Summaries of the review findings for each domain are detailed below.

Summary of findings of the clinical domain. Findings from the review identified clinically meaningful improvements in PTSD symptomology severity with the utility of a PAD, with three studies reporting the severity of symptoms fell below the diagnostic threshold at follow-up (ranging from 6 months to 15 months). The underlying mechanisms of PADs performing numerous trained tactile and positional cues were reported to directly impact symptoms of arousal and reactivity, intrusive cognitions, negative moods and cognitions, and avoidance behaviours. Specifically, these trained tasks serve as grounding techniques to deescalate the intensity of psychological and physiological responses and provide biofeedback to signal to the handler to redirect their focus and initiate metacognition, self-regulation, and self-monitoring of psychological and physiological responses. These trained tasks also assisted in prolonged exposure to public environments and enabled a realistic appraisal of the surrounding environment. Despite these trained tasks providing symptom relief, studies noted these PAD tasks are unable to support the handler's ability to recall the trauma. This may be a poignant point of why the majority of studies found PTSD severity did not fall below the diagnostic threshold and demonstrates why the continued use of trauma-focused therapy is important. Yet, what our findings suggest is PADs act as stimulants for promoting behaviour activation in a variety of contexts and conditions, which may serve to complement participants' concurrent treatment efforts.

Moreover, multiple studies depicted that the innate characteristics of canines alongside the handler/PAD relationship played a pivotal role in supporting PTSD-related symptom severity. For instance, companionship, responsibility of taking care of PAD, unconditional reciprocal love, and consistent and proximate source of calming support were found to have positive connotations in lessening the feelings of loneliness, and associated depressive symptoms as well as a safeguard against suicidal ideations and attempts. Psychiatric assistance dogs were also anthropomorphised, and likened to a soldier; where trust, reliance, and reciprocal safety, contributed to positive mental and emotional well-being, and the sense of tackling challenges together. Our understanding of this close relationship could be contextualised on the existing theoretical framework of attachment theory. This theory is widely recognised as a basis for human-animal interaction (HAI) research, providing plausible explanations of the positive effects of the human-animal relationship (e.g., Beetz, 2017, Kurdek, 2008; Rocket & Carr, 2014; Zilcha-Mano et al., 2011) in supporting PTSD symptomology.

*Therapeutic opportunities***.** Encompassed under the clinical recovery domain, studies also highlighted numerous underlying therapeutical opportunities associated with PADs, potentially contributing to changes in symptomology and recovery progress. One therapeutic benefit was the PADs' role as a type of practitioner, providing personalised therapeutic support. Founded on PADs' innate characteristics and companionship, PADs were considered a refuge for handlers to exhibit their emotional vulnerabilities and generate self-monologue of troubled cognitions, enabling the handler to explore what is on their mind, seldom disclosed to others. Often PADs were compared to practitioners, for example, unlike human practitioners, PADs provide physical touch and 24-hour calming presence, providing unconditional and nonjudgmental support to the handler. However, it is unclear to what extent this unique support transfers into a form of therapy and the impact this has on symptomology and functioning.

Another therapeutic opportunity identified in the review was PAD's role as a co-practitioner in the therapeutic setting. Whilst there was limited literature examining this, the synthesised evidence highlighted the clinical utility of integrating PAD into the handler's current PTSD treatment was perceived to improve therapeutic efficacy and increase recovery speed. One prominent finding was PADs were portrayed as playing a significant role in generating a dialogue between handler and therapist through behavioural actions of the PAD, cueing the therapist to the handlers' subliminal responses. Psychiatric assistance dogs' behaviour was perceived to support the therapist in addressing a specific issue or divert the discussion to a topic less triggering. The review also identified that the PAD was perceived to reduce incidences where the veteran attempts to 'bluff' the practitioner to diverge from specific discussions as the PADs' behavioural responses portray this discrepancy in words and actions.

Whilst therapeutic outcomes and engagement opportunities of embedding PAD into ongoing conventional treatments are perceived to be of benefit, underlying aspects of how they are integrated (i.e., PADs' role in goal-directed activities) contribute to these positive outcomes are relatively unknown. Contradictory to defence veteran's experiences identified in the review, a single case study of an individual with PTSD from childhood trauma (excluded from review as not meeting inclusion criteria parameters), identified that whilst the participants' health care team viewed the PAD as a positive support, there was no active integration of the PAD within sessions nor was the PAD included in goal-directed plans and processes (Glintborg & Hansen, 2017). This conflicting result raises further questions surrounding whether PADs are integrated into PTSD treatment regimens for all individuals

and whether there are negative implications for the individual and/or the success of the evidence-based treatment if the PAD is not included in the treatment plan. Furthermore, all but a single study examining the PAD intervention, neglected to collect historical data on the type of PTSD treatments participants had tried in the past and current treatment efforts. It is plausible co-occurring PTSD treatment efforts may significantly influence and even inflate outcomes in the studies. The single study that investigated the presence of PAD incorporated into an intensive 2-week CBT-based PTSD treatment program had comparable treatment gains in self-reported PTSD-related symptomology to those without a PAD, suggesting that the PAD neither improved nor impeded treatment outcome (Goetter et al., 2022).

A formalised PAD group training program was another therapeutic opportunity model with positive benefits in clinical and non-clinical parameters, including improvements in PTSD-symptomatology, existential, social integration, and functioning aspects. Specifically, the review uncovered underlying active components of the group-based training model, which may be conducive to these positive PTSD research outcomes posited in the literature. These include the ability to establish relationships through camaraderie with like-minded peers, building social skills, benefits of ongoing peer and social support, and leaving home to attend sessions and regular community outings as a group.

Additionally, studies have acknowledged that novel intervention programs that are more camaraderie-based in their approach may be suitable to defence culture (Scotland-Coogan et al., 2022) and there is limited stigma associated with utilising a PAD for symptomatology, suggesting that this may result in higher compliance in attending and completing PAD training programs (Scotland-Coogan, 2019a). For example, after completing a formalised self-training PAD program, studies reported high engagement and low dropout rates for PAD-associated interventions (77% completion of a 14-week self-training program; Scotland-Coogan et al., 2022) compared to traditional PTSD treatments (Goetter et al., 2015; Hoge et al., 2015), suggesting PAD training programs are a viable alternative intervention for veterans who have difficulties participating in traditional PTSD treatments (Scotland-Coogan et al., 2022). Future research may consider developing an objective measurement to serve to identify and explore the contribution of these active constituents of the PAD group training programs. Past literature has posited that programs and recovery models that involve aspects that build or strengthen social support networks may help mitigate the severity of PTSD symptoms (Simons et al., 2019). Accordingly, these underlying elements of the PAD group training program coupled with the trained task and close bond of the handler/PAD dyad

could strengthen the outcomes of this novel PTSD intervention and guide PAD organisation training standards and procedures.

Moreover, the synthesised evidence found additional positive benefits to participants that self-trained a suitable dog (either completed formalised or nonconventional training program), including self-training served as a bonding experience and a more tailored approach of learning to execute tasks the handler wants/needs the dog the perform, which was perceived to contribute positively to the training program outcomes, which participant described had may not have evolved if provided a pre-trained PAD (Floore-Guetschow, 2020; Krause-Parello & Morales, 2018, Yount et al., 2013). Additional benefits of self-training were to offset the costs of acquiring a pre-trained PAD and avoid extensive waiting times to receive a PAD (Krause-Parello & Morales, 2018).

Summary of findings of the social domain. The social recovery domain encompassed evidence of a PAD's role in supporting the handler's psychosocial functioning and integration progress and outcomes. The evidence portrayed the PAD as a catalyst for nurturing growth in the handler's interpersonal skills and connectedness to others (i.e., establishment and maintenance of relationships with family and friends). Indeed, trained functional tasks played a role in supporting symptomology difficulties in social aspects. For example, the PAD's ability to deescalate and suppress externalised negative emotional outbursts was perceived to improve relationships and feelings of belonging within the family. A pertinent finding was the influence of human-PAD interaction on reconnecting with others. Handlers assimilate direct and indirect learnings from their physical and emotional connection with the PAD to assist in closer more meaningful relationships with family.

Studies also uncovered the facilitative role of PAD in improving social functioning and integration, including engagement in meaningful and rewarding social activities and active outreach within the community. The synthesis of evidence depicted that the combination of trained functional tasks and natural characteristics of the PAD, enabled opportunities to initiate and engage in positive social interactions and activities in a variety of community contexts (i.e., public interactions, attending and participating in leisure activities, volunteering to mentor others). The review identified numerous intrapersonal and interpersonal facets (i.e., self-confidence in capabilities, development of social skills, improved generativity, a sense of purpose/direction, positive view of self/others/world) that were perceived to play an integral role in the personal recovery journey.

Summary of findings of the existential domain*.* Evidence of the facilitative role PAD plays in intrapersonal growth (i.e., hope, self-direction, empowerment, and autonomy)

was found. The amalgamation of aspects associated with the close relationship between handler-PAD accompanied by the trained tasks the PAD performs supported the handler in generating a sense of self-control of their life rather than feeling succumbed to their injury, alongside feelings of personal empowerment in reclaiming important aspects of their life.

Summary of findings of the physical domain*.* Physical recovery encompassed evidence of PAD's influence on the physical health and well-being of the handler. The interpersonal relationship between the handler-PAD and the responsibility of taking care of the PAD, enable changes in positive and negative lifestyle factors including the development of coping strategies, healthier lifestyle choices and a positive outlook. Specifically, PADs were attributed to promoting an increase in physical activity and positively impacted the handler's motivation and pleasure of being active. However, disparities in findings were identified, including heterogeneity of physical health measures and inconsistencies between objective and subjective outcomes in sedentary behaviours. Psychiatric assistance dogs were also perceived to support the reduction/cessation of negative lifestyle factors, including alcohol and substance abuse and heavy intake of medication for psychological and preventable comorbid physical conditions (i.e., diabetes).

Summary of findings of the functional domain. Studies indicated PADs foster the development of the handler's ability to function by effectively participating in all facets of daily life activities and assimilation into society through societal roles. The review identified the combination of trained tasks, innate characteristics, and the interpersonal relationship between the handler-PAD all played a facilitative role in nurturing higher morale and positive functional outcomes in employment and educational contexts. Furthermore, there was evidence to suggest PAD supported the handler's self-confidence in their ability to overcome the negative stigma of PTSD and accomplish aspirations.

Summary of findings of challenges and barriers*.* Whilst PADs are portrayed as a positive and helpful tool in mitigating PTSD-related symptomology and functioning, several challenges and/or barriers to utilising a PAD, are the consequences of those for the handler. These were primarily focused on five facets: (1) stigmatisation and public scrutiny associated with the use of PADs; (2) navigating an unregulated industry, (3) obstacles surrounding the acquisition, training, and relationship with PAD, (4) PAD training organisation challenges, and (5) PAD welfare issues and residual effect on the handler. The pertinent points highlighted were PADs are a beacon for unwanted attention, unsolicited interactions, and intrusive questioning when out within the public. Public access rights were challenged primarily due to the public's insufficient knowledge of legislation, with handlers often faced with innuendo

and/or hostility. These barriers are accentuated due to inconsistent legislation and lack of regulations surrounding the use of PAD in the public domain, impeding handler-PAD teams from ling, and limiting areas where a PAD can accompany their handler in the public domain. Fake PADs are also contributing to undue stress for legitimate handler-PAD teams, with fake PADs displaying poor behaviour and noted by one participant, causing injury to people and other PADs. This deception is problematic for legitimate PAD to access public areas, resulting in handler-PAD teams being denied access, invasive questioning to attest authenticity and humiliation from wary business owners due to prior experiences.

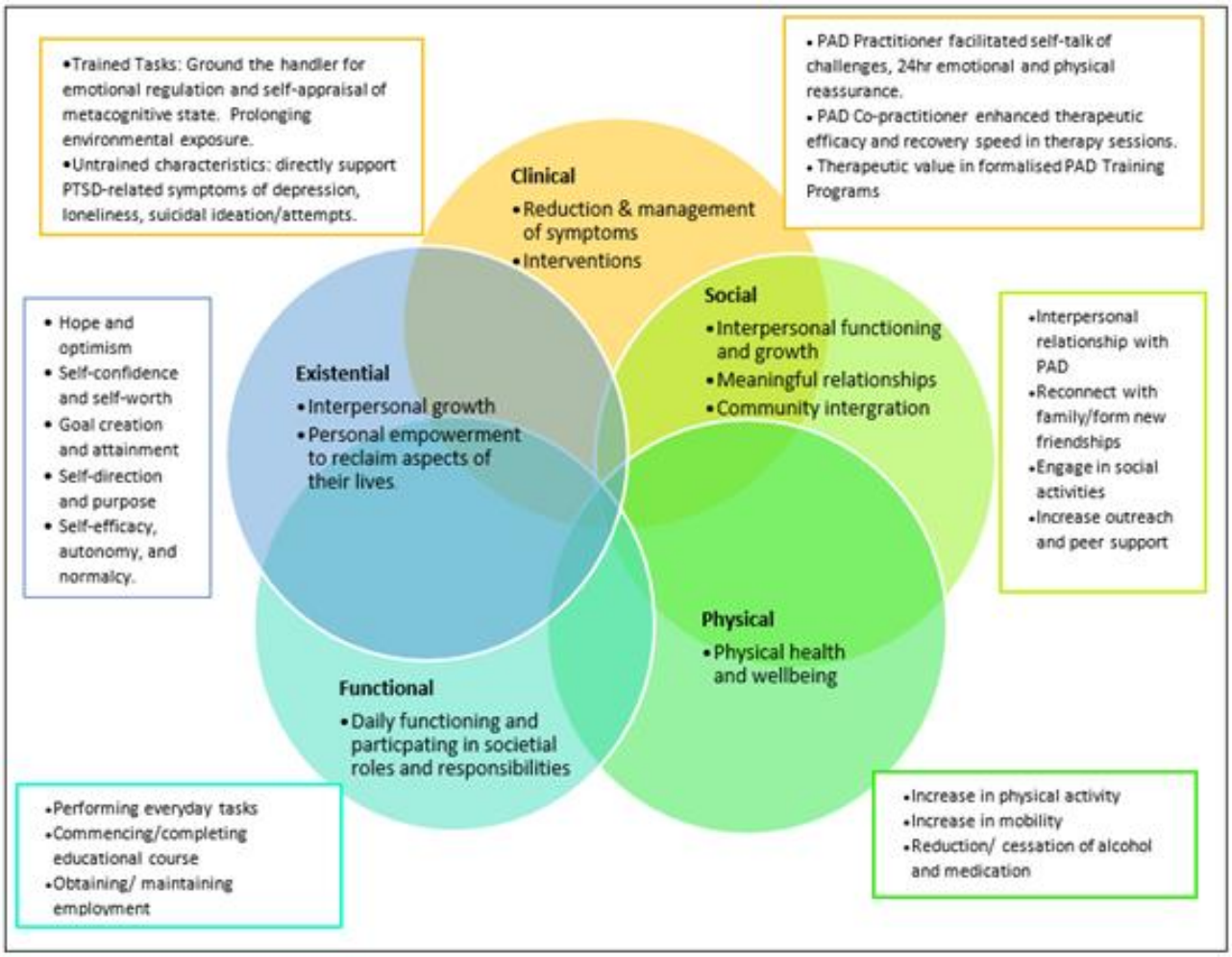
In addition to inconsistent legislation and lack of regulations, obstacles surrounding the acquisition of a trained PAD and disparate training standards were noted. Acquiring a trained PAD was reported to be costly and, in most contexts, an out-of-pocket expense, in addition to lengthy wait times ranging from one to three years. The justification of delays in obtaining a PAD was the unprecedented number of applicants with the demand surpassing the ability of organisations to supply trained PADs. To counteract the high expense and offset lengthy wait time, some participants self-trained a suitable dog and undertook either formalised or nonconventional training programs. However, several articles in the review identified training standards and procedures that were widely disparate amongst training organisations, posing potential implications to whether these disparities have an impact on the effectiveness of a PAD to mitigate the handler's symptoms and functioning. Establishing global training standards and procedures is warranted, as disparities in training accreditation and regulatory schemes among Australian states and territories are evident, highlighting the lack of a standard national model for assistance animal accreditation (AHRC, 2016).

Interconnectedness Between Domains

Contextualising the multi-facilitative role of PADs using clinical and nonclinical domains not only supports uniformity of the current literature for a comprehensive understanding of the utility of PAD for PTSD but also uncovered overlapping and complex synergistic interactions between the domains, signifying how the incorporation of a PAD may evoke holistic support in post-traumatic recovery progress and outcomes. That is, it is reasonable to posit that PADs positive impact in one domain, appeared to positively influence another domain/s, supporting Whitely and Drake's (2010) theoretical stance. This interconnectedness between the domains was evident in the review, where improvements in PTSD symptom severity within the parameters of the clinical domain, appear to be related or influenced by improvements in non-clinical domains (e.g., social, existential, physical, and functioning). A schematic of the review synthesis is presented in Figure 2.

Figure 2

Holistic View of the Role of PAD for PTSD Recovery Progress and Outcomes



For example, the synthesised evidence highlighted PADs performing tasks to the ground handler and providing biofeedback, supporting the handler to manage symptom severity (clinical), which in turn fosters self-confidence and a renewed sense of being in control of their invisible injury (existential), enabling the handler to undertake daily tasks (social and functional). Furthermore, the husbandry requirements of caring for a PAD facilitate opportunities to increase physical activity and subsequently more mobility within the community (physical). Psychiatric assistance dogs are also described as social catalysts, leading to positive social interactions, expanding social networks and building on the handler's communication skills (social) and a renewed sense of purpose. Consequently, this may result in an increase in employment prospects and/or productivity in the workplace (functional). Bergen-Cico et al. (2018) reported a similar overlap between improvements in

mental wellbeing aspects and PTSD symptoms was linked with a decrease in isolation and a renewed sense of purpose.

Accordingly, it is plausible that these multidimensional aspects contribute to a stronger understanding of the multi-facilitative role of PAD in PTSD recovery progress and outcomes. However, the extent to which progress in one dimension predicts progress in another is unclear and should be addressed in future research.

Additionally underpinning all five dimensions, the review found evidence indicating PAD nurtured the development of positive perceptions of interpersonal growth and improved intrapersonal functioning (e.g., self-worth, purpose, and direction, hope and optimism, self-confidence, goal creation and attainment, regained normalcy, generativity, belonging, increased outreach etc.). Indeed, interpersonal, and intrapersonal functioning is the epitome of personal-centred recovery models and programs, however, to date the PAD's role impacting these outcomes (particularly intrapersonal functioning) has received little scholarly attention. This signifies the importance of further research exploring unique underlying mechanisms of how PAD fosters growth in the individuals' internal monologue and interpersonal skills and how this contributes to symptom severity and functioning outcomes.

3.6.3. Future research directions

The findings from the review identified that the combination of PADs trained tasks, attributes of innate dog characteristics and the close handler-PAD relationship all played an instrumental role in promoting the recovery process and outcomes. In the context of existing theoretical frameworks, two concepts were put forward to help consolidate our understanding of the complex handler-PAD partnership, this included connotations of PADs as an 'attachment figure' (i.e., Beetz, 2017; Kurdek, 2008; Rocket & Carr, 2014; Zilcha-Mano et al., 2011) conjoined with the notion of PADs act as a stimulant for promoting 'behavioural activation' in a variety of contexts and conditions. Whilst the notion of perceiving dogs as attachment figures is widely recognised as an underlying philosophy in HAI research, there is a sparsity of literature associating PADs with behavioural activation. An interesting area for future research may be to conjoin the two frameworks for a better understanding of the underlying mechanisms involved in this complex paradigm.

The aim of the review was to include both defence and first responder personnel with PTSD using a PAD. All studies examined PAD's impact on veterans with PTSD, with only a handful of first responders included, limiting the generalisability of the results. Future research should examine other non-military populations including first responders as PTSD is highly prevalent in this population (Berger et al., 2012).

The clinical utility of augmenting PADs into professional PTSD treatment efforts requires further evaluation. Specifically, the review identified unique contributions of PADs' innate characteristics in providing personalised therapeutic support (i.e., being a refuge for the handler to exhibit their emotional vulnerabilities, surfacing bottled-up distressing cognitions and emotions and generating self-monologue of troubled cognitions and assisting the handler to explore what's on their mind). However, it is unclear to what extent this unique support transfers into a form of therapy and the impact this has on symptomology and functioning. Whilst we are not suggesting PADs are to be used as a monotherapy, research into this area would make an important contribution to establishing the degree of therapeutic support PADs could provide for individuals who were unsuccessful in traditional trauma-based treatments as well as a better understanding of PADs continued support outside of conventional PTSD therapy sessions, which may influence progression within the subsequent session with the practitioner.

Despite PADs being frequently described as an adjunct intervention to traditional forms of PTSD treatment, there is limited and contradictory evidence surrounding whether and how PADs are augmented into professional contexts, in addition to a lack of studies collecting data of past and current treatments alongside a PAD. Research should examine whether all PADs are actively involved in PTSD treatment plans and processes and how the inclusion of PADs influences the handler's experience in the therapeutic sessions. It is proposed this may inform practitioners on how to better incorporate clientele's PADs into therapeutic plans and processes for best practice models and person-centred approach to support and may assist individuals that have difficulties engaging in more traditional PTSD treatment practices due to the presence of their PAD.

After completing a formalised PAD training program, studies reported high engagement and low dropout rates for PAD-associated interventions (77% completion of a 14-week self-training program; Scotland-Coogan et al., 2022) compared to traditional PTSD treatments (Goetter et al., 2015; Hoge et al., 2015), suggesting PAD training programs are a viable alternative and or adjunct intervention for veterans who have difficulties participating in traditional PTSD treatments (Scotland-Coogan et al., 2022). Considerations of future research to investigate how to best incorporate PAD training programs alongside goal-directed activities in the professional context may be conducive to better therapeutic outcomes and perhaps improve the communication channel between PAD trainers and treating clinicians for a unified approach to support.

Additionally, numerous underlying active components of group PAD training programs were also uncovered. It is plausible that these confounding facets contribute to the positive PTSD research outcomes posited in PAD literature. Future research may consider developing an objective measurement to serve to identify and explore the contribution of these active constituents of the PAD group training programs. Indeed, past literature has posited that programs and recovery models that involve aspects that build or strengthen social support networks may help mitigate the severity of PTSD symptoms (Simons et al., 2019). These underlying elements of the PAD group training program coupled with the trained task and close bond of the handler/PAD dyad could strengthen the outcomes of this novel PTSD intervention and guide PAD organisation training standards and procedures.

Alongside the potential benefits of formalised PAD training was the acquisition of a PAD, where based on the article characteristics, some participants obtained a pre-trained PAD, while others self-trained a suitable dog to become an accredited PAD and undertook either a formalised training program or a nonconventional training (obedience classes). Whilst the review was unable to compare efficacy outcomes between the ways participants acquired a PAD (received a trained PAD or self-training) and which training program they completed due to high variability between the studies, it appeared the various ways to obtain a PAD and the subsequent PAD training channels were all advantageous to PTSD-related symptoms and functioning management. However, there is limited evidence on why participants decided to either acquire a pre-trained PAD or self-train channel and the subsequent training program they participated in. Considerations of whether inhibitive factors identified in the review (i.e., high costs, lengthy wait times to receive a pre-trained PAD, inconsistent legislation, lack of regulations and disparate training standards) may contribute to these decisions. Recommendations for future research to explore decision-making factors surrounding the acquisition of PAD and subsequent training program preferences is warranted to inform decision-makers of healthcare planning and policy of the enabling and inhibiting aspects that individuals with PTSD face when seeking to use a PAD for their invisible injury.

3.6.4. Limitations

Methodological disparity of the PAD interventions (i.e., acquisition of PAD [receiving a trained PAD, self-trained PAD] and disparate PAD training program procedures) made it difficult to compare PAD intervention outcomes across the studies. Therefore, the heterogeneous nature of the studies included in this mixed-method review needs to be considered when interpreting the findings. Furthermore, the lack of clinical trials (except for

one RCT) removes the ability of the review to determine cause-effect, yet it was possible to detect associations between the multi-facilitative role of PAD on clinical and non-clinical PTSD recovery progress and outcomes, providing a richer and more inclusive understanding of the utility of PADs for PTSD and to better inform healthcare decision-making planning (Shaw et al., 2014).

To conceptualise the multi-complexities of the unique and facilitative role PAD plays in the post-traumatic recovery journey, the review utilised an overarching theoretical approach, consisting of five superordinate dimensions of recovery. However, this framework is not specific to post-traumatic stress, but rather a holistic recovery approach to clinical and non-clinical factors of mental illness. This review postulated this framework assisted in building a holistic narrative to objectively understand the therapeutic value and appropriateness of PADs' role in fostering the handler's recovery progress and outcomes. Despite these limitations, the findings from the synthesised evidence have enhanced our understanding of PADs' role and the type of support they provide veterans who experience challenges with PTSD in a variety of contexts and conditions.

3.6.5. Conclusion

Overall, the synthesis of evidence portrays PADs as a promising complementary and integrative novel approach for reductions in PTSD symptom severity, and meaningful improvements in interconnected domains including social, existential, physical, and functional aspects. Using an emerging field of enquiry (MMSR) coupled with a broad mental health recovery framework to contextualise the evidence, the review objectively drew together evidence from the differing process and outcome evaluation methods, to update our current understanding of the PAD intervention for PTSD. In addition to uncovering gaps and informing parameters to investigate in future research as well as the subsequent chapters of this program of research.

Chapter Four Preface

The MMSR found limited and conflicting evidence on whether PADs are integrated into their handler's ongoing PTSD treatment efforts and the role PADs play within a professional context. Furthermore, past literature has not examined the type of PTSD treatments used alongside the use of PAD. The objective of chapter four is to explore Australian adults' experiences of incorporating their PADs into their ongoing PTSD treatment practices and examine the type of PTSD treatments they have used in the past and currently utilising alongside their PADs. It is hoped that this study may provide a broad preliminary insight into individuals' experiences of therapeutic opportunities and implications of

integrating PADs into current PTSD treatment and help to inform practitioners on how to better incorporate the PAD into therapeutic sessions for best practice models.

CHAPTER FOUR: THERAPEUTIC OPPORTUNITIES AND CHALLENGES IN INTEGRATING THE PAD INTO ONGOING CONVENTIONAL PTSD TREATMENTS

"In my darkest hour, I reached for a hand and found a paw"

(Anonymous, n.d)

Despite empirical evidence supporting the provision of PADs as an adjunct intervention to more traditional forms of PTSD treatment, there is limited understanding of whether and how PADs are integrated into evidence-based treatment approaches in a professional context. There is a dearth of research that has examined the type of conventional treatments individuals with PTSD undertake alongside the use of PADs. The purpose of Chapter Four is to address these gaps by exploring Australian adults' experiences of incorporating their PADs into their ongoing PTSD treatment practices and investigate past and current PTSD treatment trends.

4.1. Barriers to treatment seeking and engagement in PTSD trauma-focused interventions

In the Australian context, systemic barriers (i.e., health insurance rebate barriers, general health practitioner lack of knowledge to refer to the right specialist), dissatisfaction with previous treatments (i.e., clinician-related barriers [lack of trust, received 'pathologising' treatment, did not address the source of the issues]), and intrapersonal barriers (i.e., feeling too overwhelmed in sessions) have been identified as barriers to seeking treating or engagement for women with complex trauma (De Boer et al., 2021). These barriers to treatment-seeking and disengagement issues are concerning, as without effective engagement of intervention, individuals risk chronic and lengthy duration of illness and far-reaching and negative consequences for themselves, significant others, and communities (Forbes et al., 2019). Accordingly, evaluating adjunct approaches to support individuals experiencing difficulties in engaging or benefiting from traditional PTSD interventions should be a priority.

To address these treatment barriers, a growing number of individuals with PTSD are incorporating a variety of complementary and alternative medicine

approaches (CAM) to support symptomology severity and daily functioning challenges (Wynn, 2015). One such approach, gaining popularity, proposed to be less stigmatising (Yarborough et al., 2017) and a viable intervention for veterans who have difficulties engaging or benefiting from traditional PTSD treatments, is a PAD.

4.2. Current evidence for the integration of PADs

The synthesis of evidence in the MMSR (Chapter Three) advocated PADs play a multi-facilitative role in supporting their handlers in reducing and managing the severity of PTSD symptomology, and nurturing meaningful improvements in interconnected recovery domains including social, existential, physical, and functional aspects. Yet, despite these therapeutic benefits, PADs did not eliminate a person's PTSD diagnosis (e.g., PTSD outcome measures did not fall below the diagnosis threshold). Rather PADs were described as a tool, used as a catalyst to assist the hander in learning to self-manage symptoms (Newton, 2014), foster self-change and growth; working together towards recovery (Crowe, et al., 2018). Accordingly, PADs are strongly recommended to be used in addition to and not in place of traditional PTSD approaches. There is, however, limited understanding of the integration of PADs into evidence-based treatment approaches in a professional context.

The evidence in the MMSR advocated PADs as a promising complementary novel approach to traditional PTSD treatments. For PADs to be fully immersed as a complementary 'tool' to support PTSD recovery progress, we would assume PADs and the individual's ongoing PTSD treatment efforts work synergistically for positive PTSD outcomes, both within and outside of the professional therapeutic sessions. Additionally, for synergism, one would consider that the PAD would be incorporated into PTSD treatment plans and processes, yet there appears to be limited and conflicting research examining the integration of PADs into evidence-based treatment approaches in a professional context.

Specifically, the MMSR provided a preliminary insight into the therapeutic outcomes of the integration of PADs into ongoing PTSD treatment processes. Indeed, PADs were perceived to have a positive impact by enhancing therapeutical efficacy and recovery speed in defence veterans (Lessard et al., 2018). Psychiatric assistance dogs' role in contributing to these positive therapeutic outcomes within the professional context was unable to be established. Glintborg and Hansen's (2017) case study reported that whilst the participants' healthcare team viewed the

PAD as a positive support, the PAD was not actively integrated into therapeutic sessions nor was the PAD included in goal-directed plans and processes. These conflicting findings raise further questions surrounding whether PADs are integrated into PTSD treatment regimens for all individuals using a PAD and potential negative implications for the individual and/or the success of the evidence-based treatment if the PAD is not included in the treatment plan.

Moreover, the underlying aspects of how PADs contribute to positive therapeutic outcomes within the professional context are limited. One study in the MMSR disclosed PADs' presence and trained task of responding to the handler's subtle changes was reported to not only provide support to the handler but also cue the practitioner to the handler's current state, which in turn, assisted the practitioner to either delve deeper to address the issue or divert the discussion to a topic less triggering (Moore, 2014). It is unknown whether PADs are explicitly utilised to their full capacity in supporting the therapeutic sessions or if PADs are utilised in the application of specific techniques. Therefore, the role and clinical utility of augmenting PADs in the professional context requires further evaluation.

Additionally, a caveat identified in the MMSR, was studies neglected to collect information pertaining to the type of PTSD treatments participants had tried in the past and current treatment efforts alongside the PAD. It is plausible co-occurring PTSD treatment efforts may significantly influence and even inflate outcomes. Considering past literature has identified challenges surrounding high dropout and nonresponse rates for psychotherapy PTSD treatments, it is important to examine whether the incorporation of PAD alongside current evidence-based treatments influences treatment engagement and response.

Despite the widespread recognition of PADs as a positive adjunct intervention to traditional PTSD treatment approaches, there remain several areas that require a more comprehensive understanding. Firstly, PADs are frequently described in the literature as a 'complementary' novel-based intervention, suggesting that PAD and ongoing treatment efforts work synergistically for positive PTSD outcomes. Yet, it appears that not all PADs are integrated into conventional PTSD treatment approaches (Glintborg & Hansen, 2017). Accordingly, it is unclear whether all PADs are integrated into their handler's ongoing PTSD treatment efforts. Secondly, we have a limited understanding of the role PADs play within therapeutic plans and process context. Thirdly, to date there is a dearth of studies that have collected data

on the type of treatment participants were undertaking alongside the PAD, thus it is unclear the influence PADs have on the treatment approach. Finally, past research investigating PADs for PTSD-related symptomology and functioning has been international in scope and predominantly focused on defence populations with PTSD, limiting the generalisability of findings of the clinical utility of PADs. Overall due to the sparsity of critical reflection on this pertinent topic, it is important to explore participants' experiences of the incorporation of PAD into their ongoing treatment practices, especially if there is potential for facilitation of therapeutic change.

4.3. Current study

The aim of this chapter is to (1) contextualise Australian adults' experiences of incorporating their PADs into their ongoing PTSD treatment practices and (2) examine the type of PTSD treatments they have used in the past and currently utilising alongside their PADs. It is anticipated that this study will provide meaningful contributions to our current understanding of integrating PADs into existing PTSD treatment efforts to better assist healthcare and service providers in person-centred care and treatment plans for best practice models.

4.4. Method

4.4.1. Study Design and Researcher Reflexivity

A mixed method research design was employed to address the research objective to explore whether the incorporation of PADs assisted in improving treatment engagement and response for those having difficulties in the professional context as well as trends in conventional treatments alongside a PAD. This mixed method approach to inquiry was based on the intersection of my pragmatic paradigm, and integrating both quantitative and qualitative evidence, enabling the ability to examine the PAD intervention from different perspectives and research lenses (Creswell, 2009; Shorten & Smith, 2017) producing a more complete picture and holistic view of the PAD intervention for Australians with PTSD.

Consistent with my pragmatic approach, a concurrent mixed methods form of inquiry (Creswell, 2009) addressed the research objectives through the form of a large-scale online survey using both open and closed-ended questions. I collected both quantitative data and qualitative data at the same time and integrated the findings to interpret outcomes (Creswell, 2009). Furthermore, as the research objective was more exploratory based, the qualitative strand was predominant, whilst

the quantitative data was embedded to support the qualitative strand, by identifying aspects that may have influenced the qualitative responses (i.e., treatment trends and how respondents acquired a PAD). Accordingly, the primary research objective was addressed through a constructivist lens for analysis. By adopting a constructivist orientation for analysis, I was able to explore and understand participants meaning, perspectives and experiences whilst acknowledging how my background and experiences shaped the interpretation of meaning during analysis (refer to reflexivity Chapter 1 for researcher's background; Creswell, 2009).

Subsequently, reflexive thematic analysis (RTA) was the most appropriate approach, enabling data-driven reflection on participants' experiences generated by both semantic and latent patterns of meaning across the dataset, while also recognising my reflexive influence on interpretations of these meanings as a valid resource throughout the study (Braun & Clarke, 2022). Moreover, RTA is a flexible approach, suitable for large-scale qualitative components of online surveys (Braun et al., 2021) and in line with a constructivist orientation, the open-ended qualitative components of the online survey were purposively broad to enable participants to construct their own meaning (Creswell, 2009). Furthermore, Braun et al. (2021) advocate that the anonymity of responding to a qualitative question via an online survey may be less obtrusive and facilitate more explicit disclosure surrounding sensitive topics, compared to face-to-face methods. This may be particularly helpful considering the population of interest in this program of research.

The secondary research objective was to examine the prevalence of PTSD treatment modalities before and after the acquisition of PADs utilising a convergent design. This approach enabled the study to concurrently collect and generate data from participants' experience of integrating PADs with current PTSD treatment efforts and examine prevalence data of past PTSD treatments and current PTSD treatment/activities used alongside a PAD. Given the limited knowledge on whether and how PADs are embedded into conventional treatments, their contribution in the professional therapeutic setting, and the type of treatment participants are undertaking alongside their PAD, a convergent method is appropriate for combining prevalence data and the analysis of participants' experiences.

4.4.2. Participants

Screening for participant inclusion into the study included adults aged 18 years or older, residing in a state of Australia, with a diagnosis of PTSD or probable

PTSD (several symptoms consistent with PTSD yet not diagnosed) and currently utilising a PAD. The final dataset of 109 participants, consisted of 63.3% female (n = 69), with ages ranging from 18 to 82 years, with an average age of 48.5 years (SD = 14.80). Of the 109 participants, 42.2% of respondents were first responders and/or defence personnel. One hundred and four participants were diagnosed with PTSD (95.4%) with the remaining participants with probable PTSD. Table 10 summarises the demographics and characteristics of the sample.

Table 10

Study 2 Participant Characteristics

Variable	n (%)
Age, *M* (*SD*)	48.52 (14.82)
Gender, *n* (%) female	69 (63.3)
Marital Status *n (%)*	
Married/in a relationship	65 (59.6)
Single	40 (36.7)
Separated/ Divorced	4 (3.7)
Residential State of Australia, *n* (%)	
Queensland	52 (47.7)
South Australia	4 (3.7)
Australian Capital Territory	2 (1.8)
Victoria	26 (23.9)
New South Wales	19 (17.4)
Tasmania	2 (1.8)
Western Australia	3 (2.8)
Northern Territory	1 (0.9)
Population Group	
General Australian adult population, *n* (%)	63 (57.8)
Subpopulation First responder and Defence Personnel, *n* (%)	46 (42.2)
First Responder, *n* (%)	16 (14.7)
Defence Personnel, *n* (%)	26 (23.9)
Worked as both FR and DP, *n* (%)	4 (3.7)
Diagnosed PTSD, *n* (%)	104 (95.4%)

Note. N= 109. FR - first responder; DP - defence personnel

4.4.3. Procedure

The study was approved by the Human Research Ethics Committee at the University of Southern Queensland, H20REA284. Purposive sampling was utilised. Ten not-for-profit Australian assistance dog organisations and PTSD support groups distributed the study invitation to current and former clientele, predominantly via public and private social media platforms between May 2021 and September 2022. The study invitation included information about the study and a link to complete the

anonymous online survey. Informed consent on a voluntary basis was obtained electronically, prior to being redirected to the survey landing page. Upon completion of the survey, participants had the option to enter a random prize draw for one of two $50 National pet store vouchers, in addition to nominating a not-for-profit PAD organisation or dog shelter, where a $5 donation on behalf of the participant was made as compensation for their time.

4.4.4. Measures

PADs integration with ongoing treatment efforts. Participants were asked to respond to a single open-ended item on the survey, describing their experience of integrating their PAD into their ongoing PTSD treatment 'How have you experienced the integration between your PAD and current treatment?'

PTSD treatment modalities. To gather prevalence information regarding past and current PTSD treatments, participants were provided a list of evidence-based PTSD treatment practices alongside the option of specifying 'other' activities/programs not listed. Participants were asked to indicate the types of treatments they have tried in the past to help manage post-traumatic stress symptoms. The PTSD treatment list was then replicated, and participants were asked to indicate their current PTSD treatment/activity alongside their PAD. The survey format enabled participants to respond to multiple treatment types. Refer to Table 11 for the list of PTSD treatment modalities.

4.4.5. Analytic Strategies

Qualitative data analysis plan. Data from the single open-ended item was analysed through a process of reflexive TA (RTA) to identify, analyse, and interpret patterns of meaningful responses across a dataset (Braun & Clarke, 2006, 2022). This was the preferred approach as it is suited for large-scale qualitative components of online surveys (Braun et al., 2021). Furthermore, the anonymity of responding to a qualitative question via an online survey may be less obtrusive and facilitate more explicit disclosure surrounding sensitive topics, compared to face-to-face methods (Braun et al., 2021). Accordingly, I was guided by the six phases of Braun and Clarke's (2006) thematic analysis approach and NVivo software was utilised to support a structured approach to analysis.

Six-phase analytical process. After uploading the entire dataset to NVivo, I familiarised myself with the data by reading and rereading the dataset, noting preliminary ideas and potential patterns appropriate to the research objective as well

as noting my thoughts and feelings towards the data. I systematically examined the entire dataset, ensuring individual data items received equal attention. Codes evolved from identifying individual data that shared common underlying contexts or interesting aspects relevant to the research objective. My interpretation of data, tracking changes and/or redefining of code descriptions made throughout the recursive coding process were noted in NVivo and a journal.

Once initial coding was complete, I began to aggregate meaningful data to generate initial themes through actively analysing and interpreting recurring patterns and relationships across the coded dataset and relevant extracts grouped and assembled according to themes. Every attempt was made to ensure the dataset and participants' meaning was reflected in theme titles, rather than predetermined ideas or concepts. This enabled a more inductive, data-driven conceptualisation of themes while acknowledging my role in the cogeneration of these themes (Braun & Clarke, 2022). I then recursively reviewed themes with reference to the relationship between data extracts and the dataset to inform the central narratives. The creation of thematic maps helped to support the further refinement of concepts and identify overlapping aspects.

Once the themes and potential subthemes were developed, theme labels and descriptions were adjusted in consideration of the context of the dataset and research objective. A final inspection of the report was undertaken, where I revisited the original dataset to ensure I accurately represented the descriptions of participants' experiences and refined my interpretations of implicit patterns from the dataset. Guided by Braun and Clarke's RTA approach (2006; 2022), the synthesis of descriptive and interpretive elements was intertwined with relevant past research findings to support the research objective and reported in the results section.

Quantitative data analysis plan. Data was analysed using IBM SPSS v.27. Of the 109 participants who completed the demographic questions, five missing responses to items pertaining to past and current PTSD treatments were found and removed from the dataset. The final dataset was comprised of 104 participants. Responses from past and current treatment types were analysed separately, with the 'other' responses grouped into similar treatments/activities. Complementary and alternative medicine (CAM) responses were guided by Millstine's (2022) five categories of CAM. Frequency distributions were obtained from the list of past and current PTSD treatment/activity modalities. Frequency outcomes were then

compared between past and current PTSD treatment to examine the treatment trends before and after the acquisition of a PAD. Prevalence data and respondents' experiences across themes with the support of past literature findings were converged in the discussion section to further my interpretation of the data and answer the research objective.

4.5. Findings

Based on the broad research objective of exploring Australian adults' experiences of integrating PADs into ongoing PTSD treatment efforts, two underlying central concepts evolved from the data, and were identified as (1) therapeutic opportunities and (2) challenges of integrating PADs into PTSD treatments.

4.5.1. Therapeutic opportunities

One overarching theme was the therapeutic opportunities of integrating PAD with current PTSD practices. This central concept was defined as positive experiences of using a PAD alongside current treatment, integrating PADs into ongoing treatment efforts, and the facilitative role PADs play in therapeutic processes. Five subthemes described specific contexts within this theme: (1) synergy between the PADs and ongoing treatment, (2) explicit role of PADs in therapy sessions, (3) integrating PADs into treatment plan, (4) engagement, compliance, and treatment-seeking, and (5) practitioner and health care team support.

Synergy between PADs and ongoing treatment.

The combination of PADs and participants' ongoing treatment progress was perceived to complement one another. Extracts describing the combination included "fits like a glove," seamless", and "they go hand in hand". One participant expressed that their PAD and ongoing treatment "…are all part of my arsenal of tools to help me treat my condition," with another stating that it is "… integral to the journey toward post-traumatic growth". Participants credited their therapeutic gains to the combination of PADs and PTSD treatment, expressing that one without the other would not have been as effective.

Moreover, the inability to receive clinician support for extended periods of time was highlighted as a significant barrier, PADs were perceived to be instrumental in supporting PTSD-related issues during these delays in receiving support. One participant described that "I often fell through the cracks in the medical system and went long periods without the support of therapy or medication and the role my PAD

played was invaluable in getting me through these times." Participants described that due to inadequate health care system support, counsellors and general practitioners are recommending the use of PADs as an option to support the patient's needs. Others indicated vocational support services were lacking for first responders with PTSD, resulting in participants turning to the help of a PAD and PAD training organisations for support.

Participants also compared the constant 24-hour presence of the PADs to the brief support they receive in therapy sessions, "My dog can be with me all of the time - not just for one hour once a week". This was perceived to be invaluable during challenging times "…most treatments have helped; however, they are not always available when the train is running off the rails. My PAD is always there, able to assist in grounding me." These experiences echo findings in the MMSR, where the PADs provide personalised support, dissimilar to other psychotherapy or psychopharmacological interventions (Hyde, 2015; Newton, 2014), with participants expressing that the PAD was the most constant and effective intervention they had used (Newton, 2014).

Less reliance and frequency of attending practitioner appointments in addition to the reduction/cessation of medication has occurred as a result of including PADs in the treatment plan.

> My condition has improved during the past 4 years much more than those initial 3, I have not been medicated since my AD [PAD] began work as opposed to the earlier days and I only see a psychologist every two months now (not weekly).

One participant described the inclusion of their PAD supported a more person-centred approach to medication use, "Now my meds suit me as an individual, not as a general treatment" and "... I have experienced a reduction of reliance on anti-anxiety & anti-depression medication." These experiences echo findings in the MMSR (Chapter Three), where PADs were commonly attributed to reduction or cessation in pharmacotherapies.

Explicit role of PAD within the therapy sessions

The therapeutic value of explicitly using PADs for in-session activities was perceived to increase treatment engagement and efficacy. The role of PADs in providing comfort and support by performing tasks to ground participants and keep

them in the present moment was perceived to be particularly helpful when processing trauma and during difficult sessions.

> Having my PAD with me during my treatment sessions had made them more effective and less taxing as my PAD keeps me grounded and can task as needed, he also can give info to my psychologist as he picks up on me struggling before there are visual clues a human can pick up on. Having him with me in hospital also meant the treatment was more effective as I was less dissociated and able to actually engage in therapeutic treatments.

The subtle changes PADs detect and respond to, not only support participants during times of disassociation but also assist in alerting the practitioner to the participants' current state. One participant stated that: "my psychologist has learnt he misses many of the times I disassociate in session, my PAD tells on me, just like she does everywhere, she quickly brings me back and we can continue….." Participants also described that if a particular session was difficult, the practitioner and participant would practice techniques that incorporate the PAD and discuss utilising the PAD to work on follow-up activities between consultations. These experiences support Lessard's et al. (2018) study, where the inclusion of PADs into ongoing treatment was perceived to improve therapeutic efficacy and enhance recovery speed. These findings also provide an insight into how PADs support these positive therapeutic outcomes and offer additional support to Moore's (2014) findings, where the responses of the PAD towards changes in the handler, assisted the practitioner to recognise specific issues to address or diverting dialogue to a less triggering topic.

Integrating PADs into treatment plan

Psychiatric assistance dogs were also perceived to play a vital role in treatment planning, opening dialogue with the treating practitioner for a more person-centred approach. Participants shared how they would work with the practitioner strategising over how to incorporate the PAD into treatment plans and activities, "My dog comes to therapy, and we talk about how we can use the dog as tools and interventions."

The PADs played a valuable role in assisting in goal-directed progress and activities outside of the sessions, with one participant perceiving their PAD "… fits in perfectly with my ongoing treatment and helps me achieve my goals, including working on desensitisation for me in certain places (such as hospitals, shopping centres or cafes/restaurants) which I previously could not go to!". Another described

the role the PAD plays in the treatment plan as supporting them to keep focus “It helps me do the ‘small steps’ of accessing public my psychologist wants me to do. Helps me focus. And keep going when things are tough in my head…..”

Other supporting roles PADs play in goal-directed activities set by the treating practitioner were expressed by participants including grounding exercises, namely involving the PAD in increased sensory exercises, developing anti-dissociation behaviours and suicidal ideation reduction strategies. Psychiatric assistance dogs also assisted in maintaining medication compliance by setting PAD mealtimes with participant medication times, “if I'm late she will hassle me.” Furthermore, previously learnt techniques were perceived to be more easily practised with PADs by their side, “I feel a lot of the mindfulness I’ve learnt is easily practised with (PAD name) present compared to on my own.”

Engagement, compliance, and treatment-seeking.

The inclusivity of PADs in the treatment process was perceived to assist in treatment engagement (i.e., goal-directed activities and explicit use in specific techniques), where one participant stated that “…without the bridge created by the dog, I was unable to see the value in the other treatment.” Participants also reported having better compliance with attending appointments and a sense of safety due to the presence of their PAD. One participant described that “…my PAD escorts me to therapy and enables access when I previously may have missed appointments due to emotional health.” “I struggled to attend my appointments earlier, as they'd cause me to relive the trauma and it was just dangerous, but with him (PAD) there, I am able to attend my appointments and be safe during and after them.”

For some, the support of their PADs has encouraged treatment-seeking more attainable with some expressing consideration of “… branching out to further therapies” to support their recovery progress. These findings are similar to past studies, where the trusting relationship between the participant and PAD was perceived to enable them to better accept other interventions (Crowe et al., 2018). Likewise, the presence of the PAD enabled veterans to feel more comfortable in seeking medical support and PADs provided the motivation to be more compliant with medical recommendations and advice (Floore-Guetschow 2022).

Practitioner and healthcare team support

Acceptance and support from the treating practitioner/s regarding the provision and incorporation of PADs was perceived to be an integral aspect of

participants' progress and perceived support. Treating practitioners with prior experience with canine interventions, whether it be their (practitioners) own therapy dogs or experience with clients with PADs, were perceived to have a good understanding of the trained tasks PAD performs to support the individual and will incorporate the PADs as an aid/tool during treatment. Participants advocated that enlisting the support of practitioners experienced in the use of PAD, better understand the bond participants shared with their PAD and reported to "never questioned my right to use one."

Whilst not all participants' practitioners/healthcare team were experienced or knowledgeable in the use of PADs, numerous positive benefits including a stronger therapeutic alliance were described by participants when practitioners/team were welcoming, encouraging, and inclusive of the PADs. Similarly, the unwavering support and enthusiasm of the healthcare team to learn how to include the PAD to better support the individual, opened the doors to "work together to find solutions to help move forward."

> The people I see (clinical social worker, psychiatrist, and chiropractor) are totally supportive of [PAD name] and can see the benefits of her and incorporate her into any plans or things we do… and when we plan things we talk about how [PAD name] will be included in that.

4.5.2. Challenges of integrating PAD into ongoing treatment

Challenges of integrating PAD into ongoing treatment was the second central concept derived from the data. This overarching theme was defined as the challenges, barriers, and consequences participants face when their PAD is not incorporated into their current PTSD treatment practices and healthcare accessibility issues when using a PAD. Three subthemes were conceptualised as (1) disconnect between PADs and current treatment, (2) PTSD treatment barriers and (3) denied access and discrimination.

Disconnect between PADs and current treatment

Numerous accounts described that there was no integration of their PADs into their ongoing PTSD treatments, perceived as 'disconnected' and depicted as two separate treatments for the same injury. One participant reported that "there was no integration, once receiving PAD I slowly dismissed all treatments and medication." Another described that the two interventions are "… totally separate I have not been asked about my PAD from my health providers". Other participants echo these

experiences denoting their PADs and how their PADs support them with their PTSD-related challenges was not raised in dialogue with the healthcare providers. These experiences are consistent and expand on Glintborg and Hansen's (2017) sole case study.

Furthermore, practitioners/health care teams who were unaccommodating to integrating PADs into goal-orientated processes and plans were perceived to have a negative effect on participants' therapeutic experience, including disengagement in sessions and created clinician-patient barriers in the form of not feeling supported. Some participants chose to terminate sessions and sought support from another more accommodating 'PAD friendly' practitioner or dismissed all other treatments altogether.

PTSD treatment barriers

Coinciding with past research regarding treatment engagement difficulties and nonresponse barriers of core PTSD interventions (e.g., Forbes et al., 2019; Steenkamp et al., 2015), experiences from participants in this study highlighted past difficulties and failed attempts of evidence-based treatments to facilitate positive outcomes. After the acquisition of a PAD, some participants described how they dismissed all other treatments with a preference for the use of PADs as a monotherapy, "My dog is the only treatment that's ever worked for me, I don't receive any other treatment now because nothing has ever worked in the past". Others chose to switch to more self-governed approaches (i.e., mindfulness) alongside the PADs. These experiences concur with past research identifying some individuals use the PAD as a monotherapy treatment (Floore-Guetschow, 2020), and /or prefer to self-manage their PTSD (Naifeh et al., 2016), and/or enlist the support of CAM approaches to assist in symptomology and functioning challenges (Floore-Guetschow, 2022; Wynn, 2015).

Denied access and discrimination.

Numerous accounts described how PADs were denied access to accompany participants to mental health appointments at community-based establishments and public hospital outpatient appointments. These barriers were perceived to significantly impact the mental state of participants, often resulting in a lack of professional support for their symptoms.

> The community help refuses to allow my PAD to come with me for any appointment I've had for the past 2 months. My condition has deteriorated

drastically because lack of help I need to deal with my complex PSTD and anxiety.

Moreover, despite attempts to convey public access legislation, participants have been asked to wait outside with their PADs and felt discriminated against for their invisible injuries. Discrimination and public access barriers were highlighted in the MMSR (Chapter Three), signifying that despite the growth in popularity of PADs, the lack of public knowledge of legislation surrounding the use of PADs continues to be problematic for individuals with PTSD choosing to use a PAD to support their symptoms and functioning challenges.

4.5.3. Prevalence Results

An exhaustive list of clinical and non-clinical interventions was collected and grouped, and past and current treatment frequency outcomes were compared. A descending trend in most evidence-based PTSD treatments/activities after the acquisition of a PAD was identified in the data (refer to Table 11).

Of the 104 respondents, 93.3% have previously used counselling or psychotherapy services and 29.8% continue to use these services alongside the support of their PAD. A decrease in the number of participants using pharmacological interventions was found (past use 89.4%, current use 32.7%) as well as a reduction of participants using Trauma-focused CBT after the acquisition of their PAD (past 67.3%, current 23.1%). Within the complementary and alternate medicine (CAM) approaches, the largest decrease was found in the use of mind-body medicines (36.5% to 20.2%) followed by a reduction in the use of CAM energy medicine (i.e., reiki, acupuncture, and kinesiology), while the other three CAM approaches continued to be utilised alongside the PAD. After the acquisition of their PAD, seven participate in the PAD group training program, and nine have chosen to use the PAD as a standalone approach to support their symptomology and daily challenges.

Table 11

PTSD Interventions: Past and Current Usage and Trends

PTSD Intervention Type	Past interventions used		Current interventions alongside PAD		Intervention trends
	n	%	*n*	%	↘, ↗, =
Trauma-Focused CBT	70	67.3	24	23.1	↘
Group-based Trauma-Focus CBT	14	13.5	3	2.9	↘
EMDR	38	36.5	9	8.7	↘
Prolonged Exposure Therapy	11	10.6	4	3.8	↘
Pharmacological Interventions	93	89.4	34	32.7	↘
DBT	5	4.8	0	0.0	↘
TMS	2	1.9	1	1.0	↘
LENS	1	1.0	0	0.0	↘
Counselling services	97	93.3	31	29.8	↘
CAM Mind-Body medicine	38	36.5	21	20.2	↘
CAM Biologically based practices	3	2.9	3	2.9	=
CAM Manipulative and Body-based practices	6	5.8	6	5.8	=
CAM Whole Medical Systems	3	2.9	3	2.9	=
CAM Energy Medicine	7	6.7	4	3.8	↘
Support Groups	4	3.8	4	3.8	=
Physical Exercise/Activities	4	3.8	9	8.7	↗
Animal Assistance Therapy	11	10.6	3	2.9	↘
PAD Training Program	0	0	7	6.7	↗
PAD only	n/a	n/a	9	8.7	↗

Note. N=104. Trauma-Focus CBT includes exposure and cognitive therapies. EMDR - eye movement desensitization and reprocessing. DBT - Dialectical behaviour therapy. TMS- transcranial magnetic stimulation therapy. LENS - low energy neurofeedback systems (biofeedback). CAM- Complementary and alternative medicine. Mind-Body medicine: mindfulness, meditation, biofeedback, yoga, guided imagery, hypnotherapy, creative outlets (art, music, dance). Biologically based Practices: dietary therapy, botanicals (cannabis). Manipulative and Body-based Practices: massage, chiropractic, reflexology, cupping. Whole Medical Systems: Traditional Chinese medicine, naturopathy, homeopathy. Energy medicine: reiki, acupuncture, therapeutic touch, kinesiology, Qi gong and Tai Chi**.** Animal Assistance therapy - animals used for therapeutic support including equine, dogs etc.. Trends - ↘ decrease in use, ↗ increase in use, = no difference.

4.6. Discussion

High nonresponse rates and treatment dropout, disengagement and avoidance in treatment-seeking continue to be problematic in the delivery and success of evidence-based PTSD treatments (Beyond Blue, 2018; Forbes et al., 2019, Schottenbauer et al., 2008). Accordingly, there is a pressing demand for novel evidence-based PTSD solutions with the objective of encouraging engagement and retention in traditional treatments, while addressing the comorbidities of the diagnosis (indirectly or directly) is spotlighted as a matter of precedence for

individuals with PTSD. The purpose of this study was to examine the clinical utility of integrating PADs in the professional context. However, despite the increased empirical evidence supporting PADs as a complementary intervention to traditional PTSD treatments, it is unclear whether and how the PAD is embedded into conventional treatments and the type of treatment participants are undertaking alongside their PAD. The mixed method approach addressed these gaps in our knowledge and provided a deeper understanding of participants' experiences by generating two overarching themes of the therapeutic opportunities and challenges of integrating PAD into ongoing treatment efforts. The study also identified a descending shift in the use of evidence-based treatments and non-clinical interventions post-acquisition of PAD.

4.6.1. Integrating PAD with ongoing treatment efforts

The integration of a PAD into PTSD treatments highlighted several additional benefits to the standard treatment process and improvement in the quality of treatment practice. Specifically, participants expressed that the combination of PADs and ongoing treatments were both equally integral to supporting their treatment progress and recovery journey.

In the professional therapeutic context, PADs played explicit roles, from grounding the participant to supporting specific therapeutic techniques. The presence of PAD was also perceived to provide a sense of safety within the therapeutic setting, particularly when reliving trauma or during difficult sessions. Additionally, PADs trained task of detecting and responding to subtle cues, not only supported participants during the session but also assisted in alerting the practitioner to the participants' current state, providing additional support to Moore's (2014) findings. Psychiatric assistance dogs were also attributed to facilitating goal-directed progress and activities outside of the sessions, between consultations, with participants listing numerous tasks which incorporated the PADs. It is plausible that the continuance of goal-structured activities outside of the therapy setting may enhance therapeutic change in line with previous research reporting the inclusion of a PAD in current treatment was perceived to enhance recovery speed (Lessard et al., 2018).

The integration of PADs into ongoing treatment plans was also described to have a positive impact on treatment efficacy and increased engagement due to participants' ability to see the therapeutic value of their ongoing treatment, as well as

compliance with attending appointments. The findings are consistent and expand on past studies where the integration of PAD was perceived to improve therapeutic efficacy (Lessard et al., 2018) and the trusting relationship of the human-PAD dyad enabled participants to better accept other interventions (Crowe et al., 2018). Conversely, other participants experienced a disconnect between the use of PADs and ongoing treatment processes, where these two interventions were viewed as separate treatments for the same injury. Whilst the implications of this disconnect is unknown, it is plausible that non-inclusion of the PAD may have a negative impact on participants' progress and interfere with evidence-based PTSD treatment efforts.

The influence of the treating practitioner and health care team also played a significant role. Regardless of whether practitioners have or have not had prior experience with integrating PADs into treatment practice, the study identified several therapeutic alliance benefits including perceived support, treatment engagement, clinician-patient dialogue, and a personalised approach to treatment. Conversely, other participants expressed that their treating practitioners were dismissive of the support the PAD provides and did not incorporate the PAD into treatment plans. Non-inclusion of PADs was perceived to have a negative impact on the participants' experience with the current treatment, with some resorting to consulting with an alternate practitioner or discontinuing conventional treatments altogether. Whilst it is unknown the reasoning behind practitioners' dismissal of incorporating PAD alongside treatment plans, one potential explanation could be that the PAD is viewed as a companion rather than a contributor to treatment progress or perhaps there is ambiguity surrounding how to best incorporate the PAD into treatment delivery and processes. These findings highlight the need for treating practitioners and healthcare teams to have a better understanding of the benefits and challenges of integrating PAD into their treatment practice, and clarity surrounding the delivery of treatment programs that incorporate the PAD to better support and enhance the core therapeutic processes.

4.6.2. Treatment trends alongside a PAD

An extensive list of past and current PTSD treatments/activities was established. The data revealed a descending shift in most interventions after the acquisition of a PAD. Notably, participants highlighted past difficulties and failed attempts of evidence-based treatments to facilitate positive outcomes, with a preference for alternative and self-governed approaches (including PAD training

programs) alongside PADs. Other participants chose to dismiss all other treatments and used PAD as a monotherapy. A decline in participants' dependency on receiving clinician and healthcare team support after the acquisition of PAD was also identified, as well as accessibility issues to attend healthcare appointments with a PAD and participants' inability to receive healthcare support in a timely manner, may also contribute to the descending treatment trends.

There is a risk that the use of a PAD could be viewed as an avoidance strategy, and perceived as a safer alternative to evidence-based treatments that are naturally more immersive and uncomfortable. Indeed, findings from the MMSR identified the use of PADs was perceived to be less invasive compared to other forms of treatment (Floore-Guetschow, 2022). Conversely, this sense of safety and support PADs provide, encouraged treatment-seeking behaviours, with participants expressing consideration for branching out to other treatments to support their injury. This is in line with past literature, describing that the provision of an assistance animal may enable individuals to actively seek treatment support as it may be perceived as more attainable (Goetter et al., 2022). Therefore, it is plausible that the relationship with a PAD may encourage individuals who typically avoid or delay seeking support from conventional PTSD treatment to receive the assistance they need.

4.6.3. Implications and limitations

This study provided a platform for participants with PTSD to engage in sharing their experiences integrating their PAD and current PTSD treatment/s with findings encompassing both therapeutic opportunities and challenges of this integration. The study also addressed a gap in past PAD research, by establishing an extensive list of PTSD treatments and activities (both traditional and complementary interventions) individuals have tried and or currently use alongside their PADs and identified a declining trend in most treatment approaches after the acquisition of a PAD. Whilst no inferences were able to be drawn regarding PADs' influence on these changes in treatment trends, it is anticipated that the treatment list could be incorporated into future quasi-experimental and random control trials when examining the influence of PADs on a variety of PTSD treatment/activities for therapeutic outcomes.. Notably, several participants participating in PAD training programs. Whilst this is not a surprising finding, was considerations for future research to investigate how to best incorporate PAD training programs alongside goal-directed activities in the

professional context may be conducive to better therapeutic outcomes and perhaps open up the communication channel between PAD trainers and treating clinicians for a unified approach to support.

Past studies exploring the efficacy of PAD for PTSD, have focused on defence personnel experiences, whereas participants in this study were comprised of the Australian adult population with PTSD using a PAD with under half of the sample identifying as first responders and defence personnel subpopulations. Furthermore, collecting qualitative data via an online survey facilitated a better outreach to geographically dispersed locations in Australia, making it more accessible for larger and more diverse samples compared to smaller-scale face-to-face data collection methods (Braun et al., 2021). The large sample size of this study enabled the researchers to be confident that the pattern of responses across the dataset and treatment trends was sufficient to reveal a convincing narrative of participants' experiences. A caveat was the study sample was primarily recruited from their affiliations with PAD organisations. This may capture people with only positive experiences with a PAD, whereas people with negative experiences may have potentially disengaged with these PAD organisations, consequently, we may have missed the contributions of those voices.

The heterogeneous contexts were a limitation of this study. Intervention characteristics varied, including a range of different facilitators (practitioners, health care teams), diverse settings and treatment types. However, these differences provided a greater preliminary understanding of factors that influence experiences of the combination of PTSD treatment efforts alongside PAD, supporting the broad research objectives. The RTA approach enabled a data-driven reflection on participants' experiences, with themes generated from the data outputs instead of being anchored by predetermined coding frameworks, whilst also recognising my reflexive influence on interpretation (Braun & Clarke, 2006; 2022). Researchers play an active role in RTA, and researcher subjectivity is considered a core and valid resource to the analysis process. To ensure research rigour, my reflexivity was well documented in a journal throughout the analysis process.

4.6.4. Conclusion

The provision of a PAD in supporting Australians with PTSD will continue to increase in popularity, therefore it is important to understand their role in the professional therapeutic context. This study identified PADs can be positively

augmented into the existing PTSD treatment practices to facilitate goal-oriented progress and outcomes and improve treatment engagement as well as clinician-patient alliance. However, not all PADs were integrated into participants' PTSD treatment plans and were perceived as two separate interventions for the same injury. This ‘disconnect’ had several negative implications for the individual therapeutic experience and often resulted in the discontinuance of the treatment and in some cases, PAD was used as a monotherapy. These challenges were reflected in the descending shift of evidence-based practices after the acquisition of a PAD. Currently, there is a dearth of evidence to support PAD as a monotherapy for PTSD and is unlikely to replace standard practice recommendations for the treatment of PTSD. Concerted efforts into integrating PAD into treatment plans should be encouraged.

Whilst therapeutic opportunities for the integration of PAD into treatment practices are positive, more rigorous research is needed to understand their influence on the efficacy of treatment outcomes in disparate PTSD treatment modalities and the development of practice guidelines on how to best integrate PAD into treatment plans and processes. It is anticipated that the findings may encourage healthcare providers to consider the potential value of including the PAD in their current PTSD treatment practices and provide professional development opportunities in the use of PAD.

Chapter Five Preface

Despite the various channels to source a PAD and handler-PAD team training program resources available, the narrative review (Chapter Two) and MMSR (Chapter Three) identified several barriers and restrictions to access pre-trained PADs, and issues pertaining to standardised regulations and guidelines of the use of PAD in the public domain and training standards and the consequences of those. There is a lack of understanding of whether the aforementioned issues similarly impact Australians with PTSD decisions on acquiring a PAD and the type of PAD training modality undertaken. Subsequently, the purpose of Chapter Five is to examine the facilitators and inhibitors of acquiring a PAD and undertaking PAD training and explore factors influencing the chosen avenue of obtaining a PAD and training pathway.

CHAPTER FIVE: FACTORS INFLUENCING PAD ACQUISITION AND TRAINING MODELS

"There is no faith which has never yet been broken, except that of a truly faithful dog"

Konrad Lorenz (n.d)

Despite various channels to acquire a PAD and differing types of training program modalities available for adults with PTSD, we have a limited understanding of the underlying factors that influence peoples' decisions surrounding how they obtain a PAD and the type of PAD training program they participate in. It is important to understand these factors to develop a stronger understanding of facilitative and inhibitive factors surrounding the accessibility of PADs for people with PTSD. Subsequently, the research objective of this study was to explore factors surrounding how Australians with PTSD acquire a PAD and the type of PAD training modality undertaken.

5.1. PAD team prevalence and training organisations

In the Australian context, only two out of eight ADI-accredited assistance dog organisations provide services specifically for Australians with PTSD with a trained PAD. The state of Queensland endorses an additional 23 not-for-profit assistance dog trainers and training organisations approved under the *Guide, Hearing and Assistance Dog Act, 2009*, however, less than one-third of these approved organisations provide support for training dogs for individuals with PTSD (Queensland Government, 2023). Based on these findings, the number of accredited and/or GHAD-approved training organisations in Australia catering for people with PTSD is limited. This raises concerns regarding whether PADs and suitable training programs are easily accessible for Australians with PTSD.

Despite these small numbers of PAD organisations, the true number of PAD-handler teams is likely to be considerably greater, as there appears to be an extensive number of non-accredited or non-GHAD approved organisations and trainers/assessors across Australia offering various avenues to obtain and train PADs. Indeed, findings from Walther et al. (2017) examining ADI-accredited and non-accredited U.S and Canadian assistance dog facilities, supported this assumption, identifying that psychiatric dogs account for the majority of placements

from non-ADI accredited organisations that often acquire dogs from shelters or work with an owner to train their companion dog (Walther et al., 2017). It is also plausible that some PAD handlers self-train their dogs, without the support of an organisation/provider. In Australia there is no National register of PAD training organisations nor the number of PAD-handler teams, accordingly, it is difficult to establish the exact prevalence of PAD-handler teams in Australia.

5.1.1. Various channels to acquire a PAD and PAD training program modalities

Study characteristics extrapolated from the articles included in the MMSR (Chapter Three), identified veteran population samples across the studies sourced a PAD through either receiving a pre-trained PAD from an accredited PAD provider or self-trained a suitable dog (either their own dog or provided an untrained dog) and completed a form of formalised PAD training program. Formalised PAD training programs were primarily delivered to a small cohort of defence veterans with varying durations ranging from short-term/initial training (i.e., 3-weeks, O'Haire & Rodriguez, 2018), while other programs are longer-term duration (i.e., 14-weeks, Scotland-Coogan et al., 2022; Whitworth et al, 2019). A combination of individual support and group training was also identified in some of the studies (i.e., Kloep et al., 2017), whilst others noted participants had undertaken a less formalised self-training model, yet it was unclear whether participants received support from a trainer or organisation or no support at all (Newton, 2014).

Similarly in the Australian context, there appear to be several options available for people wishing to use this novel intervention. One option is to be accepted into an organisation that matches the person with a pre-trained PAD. Reflecting the findings in the MMSR, the duration of PAD training programs appears to be disparate between these organisations, from the initial training classes (first three months, Assistance Dogs Australia, 2022) to longer training programs (six to 12 months to complete, Integra Service Dog Australia, 2023). The second option is for the person to train their own or a suitable dog in a formalised training context via a training organisation/ trainer and pass the organisation's own public access test (PAT) or state governing requirements for public access. The third is for a person to self-train their own dog to meet the standard of hygiene and behaviour that are appropriate in a public place and employ an independent PAT assessor to certify their dog.

5.1.2. Potential inhibitors of acquiring a PAD

Anecdotal accounts of the prominent role of PADs are commonly reported in the Australian media, advocating the therapeutical benefits of this dynamic relationship to assist with everyday PTSD challenges. Speculation of the growth in popularity has been proposed to be due to the low perceived stigma of using a PAD compared with more conventional PTSD treatment methods (Yarborough et al., 2017). Accordingly, the use of PADs for Australians with PTSD is on the rise. However, due to this unprecedented popularity, the demand outstrips the supply in the number of trained PADs available to Australians with PTSD. Consequently, several organisations that provide pre-trained PADs have had to temporarily cease to accept new applications to minimise extensive wait times (Assistance Dogs Australia, 2022; Integra Service Dogs Australia, 2023). Other not-for-profit PAD organisations providing self-training support have also felt the pressure of this demand and restricted applications to certain times of the year (i.e., March to April and September to October each year, MindDog, 2018). Eligibility restrictions have also been enforced in some PAD training organisations, accepting only applications from defence personnel and first responders with PTSD (Assistance Dogs Australia, 2022).

A high level of training is involved in developing a fully accredited PAD and, accordingly, the costs associated with training a PAD can cost up to $60,000AUD (Assistance Dog Australia, 2022). Indeed, there are a handful of non-for-profit PAD organisations that provide accredited PADs free of charge or ask for a contribution to the costs of training fees ($3000 to $5000AUD; Integra Service Dogs Australia, 2023), yet often strict eligibility criteria apply, and lengthy waiting times occur. Subsidies for the acquisition of a trained PAD and ongoing maintenance and husbandry care costs, are available for eligible Australian defence personnel through the Department of Veterans Affairs (DVA) Psychiatric Assistance Dog Program (Department of Veteran Affairs, 2022) and some Australians may be eligible through the National Disability Insurance Scheme (NDIS, 2022) to receive funding support for ongoing PAD costs (estimated as $2600AUD per year, Assistance Dogs Australia, 2022). However, for others, financial aid to acquire a trained PAD is likely to be unattainable and may be an out-of-pocket expense. Thus, accessibility to obtaining a PAD may not be attainable for some Australians with PTSD wishing to use this novel intervention to support their symptomology and functioning challenges.

The alternative option that may be more accessible and affordable is to train a suitable dog to become an accredited PAD. The self-training of a suitable dog can be conducted alongside the support of a PAD training organisation and/or qualified trainer or a person can self-train the dog independently and employ an independent PAT assessor to certify the dog as an accredited PAD. Indeed, the MMSR (Chapter Three) identified numerous clinical and nonclinical benefits of undertaking self-training PAD training programs and in contrast to traditional office-based sessions that tend to be client-focused, self-training programs redirected the attention from themselves to focusing on engaging, interacting, and training the dog to perform tailored tasks, were proposed to have psychological and physiological benefits (Scotland-Coogan, 2017; Scotland-Coogan et al., 2022). Furthermore, there are significant savings in upfront costs, with self-training programs estimated to be a tenth of the cost of receiving a trained PAD (estimated as $445 - $3,000AUD; Canine Essentials, 2023). However, the self-training model is not recognised through some Australian governing funding bodies, therefore training support and ongoing maintenance costs remain ‘out of pocket’ expenses at this stage.

Overall, it is plausible that accessibility, eligibility, and feasibility aspects may play a role in influencing Australians with PTSD's decision to receive a pre-trained PAD or self-train a suitable dog to become an accredited PAD.

5.1.3. PAD training and accreditation standards

In Australia, there are no overarching national guidelines for training a dog to meet the needs of a person with PTSD, and no accrediting body to certify PADs as meeting the requirements of the public access test. Instead, federal, state, and local governments rely on PAD organisations and trainers to train and accredit these dogs to become fully certified PADs. Pertinent findings from the MMSR (Chapter Three) identified similar issues. In the U.S and Canada, there are no specific certifications or standards required for PAD training organisations to train a PAD for people with PTSD, and as a result, inconsistent training standards and procedures were identified, with organisations only moderately reflecting the ADI gold standard criteria (Vincent, Gagnon et al., 2019). These training standard disparities pose potential implications on the effectiveness of PADs to mitigate handlers’ disability if the dog is not well-suited to this working dog role but also concerns surrounding whether all Australians with PTSD have access to high-quality training if there are no guidelines to follow. As a result of inadequate training and potentially certifying an unsuitable

dog, concerns about inappropriate dog behaviour could pose a risk for the handler and other members of the public when out in the community.

5.1.4. Current study

Despite the various channels to source a PAD and differing handler-PAD team training program models available, we have a limited understanding of the underlying factors that influence peoples' decisions surrounding how they obtain a PAD and the type of PAD training program they participate in. It is important to understand these factors to develop a stronger understanding of facilitative and inhibitive factors surrounding the accessibility of PADs for people with PTSD. Accordingly, this chapter addresses the third research objective of exploring the factors influencing Australians with PTSD's decision to acquire a PAD and the type of PAD training modality undertaken. To address this research objective the study sought to first gather information about, (1) how Australians with PTSD acquire their PADs (received a trained PAD or self-trained), (2) the type of training modality undertaken, and (3) contextualising the reasons behind choosing a particular way to acquire a PAD and the form of training modality completing/completed.

5.2. Method

5.2.1. Study design and researcher reflexivity

To achieve the third research objective of exploring Australian adults with PTSD decision-making factors behind the choice of the type of PAD and PAD training program undertaken, and in line with my pragmatic paradigm, a mixed-method approach was appropriate. Quantitative or qualitative methods alone would not achieve the quantification of how the PAD was sourced and the type of training modality undertaken, while also achieving the depth of understanding of the decision-making aspect surrounding these choices. A concurrent mixed methods form of inquiry was utilised (Creswell, 2009) in the form of a large-scale online survey, using both open-and-closed-ended questions, thus both quantitative data and qualitative data were collected at the same time and integrated the findings to interpret outcomes. Whilst the qualitative strand was predominant in analysis, the quantitative data provided objectivity by identifying aspects that may have influenced the qualitative responses (i.e., how respondents acquired a PAD and which type of training program was undertaken).

As outlined in the introduction of this program of research, my lived experiences, and academic and professional background facilitated great insight into

the populations of interest and the use of PAD to support mental health outcomes, thus forming the lens of my interpretation throughout the analysis. Accordingly, a reflexive thematic analysis (RTA) was the most appropriate approach to support consistency enabling a data-driven reflection on participants' experiences generated inductively by both semantic and latent patterns of meaning across the dataset, while also recognising my reflexive influence on interpretations of these meanings as a valid resource throughout the study (Braun & Clarke, 2022). Moreover, RTA is a flexible approach, suitable for large-scale qualitative components of online surveys (Braun et al., 2021) and in line with my paradigm, the open-ended qualitative components of the online survey were purposively broad to enable participants to construct their own meaning (Creswell, 2009). Braun et al. (2021) also advocate that the anonymity of responding to a qualitative question via an online survey may be less obtrusive and facilitate more explicit disclosure surrounding sensitive topics, compared to face-to-face methods which is particularly helpful considering the population of interest.

5.2.2. Participants

Screening for participant inclusion into the study included adults aged 18 years or older, residing in a state of Australia, with a diagnosis of PTSD or probable PTSD (several symptoms consistent with PTSD yet not diagnosed) and currently utilising a PAD. The final dataset of 88 participants, consisted of 65.2% females (n = 55), with ages ranging from 18 to 82 years, with an average age of 49.58 years (SD = 13.86). Participants resided predominantly in Queensland (44.3%), followed by Victoria (25%) and New South Wales (19.3%), Of the 88 participants, 60.2% of respondents were comprised of the general Australian adult population with PTSD using a PAD, 20.5% were defence personnel, closely followed by 19.3% of respondents were first responders. Table 12 summarises the demographics and characteristics of the sample.

5.2.3. Procedure

The study was approved by the Human Research Ethics Committee at the University of Southern Queensland, H20REA284. Purposive sampling was utilised. Ten not-for-profit Australian assistance dog organisations and PTSD support groups distributed the study invitation to current and former clientele, predominantly via public and private social media platforms between May 2021 and September 2022. The study invitation included information about the study and a link to complete the

anonymous online survey. Informed consent on a voluntary basis was obtained electronically, prior to being redirected to the survey landing page. Upon completion of the survey, participants had the option to enter a random prize draw for one of two $50 National pet store vouchers, in addition to nominating a not-for-profit PAD organisation or dog shelter, where a $5 donation was made on behalf of the participant as compensation for their time.

Table 12

Study 3 Participant Characteristics

Variable	n (%)
Age, *M* (*SD*)	49.58 (13.86*)*
Gender, *n* (%) female	55 (65.2)
Marital Status *n (%)* married/in a relationship	52 (59.1)
Residential State of Australia, *n* (%)	
Queensland	39 (44.3)
South Australia	4 (4.5)
Australian Capital Territory	1 (1.1)
Victoria	22 (25)
New South Wales	17 (19.3)
Tasmania	3 (3.4)
Western Australia	1 (1.1)
Northern Territory	1 (1.1)
Population Group	
General Australian adult population, *n* (%)	53 (60.2)
First Responder, n (%)	17 (19.3)
Defence Personnel, *n* (%)	18 (20.5)

Note. N = 88.

5.2.4. Measures

Demographics. The online survey contained demographic questions including age, gender, marital status, Australian state or territory residing and whether they are former and/or current first responders.

Acquisition of a PAD. To gather prevalence information regarding the acquisition of a PAD, participants were asked to indicate how they obtained their PAD. As the MMSR (Chapter Three) identified two options to acquire a PAD, a forced-choice response was suitable. Accordingly, participants chose between whether they (1) Received a trained PAD or (2) Self-trained or were training a suitable dog to become a certified PAD.

Type of training program. To examine the type of PAD training program participants completed/or are completing a force-choice item was utilised. Based on the disparate PAD training program modalities identified in the MMSR (Chapter Three), five response options were provided: 1) Short-term/initial group training program (alongside a small cohort for less than 1 month), (2) Longer-term group training sessions (alongside a small cohort for greater than 1 month, (3) Combination of group and individual training sessions, (4) Individual sessions with a trainer in preparation for initial PAT accreditation, and (5) No assistance from a trainer or organisation to prepare for PAT accreditation.

Decision-making factors of PAD acquisition and training program. Participants were asked to respond to a broad single open-ended item on the online survey. “What were your decision-making factors for choosing to either receive a trained PAD or training dog and the type of training program/sessions you enrolled in?”

5.2.5. Analytic strategies

Quantitative Data Analysis Plan. The data from 88 respondents was analysed using IBM SPSS v.27. Frequency distributions were obtained from the responses from items surrounding (1) how they obtained a PAD and (2) the type of PAD training program they were/are participating in. Frequency outcomes across the whole sample were examined first to explore the predominant responses of the acquisition and training program undertaken. Followed by separating the sample into three groups based on vocation role, (1) Australian general population with PTSD, (2) Defence personnel, and (3) First responders, to investigate within-group trends of the way respondents acquired a PAD and the type of training undertaken. It was important to examine across and within-group differences as the responses provided a better understanding of the subsequent qualitative experiences surrounding the decision-making factors surrounding how they obtained a PAD and the training program.

Qualitative Data Analysis Plan. In line with my overall pragmatic paradigm enabling a flexible approach to analysis to address the research objective, a constructivist view was supported. The qualitative component of the online survey was purposively broad to enable participants to construct their own meaning, perspectives, and experiences (Creswell, 2009). Data from the single open-ended item from 88 respondents, was predominantly an inductive data-driven approach,

through a process of reflexive thematic analysis (RTA) to identify, analyse, and interpret patterns of meaningful responses across a dataset (Braun & Clarke, 2006, 2022). Accordingly, I was guided by the six phases of Braun and Clarke's (2006) thematic analysis approach; (1) familiarisation with data, (2) coding the data, (3) generating initial themes for the codes and coded data, (4) reviewing and developing themes, (5) defining, naming, and refining themes, and (6) writing the report. Refer to Chapter Four for a comprehensive description of the six phases of the analytic process. NVivo software was utilised to support a structured approach to analysis.

5.3. Quantitative Results

This study sought to explore the factors influencing the acquisition of a PAD and the type of PAD training modality undertaken. To investigate this research objective the first step was to explore how participants obtained a PAD and which of the various channels of PAD training programs they undertook.

5.3.1. Acquisition of a PAD

Overall sample. Of the 88 participants, 90.9% acquired a PAD through self-training a suitable dog to become a certified PAD, with the remaining participants (n = 8, 9.1%) receiving fully trained PAD.

Pre-trained group differences. Within the first responder group (n=17) 17.6% received a pre-trained PAD, followed by 16.7% of defence personnel (n=18), and 3.8% of the Australian general population with PTSD group (n=53, refer to Figure 3).

Self-trained group differences. Self-training a suitable dog to become an accredited PAD was the predominant approach for the Australian general population with PTSD (96.2%), followed closely by 83.3% of defence personnel and 82.4% of first responders self-trained a PAD (refer to Figure 3).

5.3.2. Type of PAD training program modality

Overall Sample. Results from differing types of PAD training program modalities participants undertook, identified individual sessions with a trainer as the most frequent response (51.5%, n = 45), followed by 23.9% of responses indicated that a combination of group and individual training sessions were undertaken (n = 21). The third most frequent response was participants did not receive any assistance from a trainer or organisation to pass PAT test (14.8%, n = 13) followed by 8% undertaking longer-term group training sessions (n=7). The least frequent response was from participants undertaking short-term/initial group training sessions (2.3%, n= 2, refer to Figure 4).

Figure 3

Acquisition of PAD

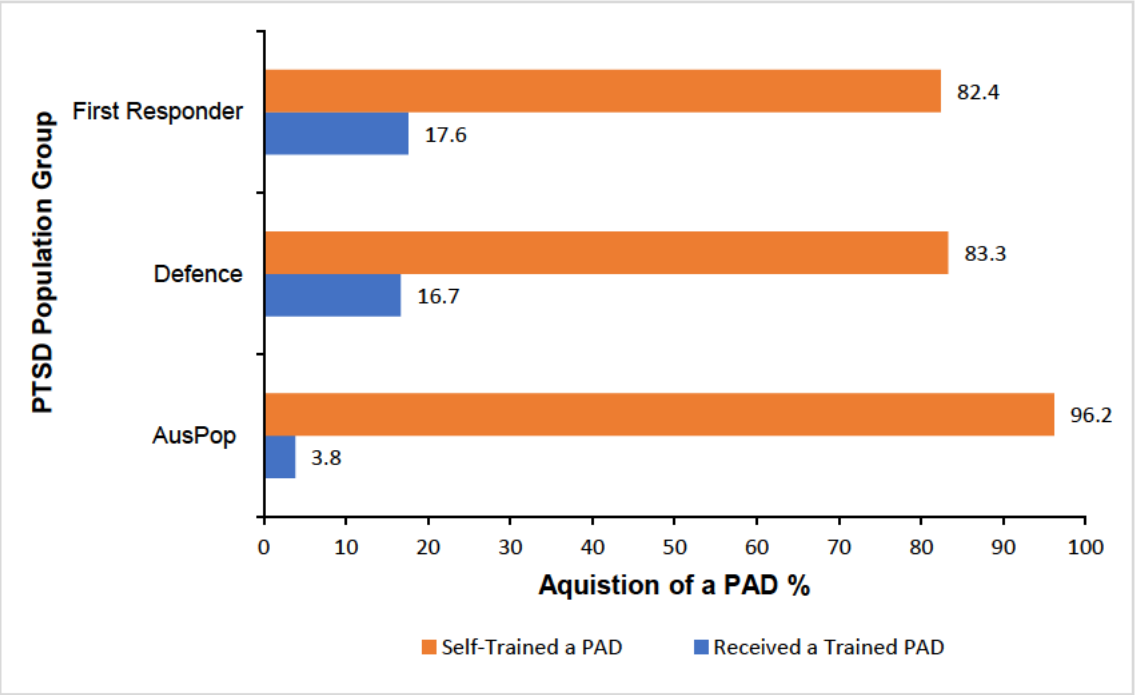
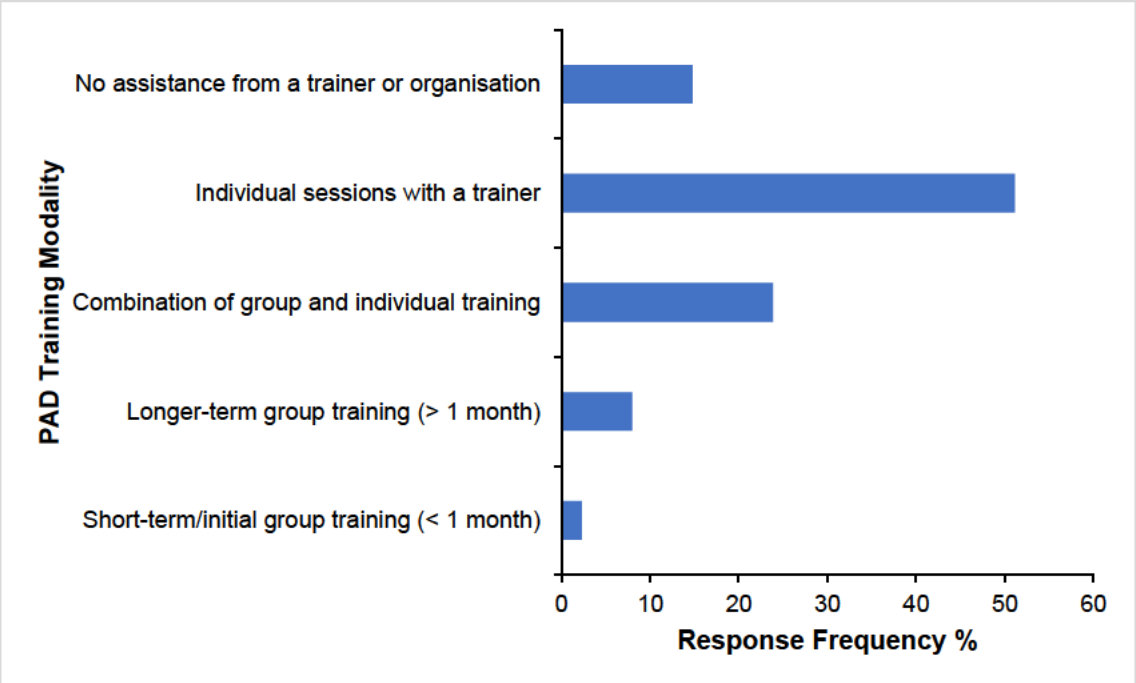


Figure 4

PAD Training Modalities

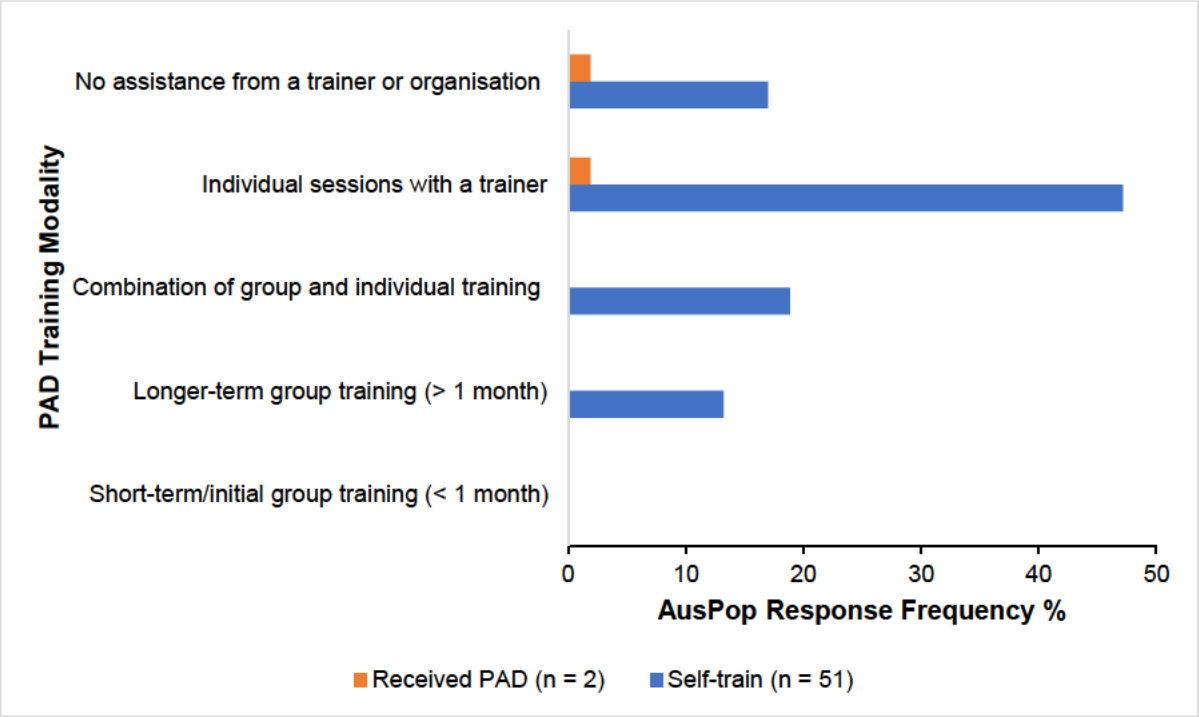


Within-group trends. Within-group differences of the acquisition of PAD and the type of training undertaken were also analysed for trends. Amongst the largest sample group consisting of the Australian general population with PTSD (n=53), self-training a suitable dog alongside individual sessions with a trainer was the

predominant response (47.2%), followed by undertaking a combination of group and individual training session (18.9%, refer to Figure 5).

Figure 5

Within-Group Differences of Acquisition and Training Modalities in Australian General Population with PTSD.



Note. AusPop – Australian general population.

Within-group trends among defence personnel participants (n=18) identified self-training a suitable PAD through the combination of group and individual training sessions was the predominant response (44.4%, n=8), followed closely by individual sessions with a trainer (33.3%, n=6). Refer to Figure 6 for within-group differences in defence personnel participants.

For first responder participants (n=17), the frequency outcomes demonstrated that they acquired a PAD through self-training a suitable dog, primarily alongside individual sessions with a trainer (refer to Figure 7 for within-group differences in first responder participants). Overall, the analysis revealed that self-training a suitable dog to become an accredited PAD was the predominant approach for obtaining a PAD for all participants. Australian general population with PTSD and first responder participants primarily undertook individual sessions with a trainer, whilst defence participants used a combination of individual and group PAD training.

Figure 6

Within-Group Differences of Acquisition and Training Modalities in Defence Personnel

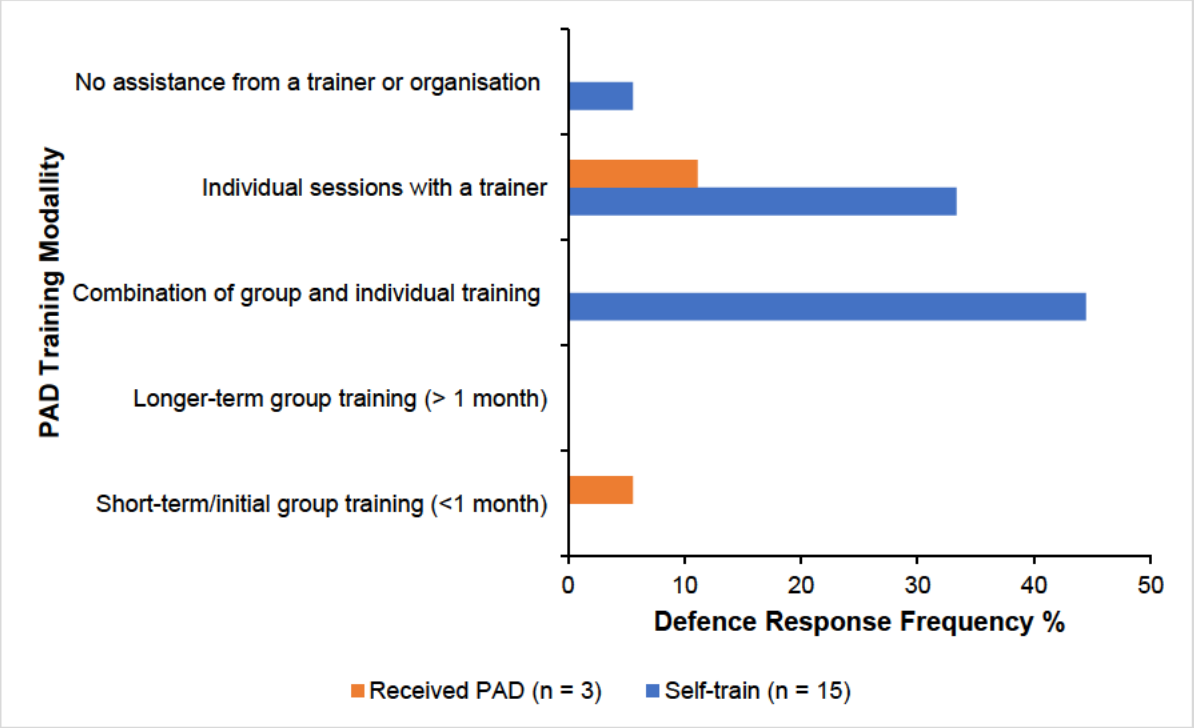
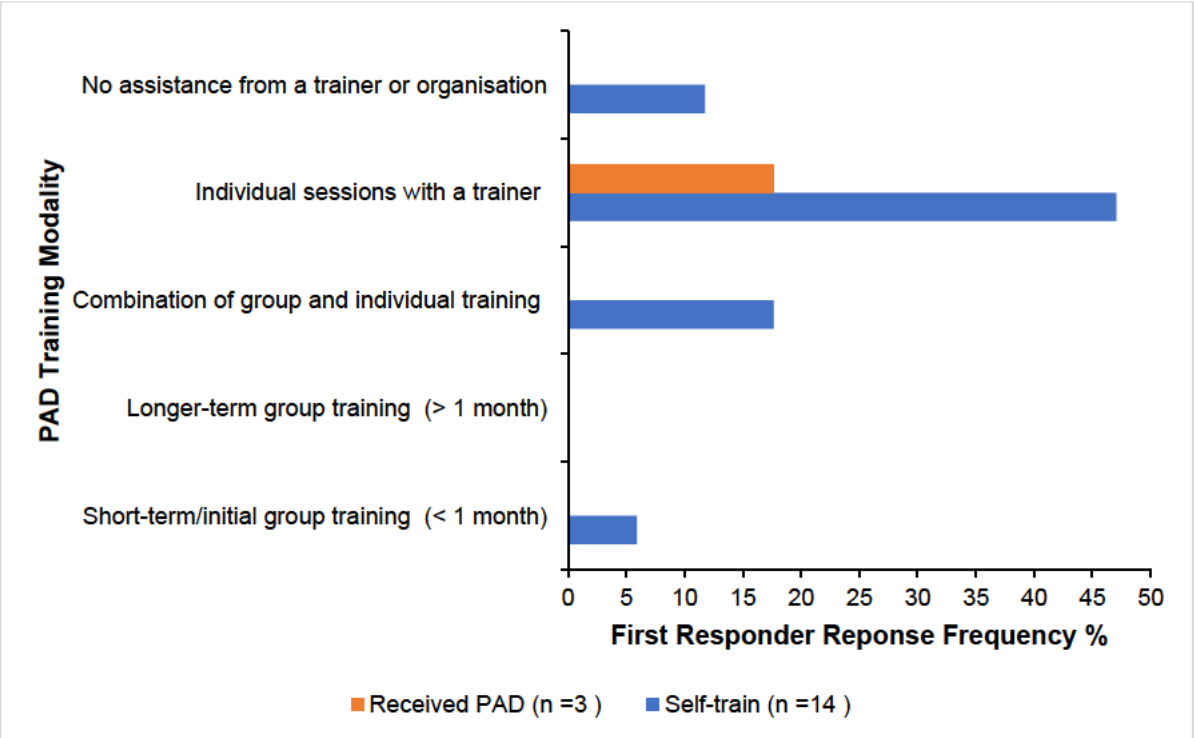


Figure 7

Within-Group Differences of Acquisition and Training Modalities in First Responders



5.4. Qualitative findings

The broad research objective explored decision-making factors surrounding how Australian adults with PTSD obtained a PAD and the type of PAD training modality undertaken. Three central concepts evolved from the data, identified as (1) acquisition and available resources, (2) accessibility to training programs, support, and accreditation, and (3) personal preference. Noting that the quantitative data clearly identified that the majority of participants (90.9%) self-trained a dog to become a certified PAD, the qualitative analysis predominantly reflected reasonings and justifications behind this self-training choice.

5.4.1. Acquisition and available resources

Acquisition of a PAD refers to the action of obtaining either a trained PAD and/or self-training a suitable dog. Available resources or lack of, refers to the processes available for participants to obtain a PAD and undertake training with or without the support of a specialised PAD training organisation or accredited trainer. Acquisition and resources were prevalent topics that were often conjointly described, with participants detailing numerous underlying factors that influenced these decisions. Common patterns found in the data were more of a negative paradigm of ‘no choice’ but to self-train a dog, highlighting barriers to sourcing a trained PAD and the lack of resources available for non-defence participants. Two subthemes were identified to support these central concepts (1) affordability and eligibility, and (2) availability and alternate sources (use of a suitable companion dog).

Affordability and eligibility. Implications surrounding the affordability and eligibility of receiving a trained PAD were frequently expressed by participants as the major drivers for self-training a suitable dog to become an accredited PAD. Specifically, relatively high costs associated with receiving a fully trained PAD from an organisation and/or costs of completing formalised training programs were significant factors influencing the decision to self-train a dog from non-defence respondents. For example, one respondent described that “I could not afford $45000 to receive a fully org (organisation) trained AD (PAD)”. A small number of defence participants stated they were financially supported by the DVA PAD program to receive a trained PAD, other participants were fortunate enough to be gifted the funding to support training and PAT accreditation through funds raised by not-for-profit charity organisations. However, other non-defence participants described that medical and/or workers" compensation insurance would not support the costs of

acquiring a trained PAD, with several participants expressing they were denied financial support due to a type of trauma event that triggered their PTSD (i.e., childhood sexual abuse, domestic violence etc.).

Barriers surrounding ineligibility to receive a trained PAD were frequently discussed by non-defence participants. Identifying that the majority of accredited PAD organisations who train PADs only accept defence personnel applicants, while others accept defence and first responder applicants. This ineligibility was a pertinent issue for non-defence respondents whose trauma injury was not due to a specific vocational role and was perceived to restrict and inhibit their ability to choose how they acquire a PAD to support their challenges. One participant described how being ineligible to receive a trained PAD was perceived to be unjust.

> I wasn't eligible for a trained one [PAD] as my CPTSD was caused by childhood trauma and torture. Only returned servicemen and first responder[s] were supported with trained dogs I was considered "real" which was very challenging as I have experienced things that I didn't choose as a career, so it seemed rather unfair.

Another expressed that whilst their vocational role was within the emergency department, they were not clinical staff, therefore not considered frontline workers and not eligible to apply to receive a trained PAD from larger accredited PAD training organisations. Consequently, the participant felt "these barriers were very demoralising". These experiences are congruent with the quantitative data where first responders and defence personnel were four times more likely to obtain an accredited PAD compared to the general Australian population (17.7% of first responders, 16.6% of defence personnel and 3.8% of the Australian general population with PTSD group).

Availability and alternative sources of acquiring a PAD. In addition to the high costs and eligibility barriers, issues of availability and lengthy delays to receive a trained PAD were commonly described. Wait times can be up to two years, with one participant describing that this was due to a "large waitlist for org [organisation] trained AD's [PADs] and many of the org's have their books closed to new applications". This lack of resources (PAD), to meet the demand and time constraints surrounding the acquisition of a receiving a trained PAD was a barrier, with numerous participants expressing that they had no other choice but to search for alternative avenues to source a PAD. These findings support participants'

experiences in the MMSR, highlighting the decision to self-train a PAD was to avoid extensive waiting times to receive a trained PAD, describing this lack of timely resources as ‘not good enough’ as there was a sense of urgency to receive support for their challenges (Krause-Parello & Morales, 2018).

One option frequently described was training a companion dog to become an accredited PAD. A number of participants expressed that they already owned a suitable companion dog, influencing their decision to self-train their dog to become an accredited PAD. One participant described that: “My dog had been through a lot of my trauma with me and was already responding to my symptoms and performing tasks, so he did all the decision-making by himself!”. Others noted that this process was faster as the bond was already strong with their dog, therefore the training process was primarily based on learning specific cues and tasks to further support participants' challenges at home and out in the public domain.

5.4.2. Accessibility to the training program, support, and training standards

Accessibility to suitable PAD training programs played an integral part in the decision-making process for participants. Considerations surrounding organisation framework and suitability, organisation and trainer support and PAD training standards for accreditation and personalised needs, were frequently described by participants as influencing their choice of program modality.

***Organisation framework*.** A prominent pattern in the data revealed positive conjectures of organisations' structure and format that involve flexible delivery of PAD training programs/sessions (i.e., individual one-on-one sessions, small group sessions and online classes) eased accessibility issues. This was particularly pertinent for some participants who lived regionally and/or had no mode of transport to attend training sessions, where organisations that delivered online training sessions, enabled participants to complete training requirements for accreditation. Access to online training was described as the “best fit for my situation” and also highlighted as particularly useful during COVID-19 pandemic lockdowns, with one participant describing that “Because of COVID-19 we did not attend formal, in-person classes. A few Zoom classes. I chose [organisation name] because of the course structure and ability to self-train. This is the most affordable way for me”.

For other participants that could attend sessions in person, they expressed a preference to use a combination of attending group training sessions for obedience training and practice task training at home, while keeping weekly logbooks to

demonstrate development and areas that required further work. Furthermore, the structure and components integrated into the self-training PAD program were described as being familiar to military structured training yet also individualised to support the specific needs of the participant.

Navigating suitable PAD training programs. Accessibility to suitable PAD training program modality was a prominent issue and the determining factor steering the choice behind the PAD training organisation and/or trainer. Participants expressed their struggles navigating through the diverse types of organisations to find a suitable program, particularly organisations and/or trainers that catered to support self-training a dog. A common complaint was the inability to access information about obtaining a trained PAD and the type of PAD training programs offered was a challenge, describing PAD organisations were not responding to enquiries. For one participant, this confirmed the decision to train their own dog "…because it was almost impossible to get organisations who provided trained dogs to return my calls". Another described that their decision was based on "finding one [organisation/trainer] who supports and easily contactable and affordable. One that I would feel comfortable within and the bonus of regular meetups is fantastic".

Other considerations when choosing a suitable training program were the type of training methods used in the sessions, the continued support of the organisation, and the discreet coats the PAD wears in the public domain, with one participant detailing that,

> I chose the training org [organisation] because they only use positive rewards-based training, I have private sessions, they remain the training org for the life of my AD [PAD], and their AD coats do not say PAD as I find there is a lot of stigma around having a PAD.

Congruent with past literature, positive reinforcement training methods (positive praise) were most frequently used and associated with higher closeness to their PAD and perceived increased attachment behaviour (Jensen et al., 2022; LaFollette et al., 2019).

Organisation and trainer support. Support from organisations and trainers was described as being instrumental in helping them navigate PAD accreditation training requirements and commonly referred to as making the entire process of obtaining and training a PAD, easier, attainable, and less stressful. One participant described that,

> My mental situation at the time of requesting a PAD and [the] lack of knowledge required to correctly train my PAD prevented me from personally undertak[ing] the required training PAD, [organisation name] is in partnership with a professional trainer, and as such allowed for a smooth transition.

Another detailed how the support from the organisation helped arrange the funding and support the individual needed.

> [Organisation name] helped me obtain support from DVA to be accepted as a PAD dog; I have found the support for the medical, insurance and food etc as massive help as I am a pensioner and I'm unable to work due to my mental and physical health.

The decision to self-train was also based on the profile of the accredited trainer. Aspects surrounding a trainer with a high standard of dog training experience, knowledge of applicable state regulations as well as an understanding of the challenges individuals with PTSD face, were some of the qualities on which participants based their decision. However, the degree of support and quality of training between PAD organisations and/or trainers were inconsistent, which ultimately influenced participants' decisions on the type of training program to work with. One participant compared their experiences of two organisations, one accredited with ADI (organisation 1) the other self-training non-accredited with ADI (organisation 2),

> I did both [self-training and receiving a trained PAD] and I found receiving a PAD through [organisation 1 name] took a lot of stress away this time [a]round. The first organisation I used [organisation 2 name] (mainly veterans like me) were difficult to deal with and made the process really harder than it needed to be, they did not support me and didn't have the staff to help me with the training or supports that [organisation 1 name] does.

Overall, the perceived lack of support from some organisations/trainers in addition to difficulties making initial contact with PAD organisations, and disparate training standards and accreditation of organisations were frequent challenges described by participants. These constraints resulted in significant distress and a pivotal reason behind the choice of how participants obtained a PAD and the type of training program undertaken.

Inconsistent and changing PAD regulations. Changes in state-approved PAD organisation/trainers made it difficult to find an approved trainer and created barriers to seeking support from an approved trainer/organisation.

> With nowhere to turn and the need to have my then GHAD-certified dog re-certified I learned my organisation were no longer approved under GHAD. I felt very distressed, and although working in dog training myself I felt the need for my dog to continue with GHAD. After calling the commissioner's office I was given [the] name of a charity to re-assess my dog. We did everything they wanted, we did the public access test, we paid them in cash as they requested then they ghosted us. It had not come to my attention (due to all that trainer said about the DDA) that I could continue to have my dog accompany me in public spaces. After I was assaulted in public and my PTSD relapsed significantly I sought out another GHAD-approved trainer who wasted so many weeks of my time failing to reply to my requests for her to assist me that I began the process of advancing my dog training to help others train their dogs as assistance dogs to public access standard… During this course, the second GHAD trainer told me she could help then many more weeks went by when she messaged me to say she couldn't help me as she had not trained my dog. I replied asking her to quote me for training as I desperately wanted to have her GHAD re-assessed, She has never replied to that message to this day. So, [in] mid-2021, I found myself still unable to find an assessor to re-certify my own 8-yr experienced assistance dog under GHAD.

Inconsistent training quality and standards. Participants also experienced inconsistent training quality and standards between organisations/trainers, which resulted in some participants deciding to find other PAD programs that could support them. One participant described this issue with a nonaccredited organisation,

> I was registered with [organisation name] but had to discontinue with them as I received absolutely no support, was being asked to pay $140-160 per training session and discovered that their training standards did not meet travel requirements … I have since discovered that my experience is not unusual and that [organisation name] training standards are incredibly inconsistent and do not comply with transportation carriers requirements. I also discovered that most of these similar organisation[s] except GHAD

> trainers are similarly poor in their training and support. The big problem is [the] lack of Federal training standards, or a Federal precedent set based on the Queensland legislation.

These experiences mirror the current challenge worldwide, where findings in the MMSR identified discrepancies between the differing PAD organisations' training standards and procedures. Guided by the gold standard of Assistance Dog International (ADI) criteria, studies reported training organisations only moderately reflected the criteria, posing implications to whether these disparities have an impact on the effectiveness of a PAD to mitigate handlers symptoms and functioning (Vincent, Gagnon, et al. 2019). Furthermore, inconsistent regulations were highlighted as a pertinent challenge in the MMSR, where participants encountered numerous barriers surrounding travelling with a PAD and disparity in public accessibility regulations, causing confusion and distress (Dell et al., 2022; Floore-Guetschow, 2022)

5.4.3. Personal Preference

Personal preference theme was defined as aspects surrounding personal choice to self-train a dog to become an accredited PAD. The importance of personal choice was summarised by one participant, stating “As cPTSD [complex PTSD] we have had a lot of power taken away from us and having the ability to decide is so important”. A number of personal preference factors surrounding self-training a dog were represented in the data including; an already established bond with their own dogs, prior experience training dogs, considerations of comorbid disorders and other disabilities/injuries and the lifestyle and choice of the breed and size of the dog.

The bond between the participant-dog partnership was frequently cited as a predominant reason behind self-training a dog to become an accredited PAD. Numerous participants expressed how they perceived that this unique bond would not be the same if they received a trained PAD compared to the bond shared between the participant and dog going through the training process together. One participant stated: “…I think the bonding during training helps secure the relationship with your dog”. Similarly, another participant expressed that training their own dog alongside the support of a trainer was “…more individualised, you bond with your dog while you’re training, you use your own commands and what works for you.....it's a huge commitment but worth it in my eyes”. A number of participants have owned the dog since a puppy, and several commented that the emotional connection

between the partnership was strongly established, whereas the connection with a trained PAD was perceived to not necessarily be the same. Others expressed how they were reluctant to self-train a dog believing it was impossible, however after completing the training and accreditation process, self-training a dog was described as the ““best experience ever”. These experiences reflected findings in the MMSR, describing self-training a dog generates a strong dynamic relationship between the handler and dog, and yields better training outcomes, which were perceived to potentially not have evolved if provided a trained PAD (Krause-Parello & Morales, 2018, Yount et al., 2013).

The responsibility and a pre-established routine of husbandry requirements of caring for their own dog (i.e., getting up to feed the dog, taking outside for bathroom breaks) was also a deciding factor for one participant to self-train as they had concerns that bringing in another dog (trained PAD) would see that routine collapse. This is an important consideration, as the MMSR identified that the responsibility of taking care of the PAD, creates structure and facilitates a daily routine (Hyde, 2015; McLaughlin & Hamilton; Rodriguez et al., 2020), which promotes a sense of purpose to their day and was perceived as an important untrained characteristic of the PAD (Rodriguez et al., 2020). Furthermore, another participant described that having to leave the home to train the dog in potential triggering environments was the catalyst to helping them with exposure issues and expressed that they would not have ventured outside the home, had they not had to train the dog in different environmental contexts. This experience supports the findings from the MMSR, portraying PADs assisted in prolonging exposure in public environments, as well as intrapersonal (goal creation and attainment) and interpersonal growth (community integration),

A number of participants detailed having prior experience as a dog trainer and/or dog handler, therefore had the ability, with the support of an accredited trainer, to self-train their own dog to adhere to PAT standards and become certified PAD. Others had already completed basic obedience classes with their dog, and with support, learnt the trained task required to help support their injury. Some participants have undertaken further PAD training certification (both national and international courses) to expand their knowledge and/or to support others in similar situations (i.e., ineligible for trained PAD).

In addition to the participants' PTSD diagnoses, the decision to self-train was also based on considerations surrounding having a comorbid disorder, physical and mobility issues and/or medical conditions. Participants expressed that due to these additional psychological and physical challenges, they were unable to find a program suitable for their unique needs. Notably, similar constraints were identified in the MMSR, highlighting PAD organisations' inability to recognise the difference and/or lack of tailored training programs for psychiatric disabilities versus physical disabilities and future considerations regarding individuals' emotional and psychological predispositions were recommended (Lessard et al., 2018; Newton, 2014). Moreover, for others, the group training session format provided by PAD organisations was not suitable for their trauma type, thus self-training one-on-one with a trainer was preferred, "My trauma resulted from a group control. I have huge triggers being under, employed by, signed with. Etc. There was no way I could sign with an org [organisation] and not be made worse".

The choice of breed and size of the dog were important considerations, as some participants required the dog to support both the psychiatric challenges and also a dog large enough for physical assistance. For other participants required a smaller dog, that "would not pull me over". Another factor was based on how self-training can work with their lifestyle and fitness regime.

5.5. Discussion

Despite the various channels to source a PAD and differing handler-PAD team training program models available, we have a limited understanding of the underlying factors that influence peoples' decisions surrounding how they obtain a PAD and the type of PAD training program they participate in. It is important to understand these factors to develop a stronger understanding of facilitative and inhibitive factors surrounding the accessibility of PADs for people with PTSD. Subsequently, the purpose of this study was to explore how Australians with PTSD acquire their PADs, the type of training model undertaken, and contextualise the influencing factors behind adopting the chosen avenue of obtaining a PAD and training pathway.

To address the research objective, a mixed methods approach was utilised, where the quantitative results answered the 'how' aspects and qualitative findings explored the 'why' facets of the study aim. The results of the quantitative component identified participants predominantly sourced the support of a PAD by self-training a

suitable dog to become a certified PAD. Amongst the general Australian population with PTSD and first responders, the most frequent response was self-training a dog alongside the assistance of an experienced trainer. Whereas for defence participants, the combination of group and individual sessions to support self-training a PAD was the dominant response to acquire a PAD and undertake training. Accordingly, the qualitative analysis predominantly reflected reasonings and justifications behind why they chose to self-train a dog.

Prominent inhibitive aspects surrounding the acquisition and available resources to source a trained PAD were commonly experienced, with many participants feeling they had ‘no choice’ but to self-train a dog to become an accredited PAD. The foremost constraint was that trained PADs are inaccessible to most participants, particularly the general population with PTSD. Specifically, receiving pre-trained PADs was described as unaffordable, and barriers encompassing ineligibility to receive financial aid were commonly experienced. Perceived discriminative factors surrounding the cause of how participants sustained their PTSD, saw some, ineligible to receive support for the cost of acquiring a trained PAD. Other prohibitive barriers to acquiring a trained PAD were regarding PAD organisations that pair individuals with trained PADs, restricting applications to defence personnel and first responders. Participants that did not meet this vocational criterion, they expressed they felt that this was unjustified.

Additional inhibitive facets identified in the findings including a lack of resources (PAD) to meet the demand, and lengthy delays in receiving a trained PAD. Accordingly, participants expressed how a number of PAD organisations have ceased to accept new applications. Due to the aforementioned reasons, accessibility of receiving a fully accredited PAD was a difficult and challenging process, as such participants expressed that they had no other choice than to look for alternative avenues to source a PAD, which in turn was self-training a companion dog to become an accredited PAD. These inhibitive aspects of acquiring a PAD are congruent with findings in the MMSR (chapter three), where the decision to self-train a suitable dog was due to the high costs and extended waiting times associated with sourcing a fully trained PAD (Krause-Parello & Morales, 2018). Veteran perceptions identified in the MMSR also outlined ineligibility barriers to receiving financial support, as PADs were not covered under the veterans' medical coverage as opposed to veterans using other types of assistance dogs for visual, hearing and

mobility challenges (Krause-Parello & Morales, 2018). Notably, Krause-Parello and Morales (2018) study was conducted prior to the announcement of the US, PAWS for Veterans Act (US) H.R.1448), requiring the Department of Veteran Affairs (VA) to establish a 3-year grant program, where non-profit organisations receive grants to pair PADs with eligible veterans with PTSD. This $25,000US grant includes training of PAD, training the veteran and PAD pair, and follow-up services and support (*PAWS of Veterans Therapy Act* (US) H.R.1448). Therefore, it is plausible that the training and ongoing maintenance costs of acquiring a trained PAD may no longer pose an issue for some eligible US veteran population with PTSD. Nevertheless, the current study findings portray these inhibitive issues remain problematic in the Australian population with PTSD looking to receive support from a PAD.

Accessibility issues were not only unique to sourcing a trained PAD but also accessibility to suitable PAD training programs played an integral part in the decision-making process for participants. As self-training a dog was the prominent response for participants, finding a suitable training program which catered to assist participants' self-training journey was described as challenging to navigate and met with frustration. It is likely that these challenges stem from the lack of an all-inclusive national registry of PAD training organisations (ADI-accredited, GHAD-approved and non-accredited organisations). However, until a national registry is available, it would be conducive for PAD training programs to clearly articulate program information to assist in voiding these navigation issues. Additionally, accessibility barriers to physically attending PAD training sessions were particularly pertinent issues for participants who reside in regional and rural areas. Accordingly, organisations that provided flexible delivery (i.e., online delivery of modules and video conference support) and/or the capacity to service and support clientele in the local community, influenced participants' decisions surrounding the type of training program undertaken.

Disparity in the quality of training and accreditation standards across PAD training organisations was frequently described by participants, causing significant distress and pivotal reasons behind the choice of how participants obtained a PAD and the type of training program undertaken. These experiences are not surprising given PAD organisations use their own training program models (excluding ADI-accredited organisations), as there are no national training standard guidelines, and generally, the onus is on these trainers to assess the dog for accreditation. These

experiences are congruent with past literature, highlighting training standard discrepancies and potential consequences for the handler if PADs are inefficacious in mitigating their PTSD challenges, emphasising the need to establish standardised PAD programs globally (Lessard et al., 2018; Vincent, Gagnon, et al. 2019). Until this is addressed at a national level, training standards and accreditation will remain ambiguous and problematic, and potentially cause frustration to handlers if the PADs exhibit inadequate behaviour when in the public domain. Recommendations for ADI PAD training criteria to be the benchmark for informing national PAD training guidelines should be considered. In addition to an overarching PAD accrediting body to oversee training standards are met and act as an independent assessor for PAD accreditation is warranted for best practice standards.

A reoccurring connotation identified in this study was participants felt they had 'no choice' but to self-train a suitable dog, due to several inhibitive aspects. Yet for others, positive conjectures of personal preference and ability to 'decide' for themselves on how they acquired a PAD and subsequent training model were also identified. Personal choice facets such as a pre-established bond with their own dogs, prior experience training dogs, considerations of comorbid disorders and other disabilities/injuries, lifestyle factors and the breed and size of the dog were prevalent aspects underlying participants' decision to self-train. Particularly prominent in the choice to self-train was the ideology of working through the training process together, and the choice of customising PAD commands/cues was advantageous. Additionally, participants felt self-training their own dog alongside the one-on-one support of a trainer, created a more tailored training program to meet the individual unique needs (including comorbidities, and physiological and psychological predispositions), which was perceived as unlikely to occur in group PAD training format.

5.5.1. Implications and Limitations

Overall, the study provided a rich platform for a deeper understanding of facilitative and inhibitive aspects of sourcing a PAD and the resources available to undertake handler-PAD training in the Australian context. The pertinent finding of inequality issues of the accessibility of PADs for all Australians with PTSD wishing to use this novel intervention to support challenges supported the evidence provided in the narrative review (Chapter Two) and MMSR (Chapter Three). Considerations for relevant nationwide healthcare agencies and policy decision-makers to expand

eligibility criteria to help subsidise some of the cost associated with receiving a trained PAD would be advantageous, as well as recognising and providing financial aid to individuals choosing to self-train a dog as an alternative mode to source a PAD for their PTSD challenges. The development of national accreditation and training guideline standards needs to be developed and implemented to ensure uniformity in producing high training standards, regardless of whether the training organisation is ADI-accredited/state-approved/ non-accredited provider. Implementation or guided by ADI gold standard PAD training criteria is recommended as a benchmark for the development of a national guideline framework.

Past studies have focused on the utility of PADs for defence personnel, whereas participants in this study were predominantly and unexpectedly comprised of the general Australian population with PTSD and first responder personnel. Accordingly, this study has provided a preliminary understanding of the facilitators and inhibitive aspects that non-defence populations face when acquiring a PAD and undertaking PAD training. Furthermore, collecting qualitative data via an online survey facilitated a better outreach to geographically dispersed locations in Australia, making it more accessible for larger and more diverse samples compared to smaller-scale face-to-face data collection methods (Braun et al., 2021). The large sample size of this study enabled the researchers to be confident that the pattern of responses across the dataset revealed a convincing narrative of participants' experiences.

The quantitative component gathered descriptive information on how the participant sample acquired PAD and which type of training modality they completed. In doing so, this data assisted in providing relevant background context. Within-group differences were examined for each of the three groups to identify trends, however, it would be conducive for future studies to examine between-group differences through inferential analysis for a comprehensive understanding of whether there are differences in the acquisition and training programs undertaken between the groups.

5.5.2. Conclusion

The provision of a PAD in supporting individuals with PTSD will continue to increase in popularity in Australia, therefore it is important to understand the facilitators and barriers of the various channels of acquiring and training a PAD. The

implication of the study on an individual level was obtaining a deeper understanding of individual experiences of obtaining and training a PAD. The study highlighted numerous inhibitors surrounding the acquisition, eligibility, availability, and accessibility of receiving and training a PAD in the Australian context. On a systematic level, inequality of accessing PADs for all Australians with PTSD wishing to use this novel intervention to support challenges was identified. We hope the findings from this study may inform and drive best practice guidelines and changes in eligibility of funding subsidies and accreditation standards at the state and federal level and the recognition and support of the self-training model as a viable alternative. Additionally, we hope the findings inform strategic direction for PAD organisations and trainers to examine the structure and delivery of their services to cater for assisting individuals with PTSD to self-train a suitable dog. By doing so, this may be able to assist in the demand outweighing the supply of trained PADs.

CHAPTER SIX: GENERAL DISCUSSION AND CONCLUSION

High nonresponse rates and treatment dropout, disengagement, and avoidance and/or delays in treatment-seeking, continue to be problematic in the delivery and efficacy of evidence-based PTSD treatments (Beyond Blue, 2018; Forbes et al., 2019, Schottenbauer et al., 2008). In the Australian context, systemic barriers, (i.e., health insurance rebate barriers, general health practitioners' lack of knowledge to refer to the right specialist), dissatisfaction with previous treatments (i.e., clinician-related barriers [lack of trust, received 'pathologising' treatment, did not address the source of the issues]), and intrapersonal barriers (i.e., feeling too overwhelmed in sessions) have also been identified as inhibitory aspects to seeking treating or engagement for women with complex trauma (De Boer et al., 2021). This is concerning as the prevalence of PTSD in Australian women is double that of Australian men (7.6%, 3.6%, ABS, 2022). Consequently, exploring adjunct PTSD approaches, which encourage engagement and retention in traditional treatments, while addressing the comorbidities of the diagnosis (indirectly or directly) is a priority.

This program of study explored whether PADs are a feasible complementary intervention for Australian adults with PTSD. A pragmatic approach of focusing on addressing three pertinent research gaps identified in the narrative review (Chapter Two) assisted in setting the scope and parameters of the three research objectives underpinning the overarching research aim. A mixed method design was employed for all three studies presented within the thesis, integrating both quantitative and qualitative evidence, and enabling the exploration of the PAD intervention from different perspectives and research lenses (Creswell, 2009; Shorten & Smith, 2017). This produced a more holistic view of the PAD intervention for Australians with PTSD. As this thesis merged the traditional thesis with a thesis by publication formatting, each of the three studies presented has separate discussions, future directions, and limitations. Consequently, in this closing chapter, we begin by revisiting the key gaps and outlining the research objectives to address these, followed by unpacking the key findings of each study. Importantly, we consider how collectively these three studies' findings, provide theoretical, practical and policy implications, adding to the body of knowledge of research in this field, then briefly outline how COVID-19 impacted the scope of this program of research..

6.1. Thesis research objectives and key findings

Overarching objective: Exploring whether PADs are a feasible complementary intervention for Australian adults with PTSD.

6.1.1. Study One. Mixed Method Systematic Review

***Research Gap**:* Due to unprecedented scholarly attention examining PADs for PTSD, evidence of the efficacy of PAD and experiences of individuals with PTSD using this novel intervention was described as a 'dogs' breakfast.' In past literature, investigations of specific facets of the role of PADs supporting an array of PTSD-related outcomes were frequently repeated, yet most method designs, procedures and measures were heterogenous and findings discrepant, making it difficult to compare and determine the efficacy of PADs and identify gaps and future pathways of research in this paradigm. Accordingly, the influence of PADs on clinical and nonclinical aspects in broad multidimensional life domains required corroboration and uniformity to update our current knowledge base and inform future areas of inquiry. Furthermore, to date, the sole review exclusively examining PADs for PTSD, emphasised the need for methodological rigor to validate the efficacy of PADs, yet this review examined peer-reviewed articles pre-September 2017 (van Houtert et al., 2018).

***Research Objective**:* Conduct a comprehensive mixed-method systematic assessment of the current state of evidence-based research that pertains to (1) identifying the roles of PADs in assisting recovery and (2) the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in first responders and defence personnel with PTSD.

Key findings of the MMSR. Of the 40 articles reviewed, 30 of those were published in the past 5 years, indicating that scholarly attention to the clinical utility of the placement of PADs with individuals with PTSD has markedly risen in recent years and coincides with the unprecedented growth in popularity of PAD placements worldwide (ADI, 2023; Walther et al., 2017). Notably, US defence veterans were the predominant population sample in articles reviewed, with only a summed handful of first responder participants.

The evidence from the review portrayed PADs as playing a unique and multi-facilitative role in nurturing the handlers' PTSD challenges in a variety of contexts and conditions. Specifically, the combination of PADs performing trained assistive tasks (tactile and positional cues), innate canine characteristics, in addition to the

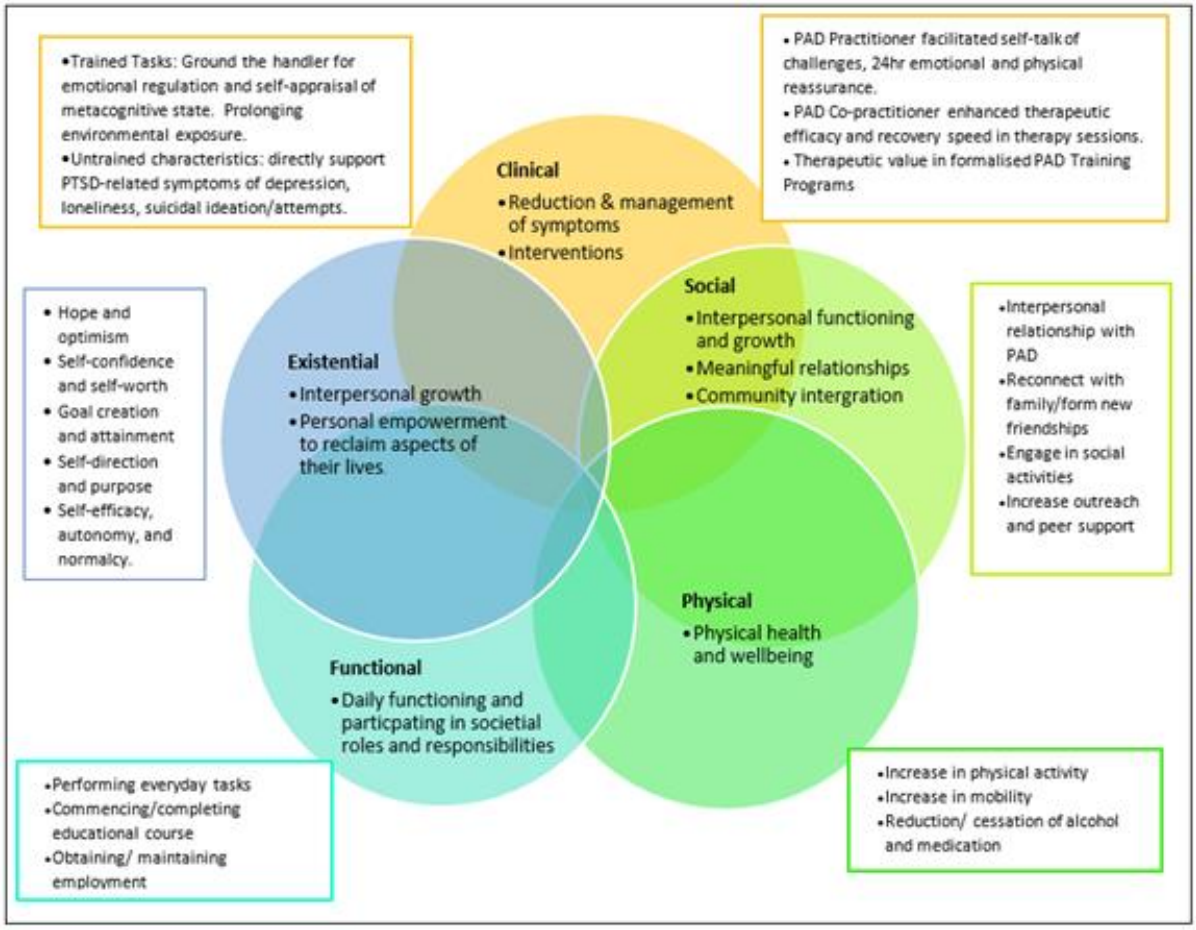
complex and close handler/PAD relationship all played a pivotal role in clinical, social, existential, physical, and functional dimensions of recovery. These findings indicate that PADs are capable of being more than a type of assistive technology, by serving as a therapeutic intervention to assist their owners in achieving recovery. However, the extent to which PADs are currently being used within the therapeutic practice and our understanding of what hinders PADs from being used more effectively in this context is limited. One assumption was that the inclusion of PAD in the professional context may share similarities to a therapy dog's role, of being incorporated into the therapeutic process with the intent to provide structured and goal-directed treatment outcomes (ADI, 2023; Howell et al., 2022). Yet, consideration of PADs playing a role in augmenting therapy, as well as an assistive aid, blurs the distinction between the role of an assistance animal and the role of a therapy animal. Past literature describing animal-assisted interventions (AAI, particularly animal-assisted therapy [AAT]) purposely exclude assistance dogs, as they are viewed as tools to support the individual's disability, rather than a therapeutic intervention (Howell et al., 2022; Kruger & Serpell, 2010). For example, guide dogs provide invaluable support to their owners with vision impairment in navigating the world, yet they are not expected to help 'treat' the vision impairment. Thus, consideration of PADs potentially playing a dual role as an assistive aid and a therapeutic intervention may be a controversial point of view and warrants further exploration.

The review also uncovered overlapping and complex synergistic interactions between recovery domains (clinical, social, existential, physical, and functional) where PADs' positive impacts in one domain appeared to positively influence another domain. For example, participants identified that PADs play an important role in their handler's recovery process by helping to manage their PTSD symptoms (clinical components) and assist with everyday tasks (functional). It was reasonable, then, to posit that these accomplishments promoted a sense of hope and self-agency (existential components) and encouraged community integration (social). This interconnectedness between clinical and nonclinical domains signifies how the incorporation of PADs may evoke holistic person-centred support in post-traumatic recovery progress and outcomes (refer to Figure 8, for a schematic of the synthesis in the MMSR). However, future research should continue to explore PADs' influence

on the relationships between the various clinical and non-clinical dimensions of recovery to expand our understanding of promoting overall recovery.

Figure 8

Holistic View of the PAD intervention for PTSD recovery progress and outcomes



Whilst PAD is portrayed as a positive and helpful tool in mitigating PTSD-related symptomology and functioning, several challenges and/or barriers to utilising a PAD and the consequences of those for the handler were identified from the articles. These were primarily focused on five facets: (1) stigmatisation and public scrutiny associated with the use of PADs, (2) navigating an unregulated industry, (3) obstacles surrounding the acquisition, training, and relationship with PAD, (4) PAD training organisation challenges, and (5) PAD welfare issues and residual effect on the handler.

Overall, armed with a broader understanding of the roles PADs play in assisting recovery and the facilitators and barriers of the use of PADs in achieving therapeutic outcomes in for defence veterans with PTSD, the review identified two

prominent areas of inquiry which warrant further examination.. . One shortcoming was the limited amount of literature regarding the incorporation of PAD into therapeutic settings for synergistic support. The other was based on the challenges of accessibility and feasibility of acquiring a PAD and the discrepant training program modalities used across the studies to examine PADs' influence on PTSD-related outcomes. Moreover, the studies reviewed were international in scope and predominantly based on defence veterans. Accordingly, the subsequent studies in this program of research focused on exploring these areas of inquiry within the Australian context and broadening sample parameters to all Australians with PTSD using a PAD to mitigate their everyday challenges.

6.1.2. Study Two. Integrating PAD into ongoing PTSD treatment.

Research Gap:

Despite PADs being described as a promising ‘complementary’ and ‘adjunct’ intervention to traditional treatments, there is limited evidence of augmenting PADs into ongoing treatment plans and processes. The narrative review (Chapter Three) detailed a case study where an individual's PAD was not actively integrated into their ongoing treatment practices. Raising concerns of whether others with PADs share similar experiences and the potential negative implications of not incorporating PAD into the therapy efforts. Findings from the MMSR (Chapter Three) indicated that integrating PADs into clinical setting were associated with positive therapeutic outcomes (i.e., enhancing therapeutic efficacy and recovery) although PADs' role in the development of these outcomes was not addressed. Furthermore, the articles in the review, either neglected or underreported the concurrent PTSD treatments participants received during the study period, potentially influencing research outcomes. Overall, based on the narrative review and MMSR findings, there is limited and conflicting literature surrounding whether and how PADs are integrated into conventional PTSD treatment plans.

Research Objective: Explore Australian adult's experiences of incorporating their PADs into their ongoing PTSD treatment practices and examine the type of PTSD treatments they have used in the past and currently utilise alongside their PADs.

Key Findings of the integration of PADs into ongoing treatment: Two polarising themes were identified, therapeutic opportunities of integrating PADs into ongoing treatments and challenges of not augmenting PADs into professional

practice. The therapeutic opportunities illustrated the facilitating influence of PADs within professional settings and the continued development of achieving goal-directed opportunities outside of sessions. Specifically, the findings identified the synergy between PADs and ongoing PTSD treatment practices was integral to supporting recovery progress and recovery. Where, the inclusion of PADs into PTSD treatment practices was attributed to goal-oriented progress, improved treatment engagement and clinician-patient alliance. The sense of safety of the presence and support the PADs provided encouraged treatment-seeking behaviours, with participants expressing consideration for branching out to other treatments to support their injury.

Conversely, participants spoke of the challenges they experienced, reflecting a disconnect between the use of PADs and ongoing treatment efforts. The findings reported that not all PADs are included in participants' ongoing PTSD treatment plans, viewed as two separate treatments for the same injury. Practitioners' dismissal of incorporating PADs was perceived to have a negative impact on participants' therapeutic experience, including disengagement in sessions, creating clinician-patient barriers, and in some cases termination of treatment.

The study also addressed a gap in past PAD research, by establishing an extensive list of PTSD treatments and activities (both traditional and complementary interventions) individuals have tried and currently use alongside their PADs. A descending trend in the use of evidence-based treatments after the acquisition of a PAD was identified. Whilst no inferences were able to be drawn regarding PADs influence on these changes in treatment trends, Whilst this study was unable to draw inferences from the data regarding PADs' influence on these changes' potential associations between the decline in evidence-based treatment trends and participants' experiences may indicate reasons behind this shift. Notably, participants highlighted past difficulties and failed attempts of evidence-based treatments to facilitate positive outcomes, with a preference for alternative and self-governed approaches (including PAD training programs) alongside PADs. Other participants described dismissing all other treatments and using their PAD as a monotherapy. This is concerning, providing the MMSR identified that whilst PADs nurtured the reduction of most PTSD symptoms and functioning challenges, PADs are unable to directly assist the person's ability to recall the trauma event/s, unlike trauma-focused approaches. A decline in participants' dependency on receiving clinician and

healthcare team support after the acquisition of PAD was also identified, as well as accessibility issues to attend healthcare appointments with a PAD, and participants' inability to receive healthcare support in a timely manner, may also contribute to the descending treatment trends.

6.1.3. Study Three. Factors influencing PAD acquisition and training program models.

Research Gap: For PADs to be considered a feasible complementary intervention to traditional PTSD treatments, they must be accessible for people with PTSD wishing to use this novel intervention. Despite the various channels to source a PAD and handler-PAD team training program resources available, the narrative review (Chapter Two) and MMSR (Chapter Three) identified several inhibitive aspects that may potentially affect whether PADs are easily accessible. We have a limited understanding of the underlying factors that influence peoples' decisions surrounding how they obtain a PAD and the type of PAD training program they participate in. It is important that research develops a deeper understanding of facilitative and inhibiting aspects that Australians with PTSD face when seeking to use a PAD for their invisible injury to ensure equality and provide recommendations for strategic direction for healthcare and policy guidelines.

Research Objective: Explore the factors influencing Australians with PTSD's decision to acquire a PAD and the type of PAD training modality undertaken. To address this research objective the study sought to first gather information about, (1) how Australians with PTSD acquire their PADs (received a trained PAD or self-trained), (2) the type of training modality undertaken, and (3) contextualising the reasons behind choosing a particular way to acquire a PAD and the form of training modality completing/completed.

Key Findings of factors influencing obtaining a PAD and training model. Past research investigating the PAD intervention has focused on examining the impact of PAD on defence personnel populations, whereas two-thirds of participants in this study were predominantly and unexpectedly comprised of the general Australian population with PTSD and first responder personnel. Accordingly, this study provided a preliminary understanding of the facilitators and inhibitive aspects that non-defence populations face when acquiring a PAD and undertaking PAD training.

This study highlighted numerous inhibitors surrounding the acquisition, eligibility, availability, and accessibility of receiving and training a PAD in the

Australian context. These barriers, were particularly poignant issues for the general Australian population with PTSD participants, raising concerns of inequality of accessing PADs for all Australians with PTSD wishing to use this novel intervention to support challenges.

A prominent finding from this study was defence and first responders are four times more likely to acquire a pre-trained than the Australian general population with PTSD. This may be largely due to the demand for receiving pre-trained PADs outweighs the supply of PADs, causing large wait lists and lengthy delays, and restricting applicants to specific vocational roles (defence and first responder personnel). For the general Australian PTSD participants, accessibility of receiving a fully accredited PAD was described as unattainable, expressing that they had no other choice than to look for alternative avenues to source a PAD. Consequently, the predominant approach for the Australian general population with PTSD is to self-train a suitable dog alongside one-on-one support from a trainer to pass PAT accreditation. However, the self-training model is not recognised in governing bodies, thus costs associated with the self-training and ongoing PAD maintenance costs remain an out-of-pocket expense. Whilst the self-training format enables more people with PTSD access to the beneficial support from a PAD, some people with PTSD have other co-occurring issues (i.e., anger and violence issues, substance abuse and major depression) and may not be a suitable PAD owner/guardian. While others, may not have suitable housing conducive to support a PAD (e.g., living arrangements, other pets; Vincent, Gagon et al., 2019; Yarborough et al., 2018). Additionally, if the handler lacks discipline in the training regime, a consequence could be the inability to distinguish differences in PADs' cues/responses and thus impede how effective the PAD is as an assistive aid (Vincent, Gagon et al., 2019). An important consideration is how to safeguard PADs' welfare to ensure they receive adequate care, appropriate housing, and training regimes. To some extent PAD organisations and trainers could monitor outcomes and intervene where necessary, however, these safeguards are not applicable to people who acquire and self-train a PAD without the support of an organisation/trainer. With the self-training modality on the rise, considerations on how to safeguard the welfare of PADs need to be addressed in future research and policy planning.

Factors influencing the choice of training program modality undertaken were based on finding a suitable training facility that supported the type of training (i.e.,

self-training) and tailored to the individuals' specific requirements and needs (i.e., comorbidities), flexible delivery formats, and perceived organisational and trainer support and quality of training.

6.2. Unique contributions to knowledge and implications of current research

6.2.1. Theoretical implications

The theoretical implications of this program of research supported the incorporation of an all-encompassing *recovery model* (Whitley & Drake, 2010) to assist in conceptualising the influence of PADs in multidimensional recovery domains. The thesis findings also portrayed the unique role of PADs as stimulating positive *behavioural activation*, both outside and within the therapeutic context. In addition to findings of the close handler-PAD bond harnessed relational functional and contributed to positive recovery progress and outcomes, sharing similarities to the *attachment theory* framework.

Recovery Model. A holistic multidimensional recovery model was employed to categorise synthesised findings from the MMSR (Chapter Three), to conceptualise and contextualise the multi-complexities of the role of the PAD in nurturing their handlers' unique post-traumatic recovery journey. This broad approach to recovery, posited by Whitley and Drake (2010) augmented influential models of recovery, to propose five superordinate dimensions, based on five clinical and nonclinical domains: (1) clinical recovery, (2) existential recovery, (3) functional recovery, (4) social recovery, and (5) physical recovery. Importantly, Whitley and Drake (2010) noted "the proposed dimensions are not meant to be definitive or replace existing approaches. On the contrary, they are intended to augment current perspectives by creating a broader framework under which more focused recover components can be considered" (p.1249). Notably, this theoretical framework is not specific to recovery for PTSD, but rather a holistic recovery approach to clinical and nonclinical factors of mental illness, nor are the underlying assumptions of the five domains specific to the PAD paradigm. Yet, by employing this broad framework, we were able to conceptualise the complexity and multi-facilitative attributes of PAD and build a holistic narrative to assist in objectively understanding the therapeutic value and appropriateness of PADs' role in fostering the handler's recovery progress and outcomes across the five interconnected domains.

Behavioural Activation (BA). Avoidance of trauma-related cues often leads to isolation and withdrawal from others, missing opportunities to participate in novel activities. Behavioural activation focuses on changing behaviours in order to address problematic avoidance behaviours to form positive coping strategies. The goal of BA in therapy is to identify unique personalised goals and values and encourage engagement in rewarding and meaningful activities (i.e., physical exercise, socialising with friends, enjoying leisure activities) in the hope of reducing sources of anxiety, increase functioning, and promote quality of life (Etherton & Farley, 2020; Jakupcak et al., 2006; Turner & Jakupcak, 2010). The application of BA in veterans with PTSD found clinically significant changes in symptom severity, and improvement in depressive symptoms and quality of life (Etherton & Farley, 2020; Turner & Jakupcak, 2010; Jakupcak et al., 2006).

The principles of BA may be congruent with the unique handler-PAD partnership, where the findings from this research identified PADs act as facilitators and stimulants for behavioural activation in a variety of situations. Whether the PAD is grounding the handler to provide biofeedback, signalling the handler to redirect their focus and initiate metacognition and self-regulation, nurturing goal progression within and outside of therapeutic sessions, participating in PAD training programs, a catalyst for social connections, or promoting physical exercise and structured routine, our findings demonstrate a PAD dilutes negative coping strategies associated with PTSD and replace with more positive coping mechanisms.

PAD as an attachment figure. Research exploring the close human-animal bond in the context of attachment theory is rising, and a principal conceptual framework underlying animal-assisted therapy research (Rockett & Carr, 2014; Vitztum & Urbanik, 1991). Research has proposed that animals/companion dogs satisfy human attachment needs, and serve as an attachment figure (Beetz, 2017; Kurdek, 2008; Rocket & Carr, 2014; Zilcha-Mano et al., 2011). Derived from human attachment figure characteristics, Kurdek (2008) identified the roles of companion dogs as an attachment figure, by providing; (1) a secure base (i.e., a reliable source of comfort and lessening feelings of vulnerability), (2) a safe haven (i.e., providing physical contact, assurance during times of distress), (3) proximity maintenance (i.e., physical presence and easily accessible and enjoyable as well as a sense of safety), and (4) separation distress (i.e., absence of dog causes a sense of distress). Similarly, Zilcha-Mano et al. (2011) found the presence of a pet (secure base)

provided the owners with a sense of confidence, competence improved self-efficacy and a safe haven during distress. The findings of this program of research support the belief that attachment theory contributes to a deeper understanding of how the handler-PAD bond can serve to nurture relationship functioning and the influence this has on recovery progress and outcomes in a variety of contexts. Specifically, the close emotional attachment to the PAD was attributed to consistency, stability, authenticity, relational trust, unconditional love, and non-judgement, which predispose the handler to feelings of safety, comfort, and reassurance in times of need and perceived as superior to human counterparts during these distressing times. This strong bond played a pivotal role in all five recovery dimensions, pertinently, nurturing the handlers' positive conjectures of themselves. The role of PADs also fostered connectedness with family and others, even extending to the development of the clinician-patient alliance in the professional context and establishing new social connections within the PAD training organisation environments.

6.2.2. Practical implications

***Professional therapeutic context*.** The findings from this program of research contributed to a better understanding of the current professional context of integrating PADs into their handlers' ongoing PTSD treatment and concurrent treatments. Two polarising outcomes were identified. First, the findings portrayed synergism between the PAD and handlers' ongoing treatment was seamless, highlighting explicit roles of PADs within the sessions and integration into therapeutic plans for continued development of goal-directed progress outside of sessions. This was attributed to shared decisions on treatment plans and progress, increasing treatment engagement and efficacy and playing a pivotal role in personalised recovery journey. On the contrary, others experienced a disconnect between the use of PADs and concurrent PTSD treatment practices, where treating clinicians did not actively integrate PADs into treatment plans and process. Consequently, this created clinician-patient barriers, disengagement, and for some termination of treatment.

The study also revealed descending trends in the use of conventional trauma-based practices after the acquisition of a PAD, and an increase in self-governed approaches (i.e., CAM), PAD training programs or PAD as a monotherapy. To encourage continued engagement and compliance in professional practice, we hope the findings may encourage clinicians to consider the potential value of the inclusion

of PADs into treatment plans and professional development opportunities in the clinical utility of PAD, for best practice models and person-centred care. Considerations could also extend to collaborating with the individual's PAD training organisations/trainers, for an integrated approach to recovery progress and outcomes. Healthcare providers could also develop practice guidelines for the inclusivity of PAD in trauma-focused therapeutic plans and processes.

PAD Organisation/trainer context. Findings from this program of research reported that non-defence populations predominantly self-trained their dog with the support of a trainer, whereas defence participants self-trained alongside a combination of group and individual training formats. Factors influencing the use of the specific training modality was based on the suitability of the training facility (organisations/trainer that assist with self-training modality), flexible delivery formats (online, face-to-face sessions) and more tailored approaches to suit multiple injuries/disabilities.

Moreover, positive affirmations for training organisations/trainers that went beyond training, to assist participants in navigating potential funding assistance applications and accreditation requirements were commonly referred to as making the process easier, attainable, and less stressful. Based on the current findings, training organisations should consider the development and implementation of (1) flexible delivery of training models and provide outreach services in rural and regional areas, (2) tailor training approaches to meet individuals' unique needs, and (3) collaboration with individuals treating clinician, may be beneficial for enhancing best practice outcomes for the handler-PAD partnership and a person-centred approach to recovery progress.

Challenges of navigating through the different PAD programs to find a suitable program, were frequently detailed, ranging from the inability of the organisations to return phone calls to failures to find information on the program to support the decision of suitability. Recommendations for the development of a national directory of organisations and trainers providing training programs PADs (inclusive of non-approved GHDA and non-accredited ADI providers) would be advantageous for clear articulation of program information, organisation structure and format. This may assist individuals' decisions on whether the program is suitable for their situation and reducing the number of enquiries regarding this matter would be beneficial for both the individual and organisations. Alternatively, PAD training organisations/trainers

promote training services on the existing directory found on the Animal Therapies Ltd website platform (Animal Therapies Ltd, n.d).

6.2.3. Policy implications

Accessibility of PADs. Our research found a number of inhibitive factors surrounding the accessibility of PADs for Australians with PTSD wishing to use this novel intervention for their invisible injury. Restrictions surrounding eligibility to receive financial aid to subsidise high costs associated with receiving a trained PAD as well as ongoing dog husbandry costs were identified. A common perception was that non-defence populations felt they had little support other than applying for NDIS Assistance animal scheme, through the National Disability Insurance Agency (NDIA), yet eligibility and subsidy approval is a case-by-case consideration with no guarantee of successful outcomes. Furthermore, NDIS is most likely only going to cover ongoing expenses up to $2,500AUD per year and not the initial costs of purchasing a trained PAD (>$40,000AUD). The current guidance from the NDIA is PADs can only be trained by an approved provider to be eligible for financial aid (NDIS, 2021). According to our findings, only a small handful of Australian organisations/trainers support people with PTSD with PADs. As a consequence of this shortage of the number of PAD organisations, the demand for trained PADs outweighs the availability of PADs to meet this demand, with some providers temporarily ceasing to accept applications to minimise wait times and/or enforce eligibility restrictions by limiting applicants to defence and first responder personnel with PTSD. Our analysis supported this barrier, whereby defence and first responder participants were four times more likely to receive a trained PAD, compared to the general population with PTSD. Thus, even if individuals were eligible for financial support or chose to personally cover the costs of a trained PAD, they still may not meet vocational background criteria for some PAD providers.

Reflecting the eligibility and accessibility restrictions, our findings identified that the predominant avenue to acquire a PAD was self-training a suitable dog to become an accredited PAD (90.9%) with participants often expressing they had ‘no choice’ but to self-train a dog. Whilst the self-training modality was reported to be cost-effective, at this stage, Australian governing bodies do not recognise the self-training modality (NDIS, 2021), therefore training support and ongoing maintenance costs remain an ‘out of pocket’ expense. Whilst we identified numerous positive attributes to the self-training method, the demands of self-training a suitable dog may

not be appropriate for all individuals with PTSD and likely to cause further distress when financial support to acquire a trained PAD was unattainable. With the self-training modality on the rise, considerations on how to safeguard the welfare of PADs to ensure adequate care need to be addressed alongside the development of self-training policy planning. One potential avenue is for PAD organisations and trainers supporting the self-training model, to monitor outcomes and intervene where necessary.

Based on these findings, considerations to easing accessibility and affordability inhibitors, include (1) the development of policy guidelines to recognise the self-training modality as a viable alternative option, (2) a review of current eligibility criteria surrounding financial aid for the provision of a PAD for people with PTSD and, (3) expanding the list of approved providers to include organisations/trainers that currently support persons in this modality.

PAD training standards and accreditation. Based on our findings, disparate training standards between organisations were prominent issues raised by participants. At this point in time, there are no unified national standards for assistance animal accreditation and training. Therefore, no sanctioning guidelines surrounding the methods and source of training. Generally, the onus is on the organisation and/or trainers to ensure the dog meets at least public access standards (i.e., meets hygiene and behaviour expectations to be considered safe and effective in the public domain), and be proficiently trained to support the person's disabilities in accordance with the legislative definition of an assistance animal (DDA, 1992 Section 9.2c, AHRC, 2016). Additionally, the dogs are accredited through internal assessors of the organisations. To assist in the equality of high-quality PAD training programs, the development of a national framework for training and accreditation standards, guided by globally recognised ADI training criteria as the benchmarks should be considered (ADI, 2023). In addition to employing an independent accrediting body responsible for ensuring the best standards in training quality, assessing the dog for PAT accreditation and suitability for supporting the handler's disability.

Disparate state regulations and standards. The findings revealed numerous inhibitory aspects of the PAD accompanying the handler in the public domain creating undue distress, confusion, and feelings of discrimination. Whilst it is unlawful to discriminate against an individual with PTSD using a PAD, the *Disabilities*

and Discrimination Act, 1992 framework defining assistance dogs is ambiguous and open to interpretation. The predominant limitation is the lack of unified national accreditation and training standards or guidelines, causing wide disparity between the states and territories. As a consequence, travelling between states and territories is difficult to comprehend and navigate, as some states provide 'public access passes' that easily identify the PAD as a working dog, leading to less intrusive questioning, whereas other states do not provide passes. The state of Queensland provides a list of approved trainers/organisations that are registered with the state as part of the PAD accreditation process, however in other states there is no formal system of accreditation or registration of PADs. Also, due to laxed regulations, a rise in the number of illegitimate untrained dogs accompanying their owner in public has caused issues for legitimate handler-PADs teams to access the public domain with dubious business owners attesting their authenticity due to prior dealing of fake PADs displaying poor behaviours. The development and implementation of practical and defining guidelines underpinning current legislation would be conducive to a united approach, enhancing clarity, and a structured framework, minimising these challenges and barriers in the public domain.

6.3. General shortcomings of the thesis

The data obtained from the two separate studies in Chapter Four and Chapter Five were extrapolated from a broader mixed-method survey examining the efficacy of PADs as a complementary treatment for Australians with PTSD. This larger study explored the facilitative roles of PAD in a variety of clinical and nonclinical domains, including measures that examined PTSD presence severity and level of functioning, using empirically validated self-reporting measures (PTSD checklist, Weathers et al., 2013; World Health Organization-Disability Assessment Schedule 2.0 (WHODAS 2.0). Derived from the outcomes of the systematic review (Chapter Three), three pilot scales were also created to (1) assess how PAD group training programs assist in recovery dimensions, (2) the importance of trained tasks and untrained behaviours of PAD to assist those with PTSD, and (3) investigate how PAD assist in intrapersonal and interpersonal functioning. However, this larger study was disrupted by the COVID-19 pandemic, affecting participant recruitment. Accordingly, the sample size was smaller than anticipated, reducing the power of the study to detect an effect, and affecting our ability to make inferences about the data. This challenge is common in this current climate, with research identifying 80% of the Australian health research

workforce (N=1212) was affected by COVID-19, with 50% of participants indicating difficulties recruiting participants (Peeters et al., 2020). As a consequence of this pandemic disruption, the scope of the thesis was revised to focus on extracting and analysing qualitative responses on two pertinent topics, and the associated quantitative data to provide background context to the qualitative responses. This resulted in two smaller mixed-method studies outlined in Chapters Four and Five).

6.4. Conclusion

This program of research achieved the overarching objective of investigating whether PADs are a feasible complementary intervention to evidence-based treatments for Australians with PTSD. The findings postulated PADs play a multi-facilitative role in nurturing unique personalised support to their handlers in a variety of contexts, supporting recovery progress and outcomes. Psychiatric assistance dogs can be positively augmented into the existing PTSD treatment plans and processes, providing additional support for those experiencing difficulties engaging and benefiting from evidence-based treatments. Numerous positive aspects were derived from the self-training format, however, it is imperative that individuals feel they have a ‘choice’ over how they acquire a PAD and the type of training modality undertaken. Accordingly, having effective interventions for PTSD that are available and affordable is important to enabling equal opportunities to access these highly trained canines to support those living with invisible injuries. We hope the findings encourage healthcare providers to consider integrating their clientele’s PADs into treatment plans for best practice models and person-centred care and inform decision-makers of healthcare planning and policy guidelines of the enabling and inhibiting aspects that Australians with PTSD face when seeking to use a PAD for their invisible injury.

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APPENDIX A

Study One MMSR: JBI Critical Appraisal Instruments

Assessment of methodology was analysed using standardized JBI critical appraisal instruments in JBI SUMARI software package (Munn et al., 2019). Below are the checklist questions for each study design type and assessment responses from reviewers found in tables.

JBI Randomized Controlled Trials Checklist (JBI, 2020g)

Q1. Was true randomization used for assignment of participants to treatment groups?

Q2. Was allocation to treatment groups concealed?

Q3. Were treatment groups similar at the baseline?

Q4. Were participants blind to treatment assignment?

Q5. Were those delivering treatment blind to treatment assignment?

Q6. Were outcomes assessors blind to treatment assignment?

Q7. Were treatment groups treated identically other than the intervention of interest?

Q8. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analysed?

Q9. Were participants analysed in the groups to which they were randomized?

Q10. Were outcomes measured in the same way for treatment groups?

Q11. Were outcomes measured in a reliable way?

Q12. Was appropriate statistical analysis used?

Q13. Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?

Table A1

Critical Appraisal Results for Included Studies using the JBI Critical Appraisal Checklist for Randomized Controlled Trials

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Richerson et al. (2020)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total %	100	100	100	100	100	100	100	100	100	100	100	100	100

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number.

JBI Quasi-Experimental Studies Checklist (JBI, 2020f).

Q1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e., there is no confusion about which variable comes first)?

Q2. Were the participants included in any comparisons similar?

Q3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?

Q4. Was there a control group?

Q5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?

Q6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analysed?

Q7. Were the outcomes of participants included in any comparisons measured in the same way?

Q8. Were outcomes measured in a reliable way?

Q9. Was appropriate statistical analysis used?

Table A2

Critical Appraisal Results for Included Studies using the JBI Critical Appraisal Checklist for Quasi-Experimental Studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Bergen-Cico et al. (2018).	Y	Y	Y	Y	Y	Y	Y	Y	Y
Goetter et al. (2022)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Jensen et al. (2022).	Y	Y	N/A	N/A	Y	Y	Y	Y	Y
Kloep et al. (2017).	Y	Y	Y	N	Y	Y	Y	Y	Y
Lessard et al. (2020).	Y	Y	N/A	N	Y	Y	Y	Y	Y
O'Haire & Rodriguez (2018).	Y	Y	Y	Y	Y	Y	Y	Y	Y
Scotland-Coogan et al. (2022).	Y	Y	N/A	N/A	Y	Y	Y	Y	Y
Vincent et al. (2017).	Y	Y	N/A	N	Y	Y	Y	Y	Y
Vincent et al. (2019).	Y	Y	N/A	N	Y	Y	Y	Y	Y
Whitworth et al. (2019).	Y	Y	Y	Y	Y	Y	Y	Y	Y
Yarborough et al. (2017).	Y	Y	Y	N/A	Y	Y	Y	Y	Y
Total %	100	100	54.54	36.36	100	100	100	100	100

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number.

JBI Analytical Cross-Sectional Studies Checklist (JBI, 2020a)

Q1. Were the criteria for inclusion in the sample clearly defined?

Q2. Were the study subjects and the setting described in detail?

Q3. Was the exposure measured in a valid and reliable way?

Q4. Were objective, standard criteria used for measurement of the condition?

Q5. Were confounding factors identified?

Q6. Were strategies to deal with confounding factors stated?

Q7. Were the outcomes measured in a valid and reliable way?

Q8. Was appropriate statistical analysis used?

Table A3

Critical Appraisal Results for Included Studies Using the JBI Analytical Cross-Sectional Critical Appraisal Checklist

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Hansen et al. (2019).	Y	Y	Y	Y	Y	U	Y	Y
Jensen et al. (2021).	Y	Y	Y	Y	Y	U	Y	Y
Kegel (2016).	U	U	U	Y	N	N	Y	N
Kopicki (2016).	Y	Y	U	Y	N	N	Y	Y
LaFollette et al. (2019).	Y	Y	Y	Y	Y	U	Y	Y
Marston (2016).	Y	Y	U	Y	N	N	U	Y
Rodriguez et al. (2018).	U	Y	Y	Y	Y	Y	Y	Y
Rodriguez et al. (2021).	Y	Y	Y	Y	Y	Y	Y	Y
Rodriguez et al. (2020).	Y	Y	Y	Y	Y	Y	Y	Y
van Houtert et al (2022).	Y	Y	Y	Y	Y	U	Y	Y
Total %	80	90	70	100	70	30	90	90

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number.

JBI Qualitative Research Checklist (JBI, 2020e)

Q1. Is there congruity between the stated philosophical perspective and the research methodology?

Q2. Is there congruity between the research methodology and the research question or objectives?

Q3. Is there congruity between the research methodology and the methods used to collect data?

Q4. Is there congruity between the research methodology and the representation and analysis of data?

Q5. Is there congruity between the research methodology and the interpretation of results?

Q6. Is there a statement locating the researcher culturally or theoretically?

Q7. Is the influence of the researcher on the research, and vice- versa, addressed?

Q8. Are participants, and their voices, adequately represented?

Q9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?

Q10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Table A4

Critical Appraisal Results for Included Studies Using the JBI Qualitative Research Critical Appraisal Checklist

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Crowe et al., (2018).	Y	Y	Y	Y	Y	N	U	Y	Y	Y
Dell et al. (2022).	Y	Y	Y	Y	Y	U	Y	Y	Y	Y
Floore-Guetschow (2020).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hyde (2015). *	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Krause-Parello & Morales (2018).	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
McLaughlin & Hamilton (2019).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Moore (2014).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Newton (2014).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Nieforth et al. (2022).	Y	Y	Y	Y	Y	U	Y	Y	Y	Y
Yarborough et al. (2018).	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Crowe & Nguyen (2018).	Y	Y	Y	Y	Y	N	U	Y	Y	Y
Vincent et al. (2019).	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Total %	100	100	100	100	100	33.33	66.66	100	100	100

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number. *Qualitative component of mixed method study

JBI Case Series Reports (JBI, 2020c)

Q1. Were there clear criteria for inclusion in the case series?

Q2. Was the condition measured in a standard, reliable way for all participants included in the case series?

Q3. Were valid methods used for identification of the condition for all participants included in the case series?

Q4. Did the case series have consecutive inclusion of participants?

Q5. Did the case series have complete inclusion of participants?

Q6. Was there clear reporting of the demographics of the participants in the study?

Q7. Was there clear reporting of clinical information of the participants?

Q8. Were the outcomes or follow up results of cases clearly reported?

Q9. Was there clear reporting of the presenting site(s)/clinic(s) demographic information?

Q10. Was statistical analysis appropriate?

Table A5

Critical Appraisal Results for Included Studies Using the JBI Case Series Critical Appraisal Checklist

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Galsgaard & Eskelund (2020).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Husband et al. (2019).	Y	Y	Y	Y	Y	U	Y	Y	U	Y
Lessard et al., (2018).	Y	Y	Y	Y	Y	Y	Y	Y	U	Y
Scotland-Coogan (2019a).	U	Y	Y	U	U	Y	U	Y	U	Y
Scotland-Coogan (2019b).	Y	Y	Y	Y	Y	Y	U	Y	U	Y
Total %	80	100	100	80	80	80	60	100	20	100

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number.

JBI Prevalence Studies Checklist (JBI, 2020d)

Q1. Was the sample frame appropriate to address the target population?

Q2. Were study participants sampled in an appropriate way?

Q3. Was the sample size adequate?

Q4. Were the study subjects and the setting described in detail?

Q5. Was the data analysis conducted with sufficient coverage of the identified sample?

Q6. Were valid methods used for the identification of the condition?

Q7. Was the condition measured in a standard, reliable way for all participants?

Q8. Was there appropriate statistical analysis?

Q9. Was the response rate adequate, and if not, was the low response rate managed appropriately

Table A6

Critical Appraisal Results for Included Studies using the JBI Critical Appraisal Checklist for Prevalence Studies

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Hyde (2015) *	Y	Y	N	Y	Y	Y	Y	Y	Y
Total %	100	100	0	100	100	100	100	100	100

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number.
*Prevalence components of a mixed method study

JBI Case Report (JBI, 2020b)

Q1. Were patient's demographic characteristics clearly described?

Q2. Was the patient's history clearly described and presented as a timeline?

Q3. Was the current clinical condition of the patient on presentation clearly described?

Q4. Were diagnostic tests or assessment methods and the results clearly described?

Q5. Was the intervention(s) or treatment procedure(s) clearly described?

Q6. Was the post-intervention clinical condition clearly described?

Q7. Were adverse events (harms) or unanticipated events identified and described?

Q8. Does the case report provide takeaway lessons?

Table A7

Critical Appraisal Results for Included Studies using the JBI Critical Appraisal Checklist for Case Report

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Brown (2017)	N	N	Y	Y	U	N/A	N/A	Y
Total %	0	0	100	100	83.33	0	0	100

Note. Responses: Y - yes, N - no, U - unclear, N/A - not applicable. Q - Question number.

APPENDIX B

Study Two and Three Participant Information for USQ Research Project

University of Southern Queensland

Participant Information for USQ Research Project Questionnaire

Project Details

Title of Project:	**The Efficacy of Psychiatric Assistance Dogs for Posttraumatic Stress**
Human Research Ethics Approval Number:	H20REA284

Research Team Contact Details

Principal Investigator Details

Karina Heyworth

[redacted]

Supervisor Details

Dr Carla Jeffries

[redacted]

Assoc. Prof Gavin Beccaria

[redacted]

Description

This project is being undertaken as part of Doctor of Philosophy program. The overall aim of the project is to examine the efficacy of psychiatric assistance dogs (PAD) as a complementary intervention for reducing and managing posttraumatic stress symptomology and functioning.

Specifically, this project is interested in (a) former/current treatment/s used to help manage symptoms and the role of PAD in treatment, (b) decisions surrounding the acquisition of a PAD and the benefits and challenges of living with a PAD, (c) your experience with PAD training programs (group and individual sessions) or self-training your dog to become a certified PAD, (d) your perception of the most important trained and untrained PAD characteristics, (e) the impact PAD has had on your intrapersonal and interpersonal functioning and (f) your current perceptions of your symptoms and functioning.

The overall implication of the project is to provide preliminary evidence of whether the provision of a PAD is an effective complementary posttraumatic stress intervention and the viability for future recommendations in Australian mental health recovery model approaches.

Participation

Your participation will involve the completion of an online questionnaire that will take approximately 30-40 minutes of your time. Most survey questions will require you to indicate your agreeance to and/or perceived importance of a question by providing a rating (1 to 5). There are also several open-ended questions that will require you to briefly respond (one or two sentences).

Your participation in this project is entirely voluntary. If you do not wish to take part, you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. You may also request that any data collected about you be withdrawn and confidentially destroyed. If you do wish to withdraw from this project, please contact the Research Team (contact details at the top of this form).

Your decision whether you take part, do not take part, or to take part and then withdraw, will in no way impact your current or future relationship with the University of Southern Queensland.

To demonstrate our appreciation for your participation, at the end of the survey, you will have a choice to enter a random prize draw to win one of two $50 Pet barn vouchers. Additionally, $5 will be donated to a non-profit assistance dog organisation (of your choice) after you complete the survey. This token is to thank you for your support and contribution in assisting our research for a better understanding of the unique role the assistance dog provides in facilitating posttraumatic recovery progress and outcomes.

Expected Benefits

It is expected that this project will not directly benefit you. However, it is anticipated that you may benefit from sharing and reflecting on your journey with your PAD thus far, and this will inform future research and potentially others who are thinking of using a PAD in the future. You will also receive our gratitude for helping with our research.

Risks

In participating in the questionnaire, there are risks such as distress or discomfort when disclosing sensitive information. In order to mitigate against this risk, the questionnaires will not ask questions directly related to traumatic event/s. Furthermore, there may be a minimal risk such as distress and/or anxiety surrounding whether personal information about you were to be made publicly available. The researcher will mitigate against this risk by ensuring all publicly available information is non-identifiable.

Sometimes thinking about the sorts of issues raised in the interview can create some uncomfortable or distressing feelings. If you need to talk to someone about this immediately, please contact:

The USQ Psychology and Counselling Clinics - 07 4631 1763 (Toowoomba) or 07 3812 6163 (Ipswich)
Beyond Blue 24/7 1300 22 46 36;
Lifeline 24/7 131114;
MensLine Australia 24/7 1300789978;
SANE Australia 1800187263 or
MI Networks 1800985944.

You may also wish to consider consulting your General Practitioner (GP) for additional support.

Privacy and Confidentiality

- All comments and responses will be treated confidentially unless required by law.
- Individuals completing the surveys will be de-identified.
- Participants data will be made available for future research purposes for similar projects only and non-identifiable data will be stored and shared.
- Participants will have an opportunity to access the anonymous project summary of results by emailing the principal investigator.
- Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy.

Consent to Participate

Clicking on the 'Submit' button at the conclusion of the questionnaire is accepted as an indication of your consent to participate in this project.

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the top of the form to have any questions answered or to request further information about this project.

Concerns or Complaints Regarding the Conduct of the Project

If you have any concerns or complaints about the ethical conduct of the project you may contact the University of Southern Queensland Manager of Research Integrity and Ethics on +61 7 4631 1839 or email researchintegrity@usq.edu.au. The Manager of Research Integrity and Ethics is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Thank you for taking the time to help with this research project.