Transition from War: how veterans with post-combat disorders adjust to civilian life

Final Report

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Contents

Executive Summary

Although most veterans manage the transition from the armed forces to civilian life without experiencing an enduring or severe psychological disorder, a sub-group of ex-service personnel encounter enduring adverse mental health.

Veterans, when compared with emergency responders and civilians exposed to air-raids, experienced a greater number of symptoms and of greater severity.

Battlefield trauma was a reliable predictor of post-conflict, mental illness. The nature and duration of symptoms exhibited by servicemen, especially those who had served in front-line combat units, may be associated with their experience of heightened risks.

Mental illness was characterised by what are now termed medically unexplained physical symptoms (MUPS). These have no observed organic cause and are interpreted as the somatisation of distress; that is its translation into a physical symptom.

For a sub-population of veterans, exposure to severe or prolonged trauma is associated with chronic multi-symptom illness, symptoms of post-traumatic stress and somatic expressions of pain that may delay or complicate the recovery process.

Anger and irritability are commonly reported symptoms for veterans. In both military and civilian populations, aggression has been associated with a range of negative consequences, including poor family functioning, adverse workplace outcomes, violence, and poorer treatment outcomes for post-traumatic stress disorder (PTSD).

There are no NICE guidelines for the treatment of MUPS and many of the veterans in the study received no specialist treatment although they had received a specialist diagnosis.

There is a need to devise new treatments for veterans suffering from chronic multi-symptom illness. These would have broader benefits as medically unexplained symptoms are encountered in the civilian population and account for 25% of primary care consultations.

The focus on the treatment of PTSD and more recently alcohol abuse in the veteran population has drawn attention away from psychosomatic illnesses, which are arguably more common and have an equally adverse effect on wellbeing.

Glossary

ARP	Air-raid Precautions (wardens)
CBT	Cognitive Behavioural Therapy
CMI	Chronic Multisymptom Illness
CS	Combat Support
CSS	Combat Service Support
HI CBT	High Intensity CBT
MUPS	Medically Unexplained Physical Symptom
NCO	Non-Commissioned Officer
OEF/OIF	Operation Enduring Freedom and Operation Iraqi Freedom
NHS	National Health Service
NFS	National Fire Service
PSS	Psychosomatic
PTSD	Posttraumatic Stress Disorder
TA	Territorial Army
Veteran	A person who has served at least one day in the UK Armed Forces. Note this is used interchangeably with ex-service personnel throughout.

Scope of the report

The following report is a review of the existing evidence concerning the health of UK veterans with post-combat disorders and their transition to civilian life. The review identifies why some veterans have trouble adjusting and steps to overcoming these difficulties. A key research output included the publication of an original research article in *Psychological Medicine*, 'The symptomatology of psychological trauma in the aftermath of war (1945-1980): UK army veterans, civilians and emergency responders', for full details see Engelbrecht, Burdett, Silva, Bhui and Jones (2018). The key emerging issues from the report, supported by the significant findings from the published article are summarized and the main gaps and areas for further research are provided.

The study was commissioned in January 2014 by Forces in Mind Trust (FiMT). The FiMT was established by a Big Lottery Fund endowment to support the psychological wellbeing and successful and sustainable transition of ex-Service personnel and their families into civilian life. The report covers a number of important domains, featuring the prevalence of medically unexplained physical symptoms (MUPS) in UK ex-Service personnel, moral injury, aggression and health-seeking behaviour.

Note: We have provided full details of the methodology, statistical analysis and the tabled results from the published article in the appendices for clarity and transparency and we refer to these findings in the report.

Acknowledgements

The Report was funded by Forces in Mind Trust with additional financial support from Queen Mary College London. We are very grateful for the help and practical assistance provided by Veterans UK at their Norcross offices. Without the access provided by the Ministry of Defence to war pension records, this study could not have been undertaken.

An Advisory Panel was set up to guide the project from the outset. Its members included Air Vice-Marshal Ray Lock CBE, Meri Mayhew and Lucy Caruana of Forces in Mind Trust, Robert Bieber MBE of Combat Stress, Colonel Paul Cummings of Veterans Aid, Colonel Barney Haugh CBE of ABF The Soldiers' Charity, Dr Hugh Milroy OBE of Veterans Aid, Carol Smith of the British Legion, and Professor Kamaldeep Bhui CBE of Queen Mary University of London. Considerable thanks are owed to them for their wise counsel and professional input throughout the course of the study.

1. Introduction

At the end of both World Wars the pressing need was to discharge servicemen and women as quickly as possible so that they could return to productive employment. Ernest Bevin's demobilisation plan, announced in September 1944, gave priority based on age, length of service and value to the community. Service personnel with skills or professional qualifications were given priority (Allport, 2009). Equally, during the period of National Service most young men were keen to return to civilian life as soon as they had completed their two years in the armed forces; many experienced National Service as a temporary interruption to a civilian career, returning to a job and community which they had been reluctant to leave (Vinen, 2014). Thus, until recently discharge from the UK armed forces was not seen as an issue that required an input beyond ensuring that the process was efficient to avoid delay.

Today's UK armed forces are volunteers, men and women who have chosen a career in the services. From the 1991 Gulf War onwards, UK Service personnel have been involved in a series of operational tours in war zones (Somalia, Iraq, Afghanistan) or in peacekeeping roles (Northern Ireland, Bosnia, Kosovo and Macedonia). Although the numbers killed have been kept low as a proportion of those deployed, there has nevertheless been an accumulation of traumatic experience, through wounds, illness and the stress of campaigning sometimes with limited periods for training and recuperation. In addition, significant advances in battlefield surgery have dramatically improved the survival rate of service personnel with horrific wounds. Hence, a significant number of men and women have left the UK armed forces with a direct experience of trauma. Although the majority of veterans manage the transition to civilian life without the need for specialist care, it is estimated that at least 10% of service leavers encounter significant mental health problems. Once in the community, they are reliant on the National Health Service (NHS) and military charities for care. Studies of veterans with chronic or severe post-traumatic stress disorder (PTSD) have shown that this illness is difficult to treat and is often associated with other illnesses such as depression and substance abuse. These, in turn, impact on relationships and the ability to undertake paid employment. The costs of failed transition are high not least because of the intractable nature of post-conflict disorders.

The project, funded by Forces in Mind Trust and Queen Mary London University, was designed to address a knowledge gap in the transition process from military to civilian life and to address some of the inherent biases in modern information flows. It is based on data taken from war pension files awarded in the aftermath of the Second World War. These records, held by Veterans UK (formerly the Service Personnel and Veterans Agency) of the Ministry of Defence, are not open to public access and ministerial permission was obtained to research them in a manner that respects Freedom of Information legislation. The files are comprehensive, including service records, reports from specialist assessors and case correspondence. In assessing the validity of a pension claim, the Ministry sought verification from external sources such as the police, hospitals, GPs, unit war diaries and employers. After an initial assessment, ex-service personnel in receipt of a pension were required to attend annual medical boards, generating detailed follow-up data, sometimes until death. As a result, we have longitudinal evidence from time in the armed forces, through the transition process into the 1950s, 1960s and 1970s. The records relate not only to veterans, but also include members of the emergency services (auxiliary firemen, police officers and air-raid wardens (ARP)) and civilians injured during air-raids; they represent the best available source of high-quality data. War pension files were used to compare ex-service personnel with a control population of emergency service workers and civilians who had been exposed to air-raids.

1.1.Aim

The project was designed to address the knowledge gap of the transition process of UK military personnel to civilian life, which remains a neglected but important health issue on which research and policy are lacking. There is little known about how veterans with post-combat health disorders adjust, especially concerning those with poor health and behavioural outcomes during and after transitioning. The project aimed to address some of the inherent biases in modern information flows.

The review has three core research aims:

1. To explore how members of UK armed forces with post-combat disorders managed the transition to civilian life in the aftermath of the Second World War and to identify their outcomes by analysing symptoms over a thirty-five year period to explore their temporal pattern and relationship to traumatic war experiences. To conduct within group comparisons and identify vulnerable ex-service sub-groups.

2. To explore the relationship between ex-Service personnel and civilians in the aftermath of the Second World War to assess whether veterans experience significantly greater effects than their civilian counterparts. To assess general understanding of veteran issues by the public at large and the factors that assisted the reintegration of veterans into peacetime society.

3. To draw lessons from these transitional processes to inform current policy and practice.

1.2. Key Questions

The scope of this review is guided by the following key questions:

1. For those veterans who experience enduring mental health issues, what are the key characteristics of their psychological illness?

2. To what extent are long-term veteran mental issues similar to those suffered by civilians and emergency responders exposed to similar conflicts?

3. What are the enduring symptoms suffered by veterans with enduring mental health issues and are they amenable to treatment and other interventions?

4. What veteran sub-groups are especially vulnerable?

5. What are the gaps in the evidence base and the areas in need of further research?

2. Overview of the literature

The role of the soldier in war is probably unique in that he is required to risk his life often at a young age. Furthermore, the particular demands of his career make transition to routine civilian life problematic (Samele, 2013). The skills of the infantryman do not readily translate to the peacetime workplace and the bonds of comradeship, so necessary in combat, are lost on demobilisation, creating a risk of isolation. Yet, of the 4.8 million veterans who live in the UK (Woodhead et al., 2009), the majority of ex-service personnel have favourable outcomes after leaving the military (Iversen, et al, 2005a). Nevertheless, for a sub-group, complex mental health problems of an enduring and intractable type are experienced, including common mental disorders like anxiety and depression, post combat stress syndromes, persistent medically unexplained symptoms, relationship related distress (Iversen, Chadler & Wessely, 2007) homelessness and a greater mortality than the general population of a similar age and gender (Iversen et al., 2005b; Mares & Rosenheck, 2004). Problems adjusting to a routine peacetime existence are thought to exacerbate psychological trauma experienced during service (Iversen et al., 2007; Schinka, Schinka, Casey, Kasprow, & Bossarte, 2012).

The impact of traumatic war experiences on military personnel's long-term physical and mental health is well recognised (Jones & Wessely, 2005). Yet, to date the focus on veteran mental health has almost exclusively been on post-traumatic stress disorder (PTSD) (Hines, Sundin, Rona, Wessely, & Fear, 2014) and yet it is known that ex-service personnel are at risk of other common psychological disorders, such as depression, alcohol misuse and psychosomatic illnesses (Iversen, Chadler, & Wessely, 2007). A difficult transition may have amplified and/or maintained symptoms (Iversen et al, 2007). Additionally, research with civilians in the general population indicates somatoform disorders and medically unexplained symptoms to be more common than generally assumed (Haller et al, 2015).

Research indicates that a successful transition is crucial for veteran's long-term well-being (Ahern et al., 2015; Iversen et al., 2005b; Oster, MacManus & Wessely, 2013; Morello, Venning & Redpath, 2017). However, if we are not aware of what difficulties veterans face

and what their needs are whilst making the transition to civilian life then these needs cannot be met. Gaining insights into the transition process is therefore critical to understand why some veterans have trouble adjusting and what they need to help them overcome these difficulties, through informing interventions and policy to support successful readjustment. The broader effects of both trauma and adjustment on veterans' well-being is under researched, not least because there are few, if any studies, that compare them with other groups exposed to war or life-threatening events. Most recent investigations of the mental health of ex-Service personnel are based on self-report data, which are known to be problematic. Psychological disorders are often accompanied by cognitive and memory deficits that impair the accurate recall of events. Traditionally, military culture has not been receptive to the report of traumatic illness. As a result of stigma, veterans who suffer the psychological consequences of intense or prolonged stress, often suffer in silence, creating hidden psychiatric morbidity (Coleman et al., 2017; Iversen et al., 2011).

2.1.Socio-cultural context

Brewin et al. (2010) studied a sample of 153 UK veterans in receipt of a war pension for PTSD or a physical disability. They found that the incidence of PTSD and suicidal behaviour was associated not with negative views of the self but a growing sense of alienation from civilian life. Feeling increasingly cut off from civil society has serious consequences for engaging veterans in NHS mental health services and for the provision of effective treatment.

It is hypothesised that the socio-cultural context in which the serviceman makes the transition to civilian life plays a part in the success of his re-integration. Because of the conflicts in Iraq and Afghanistan, service personnel currently occupy a prominent place in media reporting and military charities have flourished over the last decade. The seventieth anniversary of D-Day and hundredth anniversary of the beginning of the First World War have maintained veterans in the media spotlight. However, the withdrawal of UK armed forces from Afghanistan has inevitably been accompanied by a fall in the popular support for the military. Once UK forces ceased to take casualties in Afghanistan and the Taliban began to

reassert their power in the region, UK involvement is increasingly likely to be framed in negative terms as an operational deployment that did not justify the expenditure and cost in lives. This, in turn, could have a negative impact on veterans who are seeking to come to terms with their campaign experiences. If they feel marginalised or unrecognised, this has an adverse implication for the process of adjustment and integration. There is a significant risk, therefore, that the self-esteem and value of UK veterans will be challenged over the next decade.

A similar post-conflict culture arose in the aftermath of the Second World War. Servicemen returned in summer 1945 to celebration of victory. However, the mood of elation was short-lived as economic problems became a peacetime priority. A policy of austerity followed as Britain attempted to rebuild an infrastructure and housing destroyed by air-raids and focused output on export markets to reduce the national debt. The contribution of servicemen and women to the war was inevitably pushed to the margins and many veterans expressed a sense of disillusionment, believing that their sacrifices and efforts were no longer recognised (Allport, 2009). There are, therefore, important parallels in public opinion and the policy agenda between the post-1945 period and the present.

2.2. Medically Unexplained Physical Symptoms (MUPS)

Syndromes characterised by medically unexplained physical symptoms (MUPS) have arisen after most major wars of the twentieth century (Hyams et al., 1996). In the aftermath of the First World War, for example, large numbers of ex-servicemen experienced what was termed 'effort syndrome', identified by chest pain, palpitations and shortness of breath in the absence of underlying cardiac pathology (Jones et al., 2002a). The Second World War witnessed an epidemic of non-ulcer dyspepsia; service personnel with severe or persistent abdominal pain were repeatedly investigated for duodenal ulcer with negative or inconsistent findings in x-rays following a barium-meal (Jones, 2012). As a result, many servicemen were discharged from the armed forces without a defined diagnosis and treatment plan, transferring their invalidity into civilian life.

Medically unexplained physical symptoms (MUPS) are categorised as 'functional'; that is without organic basis but not under volitional control of the subject. They are genuine symptoms and not the result of a conscious process of malingering (Barky & Borus, 1999; Bass et al., 2001). MUPS are perceptual (a person feels symptoms), cognitive (the person with symptoms decides they are ominous) and behavioural as the person with symptoms seeks health care for them (Richardson & Engel, 2004). MUPS are particularly prevalent where gaps exist in medical knowledge or where problems of investigation lead to unreliable diagnosis (false positives). They are often problematic in that they mimic organic disorder with significant mortality that matches the symptomatology of the post-combat syndrome (heart disease and heart attack in relation to Disordered Action of the Heart; perforated ulcer in relation to suspected duodenal ulcer; known toxic effects in relation to Gulf War syndrome; cerebral lesion in relation to mild Traumatic Brain Injury). Widespread health fears attached to the diagnosis in tune with underlying cultural beliefs. Despite popular claims to the contrary, no simple biomedical aetiology has been discovered to account for these disorders, hence the term 'medically unexplained'.

2.3.Moral Injury

Also known as 'moral distress' and 'moral residue' in civilian settings, moral injury has been identified in veterans who believe that their service in combat zones was unjustified or that the practical conduct of a campaign violated deeply-held beliefs about just behaviour (Maguen & Litz, 2009; Sherman, 2015). Moral injury results from an ethical dilemma where the solution is not apparent either because of conflicting demands or because society does not offer a suitable environment for discussion and resolution. Others have described it as a 'soul wound' because it relates to deeply held beliefs about justice, appropriate behaviour and the value of life. It is manifested by feelings of shame or guilt caused by feeling responsible for doing wrong or being wronged. Clinically, moral injury can contribute to depression or the maintenance of post-traumatic illnesses.

The term moral injury was originally used by Jonathan Shay in 1994. Based on clinical work with Vietnam veterans, he argued that 'moral injury is an essential part of any combat

trauma that leads to lifelong psychological injury. Veterans can usually recover from horror, fear and grief once they return to civilian life, so long as "what's right" has not also been violated' (Shay, 1994: 20). More specifically, moral injury has been defined as 'perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations' (Litz et al., 2009). Various acts of commission or omission may set the stage for the development of moral injury.

Moral injury is not addressed by current treatments for PTSD and may serve to sustain or intensify psychological distress. New interventions may be needed to address core beliefs that perpetuate guilt and shame. A six-session form of cognitive behaviour therapy (CBT), called 'adaptive disclosure', has been trialled; it is designed to evaluate a traumatic experience and its meaning to the veteran to offer an opportunity for re-evaluation and reframing such that it no longer inhibits growth and development (Litz et al., 2016). Recent studies reveal that a significant number of veterans encounter morally injurious events (Nazarov, Fikretoglu, Liu, Thompson & Zamorski, 2018; Yan, 2016). Whilst the focus on moral injury is relatively recent, examples from past wars can readily be found (Jones, 2018). Although the Second World War was considered justified and appropriate by most combatants, there remained individual events (such as the bombing of women and children or the death of comrades by so-called friendly fire) which caused enduring distress and were not resolved by a return to routine civilian life.

2.4.Aggression

Aggression and anger have been identified as a symptom of post-war adjustment difficulties associated with combat related stress in veterans (Novaco & Chemtob, 2002; MacManus et al 2013). For example, population-based estimates of the prevalence of self-reported anger in post 9/11 veterans range between 44% and 57% (Pew Research Center, 2011; Sayer et al., 2010; Wheeler, 2007). Novaco and Chemtob (2002) propose than an increase in anger after engaging in conflict in combat zones increases the likelihood of developing anger difficulties even after leaving the war zone and recent research has found that poorly controlled

aggression and anger have been found to be a common problem among veterans who have served in war zones (Shea, Lambert & Reddy, 2013).

Further, recent findings indicate that anger and aggression problems are related to a number of adverse and negative psychosocial consequences including poor family functioning (Taft et al, 2008), increased risk of divorce and domestic violence (Kulka et al., 1990) negative workplace and school outcomes (Hershcovus et al., 2007; Thomas & Smith, 2004) and poorer treatment outcomes for post-traumatic stress disorder (PTSD) (Forbes et al., 2008). However, while interest in aggression and anger presentations by combat veterans has increased, there is very little representative data.

2.5.Health-seeking behaviour

Seeking to understand the health needs of veterans with post-combat disorders transitioning to civilian life is needed to identify possible barriers to health-seeking behaviour and treatment. Recent research indicates that the majority of military personnel (80%) who perceived they had a mental health problem sought some type of help, often not medical (Samele, 2013).

Research has demonstrated that veterans encounter a number of personal, societal, and logistical barriers to accessing care (Spelman, Hunt, Seal & Burgo-Black, 2012; Iversen et al., 2011*)*. Reasons for not seeking help may be attributable to 'internal stigma' (Langston et al., 2010), Stigma has been identified as a barrier to returning service members seeking care for mental health issues (Chapman et al., 2014; Keane et al., 2014) and the social isolation experienced by veterans, which is also reflective of our findings, may exacerbate mental illness (Mistry et al., 2001). Other reasons for not seeking help include not knowing where to go, or concern about being blamed for their problems by their employer (Iversen et al., 2011).

3. The symptomatology of psychological trauma in the aftermath of war

3.1.Study overview

In recognition of the knowledge gaps and in response to the increasing evidence showing that high levels of PTSD, common mental disorders and alcohol abuse in military populations are also accompanied by somatic symptoms, the study focused on the symptomatology of psychological trauma in the aftermath of war. The broader effects of both trauma and adjustment on veterans' well-being is under researched, not least because there are few practical opportunities to compare them with other groups exposed to war or life-threatening events. With data collected from war pension files that include medical notes and objective records of exposures, this study compares a random sample of veterans with civilians and emergency responders who had experienced air raids. All three groups had been diagnosed with a psychological disorder and were subject to regular clinical assessments. The temporal pattern of symptoms was analysed over a 35-year period (1945 to 1980) to explore their long-term relationship with traumatic war experiences. The study sought to determine:

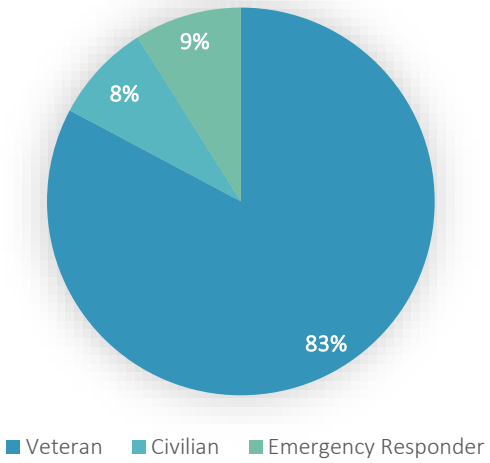
1. what symptoms UK army veterans suffered,
2. how long symptoms lasted,
3. how they related to traumatic war experiences,
4. how they related to adjustment and,
5. how veteran experiences compared with civilians and emergency workers exposed to war during the same time period.

A full description of the methodology including data sources, data collection, descriptions of variables used, and statistical analysis are provided in Appendix A1 and A2 and all statistical results tables are provided in Appendix A3 – A8 (presented in Engelbrecht et al., 2018).

3.2. Overview of Sample Distribution

The sample was made up of veterans (N = 500), civilians (N = 50) and emergency responders (N = 54), the distribution is presented in Figure 1. The veteran sample was limited to former members of the British Army because they were the largest service group in the archive and suffered significant psychological casualties. Further, while larger samples of civilians and emergency responders had been sought for comparison, the absence of a searchable database limited the numbers that could be found; as a result, they are included for context rather than direct comparison. A breakdown of demographic characteristics follows (see Table 1, Appendix A3).

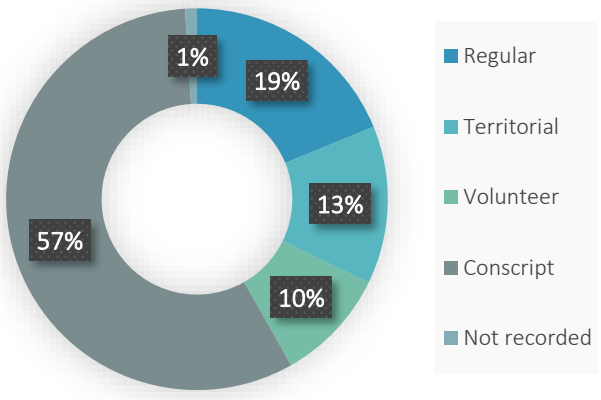
Figure 1. Sample Distribution



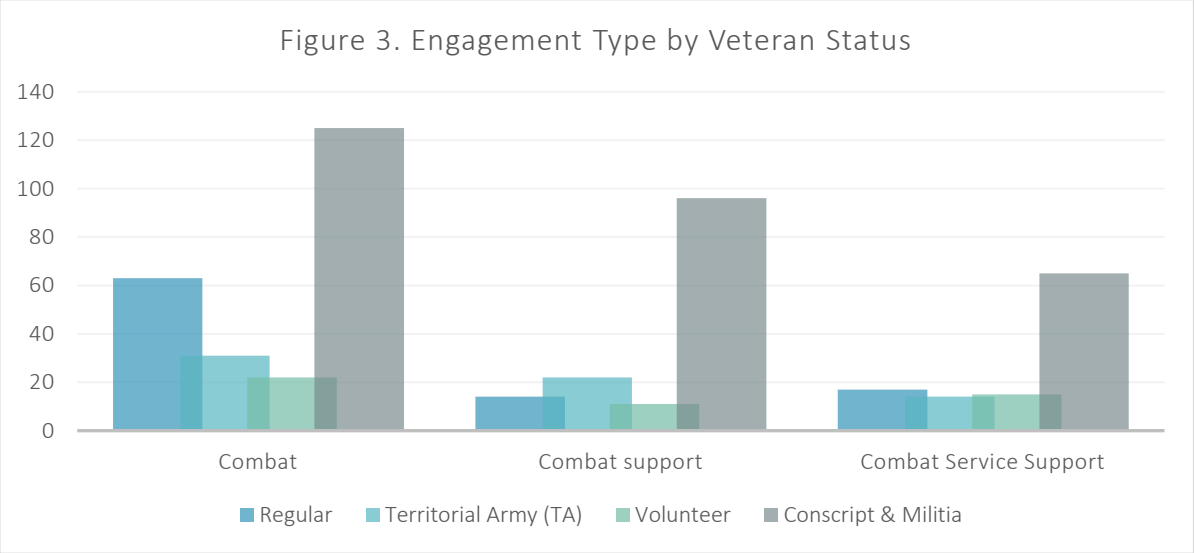
3.3. Demographic overview for veterans and military characteristics

The veteran sample was selected from former members of the British Army to avoid cultural differences between the three services and to limit the range of traumatic exposures. All veterans were male (*N* = 500, 100%), with a mean age of 28 years, were married (*N* = 429, 85.8%) and in employment (*N* = 394, 78.8%) (see Table 1, Appendix A3 for further breakdown of socio-demographic information).

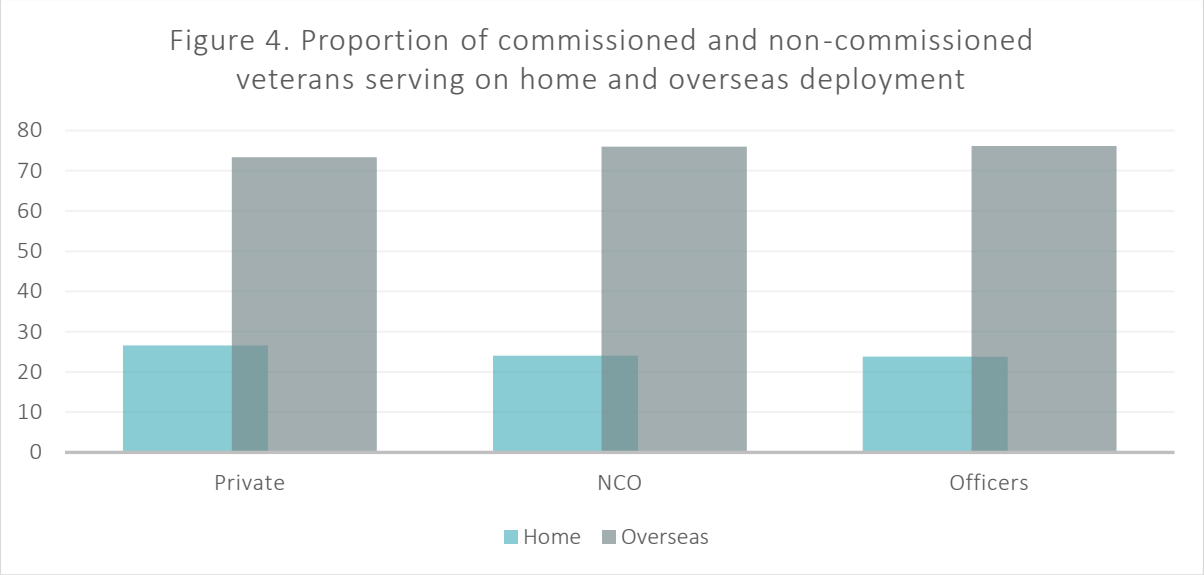
Figure 2. Proportion of veterans stratified by status.



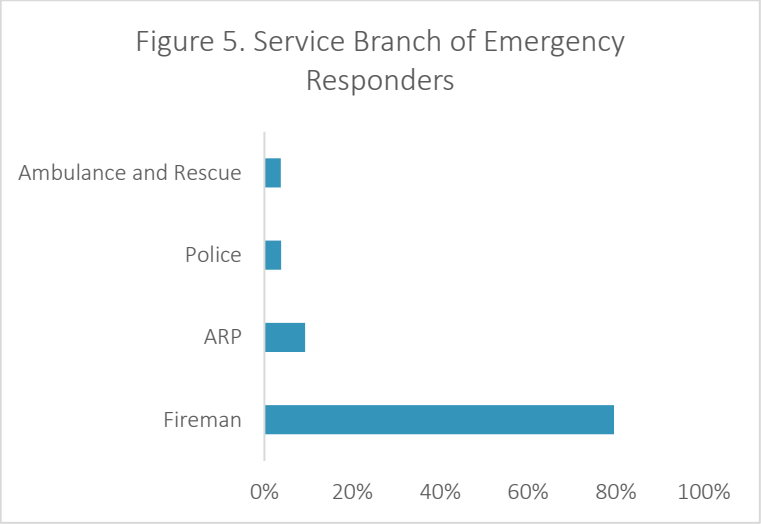
The majority of the veterans were private soldiers (65.8%), had deployed overseas (74.9%), had combat experience (48.6%), with infantry and armoured units, together with artillery and engineers making up the majority of the sample (see Table 2 for further military characteristics, Appendix A4). Figure 2 illustrates 57% of the veteran sample had been conscripted, this contrasts with today's UK armed forces which are entirely made up of volunteers. Although it is important to note that many conscripts were, in fact, willing soldiers, due to the need to defend the nation against invasion. Figure 3 shows the distribution across engagement type, stratified by veteran status. Here we find the majority of the regular soldiers were engaged in combat, while conscripts, those in the Territorial Army (TA) and volunteers were more evenly distributed across combat, combat support (CS) and combat service support (CSS). Taken as a whole, the veteran sample is reflective of troops exposed to significant danger.



Within the veteran sample, although most were private soldiers (65.6%), both officers (8.4%) and particularly non-commissioned officers (25.8%), that is corporals, sergeants and sergeant-majors, were over represented. This possibly reflects the higher mortality rates they experienced as a result of leadership roles on the battlefield. Support for this is further shown in Figure 4, where this pattern is further reflected for those deployed to the battlefields overseas. Here we find that 76% of NCOs had served overseas compared to 24% serving on home (U.K.) deployment, very similar proportions are seen amongst the other ranks.



3.4. Emergency Responder Characteristics



As shown in Figure 5, most emergency responders were members of the National Fire Service (NFS) and are disproportionately represented in our sample. All but one individual were men. They were marginally too old for military service and not working in occupations considered vital for the war effort. The sole female emergency responder was a driver for the NFS. Many were conscripted and came from London region where they had been directly exposed to risk of death or severe wounding (Guttmann & Baker, 1945). Other emergency responders were ambulance men, police officers and air-raid wardens (ARP). Apart from the physical effects of bombing, most had witnessed casualties and dead bodies, including children. The majority of emergency responders were men (*N* = 53, 98%), with a mean age of 38 years, were married (*N* = 43, 79.6%) and in employment (*N* = 44, 81.5%) (see Table 1, Appendix A3).

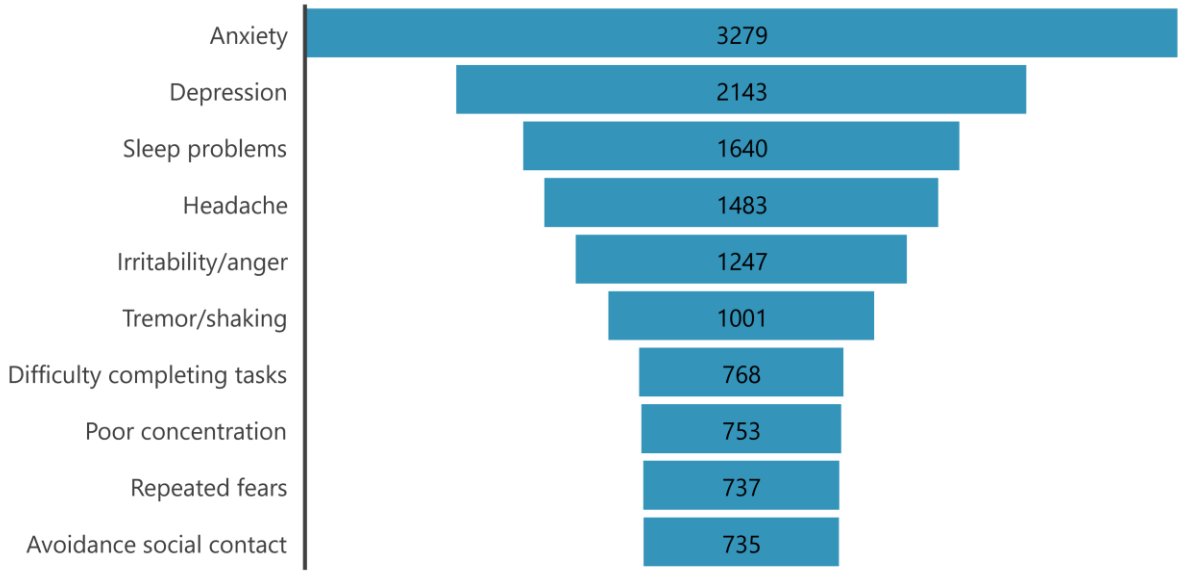
3.5. *Civilian Characteristics*

The civilian sample was more diverse in terms of age, gender and occupation. The civilian group was predominantly male (*N* = 38, 76%) but held a larger proportion of women (*N* = 12, 24%) compared to the other two groups. The mean age of the civilian sample was 50 years, the majority were married (*N* = 40, 80%) and over half were in employment (*N* = 32, 62%). Of the civilians, thirty reported the cumulative effects of sheltering during raids, seventeen experienced trauma at work, four of whom were bus or train drivers exposed to bombing. Whilst some civilians had been injured, a number continued to experience mental ill health following recovery.

3.6. Common mental health disorders reported by veterans, civilians and emergency responders

Table 3 (Appendix A5) summarises the 25 symptoms reported by veterans, civilians and emergency responders and rank each symptom by the total number of times it was reported within a group. Of these 25 symptoms the 10 most commonly reported by veterans and listed by ranking, are presented in Figure 6.

Figure 6. Top 10 commonly reported symptoms by veterans

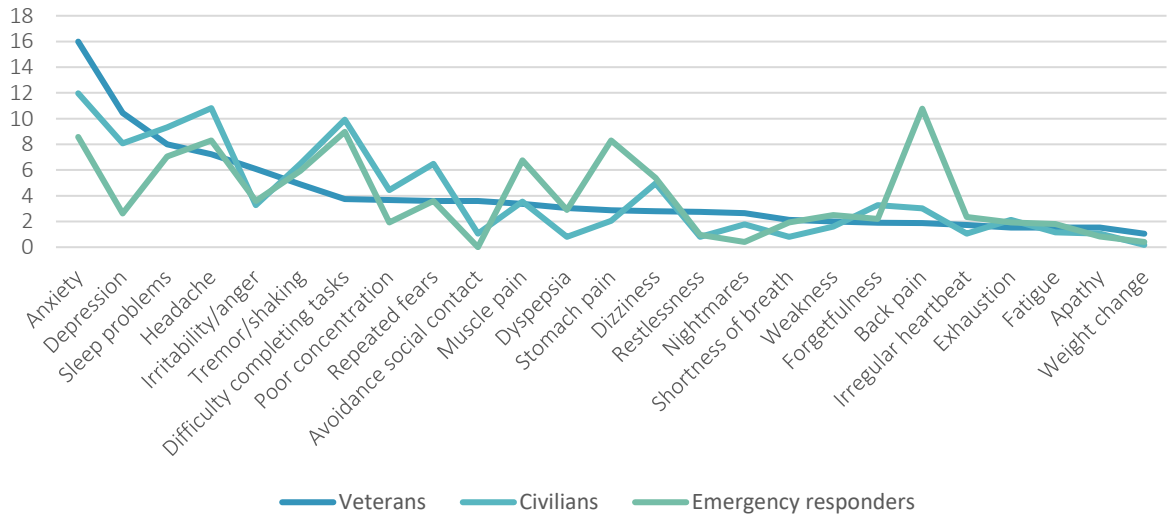


When compared with civilians and emergency responders, there are several differences in symptom type and ranking of symptoms type. Specifically:

Veterans vs Civilians: For the civilians, key differences were the inclusion of dizziness (ranked eighth) and muscle pain (ranked tenth) replacing irritability/anger, which was ranked eleventh, and avoidance of social contact which was ranked nineteenth. Further, civilians reported repeated fears, difficulty completing tasks, headaches and dizziness more often than veterans (see Figure 7).

Veterans vs Emergency responders: An even greater contrast was presented by the emergency responders who reported three somatic symptoms (back pain, stomach pain and muscle pain) more often than veterans (see Figure 7). Further, they did not report avoidance of social contact. Whilst anxiety and depression, which was ranked first and second among veterans, ranked third and thirteenth for emergency responders (see Table 3, Appendix A5). This ranking of anxiety and depression also significantly differentiated with the civilian group, where it was ranked first and fifth respectively.

Figure 7. Percentage of total number of symptoms reported by veterans, civilians and emergency responders

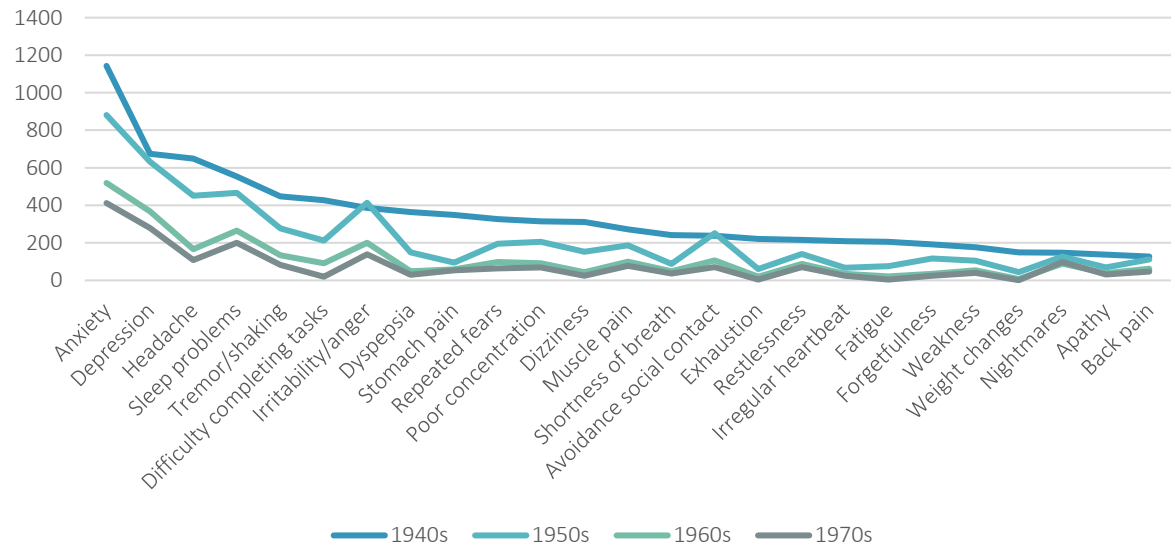


3.7. Distribution of common mental health disorders reported by veterans, civilians and emergency responders

The 10 most common symptoms accounted for 67.2% of all veteran symptoms (see Table 4, Appendix A6). Furthermore, they were widely distributed across the veteran sample, suggesting there were no sub-groups that were especially vulnerable. The overall symptom count for the veteran sample was compared by decade to explore changes over time. The ten most common symptoms represented 62.8% of those reported during the 1940s, rising to 67.7% in the 1950s and 70.0% in the 1960s. The proportion fell marginally to 69.0% in the 1970s as the veteran population began to encounter illnesses of old age. The pattern demonstrates that the 10 most common symptoms remain the most commonly reported symptoms over time.

To further explore distribution within the veteran sample, symptoms were ranked by the number of veterans who reported them (see Table 5, Appendix A7). Anxiety and depression were ranked highest by both total symptom count and subject report and were consistently the most prevalent symptoms, ranked first and second across all four decades. A significant temporal change included irritability and anger, which rose in significance throughout the decades for veterans, rising from seventh place in the 1940s to fifth in the 1950s and was fourth for the final two decades (see Table 5, Appendix A7 and Figure 8).

Figure 8. Veteran symptom reporting across study period

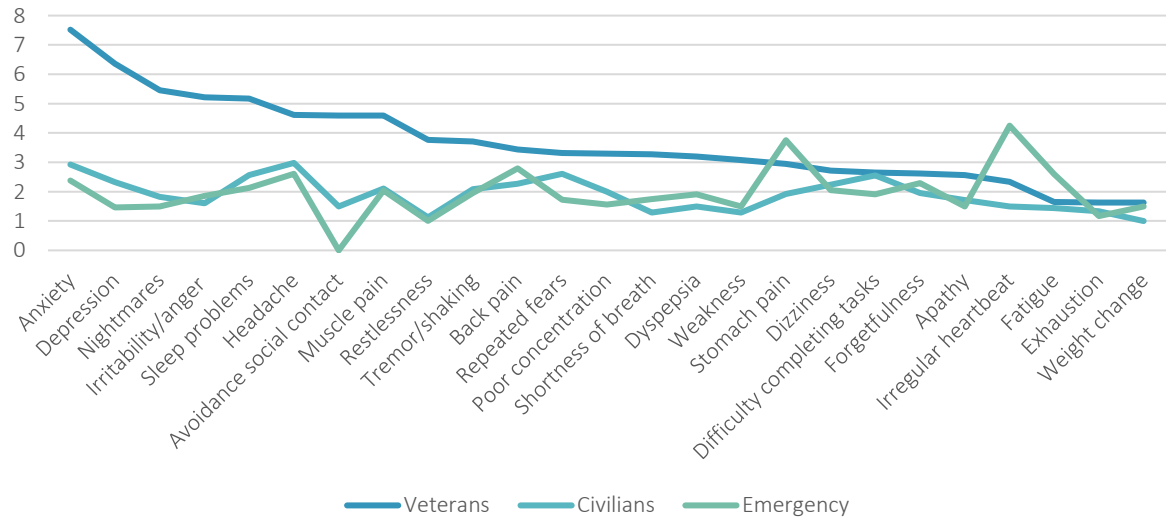


3.8. Persistent mental health problems

Seven of the ten most persistent symptoms reported by veterans are also the most commonly reported symptoms; in addition to nightmares, muscle pain and restlessness (see Table 6, Appendix A8). Overall, veteran symptoms lasted significantly longer than civilian and emergency responders (see Figure 9). For the civilians, headache followed by anxiety, repeated fears and sleep problems endured the longest. While rapid or irregular heartbeat, stomach and back pain were especially long-lived for the emergency responders.

Veterans vs Civilians: Table 6 (Appendix A8) illustrates that twelve symptoms lasted significantly longer for veterans than for civilians; these were the 10 longest-lived, in addition to poor concentration and weakness.

Figure 9. Comparison of symptom duration (mean, years) across groups



Veterans vs Emergency responders: Nine of the 10 persistent symptoms experienced by veterans lasted significantly longer than for the emergency responders, albeit a statistical comparison for avoidance of social contact was not possible, as it was not reported in the emergency responder sample (see Table 6, Appendix A8). Further, the mean duration for nightmares reported by veterans was 5.5 years, compared with 1.5 years for emergency responders, however, this was not statistically significant.

4. Discussion

The transition process of UK military personnel to civilian life has been a neglected but important health issue on which research and policy are lacking. The current study sought to address this knowledge gap by focusing on the symptomology of trauma in the aftermath of war, as especially little is known about how veterans with post-combat disorders adjust to civilian life. The opportunity to study war pension files which included medical notes and objective records of exposure allowed for a temporal analysis of veteran symptom reporting and health issues over a thirty-five-year period (1945-1980). This has afforded the identification of a range of long-lasting symptoms. The most notable symptoms reported by UK veterans of the Second World War included; anxiety, depression, nightmares, irritability/anger, sleep problems, headache, avoidance of social contact, muscle pain, restlessness and tremor/shaking. What is interesting to note, is that while the data was collected in a time before PTSD was formally recognised, there are several symptoms mentioned above that fulfil the four-factor definition for DMS-5 PTSD (American Psychiatric Association, 2013). These include nightmares, which are a feature of Criterion B, irritability, restlessness and sleep problems which meet Criterion E, anxiety and avoidance meet Criterion D, and depression is commonly co-morbid with PTSD and relates to negative thoughts and feelings which fall within Criterion D (Friedman et al., 2011). As a whole, they can be interpreted as an enduring manifestation of post-traumatic illness.

If we look closely at the symptom reporting in the veteran sample, we find that persistent symptoms were not limited to psychological and behavioural categories but included muscle pain, back pain, shortness of breath, dyspepsia and stomach pain. These are reflective of patients with unexplained bodily symptoms that are often considered psychosomatic (PSS) in origin but are disabling and not easily treated. Such symptoms are commonly chronic or intermittently relapsing and associated with physical and functional comorbidity (Coughlin et al., 2013 Kelsall et al., 2009), and a decreased quality of life (Engel et al., 1994), suggesting a difficult transition immediately after leaving the services and long after what some might assume to be the transition window for settling into civilian life. In recent years there has been increasing recognition that ex-service personnel are at risk of

psychosomatic illness and several contemporary studies have found associations between PTSD and somatic symptoms (Hoge et al., 2007) and chronic multisymptom illness (CMI) (Afari et al., 2014; Coughlin et al., 2013; Kelsall et al., 2009) in veteran populations. The current study adds to this and highlights the enduring and serious impact psychosomatic illness can have on veterans. While the study does highlight the higher ranking of somatic symptoms in the emergency responder sample, this may be explained by the circumstances in which they worked. For instance, of the 54 emergency responders, 80% were members of the fire service. Their rescue role subjected them to muscular and joint injuries, whilst night raids resulted in lengthy periods of working or sleeping in wet clothes. Contemporary accounts suggest that doctors used a diagnosis of rheumatism as a means of giving emergency responders respite from arduous duties to avoid the stigma associated with psychological disorders (Bowland, 1947). For them, somatic symptoms may have served as a proxy for traumatic stress, in part, because the circumstances in which they operated provided a convincing illness narrative to justify temporary relief from duties.

Generally, findings are reflective of patients with MUPS and demonstrate that this is an important health concern for veteran groups and reflect other veteran studies (Fukuda et al., 1998; Gray et al., 1996; Unwin et al., 1999). While MUPS have been reported in the context of earlier conflicts (Hyams et al., 1997), the emphasis today is on post-traumatic stress disorder (PTSD). Whilst PTSD is an undeniable consequence of war, such a focus may have diverted attention away from psychosomatic illnesses, not least because treatment pathways are less well defined. We suggest that MUPS are more common and warrant more treatment.

The findings of this study highlight the enduring and serious impact that psychosomatic illness can have on veterans and their families, and points to targeted treatments to facilitate a successful transition to civilian life. MUPS are difficult to treat not least because their cause is unclear but also because the veteran and the health care professional often start from different positions without a common narrative. Furthermore, the role and meaning of common symptoms are not the same for each patient. For a veteran

they could express unresolved guilt or fears from a traumatic experience in combat, or a sense of disillusionment on return from a dangerous tour of duty, a relationship difficulty or loss of status and income on return to civilian life. The challenge is to decode their meaning and find a treatment narrative that is acceptable to both the patient and the clinician. There is no simple or one-fit solution. A meta-analysis of short-term psychotherapy for MUPS found modest effects, significantly lower than the efficacy reported for other forms of mental illness such as depression or obsessive-compulsive disorder (Kleinstauber et al., 2004). A study of blended care in a day-treatment setting may provide some insights into treatment efficacy (Zeylemaker et al., 2015). Dutch servicemen were offered CBT, physical therapy (a form of graduated exercise with feedback cues), case management and psycho-education over a period of 12 weeks. Significant symptom reduction was recorded (69%), though no long-term follow-up was reported.

Furthermore, our research replicated the finding that anger and irritability are commonly reported symptoms for veterans. In both military and civilian populations, aggression has been associated with several negative consequences, including poor family functioning, negative workplace outcomes, violence, and poorer treatment outcomes for PTSD (Forbed et al., 2008; Herschcovis et al., 2007; Taft et al., 2008; Teten et al., 2010). What is more, in our study, anger and irritability were not transient in nature, instead they rose in significance throughout the decades and remained constant for the last two decades in the veteran sample. Our findings demonstrate that this is an important health concern for veteran groups and reflect other veteran studies (Taft et al., 2008; Worthen et al., 2014) and highlight the need to attend to aggressive behaviours in treatment planning. A study of High Intensity CBT (HI CBT) may provide some insights into treatment efficacy, especially if patients present with anger expression (Vecchio & Leary, 2003). Research illustrates that HI CBT to treat aggression and anger has found to be effective across a number of groups, including veterans (Strom et al., 2013).

Another symptom of note in the study sample included significantly more reporting of social avoidance by veterans compared to their civilian counterparts, while emergency responder did not report this symptom. This suggests that veterans are particularly hard to reach group. Even in the 1950s and 1960s when National Service resulted in a significantly larger military footprint than today and when much of the UK population had the first-hand experience of war, veterans avoided social engagement for much longer than emergency responders and civilians. Because of stigma, military personnel is known to be reticent in engaging in help-seeking for mental health problems (Iversen et al., 2010, 2011). Avoidance of social contact by veterans has been found to impact adversely on overall rates of cognitive and functional impairment especially those with chronic conditions (Hofman et al., 2003). Veterans often report disengagement from their social environments, prompting new initiatives to engage them in the community. An evaluation of Veterans' Pilot Clinical Services found that veteran dedicated clinics had higher treatment adherence rates compared to traditional NHS mental health services (Dent-Brown et al., 2010). Our findings demonstrate that these issues represent barriers to seeking health care. Efforts to improve the transition to civilian life, reduce stigma, reduce distrust among veterans and ensuring a positive precedent is set may improve health-seeking in veterans.

In relation to traumatic war experiences, findings showed that veterans reported more symptoms and for longer periods than civilians and emergency responders exposed to air-raids. Although symptom causality cannot be directly attributed, the characteristics of the veteran sample suggest an association with severe or repeated traumatic experience. Within our study sample, three-quarters had been deployed overseas, often to hostile environments such as desert or jungle, for lengthy periods, whilst 77% had served in combat units. Many veterans had been exposed to extreme risk, in addition to managing issues of reintegration to what had become an unfamiliar home environment (Addison, 1985; Allport, 2009). By contrast, civilian and emergency responders experienced trauma in their own communities. Emergency responders protected their own neighbourhoods and often had local support networks; they were saving lives whereas soldiers were trained and required to kill enemy combatants. This is potentially reflected in the lack of reporting of social

avoidance, suggesting a smoother adjustment and a lesser issue of transition in peacetime than the veteran group may have experienced.

Further, as mentioned, a significant proportion of veterans were engaged with combat units and it is not inconceivable that they would have encountered situations that were morally upsetting. Indeed, exposure to potentially morally injurious events during deployment had been found to be common, even among current day military personnel (Nazarov, Fikretoglu, Liu, Thompson & Zamorski, 2018). However, there are few studies that examine the impact of moral injury on both physical and mental well-being. What has been found pertains to moral injury precipitating enduring distress. For instance, US Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) veterans who had experienced combat and moral injury and who had witnessed the aftermath of battle had associations with PTSD, depression and low mental well-being (Yan, 2016). In our sample, it is therefore credible that such events can cause enduring distress and were not resolved by a return to routine civilian life. Moral and ethical dilemmas encountered by veterans need to be recognised in addition to developing treatment interventions that address expressions of moral injury.

4.1. Strengths and Limitations

The unique nature of the soldier's role in combat makes for very few studies of veterans with a control group. This is one of the first studies to include a comparator population exposed to the similar threats at the same time. A further strength was that data was extracted from medical records of subjects who were assessed by panels of doctors over extended periods of time, sometimes with repeated referrals to clinical specialists and did not solely rely on self-reports. The study demonstrates that veterans suffered more severe and lasting symptoms than civilians and emergency workers who have also been exposed to conflict. This may relate to the inherent expectation of death or wounding that front-line soldiers have, and the fact that their role requires them to kill others. In addition, the battlefield is often remote from the serviceman's family and home, and while civilians and

emergency responders also may have risked their lives they experienced lower levels of mortality.

A larger sample of civilians was sought but the progressive destruction of war pension records and an overly broad catalogue limited the number that could be identified, they are therefore included for context rather than direct comparison. Further, the parallels with today's conflicts are not exact. In recent years, regular forces have conducted asymmetric operations in time-limited tours. Whilst the risk of death and wounding remain, together with the distant nature of the battlefield, a sub-group in the study were conscripts and none were deployed on six-month tours of duty with an option to leave the armed forces at the end. However, the fundamentals of the battlefield have not changed over time and the association between physical and psychological casualties has endured across modern warfare.

4.2. Conclusions

The findings highlight the enduring and serious impact that psychosomatic illness can have on veterans of the Second World War. The most commonly reported symptoms suggest that a sub-group of veterans might meet the criteria for PTSD, yet the overall picture is not clear as 3 of the 10 most enduring symptoms were bodily expressions of pain, and as such, findings are reflective of MUPS and point to targeted treatments to reduce the number or severity of symptoms. However, what makes such medically unexplained symptoms problematic is that their role and meaning are not the same for each patient. For a veteran, symptoms may be a response to a traumatic experience in combat, or a sense of disillusionment on return from a dangerous tour of duty, a relationship difficulty or loss of status and income on return to civilian life. The challenge is to decode their meaning and find a treatment narrative that is acceptable to both the patient and the clinician. Additionally, the treatment of patients with MUPS can be both challenging and frustrating because they mimic serious or life-threatening illnesses and require careful investigation

and diagnosis. This process often reinforces symptoms or convinces the sufferer that there is an underlying or undiscovered pathology. Further, patients and clinicians often hold conflicting narratives about causation, which in turn inhibits agreement about an appropriate intervention. Although there is a growing literature on the treatment of medically unexplained symptoms, there are as yet no NICE guidelines. Our study shows that without effective treatments a sub-group, specifically, those who had been exposed to severe or prolonged trauma, continue to experience chronic ill health. This is further reflected when comparisons are made with civilian and emergency responder controls, suggesting the heightened risk veterans experienced were associated with their heightened and enduring symptom reporting.

5. Key Findings

1. Persistent symptoms in the veteran population were often disabling, chronic or intermittently relapsing and associated with physical or functional comorbidity and a decreased quality of life.

2. Exposure to severe or prolonged trauma may be associated with chronic multi-symptom illness, symptoms of post-traumatic stress and somatic expressions of pain that may delay or complicate the recovery process.

3. The comparison with civilians and emergency responders suggests that the nature and duration of symptoms exhibited by veterans may be associated with the heightened risks that they had experienced.

4. More attention should be paid to the treatment of MUPS and somatic symptoms not least because they may delay or complicate recovery.

6. Policy review

This section reviews the UK policy for veterans as context for the study's findings and recommendations. The Armed Forces Compensation Scheme of April 2005 introduced an inclusive definition for the UK veteran: a single day of paid service in regular or reserve forces (Ministry of Defence, 2011: 4; Rice, 2009). Using this low-bar criterion, the Royal British Legion estimated that there were 4.8 million ex-service personnel in Britain and Northern Ireland (7.5% of the UK population of 64.1 million in 2014), a figure predicted to decline to 3.1 million by 2020 (Woodhead et al., 2009). The UK definition stands in marked contrast to other nations (Jones & Milroy, 2016). To receive benefits from the US Department of Veterans Affairs (VA) requires at least 90 days of active duty service, with at least one day during a VA recognised wartime period, though the 90-day active service requirement does not apply to veterans discharged from the military due to a service-connected disability (US Department of Veterans Affairs, 2014). In Australia, under the Veterans' Entitlements Act of 1986 to receive full benefits for themselves and their dependants, a veteran is defined as a person who has rendered 'eligible war service' and who has 'engaged in warlike operations against hostile forces outside Australia' (Clarke, 2003: 237-48).

The inclusive and easily-met definition of a veteran adopted by the government in 2005 stands in contrast to the rigorous criteria that had traditionally characterized UK policy, and requires explanation. With the end of National Service in 1960, Britain had returned to an earlier model of military service: a small, professional force composed of volunteers deployed overseas albeit in diverse roles. Popular support for the UK armed forces remained muted throughout the Troubles in Northern Ireland and by the late 1980s some military charities were considering merger to compensate for dwindling revenues (Hines et al., 2015). However, the deployment of 45,000 UK troops to Iraq in 2003 brought the armed forces to the fore. In the context of an unpopular war and claims that the government had failed to protect its troops by the provision of adequate body armour and appropriately armoured vehicles, public and media attention increasingly focused on the demands made of the individual soldier (Ledwidge, 2011). A campaign by military charities and the press claimed that successive governments neglected service personnel once they had been discharged, whilst arguing that the unique nature of their duties entitled veterans to special status in

terms of commemoration and state benefits (Dandeker et al., 2006). In May 2004, the issue of a veteran lapel badge marked a change in emphasis. On 27 June 2006, the first official Veterans' Day (chosen to coincide with the first investiture of the Victoria Cross in 1857) was held to acknowledge the contribution of ex-servicemen and women.

Although understanding of military culture and the needs of veterans by the public and employers is inconsistent, popular support for the individual soldier or veteran rose progressively from the deployment of UK troops to Iraq (Operation Telic) in January 2004 (Ashcroft, 2014: 176-78). The intensification of the campaign in Afghanistan's Helmand province (Operation Herrick) from spring 2006 onwards inevitably raised media attention as British service personnel were killed and wounded. A survey conducted by Lord Ashcroft in 2012 found that members of the UK armed forces were rated highly (at 7.7 on a scale of 10) significantly above the NHS (6.6), the BBC (6.4) or the police (6.2), largely because they were considered 'brave' and 'courageous' (Ashcroft, 2012: 13-14).

Media focus and public support encouraged the third sector to focus on the issue of veterans and their wellbeing. Help for Heroes, set up in October 2007, raised over £200 million by September 2012 from donations and fund-raising activities. However, because of the limited size of the military footprint in the UK, the public were largely reliant on the media and armed forces charities for information about ex-service personnel. These sources are not without bias or special interest. Both the press and the third sector are attracted to narratives of distress as they engage popular interest and sympathy. By 2008, when the House of Commons Defence Committee investigated the recruitment and retention of UK armed forces, it was widely believed that the conflicts in Iraq and Afghanistan had generated a significant number of traumatised veterans. Whilst an enduring association between war and psychological casualties was accepted, the scale of the problem was at issue. The Committee concluded that there had been 'a failure in the part of the Ministry of Defence adequately to deal with the forthcoming PTSD bow wave' (Defence Committee Report, 2008: 158). In April 2009, Commodore Toby Elliott, chief executive of the military, mental-health charity Combat Stress, was quoted in the *Sunday Times* as reporting that the number of troops with

psychological disorders was 'beginning to mount up' and that this represented 'the bow wave of a much greater problem' (Smith, 2009). An attempt to define the problem accurately was made by Fossey in 2010 in a report entitled *Across the Wire, Veterans, Mental Health and Vulnerability* published by the Centre for Mental Health. That the British public had been persuaded by the media, charities and politicians was confirmed by a survey conducted in 2012 by Lord Ashcroft, which found that 'more than nine out of ten of the public thought it was common or very common for personnel leaving the Forces to have some kind of physical, emotional or mental health problem (though personnel themselves did not seem to share this view)' (Ashcroft, 2012: 7). This popular conviction stood in sharp contrast to a 2010 study of UK armed forces which found that rates of 'probable PTSD' were 4% for the army as a whole and 7% for front-line units, not significantly elevated from the 3% recorded for the entire British population (Fear, 2010).

In 2011 to address concerns that members of UK armed forces might be disadvantaged in terms of their mental and physical health as a result of their service, the Ministry of Defence published the tri-service Armed Forces Covenant (Ministry of Defence, 2011). A *Military Covenant* had originally been drafted as an Army Doctrine Publication under the Chief of the General Staff in February 2000 (Ministry of Defence, 2000). It was designed to define the relationship between the state and service personnel in the British Army in the form of an understanding, rather than a legally binding contract (Forster, 2012). It set out mutual obligations in a manner that had implications for transition and the veteran:

> Soldiers will be called upon to make personal sacrifices—including the ultimate Sacrifice - in the service of the Nation. In putting the needs of the nation and the Army before their own, they forgo some of the rights enjoyed by those outside the Armed Forces. In return, British soldiers must always be able to expect fair treatment, to be valued and respected as individuals, and that they (and their families) will be sustained and rewarded by commensurate terms and conditions of service (Ministry of Defence, 2000: 1-2).

The Armed Forces Covenant of 2011 was informed by a review of mental health services conducted by Dr Andrew Murrison MP, then parliamentary private secretary to the Health Secretary. Entitled 'Fighting Fit', it had made four key recommendations and 13 action points designed to improve and safeguard the wellbeing of service personnel (Murrison, 2010). Under the Covenant, veterans are entitled to priority access to NHS care (including hospital, primary or community care) for conditions associated to their time within the armed forces (service-related) subject to clinical need (Ministry of Defence, 2011: 6). Transition to civilian life was also identified as a significant process and support in the form of 'training, education and appropriate healthcare referral' was to be offered (Ministry of Defence, 2011: 8). However, as a statement of intent the Covenant did not outline how in practice these policies were to be delivered.

Responding to the growing call for more to be done for veterans, in June 2010 the Big Lottery Fund agreed to fund a 'Forces in Mind Trust' with an endowment of £35 million over 20 years 'to provide long-term support and advocacy for former forces personnel to make a successful transition to civilian life, including those who served in Iraq, Afghanistan and the Gulf War'. The mission designed for the trust was to address a range of problems that some veterans and their families can experience in civilian life, which can include poor mental health, social exclusion, family breakdown and alcohol abuse. Charities and armed forces organisations were asked to apply for the funding. In September 2010, a Cobseo Partnership submitted a bid and was identified as the preferred provider. The bid was approved in November 2011 and Forces in Mind Trust was constituted as a charity in January 2012.

At the outset FiMT commissioned two reports. *The Transition Mapping Study*, published in 2013, was authored by the Futures Company and outlined the process of leaving the armed forces and establishing a new life in civilian society. It did not provide solutions but defined the issues and targets for further research. The report concluded that 'the quality and consistency of the transition process within the services has improved but the process remains uneven; and after transition, the safety net that could be provided by services charities is hard to navigate' (Futures Company, 2013: 5).

In addition, FiMT funded the Mental Health Foundation (MHF) to conduct a review of the mental health of serving and ex-service personnel. This too was published in 2013 and it concluded 'for the most part, rates of mental health problems are similar to the general population, affecting a minority of serving and ex-service personnel' (Samele, 2013: 47). Although this conclusion was supported by evidence from academic research, studies focused on the symptoms of PTSD and alcohol abuse. The MHF review identified a need for further investigation of domestic violence in service families, and the impact of mental health problems on the families of military personnel. Although alcohol misuse was considered the most important research target, the review identified 'determining what mental health services work for ex-Service personnel with adjustment disorders, common mental health problems and PTSD' as 'a second priority' (Samele, 2013: 46). Because much UK research had been based on self-report measures administered through telephone surveys and postal questionnaires, the review encouraged the collection of data by face-to-face interviews and clinician administered tests.

This project funded by FiMT is, in part, a response to the recommendations contained in the MHF review. It was targeted at psychosomatic illness experienced during transition and afterwards. Data was collected from clinical notes that were the result of face-to-face interviews of veterans by doctors and other health professionals. In addition, it included the first UK comparison between veterans, emergency reponders and civilians exposed to trauma.

While several nations are developing and implementing post-operational stress management policies to moderate psychological problems experienced by veterans (Murrison, 2010), specific veteran-based healthcare in the UK is a fairly recent development when compared to other countries such as the USA (MacManus & Wessley, 2013; McCartney, 2011). Responses have included the MOD and NHS pilot and evaluation of six enhanced NHS mental health services across England, Scotland and Wales. Refinement and further implementation of veteran specific care and services is endorsed.

Recent government policy towards veterans is, in part, a response to public and media pressure created by the recent operations in Iraq and Afghanistan. The withdrawal of UK forces from high-profile, international operations and further reductions to government expenditure (which impact not only on the numbers in the regular forces but also on a willingness to deploy troops in operations overseas) are likely to take the spotlight away from veteran issues. Before the First World War and the recruitment of a vast citizen army, the armed forces in Britain were held with pride but at the margins of society, a perception reinforced by deployment to distant territories on imperial duties (Dandeker, 2006; Strachan, 1997). After the end of National Service in 1960, a need to cut government expenditure saw UK armed forces return to the status they had held in the late nineteenth century. This, in turn, suggests that unless the UK finds itself engaged in a new operational deployment, that veteran issues will require increasing efforts to maintain public interest and government support.

7. Recommendations

Recommendation 1: Greater attention be given to the treatment of medically unexplained physical symptoms (MUPS) somatic illnesses.

The study has revealed a gap in the provision of effective treatment for veterans suffering from post-traumatic illnesses. These disorders can be seen to account for chronic functional impairment with consequent welfare and health costs to the government. Whilst there are NICE approved treatments for PTSD, there are no equivalent interventions for MUPS and yet plausibly they account as much, if not greater, invalidity. This is in part because PTSD is a well-researched and tightly defined disorder that has attracted the attention of the media and military charities. Psycho-somatic disorders characterised by MUPS by comparison do not lend themselves to a simple explanation and have attracted controversy over their causation.

It is recommended therefore that greater attention is given to these disorders. Although research conducted of UK armed forces has shown that there was no specific Iraq syndrome (Horn, 2006), there has been a significant rise in the presentation of MUPS by service personnel, such that the levels reported from 2004 onwards are equivalent to those seen after the 1991 Gulf War when a syndrome apparently specific to that conflict was reported by veterans (Unwin, 1999). This evidence suggests that the report of functional somatic symptoms is on the increase and indeed is reflected in rising rates of sickness absence from stress-related disorders in the UK (Henderson et al, 2012). Furthermore, it could be argued that mild traumatic brain injury (mTBI), regarded as the signature injury of Iraq and Afghanistan, falls into the category of a medically-unexplained syndrome of these campaigns as to date neurological investigations have failed to identify a causal pathology (Hoge et al., 2008; Vasterling et al., 2012).

There is a need to devise new treatments for veterans with MUPS. These would have broader health benefits as MUPS are encountered in the civilian population and account for 25% of primary care consultations (Aggarwal et al., 2006; Kirmayer et al., 2004).

Recommendation 2: More research in to anger and aggression in veteran populations.

Anger and irritability were commonly reported symptom for veterans. Not only was it ranked as the fifth most commonly reported symptom on first presentation, it only increased throughout the 35-year reporting period and only for the veteran group. In both military and civilian populations, aggression has been associated with several negative consequences, including poor family functioning, negative workplace outcomes, violence, and poorer treatment outcomes for PTSD. It is therefore recommended that more research and clinical attention needs to be given to anger and aggression treatment in veteran populations to best inform practice guidelines for assessing and treating maladaptive anger.

Recommendation 3: Social and community support and outreach programmes to address social exclusion.

Veterans reported significantly more symptoms of social avoidance than civilians and emergency responders. Because of stigma, military personnel are known to be reticent in engaging in help-seeking for mental health problems. The effects of social avoidance amongst veterans are recognised and has increased overall rates of cognitive and functional impairment especially those with chronic conditions. Veterans often report disengagement from their social environments, prompting new initiatives to engage them in the community. An evaluation of Veterans' Pilot Clinical Services found that veteran dedicated clinics had higher treatment adherence rates compared to traditional NHS mental health services.

Recommendation 4: Recognising and developing treatment interventions that address expression of moral injury.

Clinically, moral injury can contribute to depression or the maintenance of post-traumatic illnesses and while it is not currently addressed by current treatments of PTSD it may serve to sustain or intensify psychological distress. The study findings highlight the enduring nature of post-traumatic illness suffered by veterans, with anxiety and depression as the two most common and persistent disorders and with a sub-group potentially meeting the criteria for PTSD (e.g. nightmares as a feature of Criterion B; irritability, restlessness and sleep problems meet Criterion E, whereas anxiety and avoidance fall within Criterion D. Depression is

commonly co-morbid with PTSD but also relates to negative thoughts and feelings included in Criterion D (Friedman et al., 2011). Although the data were collected from a period before PTSD was formally recognised, the symptoms can be interpreted as a manifestation of post-traumatic illness. It is not inconceivable that veterans encountered situations that were morally upsetting, which caused enduring distress and were not resolved by a return to routine civilian life. It is therefore recommended that the moral and ethical dilemmas veterans face need to be recognised in addition to developing treatment interventions that address expressions of moral injury.

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Appendix A1. Method

A1.1. Subjects and data source

The study analysed 604 subjects awarded a state war pension for a psychological disorder; these comprised: 500 army veterans, 50 civilians and 54 emergency service workers. Pension files were selected using a random number generator and applying its output to the extensive archive of World War Two cases held by the Ministry of Defence. The number of war pensions in payment had peaked in 1947 at 567,300 (Ministry of Pensions, 1953, pp. 97-98), and by 1953, when the total had fallen to 501,400, it was calculated that 50,060 (10%) were for neurological and mental disorders (Jones *et al*. 2002b). However, the absence of a searchable catalogue with fields for diagnosis and pensioner category limited the number of non-military files (104) that could be found.

The veteran sample was selected from former members of the British Army to avoid cultural differences between the three services and to limit the range of traumatic exposures. Of the cases that met the inclusion criteria, only those with missing data were rejected. Although war pensions were originally designed for members of the armed forces, air raids brought civilians into the front-line and those wounded or traumatised by bombing were considered eligible for an award. The assessment procedure and levels of compensation offered were the same as those that applied to veterans. From 1943 onwards, it was an inclusive system whereby a claim was presumed valid unless the Ministry could establish beyond reasonable doubt that the criteria had not been met. A total of 48,000 pensions were granted to civilians and Civil Defence Workers, of which 24,000 remained in payment in 1956 (King, 1958, p. 30). Most of the emergency responders in the study were members of the Auxiliary Fire Service, men marginally too old for military service but not in occupations considered vital for the war effort. Many were conscripted and came from London region where they had been directly exposed to risk of death or severe wounding (Guttmann & Baker, 1945). Other emergency service workers were ambulance men, police officers and air-raid wardens. Apart from the physical effects of bombing, most had witnessed casualties and dead bodies, including children. Such was the stress experienced by these groups that in 1941 three convalescent homes were opened in the countryside for ‘Civil Defence workers of both sexes . . . who are in need of a change after

illness or injury, or of rest and recuperation as a result of a long spell of duty' (Horder, 1941, p. 747).

Veterans, civilians and emergency responders in receipt of a pension were subject to annual boards at which they were examined by two physicians and, on occasion, referred for a specialist opinion. These clinical notes provided a continuous record of symptoms from the serviceman's discharge from the armed forces, and in the case of civilians from the time that the pension was awarded for a war-related psychological injury. The case notes also include service and employment records, reports from external and specialist assessors and case correspondence. With a duty to prevent fraud, the Ministry verified factual details from hospitals, GPs, unit war diaries and employers where necessary. All records were of deceased pensioners.

A1.2. Data collection

Data was collected by two researchers using a standardised form and protocol; inter-rater reliability was obtained by random double-checking of files (Iversen *et al*. 2007). The following information was recorded:

1. Subjects' demographic details including age, education, family history, occupation before and after war service, medical history.
2. Wartime record for veterans and emergency workers, nature of recruitment, unit, rank, date of enlistment, dates of discharge, time in combat and traumatic exposures.
3. 94 possible symptoms in the following groups: fatigue, cognition, cardiovascular and respiratory systems, gastrointestinal, genitourinary, central nervous system, locomotor system, eye, ear, nose, and throat, skin, psychological state, sleep problems, weight changes, and self-inflicted wounds. All symptoms were recorded with dates of presentation to track patterns of illness over time.
4. Results of medical investigations.

Appendix A2. Statistical Analysis

Data was recorded across 94 symptoms types, however, because of computational limitations and the inevitable overlap in the information provided by the large number of symptoms, a distribution analysis was conducted. The results showed that the 25 most common symptoms in the entire dataset accounted for 69.9% of the data. It was for this reason these 25 symptoms were selected for the study. The number of individuals reporting each of these 25 symptoms was calculated by summing all those who reported the symptom at least once over the period for which records were available. Total symptom count was calculated by summing the number of years in which the symptom was reported by the entire sample. For descriptive statistics, we used percentages, measures of central tendency (mean and frequency) and dispersion (standard deviation). Comparisons of duration between groups were made using negative binomial regression, comparing the count of years in which each symptom was reported in individuals reporting it at least once. The analytical package used was Stata 14 (StataCorp, 2015).

Appendix A3

Table 1. *Socio-demographic characteristics of veterans, civilians and emergency workers (N=604)*

	Veteran (%)	**Civilian (%)**	**Emergency Responder (%)**
	***N* = 500**	***N* = 50**	***N* = 54**
Gender			
Male	500 (100%)	38 (76%)	53 (98%)
Female	0	12 (24%)	1 (2%)
Age, years (Mean, s.d.)	28.14 (8.40)	50 (12.87)	38 (6.62)
Marital Status			
Married	429 (85.8%)	40 (80%)	43 (79.6%)
Divorced/separated	5 (1%)	1 (2%)	2 (3.7%)
Widow	0	4 (8%)	1 (1.8%)
Single	55 (11%)	4 (8%)	5 (9.3%)
Unknown	11 (2.2%)	1 (2%)	3 (5.6%)
Employment Status			
Employed	394 (78.8%)	31 (62%)	44 (81.5%)
Unemployed	9 (1.8%)	4 (8%)	1 (1.9%)
Retired	8 (1.6%)	1 (2%)	0
Sickness/disability	15 (3%)	6 (12%)	1 (1.9%)
Other	0	3 (6%)	0
Self-employed	10 (2%)	2 (4%)	5 (9.2%)
Unknown	64 (12.8%)	3 (6%)	3 (5.5%)
Pre-War Service	133 (%)	17 (%)	6
Education			
Degree level and above	62 (12.4%)	0	0
Below Degree level	211 (42.2%)	1 (2%)	2 (3.7%)
No qualification	61 (12.2%)	0	0
Unknown	166 (33.2%)	49 (98%)	52 (96.3%)

Appendix A4

Table 2. *Characteristics of the veteran sample*

Characteristics	***N* = 500 (%)**
Status	
Regular	94 (18·8%)
Territorial	67 (13·4%)
Volunteer	48 (9·6%)
Conscript	286 (57·2%)
Not recorded	5 (1·0%)
Regiment	
Infantry	211 (42·2%)
Armoured units	32 (6·4%)
Royal Engineers	62 (12·4%)
Artillery	81 (16·2%)
Signals	16 (3·2%)
Royal Army Medical Corps	12 (2·4%)
Royal Army Ordnance Corps	26 (5·2%)
Royal Army Service Corps	44 (8·8%)
Royal Electrical and Mechanical Engineers	8 (1·6%)
Other	8 (1.6%)
Engagement Type	
Combat	243 (48.6%)
Combat Support	143 (28·6%)
Combat Service Support	102 (20·4%)
Non-Combatant	12 (2.4%)
Rank	
Officers	42 (8·4%)
Non-commissioned officers	129 (25.8%)
Other Ranks	329 (65·8%)
Deployment	
Home Service	128 (25·6%)
Deployed Abroad	372 (74·9%)

Appendix A5

Table 3. *Total number of symptoms reported and ranked by group*

Symptoms	Veterans *n* = 500	Civilians *n* = 50	Emergency responders *n* = 54
Anxiety	3279 (1)	135 (1)	62 (3)
Depression	2143 (2)	91 (5)	19 (13)
Sleep problems	1640 (3)	105 (4)	51 (6)
Headache	1483 (4)	122 (2)	60 (4=)
Irritability/anger	1247 (5)	37 (11=)	26 (10=)
Tremor/shaking	1001 (6)	73 (6=)	43 (8)
Difficulty completing tasks	768 (7)	112 (3)	65 (2)
Poor concentration	753 (8)	50 (9)	14 (17=)
Repeated fears	737 (9)	73 (6=)	26 (10=)
Avoidance social contact	735 (10)	12 (19=)	0 (25)
Muscle pain	693 (11)	40 (10)	49 (7)
Dyspepsia	627 (12)	9 (22=)	21 (12)
Stomach pain	590 (13)	23 (15)	60 (4)
Dizziness	574 (14)	56 (8)	39 (9)
Restlessness	566 (15)	9 (22=)	7 (21)
Nightmares	541 (16)	20 (16)	3 (23=)
Shortness of breath	438 (17)	9 (22=)	14 (17=)
Weakness	410 (18)	18 (17)	18 (14)
Forgetfulness	391 (19)	37 (11=)	16 (16)
Back pain	385 (20)	34 (13)	78 (1)
Irregular heartbeat	353 (21)	12 (19=)	17 (15)
Exhaustion	315 (22)	24 (14)	14 (17=)
Fatigue	314 (23)	13 (18)	13 (20)
Apathy	311 (24)	12 (19)	6 (22)
Weight change	215 (25)	2 (25)	3 (23=)
Total	20509	1128	724

Numbers in brackets indicate ranking by number of symptoms reported.

Appendix A6

Table 4. *Total number of subjects who reported a symptom*

Symptoms	Veterans (*n* =500) (%)	Civilians (*n* = 50) (%)	Emergency responders (*n* = 54) (%)
Anxiety	436 (87.2)	46 (92.0)	26 (48.1)
Depression	337 (67.4)	39 (78.0)	13 (24.1)
Headache	321 (64.2)	41 (82.0)	23 (42.6)
Sleep problems	317 (63.4)	41 (82.0)	24 (44.4)
Difficulty completing tasks	290 (58.0)	44 (88.0)	34 (63.0)
Tremor/shaking	270 (54.0)	35 (70.0)	22 (40.1)
Irritability/anger	239 (47.8)	23 (46.0)	14 (25.9)
Poor concentration	228 (45.6)	25 (50.0)	9 (16.7)
Repeated fears	222 (44.4)	28 (56.0)	15 (27.8)
Dizziness	211 (42.2)	25 (50.0)	18 (33.3)
Stomach pain	200 (40.0)	12 (24.0)	16 (29.6)
Dyspepsia	196 (39.2)	6 (12.0)	11 (20.4)
Exhaustion	193 (38.6)	18 (36.0)	12 (22.2)
Fatigue	190 (38.0)	9 (18.0)	5 (9.3)
Avoidance social contact	160 (32.0)	8 (16.0)	0
Irregular heartbeat	151 (30.2)	8 (16.0)	4 (7.4)
Muscle pain	151 (30.2)	19 (38.0)	24 (44.4)
Restlessness	150 (30.0)	8 (16.0)	7 (12.7)
Forgetfulness	149 (29.8)	19 (38.0)	7 (12.7)
Shortness of breath	134 (26.8)	7 (14.0)	8 (14.8)
Weakness	133 (26.6)	14 (28.0)	12 (22.2)
Weight change	132 (26.4)	2 (4.0)	2 (3.7)
Apathy	121 (24.2)	7 (14.0)	4 (7.4)
Back pain	112 (22.4)	15 (30.0)	28 (51.9)
Nightmares	99 (19.8)	11 (22.0)	2 (3.7)

Figures in brackets indicate the percentage in the sample who reported the symptom.

Appendix A7

Table 5. *Number of veteran symptoms by decade*

Symptoms	1940s	1950s	1960s	1970s
Anxiety (%)	1143 (38.7)	881 (29.8)	519 (17.6)	412 (13.9)
Depression (%)	675 (34.5)	632 (32.3)	368 (18.8)	279 (14.3)
Headache (%)	649 (47.2)	451 (32.8)	167 (12.2)	108 (7.9)
Sleep problems (%)	553 (37.2)	466 (31.4)	265 (17.9)	201 (13.5)
Tremor/shaking (%)	447 (47.6)	277 (29.5)	134 (14.3)	82 (8.7)
Difficulty completing tasks (%)	428 (56.9)	213 (28.3)	91 (12.1)	20 (2.7)
Irritability/anger (%)	386 (33.8)	414 (36.3)	201 (17.6)	139 (12.2)
Dyspepsia (%)	364 (61.5)	149 (25.2)	48 (8.1)	30 (5.1)
Stomach pain (%)	348 (62.4)	94 (17.0)	58 (10.5)	54 (9.9)
Repeated fears (%)	326 (47.7)	195 (28.6)	98 (14.4)	64 (9.4)
Poor concentration (%)	314 (46.3)	206 (30.2)	91 (13.4)	69 (10.2)
Dizziness (%)	311 (58.6)	152 (28.6)	43 (8.1)	25 (4.7)
Muscle pain (%)	272 (42.7)	187 (29.4)	100 (15.7)	78 (12.2)
Shortness of breath (%)	242 (58.2)	88 (21.3)	48 (11.6)	37 (8.9)
Avoidance social contact (%)	238 (35.6)	252 (37.8)	106 (15.9)	70 (10.5)
Exhaustion (%)	220 (72.8)	61 (20.1)	19 (6.3)	4 (1.3)
Restlessness (%)	215 (35.6)	140 (27.3)	88 (17.2)	70 (13.7)
Irregular heartbeat (%)	209 (62.0)	68 (20.2)	35 (10.4)	25 (7.4)
Fatigue (%)	206 (67.3)	75 (24.5)	21 (6.9)	4 (1.3)
Forgetfulness (%)	192 (52.3)	117 (31.9)	34 (9.3)	24 (6.5)
Weakness (%)	176 (47.0)	104 (27.8)	54 (14.4)	40 (10.7)
Weight changes	149 (74.1)	44 (21.9)	7 (3.5)	1 (0.5)

Nightmares (%)	148 (32.0)	127 (27.4)	90 (19.4)	98 (21.2)
Apathy (%)	138 (50.2)	69 (25.0)	38 (13.8)	31 (11.2)
Back pain (%)	127 (36.6)	112 (32.3)	62 (17.9)	46 (13.3)
Total	8476	5574	2785	2011

Note: percentages relate to the proportion of symptoms reported by decade.

Appendix A8

Table 6. *Duration of symptoms in years: veterans compared with civilians and with emergency responders*

Symptoms	Veterans mean (95% Cl)	Civilians mean (95% Cl)	Civilian IRR	*p* value (95% Cl)	Emergency responders mean (95%)	Emergency responder IRR	*p* value (95% Cl)
Anxiety	7.52 (7.27-7.78)	2.93 (2.46-3.47)	0.39	<0.001 (0.26-0.58)	2.38 (1.83-3.06)	0.32	<0.001 (0.19-0.53)
Depression	6.36 (6.09-6.63)	2.33 (1.88-2.86)	0.37	<0.001 (0.24-0.56)	1.46 (0.88-2.28)	0.23	<0.001 (0.11-0.50)
Nightmares	5.46 (5.01-5.95)	1.82 (1.11-2.81)	0.33	0.016 (0.14-0.82)	1.50 (0.31-4.38)	0.27	0.225 (0.03-2.22)
Irritability/anger	5.22 (4.93-5.52)	1.61 (1.13-2.22)	0.31	<0.001 (0.17-0.55)	1.86 (1.21-2.72)	0.36	0.004 (0.17-0.72)
Sleep problems	5.17 (4.93-5.43)	2.56 (2.09-3.10)	0.5	0.001 (0.33-0.74)	2.13 (1.58-2.79)	0.41	0.001 (0.24-0.69)
Headache	4.62 (4.39-4.86)	2.98 (2.47-3.55)	0.64	0.019 (0.45-0.93)	2.61 (1.99-3.36)	0.56	0.022 (0.35-0.92)
Avoidance social contact	4.59 (4.27-4.94)	1.50 (0.78-2.87)	0.33	0.025 (0.12-0.87)	*	*	*
Muscle pain	4.59 (4.25-4.94)	2.11 (1.50-2.87)	0.46	0.009 (0.26-0.82)	2.04 (1.51-2.70)	0.44	0.003 (0.26-0.75)
Restlessness	3.77 (3.47-4.10)	1.13 (0.51-2.14)	0.3	0.023 (0.11-0.85)	1.00 (0.40-2.06)	0.27	0.022 (0.08-0.83)
Tremor/shaking	3.71 (3.48-3.94)	2.09 (1.63-2.62)	0.56	0.007 (0.37-0.85)	1.95 (1.41-2.63)	0.53	0.016 (0.31-0.89)
Back pain	3.44 (3.10-3.80)	2.27 (1.57-3.17)	0.66	0.196 (0.35-1.24)	2.79 (2.20-3.48)	0.81	0.382 (0.51-1.30)
Repeated fears	3.32 (3.08-3.57)	2.61 (2.04-3.28)	0.79	0.196 (0.35-1.24)	1.73 (1.13-2.54)	0.52	0.054 (0.27-1.01)
Poor concentration	3.30 (3.07-3.55)	2.00 (1.48-2.64)	0.61	0.049 (0.37-1.00)	1.56 (0.85-2.61)	0.47	0.081 (0.20-1.10)
Shortness of breath	3.27 (2.97-3.59)	1.29 (0.59-2.44)	0.39	0.067 (0.14-1.07)	1.75 (0.96-2.94)	0.54	0.165 (0.22-1.29)

Dyspepsia	3.20 (2.95-3.46)	1.50 (0.69-2.85)	0.47	0.129 (0.18-1.25)	1.91 (1.18-2.92)	0.6	0.144 (0.30-1.19)
Weakness	3.08 (2.79-3.40)	1.29 (0.76-2.03)	0.42	0.021 (0.20-0.87)	1.50 (0.89-2.37)	0.49	0.068 (0.22-1.05)
Stomach pain	2.95 (2.72-3.20)	1.92 (1.22-2.88)	0.65	0.192 (0.34-1.24)	3.75 (2.86-4.83)	1.27	0.355 (0.76-2.11)
Dizziness	2.72 (2.50-2.95)	2.24 (1.69-2.91)	0.82	0.374 (0.54-1.26)	2.05 (1.46-2.81)	0.75	0.264 (0.46-1.24)
Difficulty completing tasks	2.65 (2.46-2.84)	2.55 (2.10-3.06)	0.96	0.805 (0.70-1.32)	1.91 (1.48-2.44)	0.72	0.086 (0.50-1.05)
Forgetfulness	2.62 (2.37-2.90)	1.95 91.37-2.68)	0.74	0.278 (0.43-1.27)	2.29 (1.31-3.71)	0.87	0.745 (0.38-2.00)
Apathy	2.57 (2.29-2.87)	1.71 (0.89-2.99)	0.67	0.401 (0.26-1.72)	1.50 (0.55-3.26)	0.58	0.406 (0.16-2.08)
Irregular heartbeat	2.34 (2.10-2.59)	1.50 (0.78-2.62)	0.64	0.286 (0.28-1.45)	4.25 (1.38-4.44)	1.82	0.213 (0.71-4.66)
Fatigue	1.65 (1.47-1.85)	1.44 (0.77-2.47)	0.87	0.677 (0.46-1.65)	2.60 (1.38-4.44)	1.57	0.196 (0.79-3.13)
Exhaustion	1.63 (1.46-1.82)	1.33 (0.85-1.98)	0.82	0.376 (0.52-1.28)	1.17 (0/64-1.96)	0.71	0.251 (0.40-1.27)
Weight change	1.63 (1.42-1.86)	1.00 (0.12-3.61)	0.61	0.492 (0.15-2.47)	1.50 (0.31-4.38)	0.92	0.887 (0.29-2.88)

* No symptoms reported