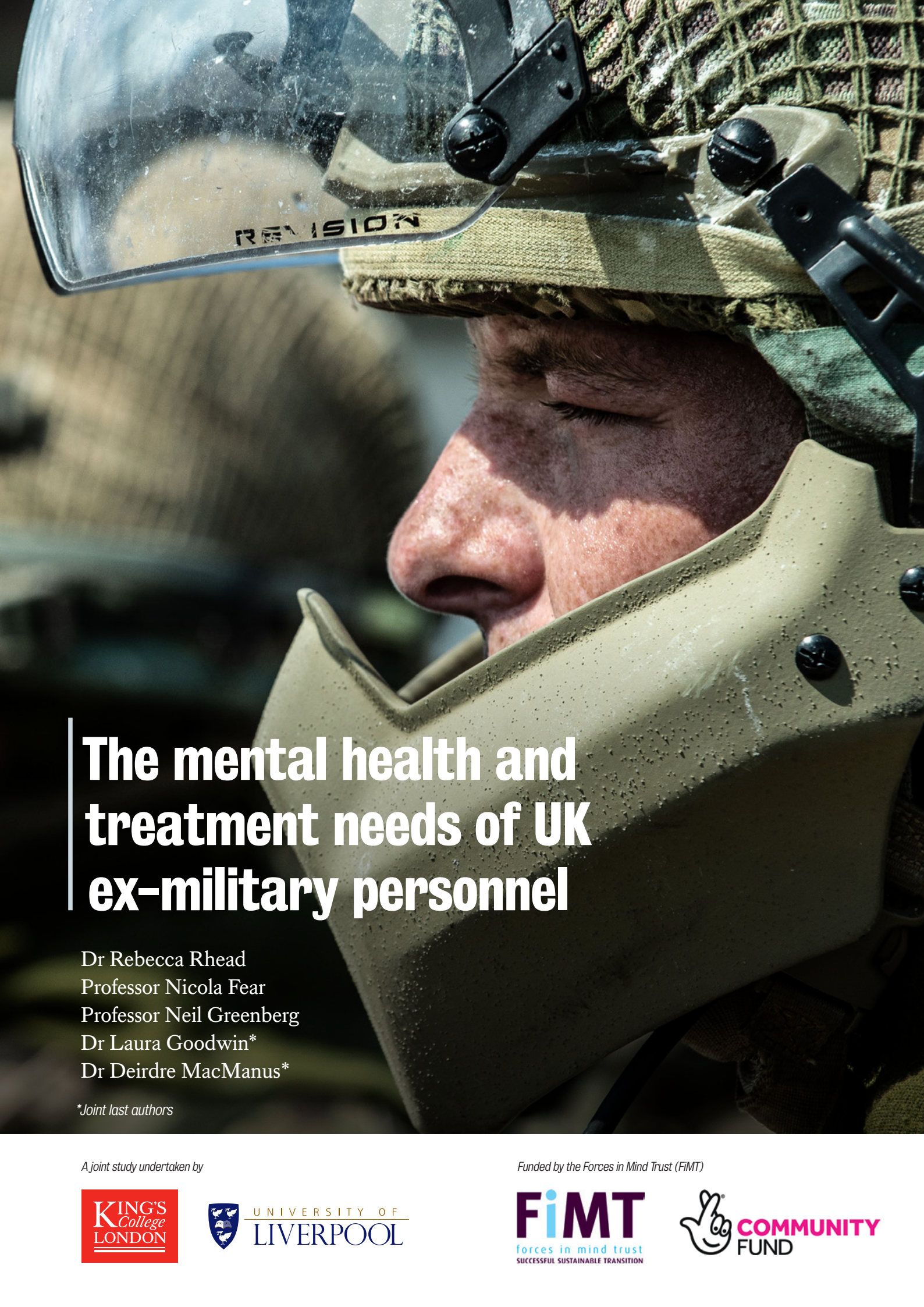




The mental health and treatment needs of UK ex-military personnel

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A joint study undertaken by



Funded by the Forces in Mind Trust (FiMT)





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Foreword

To many observers, members of the Armed Forces are a homogenous group, and likewise ex-Service personnel, or veterans. By most measures, this is not true. But one consequence of this public misperception is that work that highlights any needs of veterans, particularly around mental health, risks perpetuating the myth that all veterans have such needs. This skews the understanding of the benefits of a former Service career, and adds to the disadvantage faced by those attempting to break into the civilian employment world.

This report has therefore attempted to identify exactly what are the mental health needs of veterans, especially those who served during the recent conflicts in Iraq and Afghanistan. Usefully, it compares those needs both with an equivalent general population, and with the services that are available. This is an important study, because all four NHSs increasingly offer statutory services tailored to veterans. They have a collective aspiration to provide a complete spectrum of services to the Armed Forces Community, bespoke where necessary, from within their own commissioning. We applaud this – a country in which the health needs of its veterans are adequately delivered by the State is indeed one that can claim to be the best place in the world to live, a stated goal of Whitehall's Office for Veterans' Affairs.

There is work to do though. The report tackles the Improving Access to Psychological Therapies initiative, and promisingly reports its efficacy for veterans being broadly comparable to that for civilians, which should encourage those sceptical or stigmatised to take advantage of it. There remains work to be done in providing 'wraparound' services – particularly for those with alcohol abuse/addiction, who we know are over-represented in the veteran population.

None of this can be enabled without adequate data. This is a recurring theme across all manner of veterans services, and unsurprisingly features high up on the Government's priorities within its 'Strategy for our Veterans'. This excellent report builds a clearer picture of the reality of the demand and supply of mental health care for veterans. It warrants the closest examination by those responsible for planning and delivering that care. We can only present the evidence – we need the policy makers now to implement the recommendations.



A handwritten signature in black ink that reads "Ray Lock". The signature is fluid and includes a long horizontal stroke extending to the right.

Air Vice-Marshal Ray Lock CBE

Chief Executive, Forces in Mind Trust

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1.0 Executive Summary

While most military personnel cope well with the challenges of serving in the Armed Forces and successfully adapt to civilian life after they leave, for some, certain experiences which may be specifically related to service can have a negative impact on their mental health. Ensuring that veterans are no worse off than non-veterans, and that there are effective services available to them, is not only a UK government priority [1] but also a social and legal obligation enshrined in the Armed Forces Covenant [2].

The purpose of this research project has been to understand the mental health needs of UK veterans who served during recent military operations in Iraq and Afghanistan, and the suitability of existing services for common mental health problems, to determine whether or not veterans could be at a disadvantage because of their military service.

Two studies have been carried out to achieve this goal.

Study 1

An assessment of how prevalent and severe common mental health and alcohol problems are in a specific subset of veterans and how they compare to non-veterans of the same age and gender.

Study 2

An examination of the mental health of veterans seeking treatment for mental health problems via the Improving Access to Psychological Therapies (IAPT) initiative, and whether they respond to such treatment differently from non-veterans.

1.1 Findings from Study 1

How does the mental health of veterans compare to non-veterans?

This project analysed data from phase 3 of the King's Centre for Military Health Research (KCMHR) cohort study (Oct 2014 – Dec 2016) to assess veteran experiences and mental health. This was compared with data on non-veterans taken from two large general population surveys: the 2014 Adult Psychiatric Morbidity Survey (APMS) and wave 6 (2014-2015) of the UK Household Longitudinal Study (UKHLS).

We found that overall UK veterans who served during the time of the military operations in Iraq and Afghanistan were more likely to report probable common mental disorders (CMD), post-traumatic stress disorder (PTSD) and alcohol misuse than non-veterans.

1.

Male veterans were more likely to report probable mental health problems than male non-veterans of the same age, but we found no significant difference between female veterans and female non-veterans of the same age.

2.

Both male and female veterans were more likely to report drinking at a hazardous level (i.e. binge drinking) than their non-veteran counterparts.

3.

Male veterans were more likely to report symptoms of more problematic drinking behaviours than female veterans (i.e. symptoms of harmful drinking and dependence).

4.

Veterans and non-veterans who were unable to work due to illness or disability were more likely to report a common mental health problem than veterans and non-veterans who were employed.

5.

Veterans who were younger were more likely to report both a common mental health problem and probable PTSD, compared to those who were older.

6.

Veterans who were single were more likely to report probable PTSD and those separated, divorced or widowed were more likely to meet criteria for alcohol misuse, compared to veterans in a relationship.

Within the veteran population, who was more likely to have a mental health problem?



Those younger in age

Veterans who were younger were more likely to have both a common mental disorders and post-traumatic stress disorder



Those not in a relationship

Veterans who were single were more likely to have post-traumatic stress disorder and those who were separated, divorced or widowed were more likely to misuse alcohol



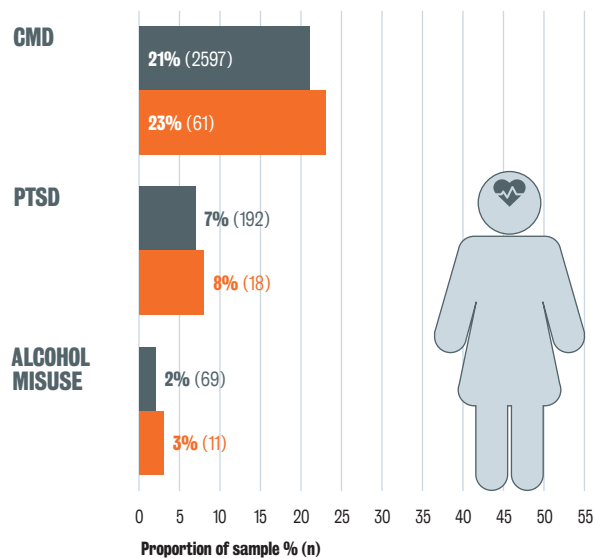
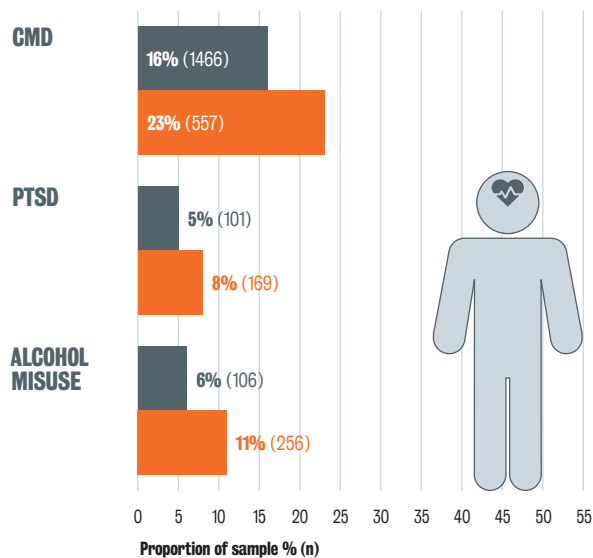
Those not working

Veterans who were unemployed or unable to work due to long term illness or disability were more likely to have a common mental disorders

Prevalence of common mental disorders, post-traumatic stress disorder and alcohol misuse

Male and female

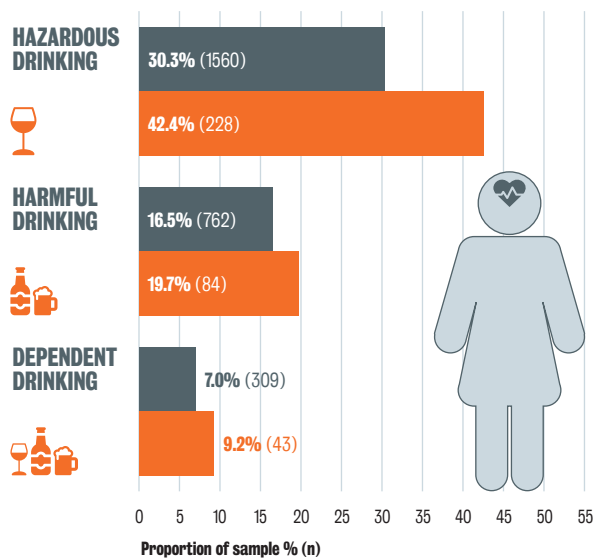
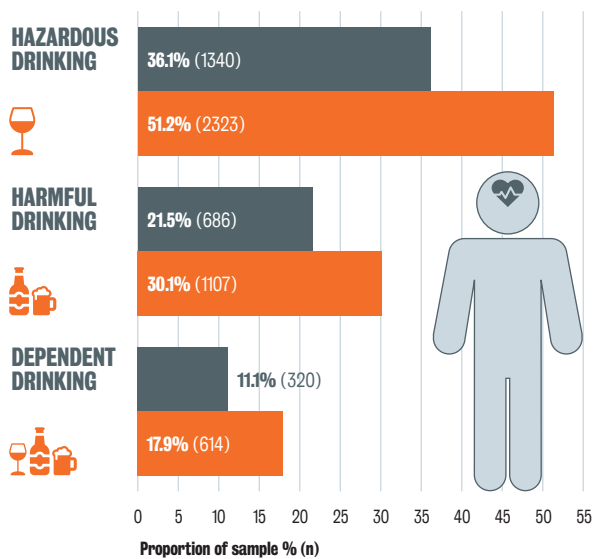
Non-veterans Veterans



Symptoms of alcohol misuse

Male and female

Non-veterans Veterans



1.2 Findings from Study 2

How do veterans respond to NHS IAPT therapies?

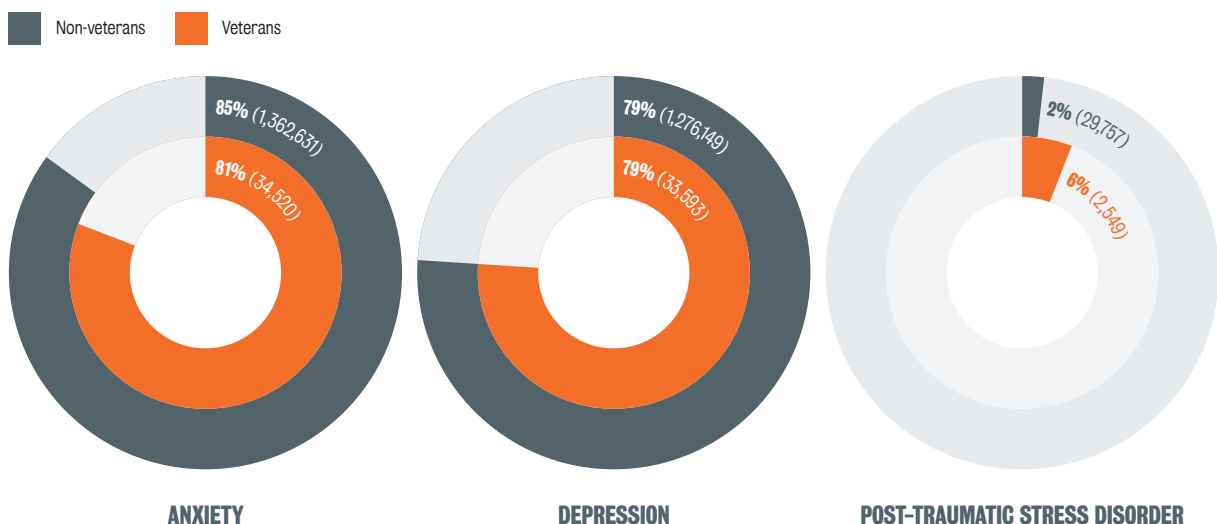
National NHS data from the Improving Access to Psychological Therapies (IAPT) initiative (which provides psychological therapies to patients with mild to moderate mental health disorders) was analysed to compare the mental health and treatment outcomes of veteran patients with non-veterans.

Veterans receiving care through IAPT were more likely to be male (as expected given the predominance of males in the military) and older than non-veteran IAPT patients (most likely due to ex-serving personnel only accessing IAPT after leaving service).

At first assessment, veteran patients were more likely than non-veterans to meet the threshold score for probable PTSD. For depression and anxiety, however, veteran and non-veteran IAPT patients were just as likely to meet the threshold score for a probable diagnosis of each of these disorders and present with a similar score on symptom severity. Overall veterans adhered to their treatment as well as non-veterans, were just as likely to show reliable improvement in their symptoms and to recover from mild to moderate PTSD, depression and anxiety.

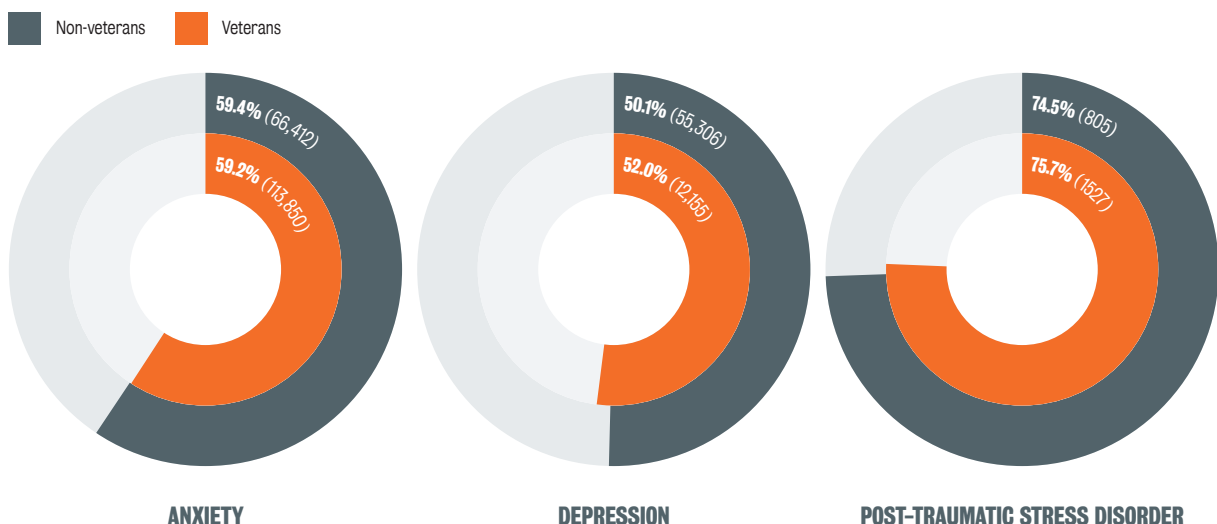
Comparison of mental health problems in veterans vs non-veterans on presentation to IAPT services

Proportion who meet threshold for possible diagnoses of disorders of depression or anxiety or post traumatic stress



Comparison of IAPT treatment outcomes in veterans vs non-veterans

Proportion who show reliable symptom improvement



1.3 Conclusion and recommendations

Overall, veterans who served in the UK military since commencement of operations in Afghanistan (2002-2014) and Iraq (2003-2011) are more likely to exhibit probable CMD, PTSD and to misuse alcohol than non-veterans of the same age and gender. Given that we also already know that veterans are more likely to report probable PTSD than serving military personnel [3], our findings confirm that veterans are also worse off when compared to the general population. When looking at possible gender differences within the veteran sample, no difference in [the] prevalence of PTSD and CMD was found between male and female veterans, which does not parallel findings in the general population. Among women, mental health (CMD and PTSD) prevalence was very similar for veterans and non-veterans, but female veterans were more likely to report hazardous alcohol misuse than non-veterans. In contrast, the prevalence of all mental health and alcohol misuse outcomes was found to be statistically significantly higher in male veterans compared to male non-veterans. Being ill or disabled was associated with a higher prevalence of CMD and PTSD for both veterans and non-veterans.

In light of these findings showing a higher prevalence of mental health problems and alcohol misuse in male veterans, it was also encouraging to find that for those seeking help for mental health problems via IAPT services, veterans adhere to, and respond as well as non-veterans to the generic psychological therapies on offer. We therefore make the following recommendations:

Improve awareness of mental health and alcohol misuse problems and access to support services

- Given our finding that veterans have worse mental health and alcohol misuse outcomes than non-veterans of the same age (CMD, PTSD and alcohol misuse are all significantly more prevalent in UK veterans) and the previous finding that veterans are more likely to report PTSD than serving military personnel, we propose that efforts are made to raise awareness of the mental health needs of veterans, as well as provide education on how to identify problems and available mental health services, and how best to access them. We also recommend targeting the above awareness raising and education efforts at serving personnel and those responsible for their care as earlier prevention and intervention is likely to reduce the need further down the line after leaving service.

Ensure access to support and treatment for co-occurring alcohol misuse

- IAPT services do not currently provide treatment for co-occurring alcohol misuse. Alcohol misuse was found to be more prevalent in veterans than non-veterans. Alcohol may be used as a coping strategy for mental health symptoms and has been shown to jeopardise the success of treatment for mental health problems. Treating alcohol misuse and mental health problems separately and sequentially can delay access to effective mental health treatment. We recommend that IAPT services develop co-working relationships with alcohol misuse treatment initiatives to ensure their patients are receiving adequate and timely support for both alcohol and mental health difficulties.

Joined up working between mental health, alcohol misuse and welfare services

- Given that mental health problems and alcohol misuse were highly prevalent in the unemployed, including those unable to work both due to illness and disability (both veterans and non-veterans), we recommend that social and welfare support is a key element of any veteran's care package, where appropriate, and that organisations delivering this support work closely with mental health and alcohol misuse services. Joined up working in this way increases the likelihood that veterans' needs will be met. Veterans with co-occurring difficulties/complex needs often need care co-ordination to help them navigate the various services/organisations providing support. A key element of the delivery model of the specialist NHS veteran mental health services (Veteran Transition Intervention and Liaison (TIL) services) is to provide such care co-ordination for veterans, some of whom may be receiving psychological therapy through a local IAPT service.

Encourage veterans to utilise the IAPT initiative

- Our findings suggest that veterans are just as likely to recover from a mild to moderate mental health disorder following psychological treatment at an IAPT service as non-veterans. We therefore recommend that the IAPT initiative raise awareness of their services to veterans and to services to whom veterans initially present. They should also train their staff in veteran sensitive practice. The findings from the current study should also be disseminated widely to the general public, beyond typical academic and policy channels, in order to increase veterans' trust in these generic NHS services.

IAPT database

- ♦ Given the limitations currently inherent in the IAPT data we recommend that (i) the military identifier is made a mandatory question rather than a required one – this would mean that all patients must be asked whether they are a veteran or not; and (ii) that all patients are asked about lifetime trauma in order that rates of screening for PTSD are improved.
- ♦ Following our difficulties accessing the IAPT dataset, we recommend that NHS Digital (the custodians of the data) implement a streamlined application process for IAPT data so that more researchers can access and analyse these data (gaining access to the IAPT database can be very time-consuming causing delays to research).

2.0 Glossary

CMD	Common mental disorders.
PTSD	Post-traumatic stress disorder.
Veteran	An individual who has served at least one day in the UK Armed Forces as a regular and has since left.
Non-veteran	A person who has never served in the UK Armed Forces.
KCMHR	King's Centre for Military Health Research.
APMS	Adult Psychiatric Morbidity Survey
UKHLS	UK Household Longitudinal Study – commonly known as 'Understanding Society'
IAPT	Improving Access to Psychological Therapies
CI	Confidence Interval
OR	Odds Ratio
AOR	Adjusted Odds Ratio
TIL service	Transition Intervention and Liaison service
CTS	Complex Treatment Service

3.0 Background

3.1 Veteran mental health and the Armed Forces Covenant (study 1)

The majority of Armed Forces (AF) personnel cope well with the challenges of military service and successfully adapt to civilian life after they leave [4]. For some, however, experiences during military service can negatively impact on their mental health [5]. Ensuring there are services to meet the mental health needs of veterans is a UK government priority¹ and a social and legal obligation enshrined in the Armed Forces Covenant (AFC) [2]. Despite this, there is relatively little recent UK research which specifically examines whether the mental health of veterans is similar to those who have never served in the military. More research is needed – it is only by understanding the nature and extent of the mental health burden experienced by some military veterans that the government can ensure that they are at ‘no disadvantage’ – a key principle of the AFC.

Findings from a 2011 study comparing the mental health of UK veterans with non-veterans found no difference between the two groups [6]. However, the 257 veterans who participated in this 2011 study were recruited in 2007 so the sample included very few veterans who had served during the later military conflicts in Iraq and Afghanistan. The results of the 2011 study may not therefore be representative of the current UK veteran population who served at the time of these conflicts. Indeed, findings from recent studies indicate that the mental health of serving personnel and veterans may be poorer than those who have never served in the military. For example, a 2015 study comparing the mental health of serving personnel with that of the general population found that serving personnel were more likely to have CMD such as anxiety and depression [7]. A 2018 study also found that veterans were more likely to report probable PTSD than serving military personnel [3].

To determine whether current UK veterans are at a disadvantage, robust mental health comparisons are required using a larger veteran sample that is representative of veterans who left service more recently.

3.2 The Improving Access to Psychological Therapies (IAPT) initiative (study 2)

As UK military personnel leave the Armed Forces, the responsibility for their mental health care primarily falls to the NHS. Currently, most UK veterans with mild to moderate mental health problems, such as anxiety disorders and depression, and who access services, are likely to be offered psychological treatment via NHS Improving Access to Psychological Therapies (IAPT) services [8]. IAPT services offer a range of evidence-based interventions for mild to moderate mental health problems including mild to moderate PTSD (which may be comorbid with depression and anxiety). Treatments are organised in a stepped care model [9] in accordance with the clinical guidelines issued by the UK’s National Institute for Health and Care Excellence (NICE). Cognitive behavioural therapy (CBT) is recommended for all anxiety disorders (including trauma focused CBT for PTSD), and a wider range of treatments (CBT, counselling, couples therapy, interpersonal therapy, and brief psychodynamic therapy) for depression [10]. IAPT referrals are accepted from primary health care professionals, the justice service, public service or an employer – self-referrals are also accepted. The mean number of therapy sessions is 6.4. Currently there is no data examining whether these generic treatments are as effective for veterans who access IAPT services compared to those who have not served in the military. This is required to understand whether IAPT referrals are appropriate for veterans.

Individuals with mental health problems often delay seeking treatment. This has been evidenced in both serving personnel and veterans [5,11,12] with personnel being reluctant to seek help whilst serving for a variety of reasons, for example, due to stigma (self-stigma and the perceived stigma of others) and only wanting to seek help once they have left the military (e.g. due to fear of effect on career).

¹ Throughout this report we refer to ‘probable’ disorders as the outcome measures used in our research were not diagnostic interviews, but rather screening tools. The latter can suggest the probable existence of a disorder based on symptom scores, but cannot establish a diagnosis.

Delaying help seeking may have additional consequences because the efficacy of mental health treatment in veterans has been shown to be affected not only by mental health comorbidity, but also by the severity and chronicity of their disorders [13]. The majority of veterans who require psychological therapy for mild/moderate mental health disorders are referred to an IAPT service. A comparison of the clinical profile and treatment outcomes in veterans and non-veterans who receive psychological therapy in IAPT services is required to determine if the referral of so many veterans to these services is justified.

3.3 Project aims:

1. To establish if veterans are more likely to have a mental health problem than non-veterans of the same age and gender in order to determine whether or not current UK veterans are at a significant disadvantage to non-veterans. Sociodemographic characteristics (such as socioeconomic status, employment status and marital status) are known to be associated with mental health, and as such these are accounted for in our analysis.
2. To determine how veteran IAPT patients compare to non-veteran IAPT patients in:
 - a. the severity and comorbidity of their mental health problems when they are first referred,
 - b. their adherence to and progression through treatment, and
 - c. the likelihood that they will improve and recover from comparable mental health problems.

This will provide us with an understanding of the mental health problems of veterans who seek help through IAPT, as well as the suitability of IAPT treatments for this particular group of help seekers.

4.0 Study 1

The prevalence of mental health disorders and alcohol misuse among veterans and non-veterans in the UK

This study examined how the prevalence of CMD, PTSD and alcohol misuse in current UK veterans (specifically, those veterans who were serving at the time of conflicts, such as Iraq (2003-2011) and Afghanistan (2002-2014)), compared to non-veterans, using large, nationally representative samples of those who served during this time. The comparison accounts for socio-demographic characteristics associated with poor mental health, such as employment status and socio-economic classification. We have also examined mental health in men and women separately, where possible, to determine if there are any meaningful differences in how veteran men and women compare to their non-veteran counterparts and to each other.

Large samples of veterans (who served during and after recent conflicts) and the general population (non-veterans) from separate studies are analysed. Both samples were combined into a single dataset and matched on age and gender to ensure comparability.

4.1 Veteran and non-veteran samples

Veteran sample

Our veteran sample was taken from phase 3 (Oct 2014 – Dec 2016) of the King's Centre for Military Health Research (KCMHR) cohort study, a large ongoing study of UK military personnel assessing the physical and mental health consequences (i.e. CMD, PTSD and alcohol misuse) of military service and deployment.

Veterans for the purposes of this study are those who reported serving during the time of recent conflicts such as Iraq and Afghanistan, as regulars, and have since left service. Thus, those still engaging in active service (who had not left service), and those who have only ever served as reservists (which could include both active and former reservists), were excluded from this study, the latter due to insufficient data to determine whether they had left the military.

Of the 8,094 (serving and ex-serving) who participated in phase 3 of the KCMHR cohort study, 2,917 participants met our definition of a veteran and also fully completed the questionnaire.

Descriptive statistics for veteran sample

- Veterans were aged 22-74.
- 91% were male (n=2612), 9% were female (n=305).
- 91% (n=2567) were employed (either full or part-time).
- 85% (n=2512) were married or in a long-term relationship.
- 71% (n=2124) were educated to A level or higher.

Table 1 shows the measures used in the KCMHR cohort to assess probable CMD, PTSD and alcohol misuse.

Table 1: Mental health measures utilised in this study

Health Issue	Measure	Score cut-off for diagnosis
Common Mental Disorders (CMD)	12 item General Health Questionnaire (GHQ12)	4 or more
Post-Traumatic Stress Disorder (PTSD)	17 item National Centre for PTSD Checklist (PCL-C)	50 or more
Alcohol Misuse	10 item WHO Alcohol Use Disorders Identification Test (AUDIT)	16 or more

Non-veteran samples

Our non-veteran sample was taken from two surveys: the 2014-2016 UK Household Longitudinal Study (UKHLS) and the 2014 Adult Psychiatric Morbidity Survey (APMS). The use of two surveys was necessary as mental health assessments needed to be made using the same measures of PTSD, CMD and alcohol misuse as used by the KCMHR cohort study to ensure comparability – UKHLS contains the same measure of CMD, while APMS contains the same measures of PTSD and alcohol misuse. No single general population survey with all three of these measures was available.



- ♦ Conducted during the same time period as phase 3 of the KCMHR cohort study.
- ♦ Assessed CMD using the GHQ12.
- ♦ Large representative sample of the general population
- ♦ Contains a military identifier to ensure veteran participants are removed.

The UKHLS is the largest panel survey in the world. Launched in 2008 as a continuation of the British Household Panel Survey, the UKHLS followed the original sample in addition to a newly selected General Population Sample (GPS) in 2009 of 25,500 responding households across the UK, who have been followed up since. The GPS is based upon a proportionately stratified, equal probability (clustered) sample of residential addresses drawn to a uniform design throughout England, Scotland and Wales. Wave 6 of UKHLS (2014-2016) achieved an individual response rate of 65% (in the adult sample).

2014 Adult Psychiatric Morbidity Survey (APMS)



- ♦ Conducted during the same time period as phase 3 of the KCMHR cohort study.
- ♦ Assessed PTSD and alcohol misuse using the PCL-C and the AUDIT.
- ♦ Large representative sample of the general population.
- ♦ Contains a military identifier to ensure veteran participants are removed.

The APMS provides data on the prevalence of both treated and untreated psychiatric disorders in the English adult population (aged 16 yrs and over). The sample for APMS 2014 was designed to be representative of the population living in private households in England, adopting a multi-stage stratified probability sampling design [14] and achieved a response rate of 57%².

Combining veteran and non-veteran samples (matching)

To enable comparisons between veterans and non-veterans, our veteran sample was reweighted to match on exact age and gender with the respective non-veteran sample.

UKHLS: For our comparison of CMD across veterans and non-veterans, KCMHR and UKHLS data were combined into a single dataset.

- ♦ UKHLS participants outside the age range of our veteran sample were removed as were those who reported currently or previously serving in the Armed Forces.
- ♦ Sample size = 22,760

APMS: Separate analyses were conducted for comparisons of PTSD and alcohol misuse in veterans and non-veterans where KCMHR and APMS data were combined into a single dataset.

- ♦ APMS participants outside the age range of the veteran sample or who reported ever serving in the Armed Forces were excluded.
- ♦ Sample size = 5,871

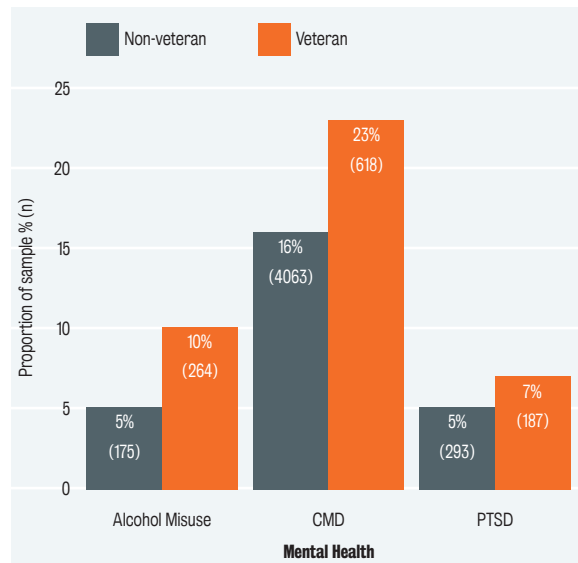
For each set of analysis (i.e. KCMHR vs UKHLS, and KCMHR vs APMS), our veteran sample was weighted for non-response (i.e. the data for participants less likely to take part contributed more to the weighted analyses so that the weighted data resembles the sociodemographic composition of the population), and additional entropy weights were applied to the respective non-veteran samples to ensure age and gender comparability. All proportions and odds ratios reported in this study are weighted, while frequencies are unweighted.

² Prevalence of CMD on non-veterans from England is very similar to the overall UK prevalence – see page 10 for details.

4.2 Prevalence of CMD, PTSD and alcohol misuse

Overall, veterans self-reported a significantly higher prevalence (i.e. the proportion of the sample meeting criteria) of probable CMD, PTSD and alcohol misuse than non-veterans (see Figure 1)³.

Figure 1: Prevalence of probable alcohol misuse, CMD and PTSD in veterans and non-veterans



Gender

Veteran and non-veteran mental health comparisons were considered for men and women separately. As shown in Table 2, the prevalence of all mental health outcomes was found to be statistically significantly higher in male veterans compared to male non-veterans. Among women however, mental health prevalence was very similar for veterans and non-veterans. Prevalence of PTSD and CMD were found to be the same in both male and female veterans⁴.

Table 2: Mental health prevalence in veterans and non-veterans by gender⁵

	Non-veteran %(n)	Veteran %(n)
Men		
Alcohol Misuse ***	6% (106)	11% (253)
PTSD ***	5% (101)	8% (169)
CMD ***	16% (1466)	23% (557)
Women		
Alcohol Misuse	2% (69)	3% (11)
PTSD	7% (192)	8% (18)
CMD	21% (2597)	23% (61)

* p<0.05, ** p<0.01, *** p<0.001

In further analyses which adjusted for socio-demographic characteristics (marital status, education and employment status), the odds of male veterans reporting probable CMD (AOR 1.84, CI 1.60-2.12), PTSD (AOR 2.77, CI 1.95-3.94) and alcohol misuse (AOR 2.32, CI 1.74-3.10) were still statistically significantly higher than male non-veterans. No significant differences were found between female veterans and female non-veterans.

Working and non-working groups

To assess mental health differences by veteran status in working and non-working groups, a binary version of employment status was used in our comparison of mental health prevalence with employed (full-time / part-time) defined as working, and all other responses defined as non-working. When we stratified by working status, the same differences were found – other than for alcohol. We found that PTSD (AOR 2.76, CI 1.82-4.20) and CMD (AOR 1.86, CI 1.58-2.18) prevalence was statistically significantly higher in working veterans compared to working non-veterans and the same difference was shown for those not in work. Though the proportion of non-working veterans who misused alcohol was somewhat higher than non-working non-veterans, this was not found to be statistically significantly different. Although a formal comparison was not made, the prevalence of CMD and PTSD was noticeably higher in non-working veterans compared to working veterans.

3 Please note that APMS is England only while UKHLS and KCMHR are UK studies. When our analysis of UKHLS participants are restricted to England only, we find very similar CMD prevalence rates to the full UK sample (16.5%).

4 As the veteran sample is overwhelmingly male (91%), overall, we find that veterans are more likely to have a probable mental health problem (i.e. findings from the male participants are obscuring findings from the female participants). It is only when we look at gender separately that we realise that there is no difference between female veterans and female non-veterans.

5 UKHLS restricted to England for CMD (stratified by gender): men = 16.0%, women = 21.6%

Table 3: Mental health prevalence in veterans and non-veterans in working and non-working groups

	Non-veteran %(n)	Veteran %(n)
Working		
Alcohol Misuse ***	5% (103)	11% (228)
PTSD ***	3% (100)	7% (143)
CMD ***	13% (2329)	22% (507)
Non-working		
Alcohol Misuse	8% (72)	12% (36)
PTSD	12% (193)	19% (44)
CMD	26% (1734)	40% (111)

* p<0.05, ** p<0.01, *** p<0.001

Further regression analysis showed that the significant differences between veterans and non-veterans remained after adjusting for sociodemographic characteristics. It should be noted that while the proportion of veterans who misused alcohol in working and non-working groups was comparable (11% and 12% respectively), the proportion of non-veterans who misused alcohol was slightly greater in the non-working group (5% vs 8% respectively) – see Table 3.

4.3 Symptoms of PTSD and alcohol misuse

Alcohol misuse symptom clusters

The AUDIT (15) broadly assesses alcohol misuse (also referred to as harmful drinking), but a more detailed interpretation of a patient's total score may be obtained by looking at which specific drinking behaviours are reported. This allows us to assess whether veteran men and women were more likely to display signs of **hazardous drinking, alcohol related harm or alcohol dependence**.

Hazardous drinking

Hazardous drinking is a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others. Hazardous drinking patterns are of public health significance despite the absence of any current disorder in the individual user.

Alcohol-related harm

Alcohol-related harm refers to alcohol consumption that results in consequences to physical and mental health.

Alcohol dependence

Alcohol dependence is typically characterised by as a strong desire to consume alcohol, impaired control over its use, persistent drinking despite harm-full consequences, a higher priority given to drinking than to other activities and obligations, increased alcohol tolerance, and a physical withdrawal reaction when alcohol use is discontinued.

Male veterans were significantly more likely to meet the criteria for hazardous (51% vs 36%), dependent (18% vs 11%) and harmful drinking (30% vs 21%) than non-veterans. Female veterans were significantly more likely to report symptoms of hazardous drinking compared to female non-veterans (42% vs 30%, respectively).

Female veterans were not significantly more likely to meet criteria for symptom of dependent (9% vs 7%) and harmful drinking (20% vs 17%) than non-veterans.

PTSD symptom clusters

PTSD is an anxiety disorder characterised by three distinct clusters of symptoms that develop following exposure to an event perceived to be traumatic. The symptom clusters⁶ include:

Re-experiencing

Involuntarily and vividly reliving the traumatic event (e.g. nightmares, flashbacks and other intrusive recollections).

Avoidance

Avoiding cues associated with the event along with general emotional numbing (e.g. avoidance of people and/or places related to the traumatic event, restricted affect).

Hyperarousal

An abnormally heightened state of anxiety that occurs whenever a traumatic event is thought about (e.g. sleep difficulties, exaggerated startle).

Questions on the PCL-C questionnaire (designed to assess probable PTSD) each refer to one of these symptom clusters. It is therefore possible to determine whether veterans were more likely to experience these PTSD symptom clusters than non-veterans by assessing on which PCL-C questions points were scored. We found that male veterans were significantly more likely to meet criteria for all symptom clusters than male non-veterans; for re-experiencing (12% vs 10%), avoidance (9% vs 6%) and hyperarousal (13% vs 9%). There was no statistically significant difference between female veterans and non-veterans in the number who met criteria for any of the PTSD symptom clusters.

6 These symptom clusters are based on DSM-IV criteria.

4.4 Comorbidity – PTSD and alcohol misuse

The association between PTSD and alcohol misuse is well established [16]. In particular, alcohol misuse may be more common when an individual reports ‘avoidance’ symptoms, as the individual may use alcohol to avoid memories or to numb fear [17]. PTSD symptom clusters have previously been found to be associated with alcohol misuse in both veterans and non-veterans [17].

To determine whether veterans were more likely to exhibit comorbid alcohol misuse and PTSD than non-veterans of the same age and gender, this study examined alcohol misuse in those who met the following criteria (with the analyses repeated for each of these groups):

- Met caseness criteria for probable PTSD (PCL-C score of 50+)
- Met criteria for each PTSD symptom cluster
- Were sub-threshold for PTSD (PCL-C scores of 30-49), i.e. experiencing a number of symptoms, but the total score does not reach the cut-off for probable PTSD

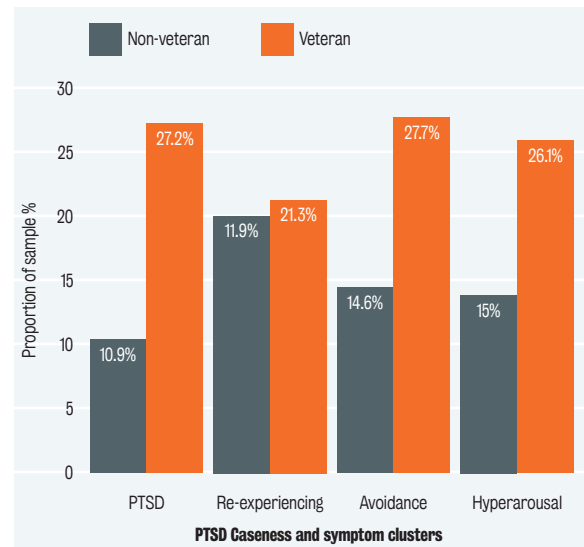
Table 4 shows that the proportion who met criteria for neither alcohol misuse nor PTSD was significantly higher in non-veterans (89.6% non-veterans vs 83.5% veterans), while the proportion of those either meeting criteria for only alcohol misuse (9.4% veterans, 5.5% non-veterans) or for both alcohol and PTSD was significantly higher in veterans (2.1% veterans vs 0.6% non-veterans).

Table 4: Prevalence of alcohol misuse and PTSD comorbidity in veterans and non-veterans

Alcohol and PTSD comorbidity	Non-veteran % (n)	Veteran % (n)	p (chi2)
Neither alcohol misuse nor PTSD	89.6% (5,119)	83.5% (2,491)	0.00
Alcohol misuse only	5.5% (153)	9.4% (212)	0.00
PTSD only	4.9% (271)	6.4% (134)	0.07
Both alcohol misuse and PTSD	0.6% (22)	2.1% (51)	0.00

We further found that veterans who reported PTSD or met criteria for any PTSD symptom cluster were significantly more likely to misuse alcohol than non-veterans (see Figure 2). Veterans who were sub-threshold for PTSD were also more likely to misuse alcohol than non-veterans (23.8% vs 15.8% – $P=0.02$), suggesting that alcohol misuse comorbidity was more common in veterans regardless of PTSD symptomatology.

Figure 2: Proportion misusing alcohol in those who report PTSD and PTSD symptoms



4.5 Socio-demographic characteristics and poor mental health

The strength or direction of the association between socio-demographic characteristics (age, gender, marital status or employment status) and poor mental health were sometimes found to be significantly different in veterans compared to non-veterans. For example, amongst non-veterans, women were more likely to have a probable mental health problem than men, but no gender difference was found in veterans. Such differences are outlined below:

Common Mental Disorders

Employment status

Both non-veterans and veterans who were unemployed or unable to work due to long term illness or disability were more likely to have probable CMD – though the impact of unemployment and disability on the likelihood of CMD was greater in veterans than non-veterans .

Gender

Amongst the general population, women were more likely to have probable CMD than men. However, this gender difference was not shown amongst veterans.

Age

Veterans aged 45+ were less likely to have probable CMD than younger participants, though for non-veterans, only those aged 65+ were less likely to have probable CMD.

PTSD

Marital status

For both samples being single was significantly associated with having probable PTSD – although the association was weaker for veterans.

Age

Younger to middle aged veterans (22-44 yrs) were more likely to meet criteria for probable PTSD caseness than older aged veterans (44-74 yrs). While in non-veterans, those younger to middle aged (22-44 yrs) were more likely to meet criteria for probable PTSD caseness than older aged non-veterans of retirement age (65-74 yrs).

Alcohol Misuse

Marital status

Veterans who were separated, divorced or widowed were more likely to indicate probable alcohol misuse (compared to being in a relationship); while single veterans were no more likely to misuse alcohol than veterans in a relationship. For non-veterans, only those who were single (compared to those in a relationship) were more likely to misuse alcohol.

5.0 Study 2

Veteran engagement and response to IAPT treatments

What is IAPT data?

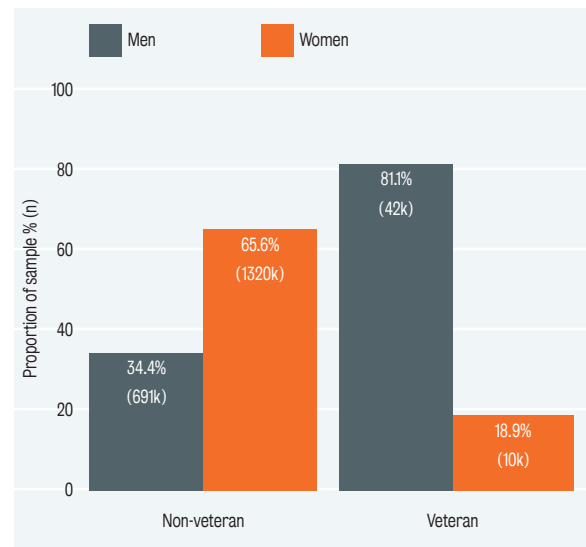
Data is taken from IAPT's online, secure electronic database which is used by clinicians to input data that is routinely collected on patients. IAPT services use a standardised protocol and collect symptomatic and functional outcome data at baseline (first clinical assessment), during treatment (session by session) and after treatment has ended.

National level data gathered between 2014 – 2017 was assessed. Patients reported whether they were an ex-service member, a dependant of an ex-service member, or neither. This variable has been dichotomised to produce a veteran status variable where those who indicate that they are ex-service personnel are veterans, and those who have never served in the military or are dependants of those in the military are non-veterans. It is not mandatory to complete this indicator and those who did not respond were removed from this analysis. Patients who indicated they were actively serving were also removed. This resulted in a sample size of 2,062,138 (veterans = 2.50% (n=51,499) and non-veterans = 97.50% (n=2,010,639)) – of note the general population in Great Britain is composed of around 5% veterans. In our examination of baseline characteristics and referral methods this full sample is utilised.

5.1 Sociodemographic characteristics of IAPT service users

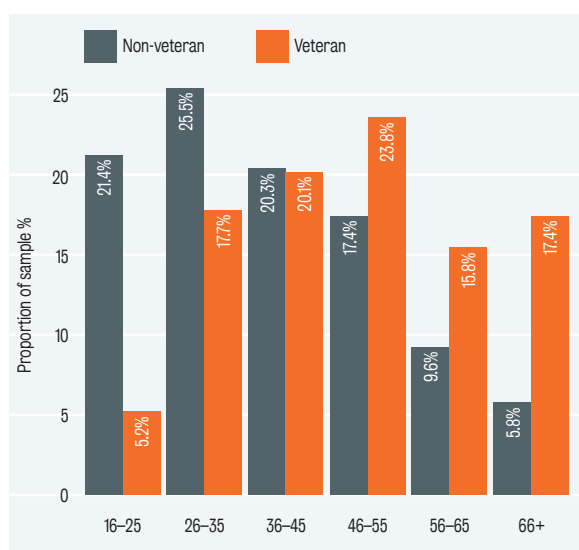
The socio-demographic characteristics of veterans and non-veterans were examined using data on gender, ethnicity (White, Mixed, Asian, Black, other) and age and employment status at baseline (employed, unemployed, retired, long term ill/disabled or economically inactive).

Figure 3: Gender composition in veterans and non-veteran IAPT service users



The majority of IAPT patients in both samples were white (Veterans = 95%, Non-veterans = 88%), while the gender and age composition of veteran and non-veteran IAPT patients were found to differ. As shown in Figure 3, most non-veteran patients were female (66%) while the majority of veteran patients were male (81%). The latter would be expected given that around 9 out of 10 serving military personnel are male. Figure 4 shows the age composition of both samples – veterans were typically older than non-veterans; the median age of a veteran patient was 48 years compared to 37 years for non-veterans.

Figure 4: Age composition of veteran and non-veteran IAPT service users



We can see in Table 5 below the employment status for veterans and non-veterans of working age and by gender. Overall, in patients of working age, veterans regardless of gender were less likely to be economically inactive than non-veterans.

Table 5: Employment status for IAPT service users of working age

	Employed	Unemployed	Economically Inactive	LTS or disabled	Retired
Working age					
Veteran	62%	15%	4%	14%	5%
Non-veteran	59%	15%	13%	11%	3%
Males of working age					
Veteran	61%	17%	3%	15%	5%
Non-veteran	60%	19%	7%	12%	2%
Females of working age					
Veteran	63%	10%	10%	10%	5%
Non-veteran	58%	13%	16%	10%	3%

5.2 Mental health upon referral

Mental health prevalence and severity at baseline

Anxiety

Anxiety symptoms were measured using the Generalised Anxiety Disorder Scale (GAD-7). This is a screening tool with a 7-item scale, with each item scored from 0 to 3 [18].

Depression

The Patient Health Questionnaire Depression scale (PHQ-9), a 9-item scale, is a screening tool for depression and was used to assess symptoms of depression [19]. The item scoring for this scale is similar to the GAD-7, with responses also ranging from 0 to 3.

PTSD

IAPT patients were also assessed for symptoms of PTSD using the Impact of Events Scale- Revised (IES-R), a measure of subjective distress in response to a specific traumatic event. This is a 22-item scale, with each item scored from 0 to 4.

While 80% of the available sample size was assessed for anxiety and depression at baseline, only 4% of patients were assessed for PTSD. This is because patients were only asked to complete the IES-R if any of the following occurred:

- The IAPT triage team believed the patient was displaying symptoms of PTSD
- The patient reported experiencing a traumatic event or explicitly stated that they had PTSD
- The PDSQ (Psychiatric Diagnostic Screening Questionnaire) screen tool was administered by the IAPT triage team which indicated probable PTSD.

We therefore treated those who were not assessed for PTSD as not having PTSD.

Table 6 shows the recommended cut-off score for each of these mental health measures, and the scores used to assess severity. Patients were divided into four initial severity groupings (nil, mild, moderate, or high) – GAD-7 and PHQ-9 score were divided on the basis of published norms [18,20]. However the IES-R does not have established cut-off points for severity groupings. To remedy this absence in IES-R cut-off points, we proposed cut-off scores for the four severity groupings as shown in the table below. Based on suggested guidelines, we proposed a score between 0-23 to indicate no symptoms ('nil') and 24-32 to indicate 'mild' symptoms (21). We also extrapolated the 'high' category score (50-88) from the PTSD Checklist (PCL) as it is a PTSD assessment tool with a similar scoring structure based on DSM-IV (22). The 'moderate' score bandings therefore fell in between 'mild' and 'high' (33-49).

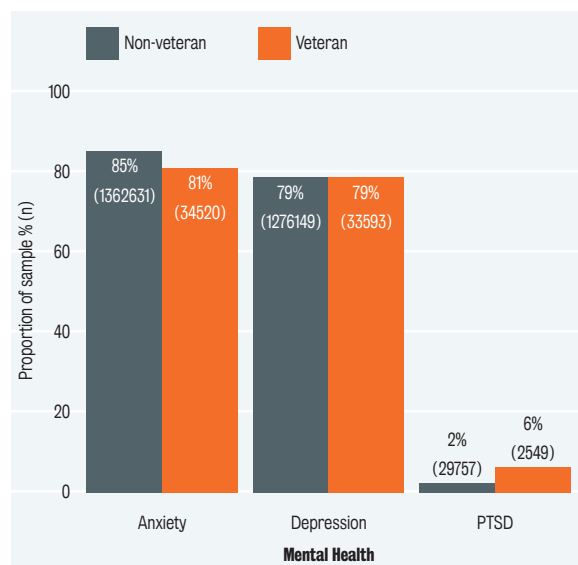
Table 6: IAPT mental health measures and score cut-offs

Measure	Threshold	Severity Score			
		Nil	Mild	Moderate	High
GAD-7	8	0-4	5-9	10-14	15-21
PHQ-9	10	0-4	5-9	10-19	19-27
IES-R	33	0-23	24-32	33-49	50-88

As shown in Figure 5, the prevalence of depression at baseline for veterans was very similar to non-veterans. Regression analysis confirmed that there was no significant difference between the two groups (AOR 1.14, CI 1.11-1.17).

The prevalence of veteran patients at baseline with anxiety (those with a GAD-7 score of 8+) was 4% lower than non-veteran patients and simple regression analysis showed veterans were less likely to have anxiety (OR 0.79, CI 0.77-0.81). However, after adjusting for age and gender, we found no significant difference between veteran and non-veteran patients (AOR 1.03, CI 1.01-1.06).

Figure 5: Baseline mental health diagnosis in veteran and non-veteran IAPT patients⁷



A significantly higher proportion of veterans had PTSD compared to non-veterans (6% vs 2% – OR 3.39, CI 3.25-3.53). This difference persisted even after adjusting the regression analysis for age and gender (AOR 3.88, CI 3.71-4.05).

Table 7: Median mental health scores at first assessment for veteran and non-veteran IAPT patients

	Non-veteran	Veteran
Anxiety (GAD-7)	14	14
Depression (PHQ-9)	16	16
PTSD (IES-R)	59	60

Table 7 shows the median⁸ mental health scores at baseline were very similar for veterans and non-veterans. There was little difference between veterans and non-veterans in the severity of anxiety and depression symptoms on first assessment. The median overall PTSD score (out of those who scored at least 24, indicating at least mild PTSD symptoms) was similar in veterans and non-veterans.

5.3 Comorbidity

Veterans were statistically significantly more likely to meet criteria for all three conditions (PTSD, depression and anxiety) during their first IAPT assessment (4% vs 1% – AOR 4.12, CI 3.92-4.33).

Of patients who only met criteria for one mental health problem (see Table 8), the most common diagnosis was anxiety (veterans = 56.1% of the 12.3%, non-veterans = 66.2% of the 12.9%). It should be noted that whilst some patients did not meet specific criteria for any particular condition (27.8% of non-veterans and 27.4% of veterans – see Table 8) their overall symptom burden across conditions may still have been high (i.e. they may have multiple symptoms, but not enough within any one diagnostic cluster to meet the threshold suggestive of a diagnosis of a specific disorder). There was a higher proportion of veterans with 3 co-existing conditions compared to non-veterans, and a slightly lower proportion of veterans with 2 co-existing conditions compared to non-veterans.

Table 8: Number of co-occurring mental health problems during their first assessment

Number of mental health disorders	Non-veteran % (n)	Veteran % (n)
0	27.83% (559, 594)	27.43% (14,124)
1	12.88% (259,020)	12.28% (6,325)
2	58.02% (1,166,558)	55.95% (28,813)
3	1.27% (25,467)	4.34% (2,237)

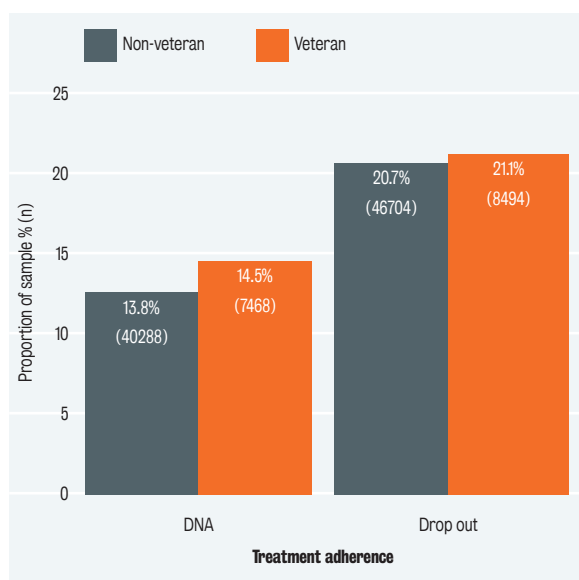
⁷ Patients may meet more than one criterion for a mental health problem.

⁸ The median is the value separating the higher half from the lower half of a data sample (i.e. the middle value). The basic advantage of the median in describing data compared to the mean (often simply described as the “average”) is that it is not skewed so much by a small proportion of extremely large or small values, and so it may give a better idea of a “typical” value.

5.4 Treatment adherence

We found that overall veterans adhere to treatment as well as non-veterans. The proportion of patients who dropped out of treatment was similar for veterans (21.2%) and non-veterans (20.7%) and no significant difference between the two samples was found (AOR 1.04, CI 1.00- 1.07). We found a very weak but statistically significant difference between veterans and non-veterans in the proportion of patients who did not attend at least one session (veteran=14.5%, non-veteran=13.8% - AOR 1.06, CI 1.02-1.11). This appeared to be because veterans were more likely to be older than non-veterans, and younger patients were more likely to DNA (many studies have also found younger patients more likely to DNA than older ones (23)).

Figure 7: Treatment adherence for veteran and non-veteran IAPT patients



5.5 Mental health improvement and recovery

How did we make the samples comparable?

In our examination of treatment outcomes and adherence, the non-veteran sample was reduced and re-weighted to improve comparability with the veteran sample.

- The sample of non-veteran IAPT patients compared to veteran patients was reduced at a ratio of 5:1 (a more optimal sample size for comparative studies) (24).
 - Resulting in a sample size = 308,994
 - Veterans = 51,499 (17%)
 - Non-veterans = 257,495 (83%).
- The non-veteran sample was then re-weighted to match the veteran sample on age and gender – ensuring that both samples have the same proportion of men and women, and the same proportion of participants of each age category.

Mental health improvement

We conducted analysis to determine whether veteran IAPT patients were more likely to show reliable improvement in their mental health symptoms during their treatment compared to non-veterans.

What is reliable improvement?

Patients were considered to have shown **reliable improvement** if the decrease in score from their first to their final assessment exceeded the measurement error of the relevant scale (PHQ-9 >5, GAD-7 >3 IES-R >8). For PTSD – only patients who scored at least 24 at baseline were included when examining improvement. This is because the IAPT model was not specifically designed to treat PTSD and likely only patients who display at least mild symptom levels would see any improvement.

The final mental health scores used to calculate reliable improvement were the last available after baseline scores, usually from the final therapy session but occasionally from an earlier session. Improvement scores were only calculated for patients who were assessed at least twice to avoid the first and last score being taken from the same appointment.

As shown in Table 9, a greater proportion of both veterans and non-veterans showed improvement in PTSD (approx. 74-76%) compared to depression (approx. 50-52%) or anxiety (approx. 59-60%), though the number of individuals screened for PTSD (n=1034) was much smaller than that screened for depression and anxiety (n>112,000). There was little overall difference in the proportion of veterans and non-veterans who reported reliable improvement in PTSD. Veterans with mild to moderate PTSD scores were marginally more likely to improve than non-veterans, but numbers were quite small and no statistically significant difference between the groups was found⁹. There was no difference in the improvement in PTSD scores in veterans compared to non-veterans with high scores.

Table 9: Reliable improvement in mental health score for veteran and non-veteran IAPT patients.

Number of mental health disorders	Non-veteran % (n)	Veteran % (n)
Depression		
No Reliable Improvement	49.9% (57,493)	48.0% (11,363)
Reliable Improvement	50.1% (55,306)	52.0% (12,155)
Anxiety		
No Reliable Improvement	40.6% (46,325)	40.8% (9,663)
Reliable Improvement	59.4% (66,412)	59.2% (13,850)
PTSD – Baseline score 24-88		
No Reliable Improvement	25.5% (229)	24.3% (169)
Reliable Improvement	74.5% (805)	75.7% (527)
PTSD – Baseline score 24-49 (Mild/Moderate)		
No Reliable Improvement	26.6% (67)	23.9% (47)
Reliable Improvement	73.4% (212)	76.1% (150)
PTSD – Baseline score 50-88 (High)		
No Reliable Improvement	24.9% (162)	24.5% (122)
Reliable Improvement	75.0% (593)	75.5% (377)

Mental health recovery

Recovery from mental health disorders was compared in veteran and non-veteran IAPT patients.

What is reliable recovery?

This study used a reliable recovery index where patients were deemed to have recovered if they scored above the threshold for a probable mental health problem at their first assessment and below it at their final assessment while also showing reliable improvement. This indicates symptom change sufficient enough to warrant recovery, and avoids the problem of deeming patients as recovered if they have passed from caseness to non-caseness during their assessment period but made minimal progress [25].

Depression and anxiety

Depression and anxiety were assessed in conjunction as they are often highly comorbid. A patient was classified as recovered from anxiety and depression if their GAD7 and PHQ9 scores were above the clinical cut-off at baseline, decreased by the measurement error of both scales, and were below the clinical cut-off at final assessment. Only patients who scored above threshold for either depression or anxiety when first assessed were included in this assessment.

PTSD

Recovery from PTSD is assessed in isolation to other mental health scores. A patient was classified as recovered from PTSD if their IES-R score was above the threshold at baseline, demonstrated reliable improvement in their mental health score and were below the clinical cut-off at their final assessment. **Only patients who score above the clinical cut-off for PTSD (IES-R = 33) when first assessed were included¹⁰.** An additional assessment for those with higher scores on the IES-R was also conducted.

⁹ This meant we were unable to detect a statistically significant difference.

¹⁰ Therefore, patients with 'mild' PTSD score (24-32) could not be included in this assessment.

Table 10: Reliable recovery from depression, anxiety and PTSD for veterans and non-veterans

Number of mental health disorders	Non-veteran % (n)	Veteran % (n)
Anxiety and depression		
No recovery	55.1% (57,059)	55.8% (11,406)
Reliable recovery	44.9% (44,228)	44.2% (9,019)
PTSD – Baseline score 33-49 (Moderate)		
No recovery	28.4% (65)	25.0% (42)
Reliable recovery	71.6% (178)	75.0% (126)
PTSD – Baseline score 50-88 (High)		
No recovery	41.2% (303)	44.1% (220)
Reliable Recovery	58.8% (452)	55.9% (279)

The findings in Table 10 suggested that there is no difference between veterans and non-veterans regarding reliable recovery from anxiety, depression or PTSD – though veterans with moderate scores seem slightly more likely to recover, and those with high scores are less likely to recover, there was **no statistically significant difference between the two groups** (this is likely due to the small sample size).

As a side note, co-occurring conditions (e.g. anxiety or depression or both) were found to reduce the odds of recovering from PTSD in both veterans and non-veterans who scored high at baseline – 59% of veterans recovered compared to 62% of non-veterans, but **no significant difference between the two groups was found** (chi2 p-value = 0.3954).

Both veterans and non-veterans who reliably recovered after reporting a high PTSD score at baseline had a median of 14 appointments. For those who reliably recovered from moderate PTSD scores, veterans had a median of 8 appointments and non-veterans had a median of 13 (again the number of both groups of patients in this category was quite small and not enough to detect significant differences between the two groups).

6.0 Discussion

Main findings

1. Male veterans were more likely to have a mental health disorder or misuse alcohol than male non-veterans of the same age.
2. Veterans who seek help via IAPT for a mild or moderate mental health problem do not respond or adhere to treatment differently than non-veterans.

Veteran mental health – How does it compare to non-veterans?

Study 1 compared the prevalence of alcohol misuse, PTSD and CMD in a large sample of veterans with a comparative sample of non-veterans in order to answer an important and timely question. We found that overall, UK veterans who served at the time of recent military operations to Iraq and Afghanistan were more likely to exhibit probable CMD (23% vs 16%), PTSD (7% vs 5%) and misuse alcohol (10% vs 5%) than non-veterans.

- ♦ When we compared **working and non-working groups**, we found that working veterans were more likely to meet criteria for probable CMD, PTSD and alcohol misuse than working non-veterans, though non-working veterans were more likely to report probable CMD and PTSD only than non-working non-veterans.
- ♦ When we looked at **males and females** separately, we found no statistically significant difference between female veterans and female non-veterans in all outcomes, but male veterans were more likely to have a mental health problem or misuse alcohol than male non-veterans.
- ♦ Being **ill or disabled** was associated with CMD and PTSD for both veterans and non-veterans, but the strength of this association was greater amongst veterans.

The only previous UK mental health comparison study between veterans and non-veterans – Woodhead (2011b) – found no significant difference between the two groups. Woodhead utilised an older cohort of veterans, very few of whom had served during recent military operations in Iraq and Afghanistan, and many of whom had served in the military under National Service and Conscription meaning they may have had more similarities with the general population than our cohort of more recent veterans who volunteered to serve in the military.

Another interpretation is that the differences we found between veterans and non-veterans may have resulted from exposure to recent operations in Iraq and Afghanistan, or any changes in the experience of transition out of the military that have occurred in the past 20 years. It is also possible that other vulnerability factors, such as increased childhood adversity in the military sample (26) (or the cumulative impact of childhood adversity combined with adulthood traumatic events) are affecting male veterans' mental health. Our sensitivity analyses suggested that deployment or experience of being deployed in a combat role were unlikely to explain the difference in prevalence of CMD and alcohol misuse between male veterans and non-veterans. However, a significant difference in prevalence of probable PTSD was found between male veterans who had deployed to Iraq or Afghanistan and non-veterans, while a difference was not observed between veterans who had not deployed to these conflicts and non-veterans, suggesting that deployment or experiences while on deployment explained some of the difference in probable PTSD prevalence. However, there are many other factors which we did not measure which may potentially explain the higher prevalence of mental health and alcohol problems in veterans compared to non-veterans, such as differences in rates of childhood adversity, the impact of family separations during military service, service-related injuries, or the challenge of adapting to civilian life after leaving service.

Fundamental differences between veterans and non-veterans in their awareness of mental health problems may have contributed to the differences found between the two groups. Veterans might be more likely to report PTSD because they are more familiar with the language of the symptoms. There have also been ongoing efforts within the military to combat mental health stigma, and, similarly, initiatives to address mental health stigma in the general population, both of which began in earnest after the data used in the 2011 study was collected. As a result, veterans in our sample may be more forthcoming in reporting symptoms of their mental health problems than those who have never served in the military.

Veteran IAPT patients – How do they respond to treatment?

Study 2 examined mental health data from veteran and non-veteran patients who received treatment via the NHS IAPT initiative between 2014 – 2017. IAPT services provide generic psychological therapies that are not, as standard, tailored to the specific needs of veterans. Despite this, most veterans who seek treatment for a mental health problem are referred to an IAPT service (8). The purpose of this study was to establish how the outcomes of these treatments for veterans compares to their outcomes for non-veteran patients.

The findings showed that upon referral to IAPT services, veterans and non-veterans displayed similar profiles in terms of diagnosis and severity of symptoms of anxiety and depression; however, the findings also showed veterans were more likely to be assessed for and meet criteria for probable PTSD. Veterans had similar rates of adherence to treatment as non-veterans and were just as likely to recover from symptoms of anxiety, depression and PTSD as non-veterans. However, low number of participants in the PTSD analyses is likely to have limited our ability to detect significant subgroup differences if they were in fact present. The data showed that veterans with moderate scores were slightly more likely to recover, and those with high scores were less likely to recover. Although a statistically significant difference between the two groups was not found, we must acknowledge that this may have been due to the small numbers. Factors which may impact recovery, such as comorbidity or length of treatment, appeared to have a similar impact on recovery for veterans and non-veterans.

6.1 Strengths and limitations

This is the first study to compare the mental health of UK military veterans who served during military operations in Iraq and Afghanistan with the mental health of UK non-veterans, and the first to compare the response of veterans and non-veterans to generic psychological therapies provided by IAPT.

A major strength of our study was our utilisation of large representative data. This allowed us to consider the effects of potentially confounding socio-demographic factors, which would not have been possible using smaller samples.

Limitations of study 1

Results were derived from self-reported data, and geographic location of participants could not be accounted for. Both APMS and UKHLS surveys used different methods of data collection than the KCMHR study: the APMS and UKHLS surveys were restricted to individuals living in private households, and APMS was conducted in England only, while UKHLS and KCMHR were conducted in the UK. All surveys had a good response rate, but as with any observational study they will not include the participants who did not want to complete the surveys. Additionally, due to lack of available data in the non-veteran population, we were also unable to examine the potential effect of childhood adversity on the association between military service and mental health. Finally, our veteran sample was only 10% female (n=305), and whilst this is representative of the UK veteran population, some of our analysis (i.e. where it was restricted to females) may have been underpowered and we could not fully explore the lack of difference between female veterans and non-veterans.

Limitations of study 2

Due to missing data, not all IAPT patients were considered for this study. Though patients undergoing IAPT treatment are asked to indicate whether they have ever served in the military, this is not a mandatory question. As a result of patients not disclosing their affiliation with the military, around 4% patient records were excluded from this study. Finally, a greater proportion of veterans than non-veterans were screened for PTSD (as IAPT patients are only assessed for PTSD if they indicate that they have experienced a trauma and veterans are more likely to be asked about trauma) which may have contributed to our finding that a significantly higher proportion of veterans have probable PTSD. The low overall number of individuals who completed the screening measure for symptoms of PTSD impacted on our ability to draw conclusions from the results of the smaller subgroup analyses.

7.0 Implications

This study's findings have implications for our understanding of veteran mental health and alcohol misuse and the need for wider awareness raising among veterans and those supporting them, provision of and access to appropriate veteran support and treatment services, and the role of IAPT services in the veteran mental health treatment pathway.

Identification of mental health problems and harmful drinking behaviours

Given our finding that CMD, PTSD and alcohol misuse are all significantly more prevalent in UK veterans than non-veterans of the same age, efforts are needed to improve awareness among veterans of mental health problems and harmful drinking behaviours. Education is needed on how to 1) maintain good mental health and reduce alcohol consumption (particularly during the transition from military service); and 2) identify signs of mental health and alcohol problems. Greater support for serving personnel before and during their transition to civilian life is needed in order to improve identification of those who have or are at risk of developing mental health disorders or harmful drinking behaviours. These findings will be helpful to the MOD Holistic Transition Policy and to the three Services' mental health awareness education schemes. It may be that some work is needed to evaluate uptake and effectiveness of these schemes.

Access to support and treatment services

Despite recent efforts by NHS England and third sector organisations to improve access for veterans to support and treatment services for mental health and alcohol problems [27], many veterans continue to struggle to access the help they need [28]. Our findings support anecdotal reports that veterans frequently present with multiple needs encompassing mental health, alcohol or substance misuse and social/welfare problems, which makes the process of seeking and accessing the appropriate help more complex. One of the aims of NHS England in designing the new NHS Veteran TIL services was to create a single point of access in each region for assessment of veteran mental health, substance and alcohol misuse, and for physical and social and welfare problems, with onward referral and care co-ordination as necessary. While Veteran TIL services refer individuals with more severe or complex conditions resulting from military service to the NHS Veteran Complex Treatment Services or secondary mental health services, they refer many veterans with mild to moderate mental health problems into IAPT services and support them in accessing these services.

Dissemination of our finding that IAPT treatments are as effective for veterans as non-veterans should help to encourage the referral of veterans, where appropriate and if acceptable to the veteran, to IAPT services.

Importantly, our study was only able to compare IAPT treatment outcomes in veterans and non-veterans who engaged with IAPT services. A proportion of veterans decline the offer of treatment by services that are not specifically for veterans and importantly we did not evaluate veterans' perceptions of receiving treatment at an IAPT service. More awareness raising of IAPT services and of TIL Services is still needed among GPs, third sector services and wider health and welfare services. Given the multiple needs of veterans, greater joint working between NHS and third sector services is needed in order to ensure veterans have access to all services which could meet their holistic needs with care co-ordination where necessary and seamless transitioning between services.

Finally, effective approaches are needed to manage the spectrum of alcohol misuse problems in those who adopt harmful and persistent drinking habits both during their military service and after the transition. Initiatives such as 'Drinks:Ration' (29, 30), should be further evaluated and possibly upscaled to address this issue.

Social and employment support

We have found that those who are unemployed, or are also sick or disabled, are the most likely veterans to have a mental health problem. Clearly veterans who are unable to work for health reasons must receive the necessary medical care required to ensure their health needs are being met, but such veterans are likely to also benefit from additional social and employment support. Sick or disabled veterans who have been medically discharged from the military may find themselves unable to work as non-veterans, while also losing the support and structure that military life had provided, having not yet established an equivalent support structure in civilian life; they are therefore at risk of becoming isolated which in turn can negatively impact their health [31]. Veterans who are unemployed or are unable to work have a particularly high prevalence of probable CMD (40%) compared to those in employment. This highlights therefore the importance of both mental health and social/employment support in their recovery process before and after they leave the military.

Given the prevalence of mental health problems and alcohol misuse among the unemployed (both in veterans and non-veterans, but with stronger effects in veterans) social and employment support organisations need to establish close links with mental health services and alcohol misuse initiatives to increase the likelihood that veterans' holistic needs will be met.

The IAPT initiative

We found that only around 4% of all IAPT patients are assessed for PTSD and recommend that all IAPT referrals are screened for trauma using a recognised trauma screening tool. This is consistent with the NHS long-term plan (formerly 10 year plan) to develop more trauma informed mental health services.

Our findings suggest that veteran patients are just as likely to recover from a mild to moderate mental health disorder, such as mild to moderate depression, anxiety and PTSD, following psychological treatment at an IAPT service as non-veterans who receive treatment. Referrals of veterans with mild to moderate depression, anxiety or PTSD to IAPT service are therefore supported by this research and should be encouraged to seek treatment via IAPT services. We recommend that IAPT NHS services be promoted to veterans at every GP practice in the UK (all of which have an affiliated IAPT service) and all services who routinely assess veterans and could make referrals to an IAPT service. Staff working in these services should be trained in veteran sensitive practice to ensure their approach is more suited to the needs of veterans and to improve veteran engagement. Greater promotion is needed of the GP accreditation scheme which is currently being rolled out by NHS England through which GPs can access online training and accreditation in veteran sensitive practice. Veteran awareness training is also being delivered at a local and regional level to staff in health and social care and the criminal justice sector by various organisations, such as regional NHS TIL services and academic institutions. This is, however, piecemeal currently and a more co-ordinated approach to ensuring adequate training of all relevant staff is needed.

Patients referred to IAPT services who on initial assessment are found to present with more severe disorders, such as severe PTSD, are likely to be referred on to more specialist services (either by the referring service or by the IAPT service following initial assessment), such as secondary psychology services or veteran specific services (such as the Veteran Complex Treatment Services), therefore this study cannot comment on the difference in treatment outcomes of generic psychological treatments for veterans and non-veterans with more severe mental health conditions, for example, complex PTSD.

IAPT services do not provide treatment for alcohol misuse and many do not offer treatment for mental health problems if comorbid with alcohol misuse, preferring the latter to be treated first. As alcohol misuse is found to be more prevalent in veterans and often comorbid with mental health problems, we recommend that IAPT services should establish close links with and, where appropriate, co-work with alcohol misuse treatment initiatives to ensure their patients are able to access the mental health treatment they need while also accessing support for alcohol misuse and that the former is not delayed by the latter unless necessary.

IAPT database

Data generated by the IAPT initiative is an extremely valuable resource for examining veteran mental health and treatment responses in the UK. Our research has highlighted current limitations to the dataset (see in limitations section regarding the absence of a mandatory military identifier and trauma screening) and below we recommend some changes to improve the dataset for future research. If NHS Digital (the custodians of the data) were to implement a streamlined application process for IAPT data then more researchers would be able to access and analyse these data.

8.0 Conclusions and recommendations

It is only by understanding the relative mental health burden experienced by veterans, and the efficacy of treatments available to them, that we can be confident that their mental health needs are being met.

Overall, veterans who served in the UK military since commencement of operations in Afghanistan (2002–2014) and Iraq (2003–2011) were more likely to exhibit probable CMD, PTSD and misuse alcohol than non-veterans of the same age and gender. Given that we also already know that veterans are more likely to report probable PTSD than serving military personnel [3], our findings confirm that veterans are also worse off when compared to the general population. When looking at possible gender differences within the veteran sample, no difference in prevalence of PTSD and CMD was found between male and female veterans, which does not parallel findings in the general population. Among women, mental health (CMD and PTSD) prevalence was very similar for veterans and non-veterans, but female veterans were more likely to report hazardous alcohol misuse than female non-veterans. In contrast, the prevalence of all mental health and alcohol misuse outcomes was found to be statistically significantly higher in male veterans compared to male non-veterans. These comparisons to the general population were not restricted to specific occupational groups, but it may be of interest to compare veterans to those either previously or currently employed in an occupational group with increased trauma exposure, for example, to the UK Police Service.

In light of these findings showing a higher prevalence of mental health problems and alcohol misuse in male veterans, it was also encouraging to find that for those seeking help for mental health problems via IAPT, veterans adhere to and respond as well as non-veterans to the generic psychological therapies on offer. On the basis of these findings we make the following recommendations:

Improve awareness of mental health and alcohol misuse problems and access to support services

- ♦ Given our finding that veterans have worse mental health and alcohol misuse outcomes than non-veterans of the same age (CMD, PTSD and alcohol misuse are all significantly more prevalent in UK veterans) and the previous finding that veterans are more likely to report PTSD than serving military personnel, we propose that efforts are made to raise awareness of the mental health needs of veterans, as well as provide education on how to identify problems, available mental health services and how best to access them. We also recommend targeting the above awareness raising and education efforts at serving personnel and those responsible for their care as earlier prevention and intervention is likely to reduce the need further down the line after leaving service.

Ensure access to support and treatment for co-occurring alcohol misuse

- ♦ IAPT services do not currently provide treatment for co-occurring alcohol misuse. Alcohol misuse was found to be more prevalent in veterans than non-veterans. Alcohol may be used as a coping strategy for mental health symptoms and has been shown to jeopardise the success of treatment for mental health problems. Treating alcohol misuse and mental health problems separately and sequentially can delay access to effective mental health treatment. We recommend that IAPT services develop co-working relationships with alcohol misuse treatment initiatives to ensure their patients are receiving adequate and timely support for both alcohol and mental health difficulties.

Joined up working between mental health, alcohol misuse and welfare services

- Given that mental health problems and alcohol misuse were highly prevalent in those unemployed (both veterans and non-veterans), we recommend that social and welfare support is a key element of any veteran's care package, where appropriate, and that organisations delivering this support work closely with mental health and alcohol misuse services. Joined up working in this way increases the likelihood that veterans' holistic needs will be met. Veterans with co-occurring difficulties/complex needs often need care co-ordination to help them navigate the various services/organisations providing support. A key element of the delivery model of the NHS specialist veteran mental health services (Veteran Transition Intervention and Liaison (TIL) services and Complex Treatment Services) is to provide such care co-ordination for veterans, many of whom may be receiving mental health treatment through a local IAPT service.

Encourage veterans to utilise the IAPT initiative

Our findings suggest that veterans are just as likely to recover from a mild to moderate mental health disorder following psychological treatment at an IAPT service as non-veterans. We therefore recommend that IAPT raise awareness of their services to veterans and to services to whom veterans initially present. They should also train their staff in veteran sensitive practice. The findings from the current study should also be disseminated widely to the general public, beyond typical academic and policy channels, in order to increase veterans' trust in these generic NHS services.

Access to IAPT data

- Given the limitations currently inherent in the IAPT data we recommend that (i) the military identifier is made a mandatory question rather than a required one – this would mean that all patients must identify whether they are a veteran or not; and (ii) that all patients are asked about lifetime trauma in order that rates of screening for PTSD are improved.
- Following our difficulties accessing the IAPT dataset, we recommend that NHS Digital (the custodians of the data) implement a streamlined application process for IAPT data so that more researchers can access and analyse these data (gaining access to the IAPT database can be very time-consuming causing delay to research).

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