

# 10 YEAR RESEARCH REPORT 2013-2023

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**Combat Stress** is the UK's leading charity dedicated to supporting the mental health needs of veterans across the UK.

**COMBAT  
STRESS**  
FOR VETERANS' MENTAL HEALTH

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# CEO



**Jeff Harrison,**  
CEO Combat Stress

Specialising in the treatment and support of British Armed Forces veterans, reservists and members of the Merchant Navy who have mental health difficulties related to military trauma, we help former servicemen and women from every service and conflict with problems such as post-traumatic stress disorder, anxiety, and depression. Our vision is for every veteran with complex mental health problems to live a full and meaningful life. In the last year\* alone nearly 12,500 veterans benefitted from our help.

Understanding veterans' needs and how to support them is key to the work we do. I joined Combat Stress in 2013 – the year when our research department was established. Since then, I have seen the department continue to grow its research output and develop meaningful partnerships with institutions around the world in the field of veteran mental health. Continuing to be at the forefront of veteran mental health research aligns with the charity's core values: **bold, together, focused, and personal.**

## UNDERSTANDING VETERANS' NEEDS AND HOW TO SUPPORT THEM IS KEY TO THE WORK WE DO.

# HEAD OF RESEARCH



**Professor Dominic Murphy,**  
Head of Research, Combat Stress

In 2013, I was tasked with setting up a department to focus on the needs of the veteran community affected by mental health difficulties and develop the department to become a thought leader nationally and internationally. This was done in partnership with the King's Centre for Military Health Research (KCMHR), King's College London, UK. Over this period of time, we have seen the department grow across a number of metrics. For example, being part of research teams that have secured 50 research grants totalling over £5million and publishing over 150 research articles and reports. Further, we have growing national and international impact. Examples of these include being in senior leadership roles in organisations such as KCMHR,

the UK Psychological Trauma Society and The European Society for Traumatic Stress Studies, working on a number of NATO Research Task Groups, membership of the Five Eyes Mental Health Research, and Innovation Collaboration to name a few. None of these achievements would have been possible without the generous support from a number of individuals; to name just a few, these include: Professors Sir Simon Wessley and Walter Busuttill, key funders, the support of the staff across Combat Stress and crucially, the veteran community, who have been central to work we have done. The purpose of this report is to reflect on some of the key areas of research we have worked on over the previous decade, and also look to the future.

\*Statistic relates to our latest financial year (1 April 2022 to 31 March 2023)

# INTRODUCTION

The Combat Stress Research Department was established in late 2013 by Professor Dominic Murphy. The department is co-located within the King's Centre for Military Health Research, King's College London. Over this period the department has grown to have strong national and international links, becoming a leader within the field of military mental health, and continues to drive innovation. The department has six main aims:

1. Understanding the needs of the veteran community
2. Trial new and innovative ways of delivering treatments to ensure that as many help-seeking veterans and their families as possible can access what they need
3. Disseminate to raise the profile of the veteran community's mental health needs
4. Support national and international collaboration
5. Provide evidence to guide policy officers, service providers, government and clinicians to support the effective delivery of support to veterans and their families.
6. Evaluate Combat Stress treatment programmes to ensure veterans are receiving the most effective care

The purpose of this document is to explore all Combat Stress research over the past decade, which has as its focal point understanding the needs of the veteran community affected by mental health difficulties.

Dissemination of Combat Stress research findings via publications and conferences is important in sharing knowledge about and raising the profile of help-seeking veterans' needs. The research team has been involved in the production and publication of over 150 peer-reviewed research papers relevant to the above aims in the past decade. Other dissemination work includes guest-editing a special edition of an international journal, members of the team holding many roles at national and international conferences, including those organised by the International Society of Traumatic Stress Studies, the Office of Veterans' Affairs, King's College London and the European Society for Traumatic Stress Studies. Team members are also responsible for delivering teaching about veteran mental health to undergraduate and postgraduate students as well as clinicians and those working within the veteran sector. To support this activity, the team has secured several high-profile funding grants from organisations including The Royal British Legion, Forces in Mind Trust, Libor, The Office for Veterans' Affairs, with funding for several future projects in place.

For the purposes of this summary, this dissemination of study findings has been broadly categorised into individual but overlapping areas of investigation. One line of research describes the demographic profile, referral patterns and health profile of the veterans treated by Combat Stress. Themes also explore the needs of minority veteran groups and women veterans more closely. Studies investigating the nature of difficulties veterans may face are described, such as PTSD, alcohol misuse, physical health problems, complex PTSD (CPTSD), moral injury and military sexual trauma. Another line of research

explores Combat Stress treatment outcomes and the interventions that the department has been involved in developing to treat veterans for these difficulties, such as the Residential Treatment Programme offered by the charity service, the Together Programme (an intervention developed to support military partners), remote access therapy, an anger management programme, and art therapy. Clinical trials investigating novel treatments the department has been involved in developing are also described, including treatments for CPTSD and moral injury.

## ACKNOWLEDGEMENTS

We would like to thank all veterans who have taken part in Combat Stress research studies, Combat Stress clinicians and staff who have been instrumental in supporting research, and all our collaborators. We would also like to thank all research department staff past and present: Dr Rachel Ashwick, Julia Baumann, Natasha Biscoe, Amanda Bonson, Dr Walter Busuttil, Gavin Campbell, Carron Carson, Georgina Clifford, Kat Graham, Lucy Spencer-Harper, Laura Hendrikx, Kate Hill, Georgia Hodgeman, Ashleigh Madigan, Dr Bethan Parry, Dr Emily Palmer, Emily Pearson, Dr David Turgoose and Charlotte Williamson.

## DESCRIBING THE NEEDS OF THE VETERAN COMMUNITY: AN OVERVIEW

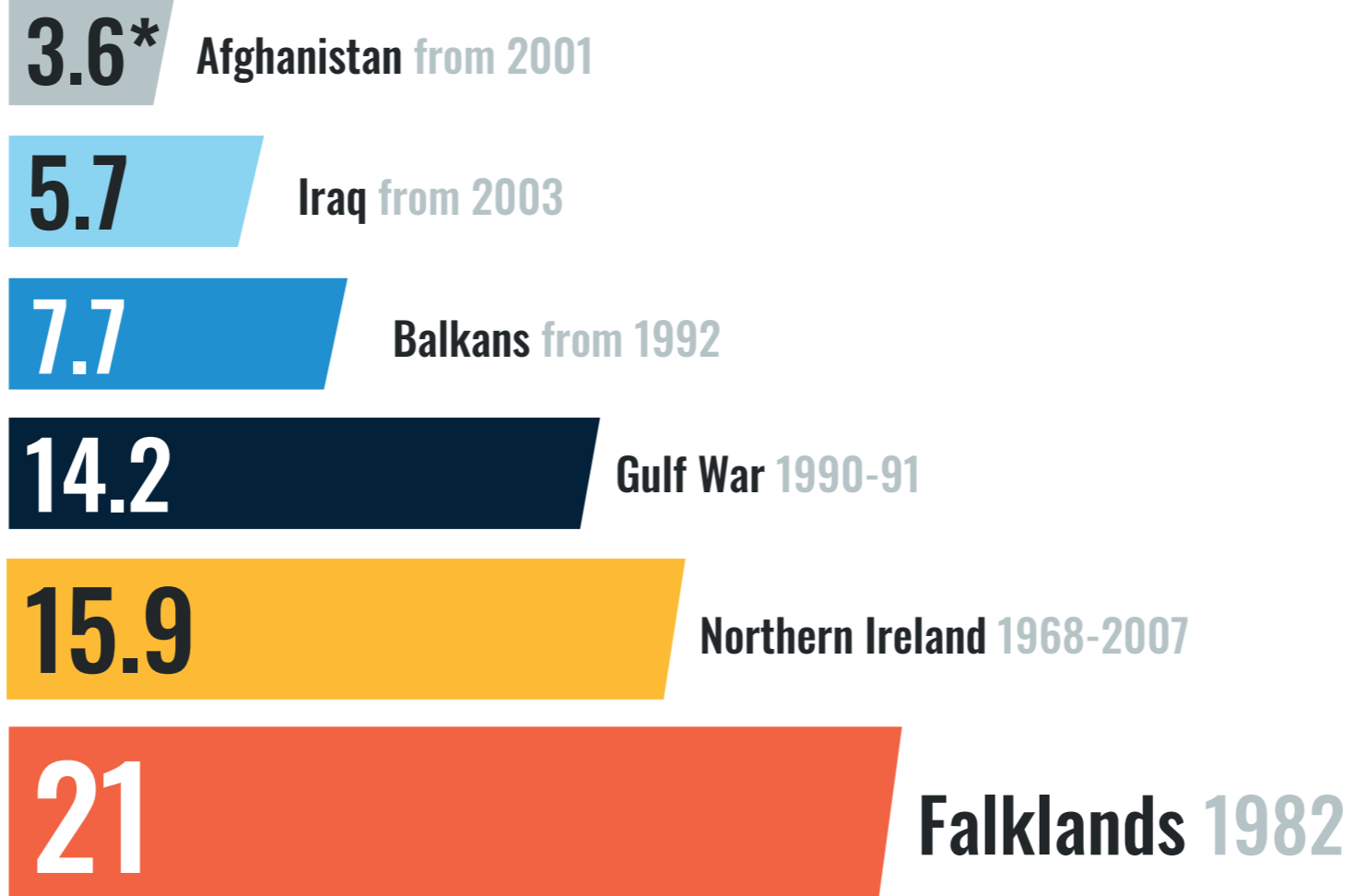
Around 20,000 UK service personnel leave the Armed Forces every year with 4.5million veterans estimated to be living in the UK from the most recent national census. Most veterans do not experience complex mental health problems as a result of their military experience, although a small number face an increased risk of anxiety, depression, PTSD, and social exclusion. Understanding the needs of help-seeking veterans is an important stage in developing effective mental health support.

In a large survey of veterans reporting mental health difficulties, nearly all had sought help of some kind, from formal non-medical support to informal support.<sup>1</sup> Two large Combat Stress surveys have explored the complexity of health and wellbeing needs among a random, nationally representative sample of veterans seeking help.<sup>2,3</sup> The initial study collecting this data was the first of its kind in the UK. These datasets have been used in several papers exploring the mental health needs of veterans.

The most prevalent mental health difficulties reported in the initial survey were PTSD, common mental health difficulties such as depression and anxiety, alcohol misuse, and difficulties with anger. In the second sample of veterans surveyed in 2020, common mental health difficulties were again the most reported mental health difficulty, followed by loneliness and low social support.

Veteran mental health is complex, and many veterans experience comorbid mental and physical health difficulties, for example alcohol misuse and PTSD. This highlights the importance of a holistic approach in supporting veterans.

### Veterans deployed to more recent conflicts seek support from Combat Stress more quickly after leaving the military



\*Gap between leaving military and seeking support (years)

### EXPLORING REFERRALS TO COMBAT STRESS

Two studies exploring Combat Stress referrals revealed a fourfold increase in the number of referrals received each year between 1994 and 2014,<sup>4</sup> and an increase in referrals of women veterans between 2012-2022.<sup>5</sup> Those who had served in Northern Ireland consistently made up the highest proportion of referrals each year. However, over time there were significant increases in referrals from those who were deployed to Iraq and Afghanistan, with the latter now the most numerous group.

Over the initial 20-year study period, the time it took for veterans to seek help after leaving service halved from 24 to approximately 12 years. The analysis of referrals from the past decade has shown that this reflects a change in help-seeking behaviours of veterans deployed to more recent conflicts: those deployed to Afghanistan and Iraq are seeking help more quickly after leaving the military than veterans from other conflicts previously.

#### NHS HIGH INTENSITY SERVICE

Combat Stress conducted the first clinical evaluations of veterans' crisis services delivered in the NHS. The High Intensity Service, a part of Op COURAGE, was the first service geared towards veterans at or near point of mental health crisis. Our findings showed that veterans presented with a range of crisis factors and that whole-person, wraparound, psychosocial care was suitable and appropriate in meeting the needs of veterans in crisis.<sup>6,7</sup>

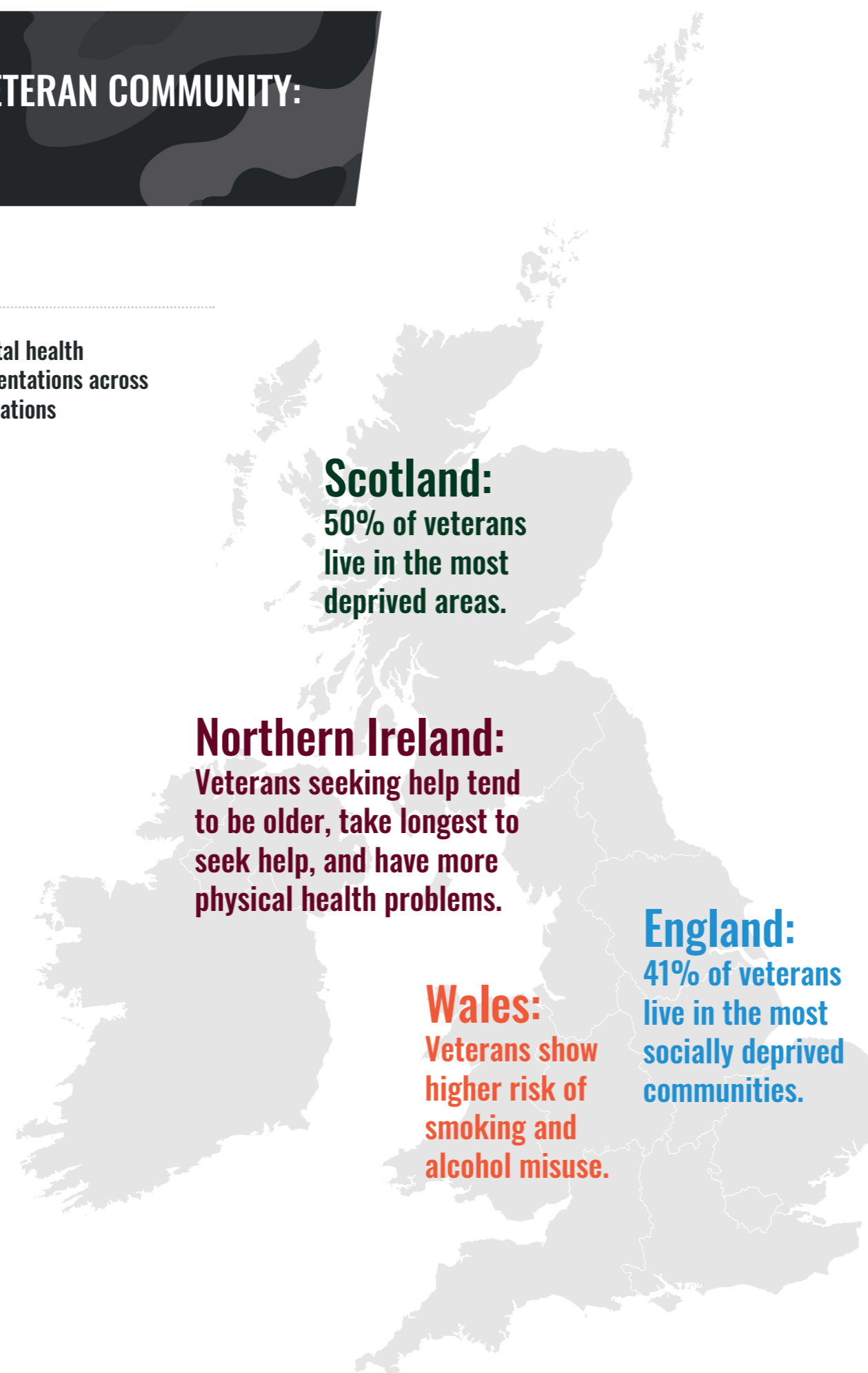
## DESCRIBING THE NEEDS OF THE VETERAN COMMUNITY: DEMOGRAPHIC PROFILE

Several Combat Stress studies have explored the demographic profile of help-seeking veterans. In a study exploring employment, 67% of veterans reported not working, the large majority due to illness. These veterans were likely to have left the military less recently and reported a greater number of physical health problems.<sup>8</sup>

Most veterans surveyed were living in urban areas. Our research indicates that 41% of treatment-seeking veterans live in the most deprived areas of England.<sup>9</sup> Deprivation is indexed using census data which classifies areas according to dimensions such as household income, health, crime, employment, access to services and overall living environment. Taking longer to seek help, being an early service leaver, or not being in a relationship were factors linked with higher levels of deprivation.

Veterans living in Scotland appeared to be at the greatest risk of deprivation followed by veterans living in England and Wales, with those living in Northern Ireland at the lowest risk. Scottish and Welsh veterans had a higher risk of smoking and alcohol misuse, although no statistically significant differences were found in mental health presentations of veterans living in different parts of the UK.<sup>10</sup>

### Mental health presentations across UK nations



### CHILDHOOD ADVERSITY

Childhood adversity is commonly measured by a list of traumatic events or experiences which may occur during childhood, such as physical abuse or being bullied. In a sample of veterans seeking help from Combat Stress, 44% of veterans reported experiencing six or more adverse events in childhood, compared with 24% in the general military population.<sup>11</sup>

Another study grouped veterans into profiles according to the types of adverse childhood experiences they reported, and found that there were no differences between these profiles on the severity of mental and physical health outcomes.<sup>12</sup>

Higher rates of childhood adversity were associated with PTSD, anger, and traumatic brain injury, suggesting veterans with these needs may present with more complex mental health presentations, such as moral injury<sup>13</sup> and CPTSD.<sup>14</sup> Women veterans are also more likely to report adverse childhood experiences.<sup>15</sup> This research highlights the importance of adapting clinical support to take these experiences into account.

### FUTURE DIRECTIONS

Several papers are in production which utilise the most recent dataset exploring veteran needs. These include studies investigating associations between PTSD and obsessive compulsive disorder, as well as executive function; wellbeing in a clinical sample of veterans and other studies exploring physical health.

# DESCRIBING THE NEEDS OF THE VETERAN COMMUNITY: WOMEN VETERANS

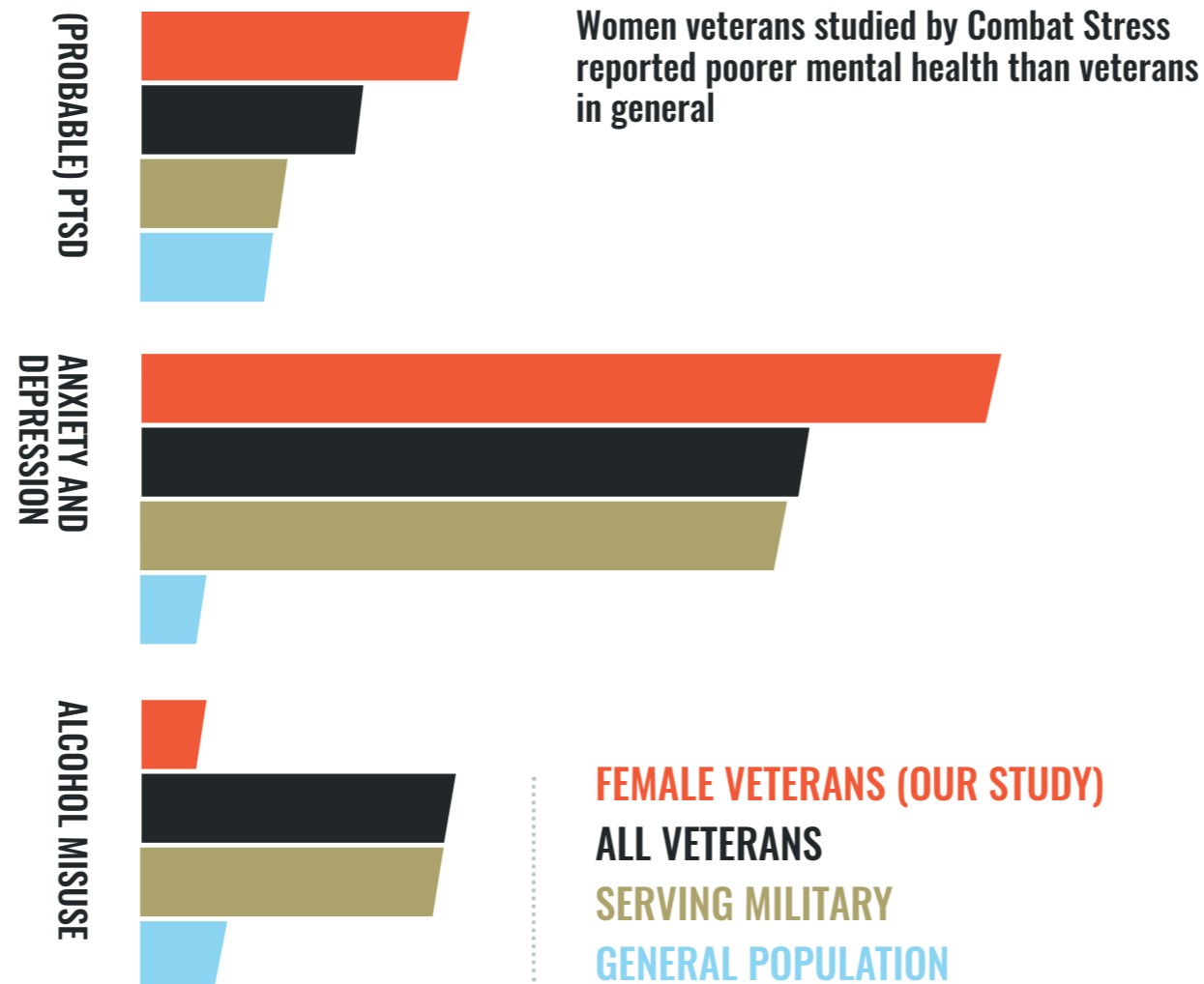
Women comprise 11% of Armed Forces personnel, and this proportion is expected to rise. Combat Stress recruited a cohort of 750 women veterans from the Women's Royal Army Corps (WRAC) Association for a series of studies using the largest sample of its kind to explore the experiences of women service personnel and veterans.

Our analysis revealed that women veterans have poorer mental health than their male counterparts, including higher rates of depression, anxiety and PTSD compared to male veterans and the general population.<sup>16</sup> Multiple mental health difficulties were common: 61.3% of those with PTSD and 33.9% of those with common mental health disorders reported at least one other mental health problem. Loneliness and childhood adversity were also common, with 55% reporting at least one adverse childhood experience. Alcohol misuse was comparatively lower in women veterans, who were also less likely to report anger difficulties than male veterans.

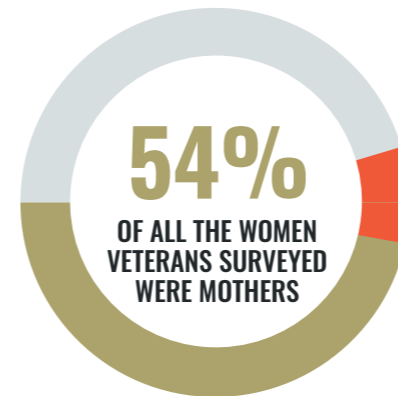
## GENDER SPECIFIC CHALLENGES

Women veterans reported distinct gender-specific adversities and challenges during and after their time serving in the Armed Forces. While serving, these adversities included bullying, sexual harassment, and assault. Those who experienced sexual assault were over two and a half times more likely to suffer from PTSD, and those who reported physical assault were over four times as likely to experience the disorder. Sexual harassment and assault were also significantly associated with physical health problems and alcohol misuse.<sup>17</sup>

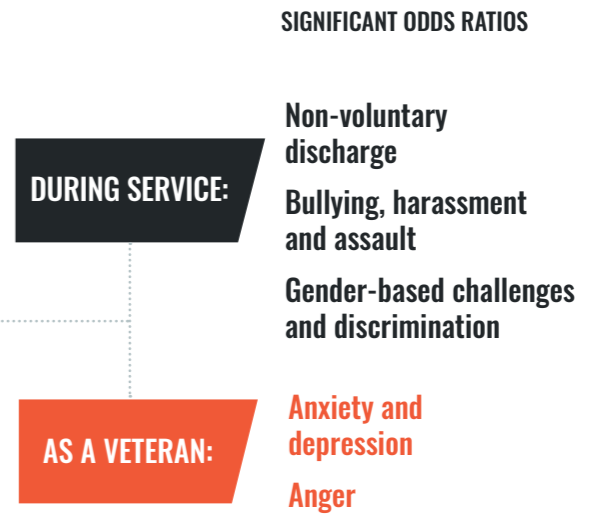
Experiencing emotional bullying during service was significantly associated with reporting a range of post-service negative outcomes including anxiety and depression, perceived low social support, and loneliness.<sup>18</sup> Women veterans also reported broader gender-specific difficulties. During service these included diminished career prospects and a sense of exclusion from their units. After service, these challenges included a lack of recognition as a veteran, and more difficulty accessing veteran services. Experiencing these challenges was linked to poorer health and wellbeing.<sup>19</sup>



## Female veterans timing of first child



Compared to the 54% of mothers who did not have their first child during service, the 14% of mothers who did faced an increased risk of:



## PREGNANCY IN SERVICE

Until 1990 it was military policy to discharge pregnant women. Just over half of the WRAC Association sample (54%) were mothers, 39% of whom felt they were made to leave the military because they had or wanted to have children.<sup>20</sup> Mothers who had their first child during military service (14.5%) had particularly poor outcomes, with 44.1% feeling they were treated differently because of childcare responsibilities. Having a child whilst in military service was associated with poorer health after service including anxiety and depression, anger, poor social support, and loneliness. Negative experiences during military service such as higher gender-specific challenges, high service adversity and non-voluntary discharge were associated with being a mother.

## FUTURE DIRECTIONS

Further work will explore the needs of women veterans through an Office for Veterans' Affairs funded review to understand health inequalities faced by minority veteran groups.

## MINORITY VETERAN GROUPS

Several minority groups serve in the UK Armed Forces. In a 428 veteran sample of treatment-seeking veterans, 97.4% identified as male, and 94.7% identified as white.<sup>3</sup> Both during service and as veterans, individuals who identify with a minority group may face distinct challenges, which may also be relevant to treatment for those seeking support for mental health difficulties. Combat Stress research exploring the experiences of women veterans has been highlighted. In addition to exploring the experiences of women veterans, our studies have also explored the impact of identifying as a sexual minority in the military, and the experiences of Commonwealth veterans. Future research will explore the experiences of other minority groups serving in the UK Armed Forces.

### LGBT+ VETERANS

Until 2000, it was illegal for personnel identifying as gay to serve in the UK Armed Forces. The “ban” led to the investigation and early discharge of thousands of sexual minority veterans. Individuals were also stripped of medals, had pensions withdrawn and were sometimes imprisoned.

The Ministry of Defence has subsequently made public apologies and returned medals, although little is known about the lived experiences of those who served under the ban.

In a Combat Stress study using a sample of older women veterans, around a quarter identified as LGBT+.<sup>16</sup> Ten of these women were interviewed about their experiences. All veterans interviewed reported negative treatment because of their sex or sexuality, including sexual harassment and sexual orientation-based discrimination. However, the women also mentioned buffering factors to these negative experiences, such as positive military experiences including close friendships and travel and sporting opportunities.<sup>21</sup>

Whilst veterans recognised the changes that have occurred in the military, they expressed a need for further improvement in the experiences of women in the Armed Forces, and the possibility that this may reduce attrition of women service members.

### COMMONWEALTH VETERANS

While little is known about the potential barriers to accessing mental health support for veterans from diverse ethnic backgrounds, in 2022 Combat Stress interviewed six veterans from a diverse range of Commonwealth countries including St Lucia, Gambia, Ghana, Fiji, and South Africa who had all served in combat roles in the UK Armed Forces.<sup>22</sup> These veterans reported feeling that they were treated differently, felt unheard when reaching out for help, and highlighted systemic pressures such as financial difficulties, as well as the importance of involving the wider community in mental healthcare.

Minority veteran groups may face additional and unique challenges that may impact on mental health outcomes.

## THE GAY BAN

Until 2000, LGBT+ men and women were banned from serving in the UK armed forces’

## NON-UK

Around **5.8%** of veterans (living in England and Wales) were born outside the UK

## PREGNANCY

Pregnant servicewomen faced discharge from the military until 2000

### FUTURE DIRECTIONS

Further research is needed in this area to understand the particular barriers to mental health support faced by underrepresented groups in the UK Armed Forces. To explore this, Combat Stress is currently developing a model to better explain and understand such barriers.



# SUPPORTING MILITARY PARTNERS AND FAMILIES

An initial Combat Stress study revealed that partners of veterans in treatment face an increased risk of developing depression and anxiety, and problematic alcohol use compared to the general population.

Military partners may also experience secondary traumatisation through exposure to their partner's experiences.<sup>23,24</sup> A scoping study which interviewed veterans' partners identified a need for a more structured, evidence-based intervention for partners to address the common challenges they had reported. This included the sense of inequality in their relationships, volatile environments, and emotional distress and isolation.<sup>25</sup>

## THE TOGETHER PROGRAMME

The Together Programme (TTP)<sup>26</sup> for partners of UK veterans was funded by the Royal British Legion and drew on the effectiveness of similar US programmes. Initially, 51 partners completed a five-week psychoeducation-based support programme across the UK.

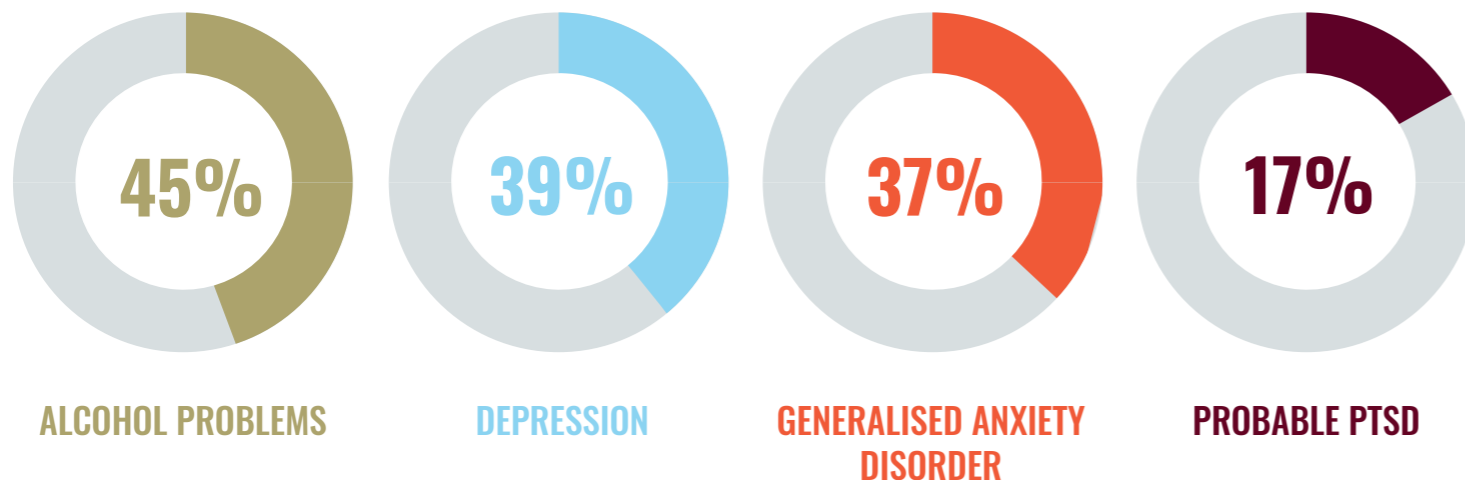
TTP resulted in significant reductions in anxiety, depression, and PTSD symptoms in partners three months after it finished, as well as reported improvements in relationship satisfaction. The vast majority (94%) of partners were extremely likely to recommend the programme to family and friends.<sup>27</sup>

## THE TOGETHER PROGRAMME: REMOTE

Having identified potential barriers to taking part in TTP, such as childcare and travel costs, as well as the Covid-19 pandemic, The Together Programme webinar was developed<sup>28</sup> and evaluated in a 2020 randomised controlled trial.<sup>29</sup> This online intervention focused on skills in managing difficult emotions and connecting with partners.<sup>30</sup>

Partners reported increased confidence in recognising PTSD symptoms and understanding different communication styles. Levels of general psychological distress showed more improvement amongst partners who completed the programme than those who were placed on a control waitlist.<sup>31</sup>

## Prevalence of mental health difficulties in a sample of partners of military veterans



## Some quotes from partners who took part in The Together Programme



WE COMMUNICATE MUCH MORE. HE WILL TELL ME HOW HE IS FEELING"

BEING ABLE TO HAVE THOSE CONVERSATIONS AND LISTEN TO PEOPLE'S STORIES MADE ME FEEL REALLY STRONG"

WE ARE IMPORTANT TOO"

IT MADE YOU FEEL LIKE YOU ARE NOT THE ONLY ONE, WHICH YOU DO BEFORE YOU START"

## VETERAN FAMILIES

Recent Combat Stress research has explored military fathers' experiences as parents while living with PTSD. In interviews about their experiences, veterans highlighted evolving views of themselves as parents, and a need to protect their children from their diagnosis.<sup>32</sup> However, they also emphasised the distracting yet positive motivational influence of their children in their recovery. A review of previous research on the psychological health of veteran families within the Five Eyes alliance countries of Australia, Canada, New Zealand, UK and USA, found that partners of veterans had higher prevalence of anxiety, depression and PTSD. Adult children were also at a higher risk of these difficulties.<sup>33</sup>

## FUTURE DIRECTIONS

The Together Programme continues to be offered to partners of veterans within the Combat Stress service and feedback for the programme remains positive. A PhD project is currently exploring the impact veterans' CPTSD has on how they parent..

# THE NATURE OF PTSD IN VETERANS

Post-traumatic Stress Disorder (PTSD) is characterised by symptoms of re-experiencing, avoidance, negative alterations in mood and thinking, and hyperarousal, although the disorder can present in various ways across different individuals.

Research has shown that PTSD can impact negatively on many aspects of day-to-day life, including work and relationships. It is clinically useful to understand the specific nature of PTSD in veterans so that the PTSD diagnosis is well defined, and effective support can be targeted.<sup>34</sup> Around 70% of clinical samples of veterans meet diagnostic criteria for PTSD, compared to approximately 6% of the UK military.

Symptoms found to be most central to PTSD in a Combat Stress sample

**RECURRENT NEGATIVE  
THOUGHTS NIGHTMARES  
NEGATIVE EMOTIONS  
HEIGHTENED STARTLE  
RESPONSE FEELINGS OF  
DETACHMENT**

Our studies have explored the specific presentations of PTSD in veterans. One study found that recurrent thoughts and nightmares, a negative emotional state, feelings of detachment and an exaggerated startle response were most central to PTSD in veterans.<sup>35</sup> Another study revealed that not all veterans present with the same profile of PTSD symptoms. Across the six different profiles, some veterans may experience more severe symptoms and an emphasis on different groups of symptoms.<sup>36</sup> We also developed a model to describe the recovery of veterans who had been treated for PTSD. Over two-thirds could be classified as having a positive treatment response according to this model.<sup>37</sup>

Another Combat Stress study compared large samples of Australian and UK veterans, finding that the UK cohort tended to be younger, were more likely to have served in the army, served for longer in the military and took longer to seek help.<sup>38</sup> The UK cohort also exhibited more severe symptoms of PTSD, anger difficulties, as well as anxiety and depression.

## IMPLICATIONS FOR TREATMENT

Together, these studies suggest interventions that are tailored to specific symptom profiles, and which target the most central symptoms may quicken recovery. In a sample of veterans who completed an intervention for PTSD, higher levels of prior anxiety and depression were associated with less of an improvement in symptoms, indicating that treating these symptoms before a PTSD intervention may lead to better outcomes.<sup>39</sup>

PTSD may also be associated with cognitive biases, such as excessive attention to threat.<sup>40</sup> In a review of the evidence of 21 studies on this topic, when tasked with completing sentences, veterans with PTSD were more likely to give them negative endings compared with veterans without PTSD, who tended to give neutral endings.<sup>41</sup> This, along with findings using other test of cognitive biases, tentatively support the use of skills-based training in targeting PTSD symptoms.

Another systematic review explored the evidence base specifically for the treatment of PTSD-related guilt, shame and anger in veterans.<sup>42</sup> Findings suggested that cognitive- and exposure-based treatments are similarly effective in reducing post-trauma related guilt and anger, although longer term comparisons in treatments could not be made.

## MEASURING PTSD

Various measures of PTSD have been developed, although there is variation in the cut-off scores used to indicate probable caseness of the disorder, with a trend for higher scores with veteran samples. A Combat Stress study explored optimum cut-off scores using a clinical sample of veterans.<sup>43</sup> Findings supported the use of brief psychometric measures of PTSD in veterans which can be an advantage since veterans can complete these themselves.

## POSTTRAUMATIC GROWTH

Posttraumatic growth has been described as an experience of positive changes to daily functioning following a traumatic event. The phenomenon has been explained as 'growth' that accompanies the process of dealing with and overcoming trauma. Two Combat Stress studies have explored posttraumatic growth.<sup>44,45</sup> An association was found between improvements in symptoms of PTSD and depression and self-reports of posttraumatic growth.

## FUTURE DIRECTIONS

In 2023, we will begin a clinical trial investigating the feasibility and acceptability of using virtual reality to augment CBT to overcome avoidance central to mental health presentation in veterans. We aim to recruit eight to ten veterans for this study.

# COMPLEX PTSD IN VETERANS

A key development for veteran research in the last decade has been the addition of complex post traumatic stress disorder (CPTSD) as a diagnosis to the International Classification of Diseases (ICD-11). Combat Stress research indicates that CPTSD may be more prevalent than PTSD in treatment-seeking veterans.

CPTSD consists of the core PTSD symptoms of hyperarousal, avoidance, and re-experiencing, plus additional symptoms of difficulties in emotion regulation, relationships, and negative beliefs about the self.

Together, these additional three symptoms are referred to as disturbances in self-organisation (DSO).

### MEASURING CPTSD: THE INTERNATIONAL TRAUMA QUESTIONNAIRE (ITQ)

Combat Stress has been part of a wider research group developing the first measure of CPTSD symptoms: the self-report International Trauma Questionnaire (ITQ). Our studies have validated the ITQ as an accurate and reliable measure of CPTSD in veteran samples.<sup>46</sup>

Combat Stress research has found that veterans with CPTSD tend to take longer to seek help, reported higher rates of childhood adversity and experienced high rates of emotional or physical bullying during their time in the military. CPTSD was also associated with higher rates of comorbid difficulties including anger, common mental health disorders, social isolation, sleep difficulties, dissociation, and impaired functioning.<sup>14</sup>

### DEVELOPING AN INTERVENTION

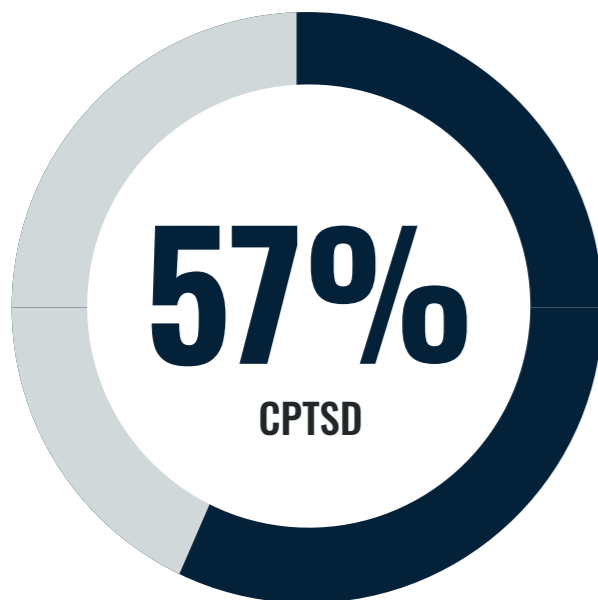
Typical trauma-focused interventions for PTSD may be less effective for CPTSD. A Combat Stress study interviewed veterans to explore possible barriers facing veterans with CPTSD in accessing support.<sup>47</sup> Study findings suggested the CPTSD symptom of negative self-concept in particular may deter veterans from seeking help. As such there is a need to develop evidence-based treatments for CPTSD.

Combat Stress has conducted the first study of its kind into a novel treatment for CPTSD in veterans. Funded by the Forces in Mind Trust, we have conducted a randomised controlled trial into the effectiveness of Enhanced Skills Training in Affective and Interpersonal Regulation (ESTAIR). ESTAIR sequentially targets all symptom clusters of CPTSD.

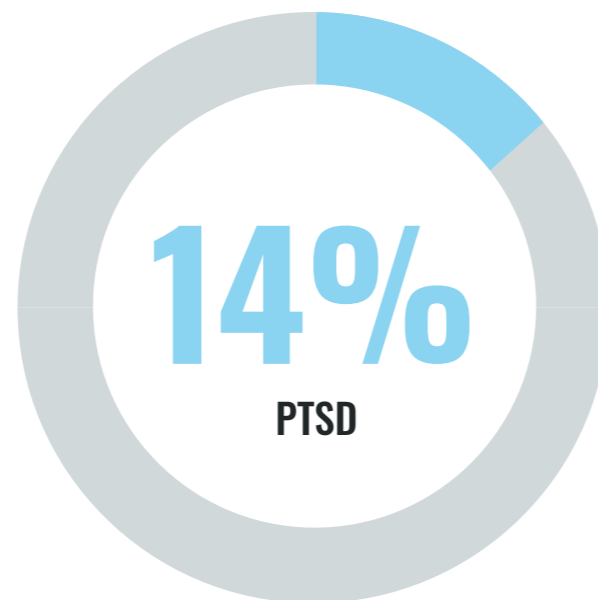
Preliminary results of this study suggest that the intervention is acceptable by the participants and that it can significantly reduce the symptoms of CPTSD in veterans when compared to standard care

**COMPLEX PTSD MAY DEVELOP FOLLOWING SUSTAINED OR MULTIPLE EXPOSURES TO TRAUMA, AND MAY BE LESS RESPONSIVE TO TRADITIONAL THERAPIES FOR PTSD**

## Symptoms of CPTSD (symptoms of PTSD plus symptoms of disturbances in self-organisation)



- Heightened threat
- Avoidance
- re-experiencing



- Affective dysregulation
- Negative self-concept
- Relationship disturbances

### FUTURE DIRECTIONS

Treatments for CPTSD will be further explored in studies comparing the relationships between DSO symptoms and PTSD symptom clusters with mental health presentations involving moral injury, physical health and obsessive compulsive disorder.

# MORAL INJURY IN VETERANS

Moral injury may occur when individuals face events or experiences that transgress their deeply held moral and ethical beliefs. Such events are referred to as potentially morally injurious events (PMIEs) and could involve witnessing, being the victim of, or committing an act of harm or an act of omission. Moral injury often comprises feelings of guilt, shame, disillusionment and anger and is associated with mental health problems such as PTSD, suicidal ideation, and depression. Moral injury is increasingly

being recognised clinically as a difficulty that veterans may face. Combat Stress has published several papers on moral injury and along with collaborators, is leading research in this area.

## CONCEPTUALISING MORAL INJURY

Several Combat Stress studies have explored the nature of moral injury in veterans.<sup>48-53</sup> Quantitative studies have found that veterans who meet criteria

for probable PTSD, CPTSD, physical health problems, possible anger difficulties and common mental health difficulties are more likely to report expressions of moral injury.<sup>54</sup> Whilst PTSD and moral injury are often experienced together, analysis has revealed that they are distinct. Overlapping symptoms appear to centre on disturbances in self-organisation which are a defining feature of CPTSD.<sup>55</sup> Moral injury is also associated with poorer outcomes following gold standard treatments when it co-occurs with PTSD.

In qualitative interviews, veterans described feeling that their relationship with the world around them has been deeply altered by their PMIE experiences. Another theme was a sense of veterans feeling undeserving of support or recovery, which presents a challenge to treatment.<sup>56</sup> Building on this, a recent paper proposes a conceptualisation of moral injury as socially embedded, and recognises predisposing factors to moral injury, cognitive appraisal patterns and maintaining patterns.<sup>57</sup>

## MEASURING MORAL INJURY

Combat Stress has been involved in developing a measure of moral injury: the Moral Injury Outcomes Scale (MIOS).<sup>58</sup> Six domains characterising the impact of moral injury were found by building on research and interviews with stakeholders. Further statistical analysis revealed a 14-item scale which reliably indicated moral injury difficulties across different samples. The scale can be split into shame-related moral injury factors, and those relating to violations of trust.

## DEVELOPING A TREATMENT: RESTORE AND REBUILD

As part of a wider team, Combat Stress conducted research to understand the best treatments for symptoms associated with moral injury-related mental difficulties. This research involved key stakeholders including veterans with lived experience of morally injurious events, clinicians and members of the clergy

who have supported them. A manualised treatment (Restore and Rebuild)<sup>59,60</sup> was developed, informed, and co-designed by these initial studies. Restore and Rebuild involves elements of psychoeducation, Cognitive Processing Therapy, Acceptance and Commitment Therapy, and Compassion-focused Therapy. The aims of treatment are to address maladaptive thoughts and emotions related to the morally injurious event and create a new understanding of it.

A pilot study then explored the feasibility of Restore and Rebuild as a moral injury intervention. The novel treatment was delivered to 20 veterans seeking treatment at Combat Stress.

**“I’m talking loads more with my wife about what happened. I am able to open up a little bit more and just be a little bit kinder to myself. I think they can see a softness within me. My daughter came up and gave me a hug yesterday and just said ‘you alright, how did treatment go today?’ So, conversations are getting better, softer and more understanding since starting this treatment, which is fantastic.”**

**Veteran participating in Restore and Rebuild treatment.**

## FUTURE DIRECTIONS

Building upon the success of the pilot study, the research team have secured further funding for a randomised controlled trial (RCT) of Restore and Rebuild which started in June 2023 and is due to be completed in 2026. The RCT is funded by the Forces in Mind Trust.

## MORAL INJURY CAN ARISE FROM PERPETRATING, FAILING TO PREVENT, BEARING WITNESS TO, OR LEARNING ABOUT ACTS THAT TRANSGRESS DEEPLY HELD MORAL BELIEFS AND EXPECTATIONS

[YOUTUBE.COM/WATCH](https://www.youtube.com/watch)

### What is moral injury and how does it differ from PTSD?

	PTSD	MORAL INJURY
TRIGGER EVENT	ACTUAL OR THREATENED DEATH OR SERIOUS INJURY	ACTS THAT VIOLATE DEEPLY HELD MORAL VALUES
INDIVIDUAL'S ROLE IN EVENT	VICTIM WITNESS	PERPETRATOR VICTIM WITNESS
MAIN EMOTION	FEAR HORROR HOPELESSNESS	GUILT SHAME ANGER
SYMPTOMS OF RE-EXPERIENCING	✓	✓
AVOIDANT OR NUMBING BEHAVIOURS	✓	✓
FEAR-BASED PHYSICAL RESPONSE	✓	✗
WHAT IS LOST?	SAFETY	TRUST

# MILITARY SEXUAL TRAUMA

Military sexual trauma (MST) is defined in the international research literature as sexual assault, harassment and bullying experienced during military service. Across the globe, servicewomen are disproportionately the targets of MST, with a prevalence exceeding ten times that for men. Research by Combat Stress and others has shown MST is associated with PTSD, anxiety, and depression, as well as poor social support in later life as a veteran.<sup>17</sup> Indeed, MST is considered one of the leading causes of PTSD amongst women veterans.

## ENHANCE

The ENHANCE study by Combat Stress and funded by the Office for Veterans' Affairs, examined how to improve access to the best evidence-based treatments for women veterans who had experienced MST. The 12-month project comprised three work packages, as well as involving an expert stakeholder group which included those with lived experience in the co-production of the project.

The first phase of ENHANCE involved a review of all published international research literature on treatments for PTSD resulting from MST in women veterans.<sup>61</sup> Overall, trauma-focused therapies had the

## The three stages of the ENHANCE study

01

**SYSTEMATIC REVIEW**

02

**QUALITATIVE STUDY**

03

**KNOWLEDGE MOBILISATION**

**ATTITUDES TO MENTAL HEALTH AND HELP-SEEKING**

**ACKNOWLEDGING UNIQUENESS**

**CARE PROVISION**

**VIEWS ABOUT THE SELF**

**INVALIDATION OF TRAUMATIC EXPERIENCES**

**CONSEQUENCES OF SEEKING HELP**

**VETERANS NOT CIVILIANS**

**WOMEN VETERANS NOT MEN VETERANS**

**VALIDATION AND OUTREACH**

**INFORMED GATEKEEPERS**

**APPLICABILITY OF TREATMENT**

Women veterans reported a number of themes common in their experiences of mental ill health and seeking help and support.

largest and best evidence base for treatment efficacy. Cognitive Processing Therapy (CPT) in particular had the strongest evidence base of these. CPT was originally designed for those with sexual trauma histories, and potentially attends to a wider range of psychological consequences specific to sexual trauma, such as feelings of shame, compared to other more generalised trauma-focused therapies.

The second phase comprised in-depth interviews with 19 women veterans, all of whom reported symptoms of PTSD in the preceding two years, although not all had sought mental health support and treatment.<sup>62</sup> Qualitative analysis revealed three themes around help-seeking and experiences of mental ill health: beliefs; belonging; and health care provision. Although many of themes were shared with the veteran population as a whole, women veterans reported additional and heightened complexity as a result of their gender and experiences during military service.

Women veterans reported that military attitudes concerning stoicism and equating illness with weakness act as a barrier to help-seeking both during and after military service. Secondly, women veterans wish to be acknowledged as unique in support and treatment provision. Thirdly, veteran mental health care professionals need to be better supported to understand the needs and experiences of women veterans.

The final phase synthesised the findings from the previous packages, to produce education materials on MST and treatment for PTSD in women veterans for professionals working with veterans. Recommendations for policy makers were also produced.

### FUTURE DIRECTIONS

Working in partnership with King's College London, a London Interdisciplinary social science-funded PhD is exploring the impact of MST in men and women veterans.

# BARRIERS TO TREATMENT

Understanding the present barriers to accessing support for UK service personnel with mental health difficulties is important because this may provide guidance on how to improve veterans help-seeking. Our research indicates that veterans who take longer to seek help for their difficulties are male, younger, and have a war pension.

## BARRIERS

Combat Stress research has highlighted perceived and experienced stigma as a key barrier to help-seeking behaviours.<sup>63</sup> Internal stigma in the form of negative views about the self and mental health difficulties, are particularly influential.<sup>64</sup> Practical barriers such as lack of knowledge about available services, and feeling non-military, non-specialist services are inappropriate to veterans' needs are also prominent barriers.

## Themes reported by women veterans in a study exploring their experiences of mental health support

### BEFORE TRAUMA

HIGH RATES OF CHILDHOOD AVERSITY

ATTACHMENT ISSUES (MALADAPTIVE RESPONSES: HIGH AVOIDANCE AND ANXIETY)

MILITARY CULTURE (ALCOHOL, EMOTIONAL AVOIDANCE)

### DURING TRAUMA

MULTIPLE TRAUMA

SHAME & GUILT COMMON EMOTIONS RATHER THAN FEAR-BASED

HIGH AVOIDANCE/ ROLE OF ALCOHOL

### AFTER TRAUMA

HELP-SEEKING ISSUES (IN PARTICULAR INTERNAL STIGMA)

POST-SERVICE TRANSITION (HIGH RATES OF FUNCTIONAL IMPAIRMENT)

PHYSICAL HEALTH (INCREASED RISK VS GENERAL PUBLIC)

CO-MORBID MENTAL HEALTH DIFFICULTIES

## EXPLORING BARRIERS TO ACCESSING SUPPORT IS A KEY AREA OF RESEARCH. MINORITY VETERAN GROUPS MAY FACE ADDITIONAL OR DIFFERENT BARRIERS WHICH ARE RELEVANT TO TREATMENT

Another study explored how veterans themselves conceptualised the idea of recovery, interviewing nine veterans who had participated in the six-week Combat Stress Residential Treatment Programme.<sup>66</sup> Veterans emphasised the group framework as being a familiar context which supported recovery, highlighting the shared experience. They also raised ideas around feeling they had accepted their PTSD diagnosis, and rebuilding their everyday life, for example in managing relationships as key to their notion of recovery. These themes highlight areas of focus which could promote perceived ideas of recovery and therefore facilitate help-seeking.

## FACILITATORS

Taking a different approach to examining access to support services, a qualitative study used interviews to explore factors which encourage or push military personnel with PTSD to engage in help-seeking. Findings mirrored the barriers explored in other research, with individuals highlighting five main factors which encouraged them to seek help: having reached a 'crisis point; a need to overcome feelings of shame; feeling 'in control' of the process; finding an explanation for their symptoms which was psychological in nature; and having a strong network of social support.<sup>65</sup>

## GENDER-SPECIFIC BARRIERS

A 2021 study identified gender-specific barriers to accessing support after military service using a questionnaire which asked women veterans to describe their experiences of help-seeking.<sup>19</sup> Identified barriers included a lack of access through being unaware of available options, a poor understanding from professionals, gender-related discrimination and feeling that support services were specifically designed for male veterans. Women veterans also highlighted stigma associated with accessing help, and discrimination after identifying as LGBT+.

## FUTURE DIRECTIONS

Future work will explore barriers particular to veterans in underrepresented veteran groups. An ongoing strand of research is exploring similarities and differences in the barriers and facilitators to accessing mental health treatment for a range of underrepresented veteran groups. This includes older and younger veterans, veterans with caring responsibilities, and those with non-mental health disabilities.

# EVALUATING COMBAT STRESS TREATMENT OUTCOMES

Our research facilitates the development of and explores the feasibility and effectiveness of new and existing clinical interventions offered by Combat Stress. The findings of some of this work are outlined here. Clinical pathways at Combat Stress are described in a 2016 paper.<sup>67</sup>

## INTENSIVE TREATMENT PROGRAMME

Between 2012 and 2014, Combat Stress offered veterans with PTSD an intensive six-week residential treatment programme which involved group sessions, individual trauma-focused therapy, as well as adjunctive occupational therapy, yoga and art therapy. Our research explored the recovery trajectories of 960 veterans at set time points in the year following their treatment.<sup>68</sup> Analysis indicated that 71.3% of veterans could be classed as having a positive treatment response.

Another study evaluated the patient acceptability of the programme by interviewing eight veterans who took part. Veterans highlighted the benefits of living in a 'bubble', with other veterans able to support them after 1:1 therapy sessions and being able to relate to each other through shared experiences.<sup>69</sup> However, veterans also emphasised the importance of cohort dynamics, and the possible negative effects of a non-cohesive cohort. Another study which followed up veterans at 12 months found a significant improvement in PTSD symptoms, although individuals with higher levels of functional impairment and alcohol problems exhibited less improvement<sup>70</sup>.

## ANGER MANAGEMENT PROGRAMME

Symptoms of anger and aggression are often more prevalent in veterans, although those with PTSD are more likely to report difficulties with anger.<sup>71</sup> A review of interventions for anger difficulties in veterans found that more integrative approaches may support veterans with these difficulties.<sup>72</sup>

## EXPLORING HOW PROGRAMMES CAN BEST SUPPORT VETERANS IS AT THE HEART OF THE WORK WE DO

A two-week Combat Stress residential programme was offered to 172 veterans experiencing difficulties with anger. The programme utilised principles from Cognitive Behaviour Therapy and Dialectical Behaviour Therapy and included individual as well as group sessions. Our research found that after treatment, anger difficulties on average reduced to a level no longer considered indicative of anger problems. Veteran symptoms of PTSD, anxiety and depression also improved.<sup>73</sup> Treatment appeared to be less effective for those with more severe pre-treatment depression, those who were unemployed, not in a relationship and classed as early service leavers (serving less than four years).

## ART THERAPY

Combat Stress offers art therapy as a pathway for veterans with PTSD. Combat Stress studies have suggested that art therapy can help veterans with PTSD,<sup>74</sup> perhaps alleviating symptoms of

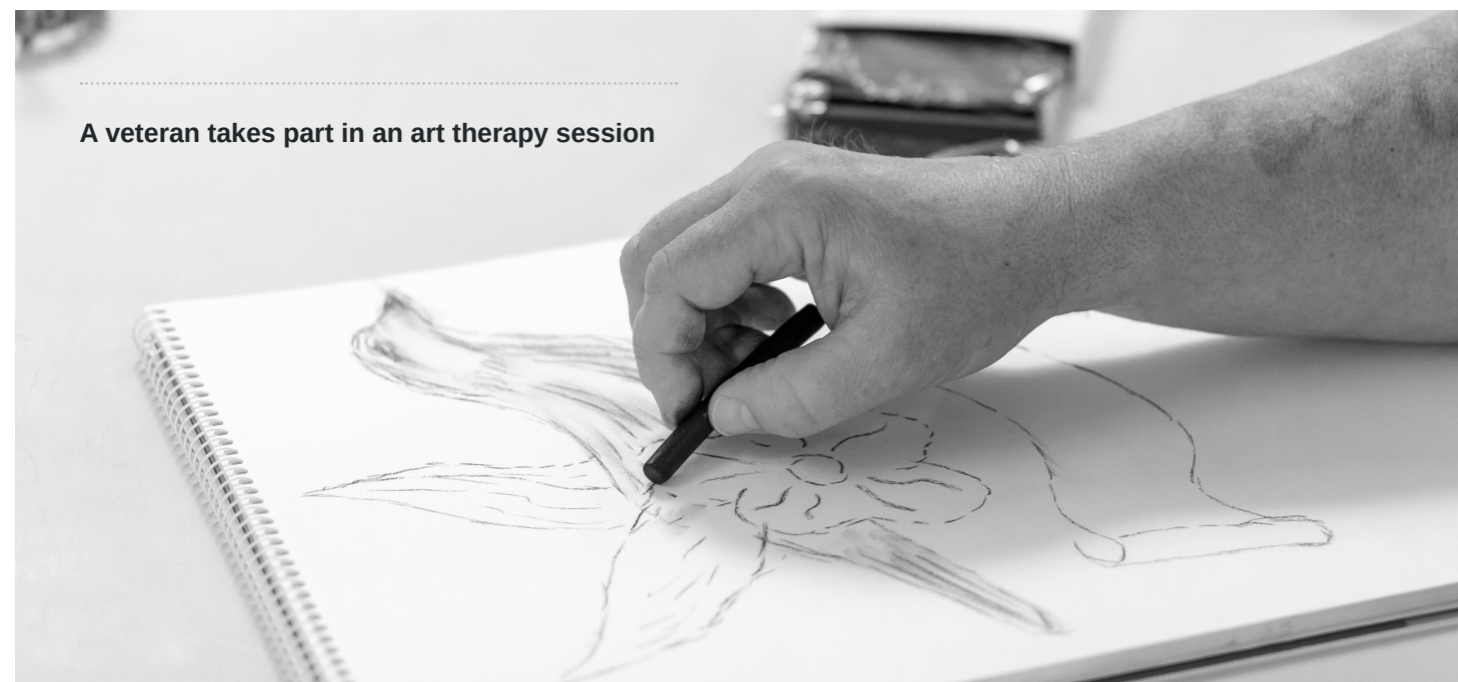
avoidance through the nonverbal creative process<sup>75</sup> as well as with symptoms of moral injury.<sup>76</sup> Another study explored the acceptability of the art therapy programme through a questionnaire which 547 veterans responded to. On average, veterans rated the usefulness of the sessions as 4.4 out of 5.<sup>77</sup> Veteran comments highlighted the benefits of the group context and being able to share difficult feelings. A study interviewing veterans about their experiences taking part in a museum-based art therapy programme. Veterans suggested the museum context stimulated the creative process, although for some this led to a fear of disengagement in case objects prompted negative emotions.<sup>78</sup>

## RANDOMISED CONTROLLED TRIALS FOR TRAUMA-RELATED MENTAL HEALTH DIFFICULTIES

As described, the Combat Stress research department has been involved in developing novel treatments to address presentations of mental health difficulties which were not previously targeted by tailored interventions. As part of the RESTORE study, 56 veterans presenting with CPTSD difficulties were randomly allocated to receive ESTAIR or usual evidence-based treatments at Combat Stress.<sup>79</sup>

## FUTURE DIRECTIONS

An ongoing moral injury RCT aims to evaluate the efficacy of the Restore and Rebuild, a novel intervention the team developed with collaborators for moral injury.



A veteran takes part in an art therapy session

# ALCOHOL MISUSE AND GAMBLING

Several studies have explored the nature of alcohol misuse in treatment-seeking veterans. Compared to civilians, UK veterans are almost twice as likely to suffer from alcohol misuse, which is associated with PTSD and difficulties with everyday functioning.<sup>80</sup> However, when a Combat Stress study compared data between veteran and general public groups admitted to a general UK hospital, there was no difference found in terms of the severity of alcohol misuse.<sup>81</sup> However, veterans who were referred tended to be older, admitted for longer, and presented to the hospital with physical health difficulties prior to being treated for alcohol misuse.

Our research indicates high rates (43%) of alcohol misuse in veterans who are seeking help for mental health difficulties,<sup>3</sup> although the prevalence is estimated to be lower in women veterans.<sup>16</sup> One study found that treatment-seeking veterans are more likely to report alcohol dependence and alcohol-related harm compared to the general Armed Forces population and UK public.<sup>82</sup> This study showed that PTSD, anger, anxiety and depression and functional impairment were all related to more severe alcohol misuse, whereas being older and not in work was linked with reduced alcohol misuse.

## COMORBID ALCOHOL ABUSE


Combat Stress studies have also indicated high rates of combined alcohol misuse and PTSD. Our work found that sleep disturbances and reckless behaviour

## The **DrinksRation** app helps veterans drink less alcohol.

Drinking Recap
Done

Your Drinking
How You Compare
Drinking Advice


You need to use **DrinksRation** a little more before we can personalise the feedback to you. But here is how you're doing based on what you've told us so far



You've had 5 units of alcohol over the last week

That's equivalent to **5** single shots of spirit; or **2** half a pints of lager; or **2** 250ml glasses of wine

You spent **£5** over the last week on alcohol. That's



This equates to **£364** per year

# VETERANS REPORTED IMPROVEMENTS IN MANAGING THEIR MENTAL AND PHYSICAL HEALTH, FUNCTIONING, SELF-ESTEEM AND FEELINGS OF TRUST AND HOPE.

were the symptoms most central to the overlap and co-occurrence of these disorders.<sup>83</sup> Therefore, these symptoms may be specific targets for treatment, which could result in shorter interventions in veterans with both PTSD and alcohol misuse.

Veterans with problematic alcohol use are likely to attend fewer appointments and may have a negative perception of mental health treatment. It is therefore important to develop treatments which address alcohol misuse to improve engagement with, and outcomes following treatment for mental health difficulties.

## CASE MANAGEMENT APPROACH

A pilot study explored the effectiveness of a Veteran's Substance Misuse Service which utilised specialist nurses to refer veterans to Combat Stress or other appropriate services.<sup>84</sup> Following treatment, veterans reported improvements in managing their mental and physical health, functioning, self-esteem and feelings of trust and hope and the case management approach was found to be feasible.

## DRINKSRATION APP

Combat Stress has developed an app intervention to target alcohol misuse in veterans, following a review of research which found that smartphone-based interventions for alcohol misuse found that more research was needed to explore their potential.<sup>85</sup> The DrinksRation mobile app was tailored to address the

social context and aspects of drinking experienced by the UK Armed Forces community. The app includes interactive features such as personalised messaging to enhance motivation. Initial evidence on the useability of the app, based on ratings of veterans and expert service-providers as well as interviews, revealed users found the app straightforward to use, suitably tailored to veterans and easier to engage with than other apps.<sup>86</sup>

Feedback was incorporated into a version of the app used in a randomised controlled trial.<sup>87</sup> A total of 123 were allocated to either DrinksRation or a control app which provided government guidance on alcohol. Self-reported alcohol units consumed reduced by an average of 28.2 in the veterans using the interactive app compared to a 10.5-unit reduction in the comparison app. There was also a significant reduction in AUDIT score – which measures potential harmful drinking – of 3.9 in veterans using DrinksRation.<sup>87</sup>

## FUTURE DIRECTIONS

The DrinksRation app is currently being adapted for a future RCT with women veterans. A further RCT funded by the Office for Veterans' Affairs and in collaboration with Swansea University and King's College London is investigating the effectiveness of a smartphone app in supporting veterans with co-occurring gambling disorder and a mental health diagnosis.



# PHYSICAL HEALTH AND TRAUMATIC BRAIN INJURY (TBI)

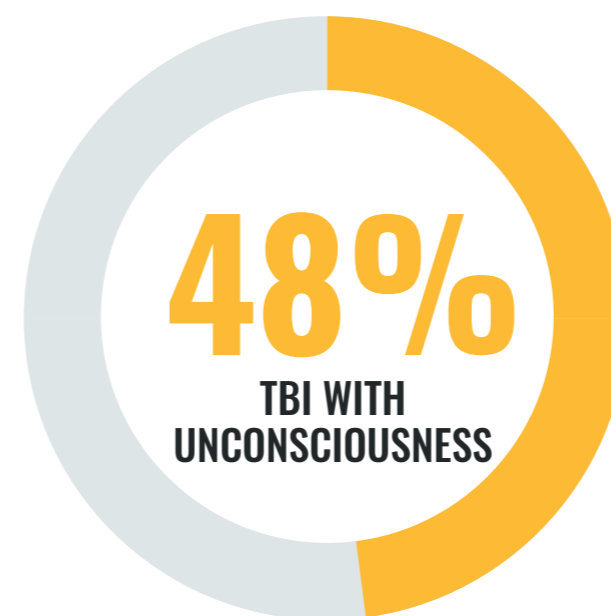
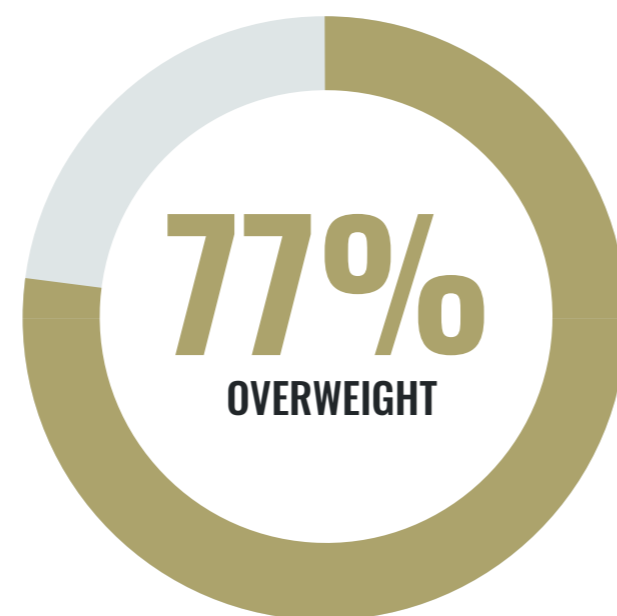
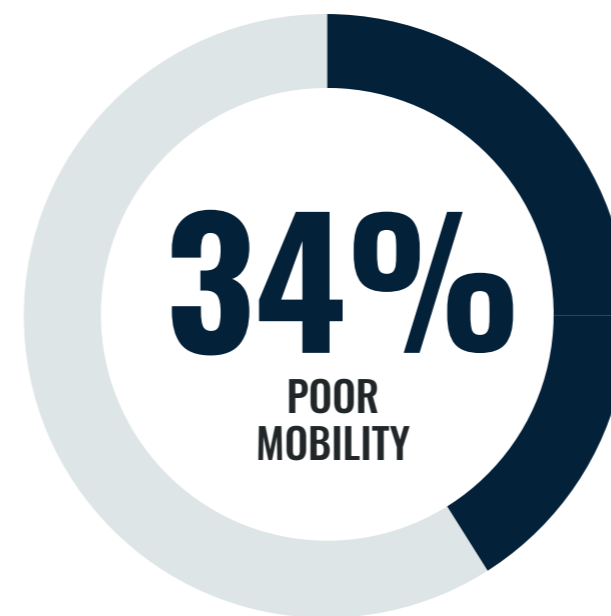
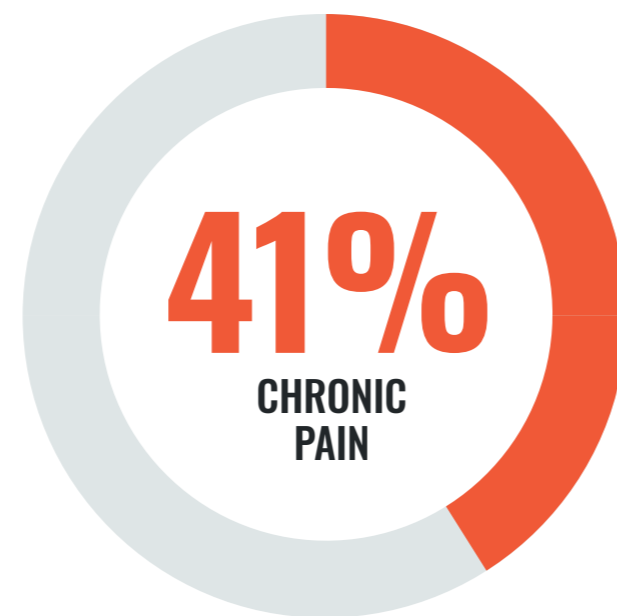
Little research has explored the physical health of UK veterans seeking treatment for mental health difficulties.<sup>88</sup> Out of a possible 13 physical health problems asked about in a Combat Stress study, the average number of such difficulties reported by veterans was 2.41. The most reported physical health problems in a sample of veterans were chronic pain (41%) and poor mobility (34%).<sup>89</sup>

Out of 384 veterans in the sample, the majority had a body mass index (BMI) classed as overweight or obese (77%; 294 veterans). Those who were obese were two to four times more likely to report the most prevalent physical health complaints. A higher BMI was also associated with a greater risk of anger, and common mental health difficulties.<sup>90</sup>

Veterans with PTSD were more than twice as likely to report chronic pain. Veterans who were not working due to illness, were medically discharged from the military, who reported experiencing a traumatic brain injury, were classed as overweight and who were between 45–54 years old were more likely to report chronic pain and poor mobility. Veterans who met criteria for a common mental health disorder were 2.8 times more likely to report gastrointestinal problems compared to those who did not have a common mental health difficulty.

This research suggests that veterans with complex mental health presentations may also experience a high burden of physical health difficulties, which may be relevant for health services during assessment and treatment of help-seeking veterans.

## Physical health problems reported by a sample of military veterans



## TRAUMATIC BRAIN INJURY (TBI)

A series of studies have explored traumatic brain injury (TBI) in veterans.<sup>88,91,92</sup> Almost half of veterans of treatment-seeking veterans reported a history of traumatic brain injury (TBI) accompanied by loss of consciousness (48%).<sup>93</sup> TBI was linked with drug use and childhood adversity. More modest associations were found between TBI and early service termination, likelihood of unemployment and physical health problems including chronic pain and poor mobility.

Another study explored rates of brain injury and symptoms of post-concussion syndrome (PCS).<sup>94</sup> In this study, 63% of treatment-seeking veterans reported a TBI. No relationship was found between TBI and PCS, although those who reported a TBI had an increased risk of common mental health problems and anger difficulties. These findings could be particularly relevant in the rehabilitation of veterans with TBI.

## FUTURE DIRECTIONS

Ongoing studies are exploring the relationships between physical health, PTSD and MST in women veterans, as well as the relationship between moral injury and physical health.

# EXPLORING RISK IN VETERANS

Suicide rates in the UK Armed Forces are reported to be lower than in the general UK population. However, research indicates that particular sociodemographic and military characteristics may increase risk. Risk is also likely to be variable in help-seeking populations. Due to inconsistency in the existing literature on the profile of risk in veterans, Combat Stress has explored this further.

One such study linked questionnaires asking about military experiences, pre-enlistment factors, and health to risk assessments from clinical records.<sup>2</sup> Analysis indicated that suicide ideation was significantly higher in veterans who were unemployed, were early service leavers and in those with a history of childhood adversity. Taking longer than five years to seek help was associated with a reduced risk of suicide ideation, and no links were found between health outcomes and suicide ideation.<sup>95</sup>

## RISK BEHAVIOURS AND MENTAL HEALTH OUTCOMES

Another study explored risk-taking in veterans, which measured risk-taking as endorsing a number of behaviours such as smoking, fighting, and dangerous driving.<sup>96</sup> This research revealed a direct association between these risk-taking behaviours and PTSD symptom clusters of hyperarousal, elevated negative alterations in mood and cognition. Other factors associated with risk-taking were being younger, in a relationship, common mental health difficulties and having a history of traumatic brain injury, with 87% (350/403) of veterans reporting risk-taking in the previous month.

## An example of a machine learning algorithm coding segments of a clinical note\*

FIRST NAME: Richard

LAST NAME: Johnson

DOB: 09/02/1977

SEX: Male

ADDRESS: 102b High Street, York, YO6 7RS

FAMILY HX: mother and father both alive and healthy, father monitored for pre-diabetes. Two younger siblings, both healthy. Maternal and paternal grandparents deceased: "natural causes".

SOCIAL HX: Lives at above address with wife of 15 years – she is employed. No children. Patient is educated to degree level. Served in military (RAF) for 12 years, left voluntarily 2011. Retrained as building suryor. Unemployed due to mental health since 2019; reports feeling "really depressed" and "like I've given up". Reports having "one or two friends, but not seen them" for a long time and "can't bring myself" to meet up".

CURRENT PRESENTATION: Walk-in appt as "wife was worried about me". Reports being "up and down" for the past few months". Does not routinely drink alcohol – "might have a few drinks on special occasions". No Hx of DSH. No plan for DSH. Coping and helpful to "go fishing alone" and "watch old films at night". Does not feel need to get help and "wants to fix it himself". Has contacted local veterans breakfast club to reconnect with other veterans and is active on social media groups.

MEDICATION HX: No active prescriptions. May 2021: amoxicillin 50mg 3/24

APPOINTMENT HX: 27 May 2022:  
HCA Routine SS; 19 March 2022: 02f2f GP; 20 May 2021: 02f2f GP

\*Clinical note is fictional

# IT IS VITAL TO UNDERSTAND FACTORS WHICH MAY INCREASE OR ATTENUATE RISK IN VETERANS

## USING NEW TECHNIQUES TO EXPLORE RISK

Another strand of Combat Stress research which utilised novel statistical techniques has suggested that risk-taking may be a key factor in comorbid PTSD and alcohol misuse.<sup>97</sup> However, alcohol use as a means to reduce distress arising from PTSD symptoms is another possible explanation for the overlap in these disorders.

## FUTURE DIRECTIONS

Current research is exploring suicide risk factors using data from clinical records and natural language processing. This technique trains machine learning algorithms to pick up factors which may be linked with risk in clinical notes of sessions assessing and supporting veterans with their mental health difficulties.

## REMOTE ACCESS THERAPY

To better understand how best to support veterans using online tele-therapy rather than face-to-face therapy, a systematic review was conducted of the current evidence-based exploring use of tele-therapy in a veteran population.<sup>98</sup> Findings from a total of 41 studies indicated that tele-therapy is as effective as face-to-face therapy in reducing PTSD symptoms. Whilst some challenges were highlighted including technological difficulties and reports that it was sometimes harder for clinicians to observe nonverbal cues, such difficulties did not negatively affect outcomes.

Informed by this review, a feasibility study was undertaken at Combat Stress in 2018, in which 27 veterans were offered Cognitive Processing Therapy via Skype.<sup>99</sup> The rate for non-attendance was lower than seen for in-person outpatient services offering similar interventions. There was an overall improvement in mental health outcome scores following the treatment and at three months' follow-up, with effect sizes comparable to those reported for the six-week intensive treatment programme offered at Combat Stress.

### ACCEPTIBILITY OF REMOTE TREATMENT

Veterans who were offered the remote treatment highlighted benefits of the treatment including control over their environment and minimal technological challenges, although veterans reported the importance of preparation and support between sessions. Overall, results indicated the acceptability of the virtual treatment,<sup>100</sup> suggesting this format of therapy could provide a viable alternative for delivering psychological therapies to veterans, a vital finding for treatment modalities during the Covid-19 pandemic.

### APP INTERVENTIONS AND FUTURE DIRECTIONS

As described, Combat Stress has been involved in developing and trialling an app intervention to support veterans with alcohol misuse called DrinksRation.<sup>101</sup> DrinksRation includes interactive features such as personalised messaging to promote engagement with the intervention and targets the cultural context of drinking in the military. Ongoing studies are exploring this intervention.

An app-based treatment using Acceptance and Commitment Therapy (ACT) approaches for co-existing gambling difficulties and PTSD has also been developed.<sup>102</sup> A study sought feedback on this app from veterans and the clinicians who treat them for these difficulties. Interviews highlighted the need for a collaborative approach with clinicians and veterans sometimes having different ideas. One example of such a divergence was whether the app should be described as a gambling or mental health app. Ongoing research is exploring the efficacy of this intervention.



Some quotes from participants after remote therapy

**IT MADE ME FEEL A LOT MORE COMFORTABLE, YOU KNOW. I COULD RELAX A BIT MORE AND I LISTENED MORE”**

**I DIDN'T HAVE ALL THIS APPREHENSION ABOUT GOING SOMEWHERE AND PEOPLE SEEING ME AFTERWARDS”**

**IT DIDN'T REALLY FEEL ANY DIFFERENT TO HIM SITTING RIGHT IN FRONT OF ME, IN PERSON. IT WAS JUST LIKE HE WAS WITH ME”**

# THE IMPACT OF THE COVID-19 PANDEMIC

Combat Stress conducted a series of studies exploring the impact of the Covid-19 pandemic on veteran mental health. The studies used a sample of veterans with pre-existing mental health difficulties and collected data at three timepoints: as the first and second lockdowns were easing (June 2020; November 2020), and as restrictions were lifted in June 2021.

In the initial study, symptoms of common mental health difficulties (CMDs) such as anxiety and depression, as well as PTSD were most commonly

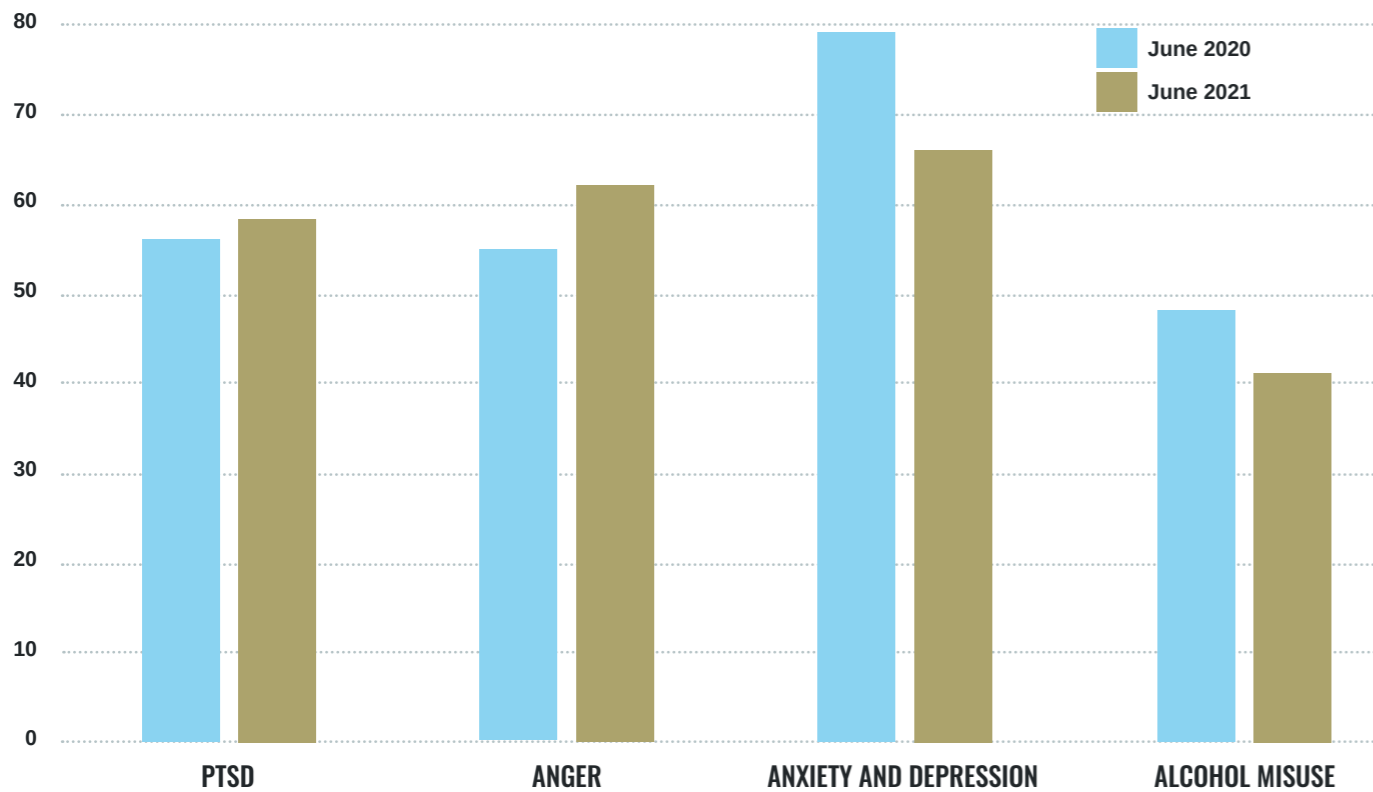
reported to have been exacerbated by the pandemic, with driving factors including a perceived lack of social support.<sup>103</sup> Veterans reported a range of pandemic-related stressors that included financial (e.g., being unable to pay bills, changes in employment due to the pandemic), health (Covid infection, unable to access required medication) and general life difficulties (changing or delaying major life plans and events, bereavement due to Covid). An increase in pandemic-related stressors were consistently associated with more severe mental health difficulties.

## CHANGES IN MENTAL HEALTH OVER THE COURSE OF THE PANDEMIC

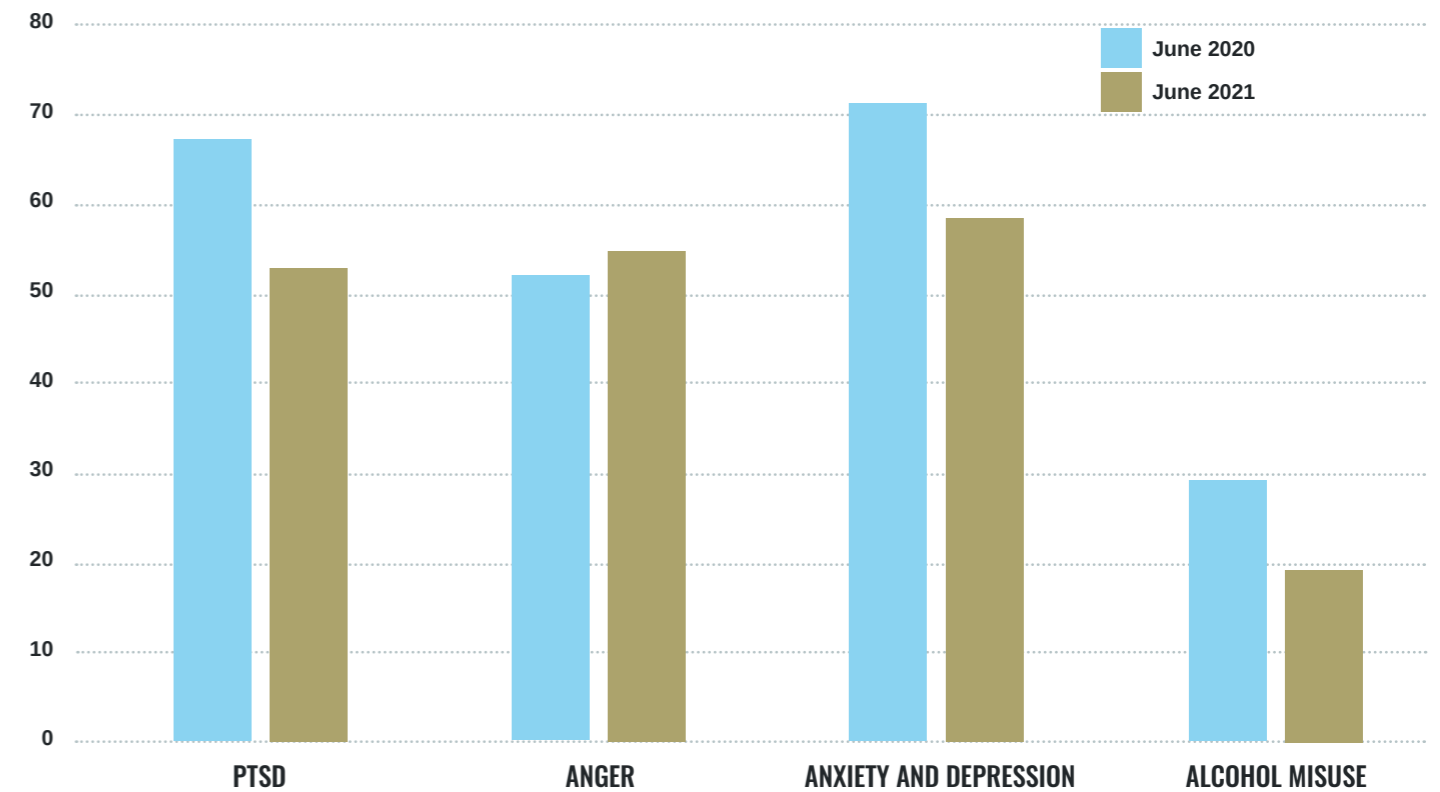
Over the course of the study period, veterans did not report a significant worsening of mental health difficulties and symptoms of anxiety and depression decreased over time.<sup>104</sup> However, veterans who experienced more Covid-related stressors exhibited worse mental health.<sup>105</sup>

Taken together, these studies suggested that although mental health among veterans may have remained relatively stable throughout the pandemic, those who experienced more Covid-related stressors may have been more vulnerable to symptom exacerbation. This pattern of results indicates that the restrictions during the pandemic may have reduced some stressors that impacted veteran mental health. However, it may be too early to understand the long-term impact of Covid-19 on veteran mental health.

Proportion of sample (n=121) meeting caseness for each disorder (%)



Proportion of sample (n=121) who felt their symptoms had worsened due to the pandemic (%)



## FUTURE DIRECTIONS

The research department continues to be involved in and seek projects and collaborations which are relevant to Combat Stress veterans. Ongoing and future projects are summarised in this section. The research department continues to be involved in and seek projects and collaborations which are relevant to Combat Stress veterans. Ongoing and future projects are summarised in this section.

### CLINICAL TRIALS

#### Moral injury treatment

An RCT comparing the R&R intervention for moral injury with treatment as usual is ongoing and due to be completed in 2026.

#### Virtual reality

A clinical trial is soon to begin investigating the feasibility and acceptability of using virtual reality to augment CBT to overcome avoidance central to mental health presentation in veterans. We aim to recruit eight to ten veterans for this study.

#### Psilocybin-assisted psychotherapy

A study exploring the feasibility of psilocybin-assisted psychotherapy in veterans with PTSD is due to begin recruiting a total of eight veterans in 2024.

#### Population research papers

Several future papers will explore the needs of veterans, including in areas such as OCD, executive functioning, moral injury, MST and physical health.

#### Gambling and alcohol use

The DrinksRation App is being adapted for an RCT exploring the effectiveness of the intervention for women veterans. Studies will further explore the app designed in collaboration with King's College London and Swansea University to support veterans with gambling disorder.

#### Moral injury

Combat Stress is a thought leader in the area of moral injury. Ongoing work includes defining the nature of a potentially morally injurious event, as well as the RCT exploring an intervention for moral injury as described.

#### NATO

As a thought leader in research exploring veteran mental health, the Combat Stress research team contributes to a number of NATO Research Task groups. Currently, a new project is being set up to understand how best to personalise medicine to the treatment of complex mental health difficulties.

#### Five Eyes

Combat Stress is involved in a number of projects with the Five Eyes nations. The Five Eyes is a network of anglophone countries which includes the UK, USA, Canada, Australia and New Zealand. The purpose of the network is to support collaboration and learning internationally to support policy makers across the Five Eyes nations to focus on the most pressing needs of the veteran community.

#### International Dataset Initiative

This initiative is a collaboration with international partners to compare population datasets on the needs of veterans across the nations involved in the initiative.

#### Minority veteran groups

Future work will explore the specific needs and barriers faced by veteran groups typically underrepresented in the UK Armed Forces to develop a model to understand factors relevant to minority veteran groups.

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