



## The Health and Wellbeing of Armed Forces Veterans in Northern Ireland: The Results of a Cross-sectional Psychological Wellbeing Survey

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# The Health and Wellbeing of Armed Forces Veterans in Northern Ireland



## The Results of a Cross-sectional Psychological Wellbeing Survey

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## FOREWORD

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Our long-running study into veterans in Northern Ireland has so far yielded high quality evidence across a whole range of aspects of life after service. This report continues that record and, indeed, burnishes it considerably by the quality and credibility of its findings. Covering a range of psycho-social factors contributing to wellbeing, the report is essential reading for all those charged with supporting veterans in Northern Ireland.

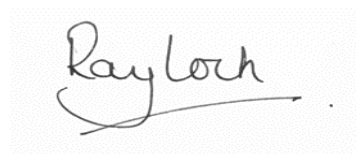
The evidence presented in this report is compelling and usefully draws attention to the positive value of military service as well as to the negative effects suffered by some. Likewise, by highlighting the differing outcomes of home versus general service veterans, this report can help bring focus to where limited resources should best be applied.

For those short of time, and convinced of the veracity of the work, I would highly recommend turning to the Sections on Conclusions (4) and Recommendations (5) which lay out starkly the particular areas of need - some inevitably research based, but others that are more pressing concerning the delivery of healthcare. Responsibility for this lies firmly at the door of Northern Ireland's Department of Health and its Health and Social Care Trusts, working in concert with specialist organizations within the voluntary sector.

I would certainly reflect on the progress made in other parts of the United Kingdom, for example Op Courage under NHS England, an integrated pathway for mental health care for veterans. The announcement of this initiative was made by the Minister for Defence People and Veterans - a UK Government position, but in reality, with little direct influence over veterans outside England who are, first and foremost, civilians. I hope that the recent establishment of the Northern Ireland Veterans Commissioner will establish accountability and bring appropriate pressure to bear.

I applaud the report's recommendation to seek innovative ways to overcome the adverse effect of Section 75 of the Northern Ireland Act on the Armed Forces Community in Northern Ireland, and the limitations on the delivery of the Armed Forces Covenant. For anyone familiar with the determined work of Professor Armour and her teams over the years, this will resonate strongly.

Until the health and social care needs of veterans in Northern Ireland are fully met, we will continue to generate evidence of what more should be done. Much of that evidence will be generated from the wealth of data collected as part of the NI veterans' health and wellbeing study described herein. We will continue to present this evidence at the doors of Stormont and Whitehall in the hope that eventually it will be fully acted upon.



Air Vice-Marshal Ray Lock CBE

Chief Executive, Forces in Mind Trust



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## FORCES IN MIND TRUST

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The Forces in Mind Trust was founded in 2012, through an endowment of £35 million from the Big Lottery Fund, to promote the successful transition of Armed Forces personnel, and their families, into civilian life.

Our **Vision** is that all ex-Service personnel and their families lead successful and fulfilled civilian lives. Our **Mission** is to enable them to make a successful and sustainable transition.

Our **Strategy** is to use our spend-out endowment to fund targeted, conceptually sound, evidence generation and influence activities that will cause policy makers and service delivers to support our Mission.

Full details of what we have funded, our published research, and our application process can be found on our web site [www.fim-trust.org](http://www.fim-trust.org)



## ACKNOWLEDGEMENTS

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First and foremost, the authors would like to thank all the armed forces veterans for their participation in this report. We recognise the time commitment that was required to complete the questionnaires.

We would also like to thank all the armed forces charities and other organisations who helped to promote the survey.

Special thanks go to the Northern Ireland Veterans Support Committee (NIVSC) Colonel (Ret'd) Johnny Rollins and Major (Ret'd) Peter Baillie, and in later stages Liz Brown from the Veteran Support Office for supporting the research team in promoting the wider study across their extensive networks.

We would like to thank Professor Nicola Fear from King's Centre for Military Health Research (KCMHR) at King's College London for her unwavering support and advice over course of the NI Veteran Health and Wellbeing study, particularly concerning the cross-sectional survey. We would also like to thank our advisory board members for their input throughout the design of the survey and data collection.

Finally, we would like to acknowledge members (current and former) of the research team who contributed to the NIVHWS survey including study design, data collection, survey promotion, and administration: Dr Bethany Waterhouse-Bradley; Dr Martin Robinson, Dr Emma Walker, Dr Matthew Hall, Dr Maria O'Kane, Dr Deborah Roy; Dr Margaret McLafferty; Dr Rhonda Burns.



## THE BOTTOM-LINE UP FRONT

We are delighted to be sharing this report. The psychological wellbeing survey of the Northern Ireland Veterans Health and Wellbeing Study (NIVHWS) is a unique and valuable resource that is the first of its kind in NI. We are incredibly proud of the efforts of all those involved including the veterans who participated in the research, our partners who helped us shape the research, and the many researchers who have been involved along the way. We are immensely thankful to the Forces in Mind Trust for supporting us to undertake this research. Without this support we could not have invested the time and resource required to conduct such an in-depth data collection exercise. It has been a privilege to be able to design a survey which queries several aspects of life pertaining to the NI veteran population. We acknowledge that we have more data than we can report upon in a single report and want to publicly state that we are committed to continuing to analyse the data for many years to come. Doing so will allow us to build a clear body of evidence upon which we can better understand and support our veterans. We must of course caveat all of this with the acknowledgement that for reasons beyond our control the current size of the veteran population in NI remains unknown. When the total size of a population is unknown it is impossible to calculate whether any data collected from within the population is fully representative of that population. We can report that the sociodemographic profile of our data is broadly in line with that of the UK Armed Forces population in Great Britain as per a report published by the Ministry of Defence (2019) whereby the majority were identified as male, older, married or in a civil partnership, and had obtained at least one educational qualification. Regardless, we still cannot say that this data tells us that a certain percentage of all veterans in NI have had a particular experience. What we can say is that, of those who responded to the questions in our survey a certain percentage reported having the experience. In addition, we want to highlight that we allowed participants to choose exactly which questions they answered in the survey rather than force answers to all questions; some of which may have made people uncomfortable. This approach permitted people to work through the full survey rather than exiting early; however, it also resulted in variable levels of missing data. This is why you will see different numbers of participants responding to different questions that we assessed. Finally, this report focused on describing our survey and how we collected the data. We reported high level descriptions of rates of experiences and differences between home service and general service veterans concerning those experiences. It was not practical to present detailed analyses from all the data in the psychological wellbeing survey in a single report. We have however started to conduct further analyses for peer reviewed publications (abstracts are in the appendices). Despite these caveats, the data is unique and one of a kind which will provide many insights into the health and wellbeing of a 'hidden and hard to reach' population of UK Armed Forces veterans residing in NI. We will always do our best to use this data to ensure optimal support and outcomes for our veterans.



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## EXECUTIVE SUMMARY

**Overview:** This report details the findings of the Northern Ireland Veteran Health and Wellbeing Study (NIVHWS) psychological wellbeing survey; a cross-sectional survey designed to collect data directly from veterans of the UK Armed Forces residing in Northern Ireland (NI). The report provides a methodological overview of study procedures and the resultant sociodemographic profile of the 1267 respondents. In addition, the report presents headline results on respondents' favourable and unfavourable military experiences, physical and mental health and mental health service utilisation and help-seeking.

**Methods:** The NIVHWS is a large-scale cross-sectional survey of the adult (18+) veteran population within NI ( $N=1267$ ; 88% were male). The survey was administered using online survey methods, via the survey software platform 'Qualtrics' and via traditional pen and paper format. Participants were recruited via (1) a large-scale social media campaign, (2) newspaper advertising, (3) veteran service providers and (4) engagements with veterans at Armed Forces events such as Armed Forces Day. This is a valuable data source and is the first of its kind concerning the health and wellbeing of military veterans in NI. The sociodemographic profile has similarities to that of veterans residing in Great Britain<sup>1</sup> (male [89% vs 88% in the current study], older ([60% were over 65 vs 20% over 65 and 53% over at least 55 in the current study], married or in a civil partnership [62% vs 72% in the current sample] and had at least one educational qualification [92% vs 80% in the current sample], however it is pertinent to be clear that we do not know if the data is representative of all veterans residing in NI as the total population size and characteristic remain unknown.

**Key Findings:** Key findings are summarised on Figures 1 and 2 on the next page.

**Conclusion:** Taken together these initial findings highlight the importance of developing a concrete evidence base around the health and wellbeing of veterans residing in NI. The NIVHWS survey has collected vast amounts of quantitative data which over time will solidify a concrete evidence base upon which appropriate services can be developed and implemented to support veterans residing in NI. These results can therefore be used as a locally focused resource by clinicians, policy makers, and funders of key services which aim to support veterans residing in NI.

<sup>1</sup> Ministry of Defense. (2019). Annual Population Survey: UK Armed Forces Veterans residing in Great Britain, 2017.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/774937/20190128 - APS 2017 Statistical Bulletin - OS.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/774937/20190128_-_APS_2017_Statistical_Bulletin_-_OS.pdf)





## Figure 1. Key Findings Overall Sample

### Military Experiences



27.5% felt military service contributed a lot to improved life chances via education



28.2% felt military service contributed a lot to better job skills and opportunities



70.4% felt military service contributed to learned cooperation and teamwork



Separation from loved ones was the most highly endorsed negative experience (29.4%)

### Mental and Physical Ill-Health



- 39.9% met criteria for depression
- 36.8% met criteria for PTSD
- 32.3% met criteria for anxiety



- 35.5% had alcohol problems
- 4% had gambling problems
- 2.3% had drug abuse problems



High blood pressure was the most common physical illness (41.1%)

### Barriers to Help-seeking

Stigma was a prevalent issue. The most commonly endorsed reasons for not seeking help for mental health and wellbeing were:

*"The mental health care system doesn't work"*

*"I would be seen as weak"*

*"It would be too embarrassing"*

*"It is difficult to schedule an appointment"*

*"My family, friends or peers might treat me differently"*

There was a stark contrast between the degree of self-reported mental health problems vs those who received a professional diagnosis for these disorders. This highlights a potential hidden need for care

*Note:* This data was collected via the use of bespoke questions adapted from other studies and standardised measures including Depression = Patient Health Questionnaire (PHQ-9); Anxiety = Generalized Anxiety Disorder (GAD-7); PTSD = PTSD Checklist for DSM-5 (PCL-5); Alcohol = Alcohol Use Disorders Identification Test (AUDIT); Drug Abuse Screening Test (DAST); Gambling = Brief Biosocial Gambling Scale (BBGS).

## Figure 2. Key Findings Home Service vs General Service

### Military Experiences



For both groups, the majority did not regret at all joining (82.6% and (83.9%) and were really glad that they had joined (68.8% and 70.0%). This was not statistically significant



A significantly higher proportion of the home service veterans said that they felt they were at severe risk (45.3% vs. 21.7%).



Home service veterans reported significantly more unfavourable military experiences (average score of 18.4 vs 14.8)

### Mental and Physical Ill-Health



A significantly higher proportion of home-service veterans had depression (47.8% vs 33.9%), probable PTSD (46.7% vs 29.0%), and anxiety (40.5% vs 26.0%)



A higher proportion of home-service veterans had gambling (5.5% vs 3.2%) and drug abuse problems. (3.2% vs 2.4%). These differences were non-significant.



The rate of alcohol problems was similar in both groups (35.6% for home service vs 35.4% for general service). There were no significant differences.

### Service Utilisation

A significantly higher proportion of the home service veterans, compared to general service veterans reported:

- that they ever took prescription medication for a mental health or emotional problem (52.1% vs. 34.5%)
- that they ever received psychotherapy or counselling for a mental health or emotional problem (52.4% vs. 37.6%)
- that they were currently taking prescription medication for a mental health or emotional problem (35.1% vs. 21.4%)
- they were currently in psychotherapy/counselling for a mental health or emotional problem (13.5% vs. 6.6%).

### Barriers to Help-Seeking



- Home service veterans reported significantly higher degrees of agreement across a range of barriers to help-seeking compared to general service veterans.
- However stigma-related barriers played a big role in both groups.

*Note:* This data was collected via the use of bespoke questions adapted from other studies and standardised measures including Depression = Patient Health Questionnaire (PHQ-9); Anxiety = Generalized Anxiety Disorder (GAD-7); PTSD = PTSD Checklist for DSM-5 (PCL-5); Alcohol = Alcohol Use Disorders Identification Test (AUDIT); Drug Abuse Screening Test (DAST); Gambling = Brief Biosocial Gambling Scale (BBGS); Attitudes Towards Seeking Professional Psychological Help-10 (ATSPPH-10).



# Section 1.

## Project Overview & Methodology



## 1.0. INTRODUCTION

### 1.1. Overview of the Northern Ireland Veteran Health & Wellbeing Study (NIVHWS)

In 2015, Forces in Mind Trust (FiMT) commissioned Professor Cherie Armour from Queen's University Belfast (formerly from Ulster University) to conduct two studies examining the needs of the veteran community residing in Northern Ireland (NI). Recognising the complementary nature of the two studies, they were merged into one larger study in January 2016 to comprise the NIVHWS. The NIVHWS aimed to address gaps in the information available about the Armed Forces veteran population in NI. The main work packages of the NIVHWS, already published, are outlined below in Figure 1. These reports can be retrieved from <http://www.niveteranstudy.org/>.



Figure 1. Previous NIVHWS Reports

This current report is the final in a series from the NIVHWS and focuses specifically on outlining the psychological wellbeing survey which provides insights into the health and wellbeing of the veteran population living in NI. This report had 4 key aims as outlined below;

## 1.2. Project Aims

- Examine the sociodemographic profile of a large UK Armed Forces veteran sample who are resident in NI ( $N= 1267$ )
- Identify key psychical and mental health outcomes and associated mental health service use and help seeking behaviours.
- Identify and examine differences between home service veterans and general service veterans<sup>2</sup>
- Provide key recommendations to better support the veteran community in NI.

## 1.3. Northern Ireland in Context

The recent history of NI is marked by a period of civil unrest and armed insurgency commonly known as the ‘Troubles’. The Troubles spanned from 1968 to 1998 and saw almost 4,000 deaths, 48,000 physical injuries, 34,000 shootings and 14,000 bombings (Fay et al., 1997; Daly, 1999). From 1969, the daily life in NI was characterised by deaths, shootings, bombings, and other violent acts. The unrest continued well beyond the 1998 Good Friday Agreement, which marked the official end of the Troubles, with stories describing dissident activities continuing to appear in the news; including those happening at the time of writing (April 2021) (BBC News, 2019; BBC News, 2021<sup>3</sup>). MI5 continues to assess NI-related terrorism in NI as severe (Security Service MI5, 2021<sup>4</sup>). Inevitably, as many research studies have shown, the legacy of the NI conflict has been reflected in the mental health of the NI population. There are 25% more people living with mental ill-health problems in NI than in England (Department of Health, 2014a). Furthermore, a 2017 NI Assembly report<sup>5</sup> found high rates of mental health problems in NI, attributable to the Troubles. This report stated that “*NI has higher levels of*

<sup>2</sup> Home service veterans are defined as those who reported serving in the home services at any point of their military careers. The exact wording of the question was ‘Did you serve in the UDR or the Royal Irish (HS)?’ and participants answered either Yes or No. Home service veterans are those who answered, ‘Yes’ and general service veterans are those who answered ‘No’.

<sup>3</sup> <https://www.bbc.co.uk/news/uk-northern-ireland-56664378> & <https://www.bbc.co.uk/news/uk-northern-ireland-56814575>

<sup>4</sup> <https://www.mi5.gov.uk/threat-levels>

<sup>5</sup> <http://www.niassembly.gov.uk/globalassets/documents/raise/publications/2016-2021/2017/health/0817.pdf>

*mental ill health than any other region in the UK - 1 in 5 adults and around 45,000 of children here have a mental health problem at any one time*’ (p.2). (Betts & Thompson, 2017).

Bunting and colleagues (2013), reported findings from the NI Study of Health and Stress (NISHS; 2004-2006), and revealed that 60.6% of the NI population experienced at least one traumatic event during their lifetime. Overall, 39% of the population experienced a conflict related trauma. The most common event type was being a civilian in a place of ongoing terror (19.5%), followed by witnessing death or serious injury (16.9%). Males were more likely to experience all types of Troubles-related trauma events than females. Nearly half of the male population (49.8%) experienced at least one Troubles-related traumatic event in comparison to 29.1% of females. Moreover, the study revealed that those who experienced Troubles related traumas were significantly more likely to have a range of mental ill health disorders, than those who experienced non-Troubles-related traumas or no trauma.

The NISHS was the first representative epidemiological study to examine the traumatic experiences and associated mental and physical health issues of the NI population. It was conducted as part of the World Health Organisation’s World Mental Health (WMH) Survey Initiative, which examined the mental health of the general population in 30 countries throughout the world. Based on the data from this study, it was reported that mental health disorders were highly prevalent in NI, with 39.1% of the general population meeting the diagnostic criteria for one or more mental health disorders. The most common disorders were major depressive disorder (16.3%), alcohol abuse (13.2%), specific phobia (9.6%) and PTSD (8.8%) (Bunting, Murphy, O’Neill & Ferry, 2012). The NISHS was hugely insightful regarding the mental health and wellbeing of the population of NI, and is still a comprehensive data source; however, it is pertinent to note that data was collected between 2004 and 2006 and thus may not be reflective of the current rates of mental ill health in the population.

PTSD can be considered distinct from the other disorder types, as the symptoms of the disorder must be linked to a past traumatic event(s). As such, PTSD may be of increased significance to the population of NI due to the Troubles. Indeed, with a lifetime prevalence rate of 8.8%, PTSD is more common among the general population in NI than in any of the other countries surveyed as part of the WMH Survey Initiative, including other countries that have experienced high levels of conflict, such as Israel (Bunting et al., 2012).

**Table 1.** Prevalence of PTSD in the WHO, WMH survey initiative for the top 5 countries

| WMH Survey Initiative participating County | Lifetime Prevalence of PTSD |
|--------------------------------------------|-----------------------------|
| Northern Ireland                           | 8.8%                        |
| Australia                                  | 7.3%                        |
| USA                                        | 6.9%                        |
| New Zealand                                | 6.1%                        |
| Portugal                                   | 5.0%                        |

Note: These figures are reproduced from Kessler et al. (2017)<sup>6</sup>

It has been proposed that in the context of NI, living as a civilian in an environment experiencing an ongoing threat of terrorism has had a significant negative impact on the mental health of the population and that this is potentially being transmitted through generations (Bunting et al., 2013; O'Neill et al., 2015).

#### 1.4. Armed Forces Veterans in Northern Ireland

The Ministry of Defence (2004) reported that around 300,000 veterans served on Operation BANNER<sup>7</sup> (1969-2007) during the Troubles in NI; making this the longest and largest deployment operation in the history of the UK Armed Forces. More than 40,000 of those personnel served in the Ulster Defence Regiment (UDR) and Royal Irish Regiment (R IRISH) - replaced in 2009 by the 38 (Irish) Brigade (Armour et al., 2017). These 'home service' regiments were recruited locally, and often included individuals who served in a part-time capacity alongside their civilian jobs. This meant that for many their operational theatre was and remains the communities in which they live. Constant fear and threat, both on and off duty, meant that there was and continues to be no safe place. Upon transition from the military to civilian life, this constant feeling of threat was not eliminated, since personnel were transitioning to live in what used to be their operational theatre. The high numbers of Home Service veterans who served as part of Operation BANNER during the Troubles has therefore been commonly cited as a key argument for the uniqueness of the NI veteran population.

<sup>6</sup> [https://www.cambridge.org/core/services/aop-cambridge-core/content/view/7DB941D95BB33FCC18BF52DFB3F78197/S0033291717000708a.pdf/posttraumatic\\_stress\\_disorder\\_in\\_the\\_world\\_mental\\_health\\_surveys.pdf](https://www.cambridge.org/core/services/aop-cambridge-core/content/view/7DB941D95BB33FCC18BF52DFB3F78197/S0033291717000708a.pdf/posttraumatic_stress_disorder_in_the_world_mental_health_surveys.pdf)

<sup>7</sup> Operation BANNER was the operational name for the British Armed Forces' operation in Northern Ireland from 1969 to 2007, as part of the Troubles.

While there is (to date) no reliable estimate of the size of the veteran population living in NI, an extrapolation of data from The Royal British Legion UK household survey of the ex-Service community (Royal British Legion, 2014) estimated the population to be roughly 115,000. Although precise data is not available on the numbers deployed to NI, it is estimated that 21,000 soldiers were deployed annually during the 1970s, and 10,000 annually during the 1980s and 90s (thus a collective estimate of 410,000). This contrasts to an estimated 53,000<sup>8</sup> for the 1991 Gulf war, 150,000 for the 2003 Iraq conflict, and 139,000 for the Afghanistan conflict (Armour et al, 2017; Murphy et al., 2015)

## 1.5 UK Wide Veteran Health & Wellbeing

### A NOTE OF CAUTION WHEN COMPARING RATES OF MENTAL HEALTH AND ADDICTIVE BEHAVIOURS ACROSS STUDIES

The following section will present a variety of studies that have concluded the proportion of people who meet the criteria for mental ill health disorders and for problematic addictive behaviours such as alcohol and drug use and gambling. Before reading this, we want to provide some information to help you understand why making comparisons across studies is challenging. The gold standard of studies which report prevalence rates are those which are regarded as representative of a total population, include participants that have been selected at random and therefore every person in the population had an equal chance of participating, and those that have used standardised measures of disorders and /or behaviours that have been shown to be valid and reliable. The challenges in conducting studies of this nature with the UK veteran population are many. Indeed, there are difficulties with ensuring a representative sample as we do not currently know the details that we would need to know about the total population of veterans in the UK to allow us to know if the data we collect is representative (for example, if looking at the general population, the data we collect can be compared on key variables against information from the census). This means we can only say 'of those people who responded to the survey' rather than saying of 'all veterans in the UK' - these two statements are clearly very different. In addition, different studies have focused on different groups of individuals with varying characteristics that may or may not impact on the rates of disorder or behaviour. A sample which has been accessed via a charity (such as the excellent research being conducted by Combat Stress) is regarded as a treatment seeking sample - this will result in much higher rates of disorder (because this is why they are known to the charity) than a community-based sample (some of whom may or may not be engaging with treatment). Other differences could relate to studies which have focused their exploration on those with physical disabilities, or those with substance misuse problems, those who are combat exposed or recently deployed, or maybe the sample just has a lot more younger people included than found in the overall population (all these can impact on mental ill health rates). These sample characteristics must be considered before making comparisons across studies concerning the reported rates. Finally, it is important to look at the way in which things are

<sup>8</sup> These are not of course mutually exclusive numbers especially concerning the 1991 Gulf conflict. Indeed, many of those personnel would have also had service during Operation BANNER.



being measured, asking whether valid and reliable standardised measures have been used or have single item questions been employed (there are reasons as to why both approaches occur but when comparing studies its important to know which). If a study asked someone 'are you depressed - yes or no' vs. asking a series of questions that account for the frequency with which someone experiences a range of symptoms know to combine to reflect a depressive disorder, we can see these are different approaches which may result in quite different proportions of people who are classified as depressed. Indeed, a person may not realise that what they are experiencing is depression so they may say no to the first question but when they answer questions about individual symptoms, we can tell that they are most likely experiencing depression.

Our survey is a community-based survey of veterans who live in NI meaning that every veteran in NI was given an equal opportunity to participate through extensive and multiple forms of recruitment including a large scale social media campaign. We used a series of standardised measures know to be reliable and valid, however our survey data is not regarded as representative as we do not know the size of the veteran population in NI.

It is pertinent to note that previous UK research has demonstrated that most UK Armed Forces veterans successfully transition to civilian life with little difficulty (FIMT, 2013). However, there remains a growing body of evidence reporting that mental ill health and problematic alcohol use among the veteran population is prevalent. For example, Rhead, Fear, Greenberg, Goodwin, and MacManus (2020), examined differences between UK veterans, who were deployed in Iraq and Afghanistan, from phase 3 of the King's Centre for Military Health Research (KCMHR) cohort study (Oct 2014 - Dec 2016) with the general population (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)) across a range of well-being outcomes. Overall, UK veterans compared with the general population were more likely to experience common mental health problems (CMD; 23% vs 16%), PTSD (7% vs 5%) and problematic alcohol use (10% vs 5%). Key gender differences were also highlighted in that male veterans were noted as being at particular risk compared to their male non-veteran counterparts across mental ill health and alcohol misuse (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*) all statistically significant), yet no statistically significant differences were found between female veterans and female non veterans.

In a second study, Rhead et al., (2020)<sup>9</sup>, examined rates of mental health disorders in veteran patients and non-veteran patients seeking treatment for mental health problems via the

<sup>9</sup> [https://www.liftingoursights.org.uk/media/sdm\\_downloads/20201012-KCL\\_UoL-MH-Treatment-Needs-final-report-digital.pdf](https://www.liftingoursights.org.uk/media/sdm_downloads/20201012-KCL_UoL-MH-Treatment-Needs-final-report-digital.pdf)

Improving Access to Psychological Therapies (IAPT) initiative. The findings indicated that veteran patients were more likely than non-veterans to meet the threshold score for probable PTSD (6% vs 2%). Concerning depression and anxiety, both veteran and non-veteran patients were just as likely to meet the threshold score for a probable diagnosis and both presented with similar scores on symptom severity (anxiety 81% vs. 85% & depression 79% vs 79%).

The results of Rhead et al. (2020) are echoed by previous UK based studies (Craig, Fuller, Mindell, 2015; Goodwin et al, 2015; Palmer et al, 2021). For example, a recent study examining mental health outcomes among a treatment seeking sample of 600 UK veterans, demonstrated high rates of PTSD (82%), anger issues (74%), CMDs (75%) and problematic alcohol use (43%), as well as a high degree of co-morbidity among disorders, particularly in relation to PTSD (Murphy, Ashwick, Palmer & Busuttill, 2019). Moreover, recent research examining the rates of PTSD among current and ex-serving members of the UK Armed Forces (including NI veterans but cross nation difference were not assessed) found that while the majority experienced little to no problems, 12% met the criteria for probable PTSD and 13.7% misused alcohol (Palmer et al., 2021<sup>10</sup>). Ex-serving members were significantly more likely to meet the criteria for probable PTSD (13%) when compared with those currently serving (10%) and ex-service members experienced worsening PTSD symptoms over time compared to stable PTSD symptoms as experienced by currently service personnel (Palmer et al., 2021).

While several studies above have focused on rates of problematic alcohol use among UK veterans, what is currently understood about other types of addictive behaviours including drug use among UK veterans is scarce. This has previously been noted as an important area for future consideration, particularly concerning the known associations with mental ill health. At present, the current rates of drug abuse, specifically in veteran populations, could not be identified from previous UK literature. A recent FiMT report<sup>11</sup> did however focus specifically on Compulsory Drug Test (CDT) Discharge. Authors reported that in 2017, 770 individuals from across the three services, approximately 0.6% of Full-time Trained Strength (RN/RM & RAF) and Full-time Trade Trained Strength (Army), returned positive CDT results. During the first phase of the FiMT 'Fall Out' study, 18 respondents from England, Wales and Scotland were interviewed; 16 of these took part in a second follow-up interview. The report concluded that CDT discharge exacerbated existing challenges with transition back to civilian life, including additional complexities of stigma and feelings of shame and embarrassment in addition to a deterioration in mental health. Some interviewees confessed to substance-misuse binges as an attempt to cope with the complexities of their situation. Of note, no interviewees were

<sup>10</sup> <https://s31949.pcdn.co/wp-content/uploads/FiMT-TRIAD-Report-2020-FINAL.pdf>

<sup>11</sup> <https://s31949.pcdn.co/wp-content/uploads/20210322-Galahad-Fall-Out-Briefing-Report-FINAL.pdf>

residents of Northern Ireland. Furthermore, this report does not give us an indication of the extent of drug use within the veteran population, thus this remains unknown.

Concerning other addictive behaviours, gambling has been reported as a concern for military veterans. A recent report<sup>12</sup> examining gambling problems in UK Armed Forces analysed data for the Adult Psychiatric Morbidity Survey (APMS, 2007). It was concluded that veterans in England were up to 8 times more likely to have a gambling problem when compared to their non-veteran counterparts in the general population, even when factors such as mental health disorders and substance misuse were controlled for (Dighton et al., 2018; Roberts et al., 2020). Several studies internationally have reported that rates of problem gambling in veterans range from 2% to 29% and exceed rates reported for non-veterans. Gambling problems are also reported as frequently co-occurring with mental health disorders; a recent study reported that 41% of veterans being treated for gambling concerns have also experienced mood disorders at some point in their lifetime (Ahern et al, 2015, Etuk et al., 2020; Freeman et al., 2019; Levy & Tracy, 2018; Paterson et al., 2020; Shirk et al., 2018; van der Mass & Nower, 2020).

Regarding physical health conditions, the available UK evidence is relatively scarce (Williamson, Harwood, Greenberg, Stevelink & Greenberg, 2019). Indeed, it is challenging to study and draw definitive inferences from this evidence base given the increasing age of the UK veteran population and difficulties around ascertaining whether physical health conditions are directly related to military service or to general ageing (Williamson et al, 2019). A recent qualitative study by Williamson and colleagues which examined the health and wellbeing of both older veterans and non-veterans, suggested that in comparison to the general population, veterans in the UK are more likely to experience physical health conditions in relation to musculoskeletal problems, arthritis and hearing difficulties, as well as difficulties engaging in physical activity and that these issues in turn can have a profound impact on their psychosocial functioning (Williamson et al, 2019). Research by Sharp, Busuttill, and Murphy (2019) examining physical health conditions among 403 treatment seeking UK veterans found that the most endorsed physical health problems were chronic pain (41.2%), reduced mobility (34.2%), hearing difficulties (29.5%), high or low blood pressure (24.8%) and issues with digestion (21.8%).

<sup>12</sup> <https://s31949.pcdn.co/wp-content/uploads/gambling-armed-forces-veterans-2007-adult-psychiatric-morbidity-survey.pdf>

## 1.6 Veteran Health & Wellbeing in Northern Ireland

Despite the unique nature of the NI veteran population, prior to the commencement of the NIVHWS, no research had examined the health and wellbeing of Armed Forces veterans living in NI. To date, the available data in relation to veterans from NI is based on samples who have been deployed on a short-term basis to NI and then returned to their home nations. Therefore, they were not based in NI in the long term, thus not residents of NI (e.g., a study by Lawrenson & Ogden, 2003). However, given what we know from UK wide studies (cited above), this underscores the importance of, and need for, future research which attempts to examine and understand mental ill health among the veteran population who permanently reside in NI. Regarding what is known in the context of NI specifically, early research by Lawrenson and Ogden (2003) investigated mental ill health and other psychosocial difficulties among 150 servicemen deployed to NI on a six-month tour. Specifically, somatic symptoms, anxiety, social impairment, and depression were examined. The results demonstrated a three-fold increase in psychological difficulties from pre- to post-deployment. This research is often cited as 'research on Northern Irish Veterans', however it is important to emphasise that these were soldiers deployed to NI from the mainland who returned home, not those who resided in NI.

Furthermore, a recent qualitative report examining the current and future needs of the veteran population in NI (Armour et al, 2017) suggested that there is a cohort of NI veterans, particularly those who have been medically discharged, who are experiencing significant and sustained mental ill health that they attribute to their military service. A total of 41 veterans participated in focus groups for the study - 40% of whom reported having received a prior mental health diagnosis (Armour et al., 2017). Participants reported that for many years, veterans have lived with hypervigilance associated with sustained levels of threat and as a result, many felt hesitant to disclose mental health concerns or their veteran status to healthcare practitioners in statutory organisations such as general practitioners. The physical health needs that will increase in complexity due to ageing also featured in the discussions with NI resident veterans and with voluntary and community service providers. The focus groups further described the importance of having a safe place to go for support, where they felt they would be understood. Concerns were raised about isolation and about care and mobility issues when transitioning to older age. Full details can be found in the report<sup>13</sup> titled 'Current and Future Needs of Veterans in Northern Ireland' (Armour et al, 2017).

While the age profile of NI resident veterans currently remains unknown, nearly 50% of veterans in the UK are estimated to be over 75 years old (Office of National Statistics, 2016).

<sup>13</sup> <http://www.niveteranstudy.org//>.

The future impact on health and social care services from having an ageing veteran population is therefore of particular concern. Indeed, there is recent evidence of a significant association between PTSD and a later diagnosis of dementia in veterans (Rafferty, Cawkill, Stevelink, Greenberg & Greenberg, 2018). At the same time, it must be pointed out that there are several hidden contributing factors that may account for the progression to dementia, making the issue by no means straightforward.

### **1.7. Help Seeking among the veteran population.**

Being a veteran in NI is associated with a unique set of circumstances; not only are veterans likely to have been exposed to a variety of Troubles-related traumatic events (just like the general population), but additionally many of them must live amongst their former adversaries, often feeling a requirement to conceal their veteran status to protect themselves and their family. It is therefore unsurprising that due to fears around security and potential discrimination, only 20% of veterans with a mental health difficulty will seek help (Iversen et al., 2011). Looking more broadly at what is known about help seeking and service utilisation among veterans in the UK, the general census suggests that UK veterans typically under use services (Greenberg, 2014; Iversen et al., 2011; Mellotte et al, 2017), with recent research highlighting that veterans in the UK typically wait more than a decade to seek assistance for mental health disorders (Murphy, 2016). Several reasons have been suggested for this such as stigma, negative attitudes towards mental health services, a denial around need for care and in the case of NI, safety concerns. There are also several logistical barriers which have been identified such as long waiting lists and the availability of treatments. A qualitative study by Mellotte et al. (2017) reported that key barriers could be split into barriers in accessing initial help and barriers during the treatment process. Initial barriers were found to be stigma (both self and public) and acknowledging that help was needed, whereas treatment barriers were attitudes and beliefs towards health care professional and services.

### **1.8. Statement of Project Rationale**

Overall, a combination of complex factors such as stigmatisation, attitudes towards help seeking, logistical barriers to treatment, and safety concerns around disclosure of veteran status in NI, coupled with an inability to collect truly representative veteran data means that it is difficult to determine how common mental health disorders are among veterans resident in NI. Subsequently, it is therefore difficult to estimate the level of need for mental health services.

To date, no research has examined the rates of mental ill health or help seeking behaviours among the veteran population in NI. This is despite preliminary evidence suggesting that this section of the population may demonstrate significant qualitative differences that set them apart from other veteran populations in the UK and further afield. It is believed this is largely because of the unique socio-political circumstances surrounding the Troubles and the resultant legacy of the period. This NIVHWS aimed to address this key gap within the evidence base.

## 2.0. METHODOLOGY

### 2.1. Design & Procedure

A large-scale cross-sectional self-report survey was designed to collect data directly from veterans of the UK Armed Forces currently residing in NI.

A Veteran was defined in line with the MOD definition and is consistent with the definition adopted in previous reports published as part of the NIVHWS and this research group:

*“Someone who has served for at least one day with the Regular Armed Forces (this may include current Reservists) or someone who has served with the Reserves and no longer serves.”*

Participants were included in the study if they reported meeting the study’s definition of veteran status outlined above, were over 18 and currently living in NI. Convenience sampling<sup>14</sup> was used to select participants because at present there is no reliable population estimate of veterans who reside in NI.

#### WHAT IS A CROSS-SECTIONAL SURVEY?

A cross-sectional survey is a large questionnaire which is administered at one point in time. It collects data by asking participants a series of questions about their life both in the past and currently and/or about their attitudes and thoughts about things including their wishes for the future. Questions typically ask about characteristics that help to describe the person answering (often called sociodemographic variables), this helps research to ask questions such as whether there are differences in responses between people of different ages. In addition, there are usually many questions which make up a series of standardised measures. A standardised measure is a set of questions that group together to focus on a particular topic (often referred to as a construct) (e.g., there are 9 questions in a standardised measure called the Patient health Questionnaire (PHQ-9) used to calculate a person’s level of depression). Standardised measures are very common in research, they are tested for their ability to detect the constructs / topics of interest, and they allow researchers to compare across different groups of people who respond to different research surveys.

A wide-reaching recruitment strategy was employed. The study was promoted via a targeted professional and funded social media campaign, through newspaper advertising (paid and

<sup>14</sup> Convenience sampling is the use of a population who are ready and available thus close to hand.

unpaid), veteran service providers, and in person at different Armed Forces events organised throughout NI. Veterans who had participated in previous studies of the NIVHWS and had expressed interest in future participation in research were invited to take part in the survey. All participants were incentivised by being included<sup>15</sup> in a prize draw for one of 19 shopping vouchers valued at £150 each.

Data collection for the survey commenced in December 2017 and ended in June 2019. The survey was administered predominantly online through a survey data collection platform called Qualtrics (a small number of surveys were completed by residents of the Somme Nursing Home in pen and paper with researchers assisting residents). Participation was voluntary and open to all meeting the study inclusion criteria. Please see the section on 'Survey Development' below for more detailed information on what topics were covered.

Ethical approval for this study was provided by both the Faculty of Engineering and Physical Sciences at Queen's University Belfast and the Ulster University Research Ethics Committee. Additionally, all study procedures were in accordance with data protection legislation.

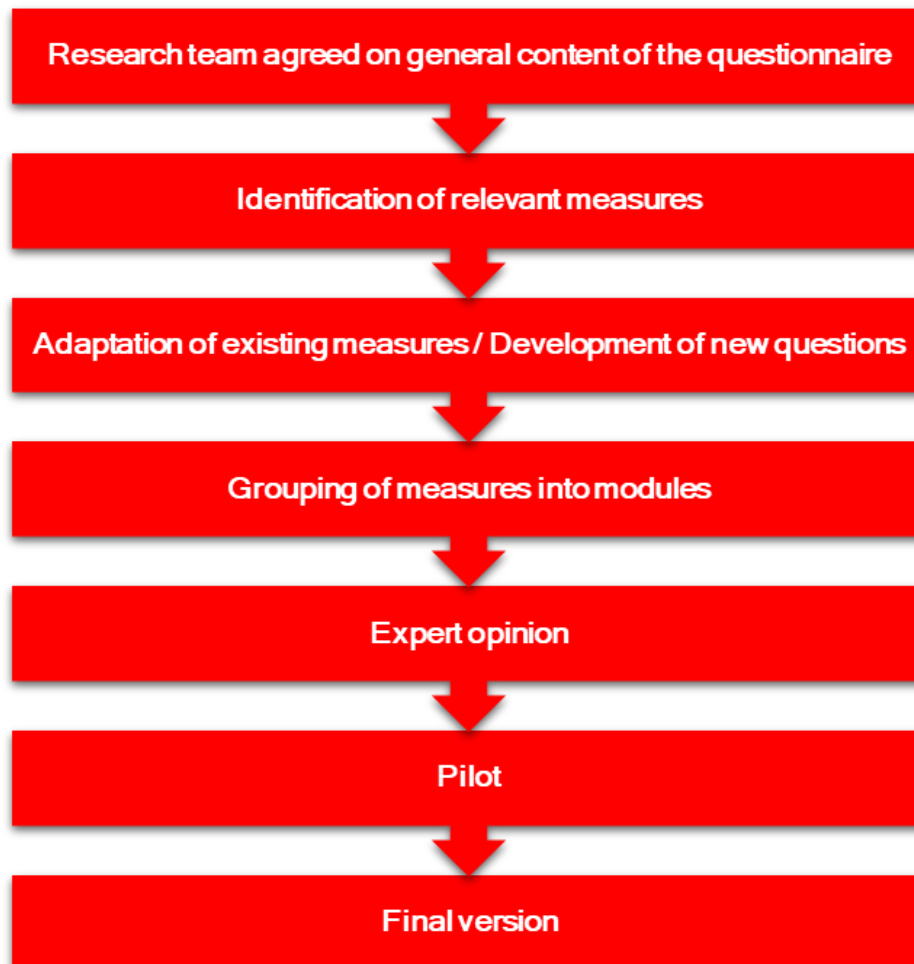
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<sup>15</sup> Participants were asked if they would like to be added to the prize draw and if so were asked to leave contact details in a 'separate survey database' that was NOT linked to their responses in the NIVHWS psychological wellbeing survey. This maintained the anonymity of survey respondents.



## 2.2. Survey Development

To provide a comprehensive overview of veterans' health and wellbeing, the development of the survey for data collection proceeded through several stages, as shown in Figure 2.



**Figure 2.** Stages of Survey Development

*Stage 1: Research team agree on the general content of the survey.*

Using their wider knowledge of psychology and social policy, the research team discussed the potential content of the survey and agreed on a wide range of constructs to be included. This ensured a robust first draft of the potential constructs the survey would assess.

*Stage 2: Identification of relevant measures*

To identify the most appropriate measures to be used in the survey the research team:

- a) reviewed previous surveys which had collected data from military and military veteran populations in other countries, including the wider UK, Canada, Denmark, and the US, looking at both standardised measures and bespoke measures.
- b) reviewed surveys and the measures used in previous studies to collect data from the general population of NI, including the NISHS
- c) reviewed the wider scientific literature to identify other potential surveys and look at which measures were used across our agreed upon constructs which could be used in our survey.

The suitability of these measures to veterans in NI, as well as their brevity, were discussed within the research team, and the ones deemed most suitable were selected for inclusion in the overall survey.

*Stage 3: Adaptation of existing measures and development of new questions*

To meet the aims of the study, some existing measures were adapted to make them more appropriate for the veteran population in NI. This included addition/deletion of questions and changes in question wording or instruction for question completion. Additionally, several new questions were developed specifically for the survey.

*Stage 4: Grouping of measures into modules.*

To make the survey completion more intuitive, measures and questions with similar themes were grouped together to form modules. There was a total of nine modules in the survey.

*Stage 5: Expert opinion*

Once the measures were compiled into their respective modules and organized into a survey, several experts in the field were consulted on the content and structure of the survey. In response to their feedback, some changes were made.

*Stage 6: Piloting*

The survey was then tested in the form of a pilot, where 10 veteran volunteers (50% were male, aged 36 - 66, nine were from the Army and one was from the Royal Navy) provided feedback on the questionnaire. The volunteers worked one-to-one with the researchers and were asked to complete the survey and comment on the content, structure, and wording of the individual questions. At this stage, the researchers were not interested in participants' responses to the questions, but rather their understanding and perceptions of the suitability of

the questions to veterans in NI. As a result of this pilot, some additional changes were made to the survey, such as clarification of certain terms.

*Stage 7: Final version of the survey*

Most of the measures included in the final survey had been extensively validated with a variety of populations worldwide. Most of the questions were in a multiple-choice format, providing participants with a range of options to choose from when answering the questions. Some questions were, however, open-ended, providing participants with the opportunity to answer in their own words. The list of modules with the corresponding constructs assessed in the final survey are presented below in Table 2.

### WHAT IS A STANDARDISED SELF-REPORT MEASURE AND HOW DO THEY WORK?

When researchers want to know the percentage of people in a group who are suffering psychological distress and are likely to meet the criteria for a psychological disorder, they ask people to complete a survey containing self-report standardised measures. A self-report standardised measure is essentially a mini questionnaire that people respond to on their own (without the help of a clinician) that has been developed and validated to reliably assess for a psychological disorder. For example, if we want to know about depression, we will select and use a standardised measure of depression such as the PHQ-9. This measure contains 9 questions. The way in which people answer results in a score. The score allows us to determine if the person would likely be given a diagnosis if assessed for depression by a clinician. This is often referred to as 'meeting the criteria OR caseness criteria for a probable disorder'. Essentially, we are interested in how many of the group pass a threshold (sometimes called a cut off) score. This is reported as XX% meeting the criteria for a probable disorder.

Table 2. Psychosocial constructs assessed in the survey.

| Module                                     | Construct                                           | Standardised Measure                                                                    |
|--------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>A: Background information</b>           | Sociodemographic information                        | /                                                                                       |
|                                            | Financial situation                                 | /                                                                                       |
| <b>B: You and society</b>                  | Veteran welfare                                     | /                                                                                       |
|                                            | Barriers to care                                    | /                                                                                       |
|                                            | Attitudes toward seeking professional help          | Attitudes Towards Seeking Professional Psychological Help-10                            |
| <b>C: Stressful events and your health</b> | General health                                      | Veterans RAND 12-item health survey (VR-12)                                             |
|                                            | Traumatic experiences                               | Life Events Questionnaire (LEQ) & Stressful Life Events Screening Questionnaire (SLESQ) |
|                                            | Posttraumatic stress disorder, Posttraumatic growth | PTSD Checklist (PCL-5) & Posttraumatic Growth Inventory-Short Form                      |
|                                            | Suicide and self-harm                               | Self-Injurious Thoughts and Behaviours Interview (SITBI)                                |
| <b>D: Military experiences</b>             | Combat exposure                                     | Adapted from the Combat Exposure Scale                                                  |
|                                            | Military to civilian life reintegration             | Military to Civilian Questionnaire                                                      |
|                                            | (Un)favourable military experiences                 | /                                                                                       |
| <b>E: Health</b>                           | Anxiety and depression                              | Generalised Anxiety Disorder-(GAD-7) & Patient Health Questionnaire (PHQ-9)             |
|                                            | Dissociation                                        | The Dissociative Symptoms Scale                                                         |
|                                            | Eating disorders                                    | The SCOFF Questionnaire                                                                 |
|                                            | Anger                                               | Dimensions of Anger Reactions-7 (DAR-7)                                                 |
|                                            | Physical and mental health diagnoses                | /                                                                                       |
| <b>F: Lifestyle</b>                        | Sleep                                               | Pittsburgh Sleep Quality Index                                                          |
|                                            | Alcohol use                                         | Alcohol Use Disorders Identification Test (AUDIT)                                       |
|                                            | Smoking                                             | Fagerström Test for Nicotine Dependence                                                 |
|                                            | Gambling                                            | Brief Biosocial Gambling Scale (BBGS).                                                  |
|                                            | Drug abuse                                          | Drug Abuse Screening Test (DAST)                                                        |
|                                            | Expectations about aging                            | Expectations Regarding Aging Survey-12                                                  |
|                                            | <b>G: Coping</b>                                    | Resilience                                                                              |
| Coping strategies                          |                                                     | /                                                                                       |
| <b>H: Relationships</b>                    | Social support                                      | Multidimensional Scale of Perceived Social Support                                      |
|                                            | Relationship attachment                             | Relationship Questionnaire                                                              |
|                                            | Relationship satisfaction                           | /                                                                                       |

|                   |                                                                                                                              |   |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|---|
|                   | Intimate partner violence                                                                                                    | / |
| I: Open Questions | Open-ended questions providing participants with the opportunity to comment on any veteran-related issues they felt relevant | / |

### WHY DID WE INCLUDE SO MANY MEASURES IN OUR SURVEY?

We included several questions in our survey that helped us to understand the details of the demographic profile of the participants (e.g., how many males vs. females, how many home service vs general service veterans). This allows us to understand if different groups experience difficulties at a different rate or in a different way. We also included several standardised measures of topics which we know are important to understand for veteran populations and which have been assessed by other similar studies in the past. We could have included more topics and indeed had many more topics in the first draft of the survey; however this must always be balanced with how long it takes the survey to be completed. If it takes too long, people will not complete it. The full NIVHWS survey took our participants between 1-2 hours to complete meaning we have a LOT of data. Securing this dataset required a lot of resources and so maximising the amount of data we can collect during a single exercise of this nature whilst ensuring it is acceptable to participants is a fine balance. Given the amount of data we have and the different ways that we can look at it to answer key questions means it is not feasible to present all the possible results in a single report. We will however be analysing the data for several years and in turn building a clearer picture and evidence base of the health and wellbeing of NI veterans. In the appendices of this report, we have included abstracts for studies that we have conducted with this data to allow you to see some of the future possibilities regarding how the survey data can be used.

### 2.3. Quality Control

When conducting a study, which asks individuals to complete a survey, several important checks are required to ensure that the data is robust. This is to ensure confidence in the results. Some examples of these 'checks' are; (1) ensuring everyone that completed the survey provided informed consent; (2) ensuring everyone that completed the project meets the study's inclusion criteria i.e. is there anyone who completed the survey who is under a certain age range that needs to be excluded or in the context of this study do all participants meet the study's definition of 'veteran'; (3) examining the data carefully and making decisions about cases where participants have large amounts of missing data, as missing data can impact what type of analysis can be completed. Missing data can arise for several reasons, for example it is perfectly normal for individuals to click into a survey link to find out information but not go any further in terms of completing the survey. Similarly, once they read the study information, they may change their mind and choose not to participate. Participants may only partially complete a survey because something came up mid-way through and they were

unable to return to complete it or decided not to. Therefore, when conducting these robustness checks it is perfectly normal to start with large amounts of individuals within your sample size, however once you employ these data cleaning techniques the sample size becomes reduced. Essentially the data cleaning process take you to a point at which the dataset is deemed useful for further analysis.

Concerning the NIVHWS psychological wellbeing survey, 3521 respondents originally entered the survey. However, 2,105 respondents were removed as they clicked into the survey but did not provided full informed consent. We cannot include respondents in a survey where they have not consented to take part. Secondly, one survey entry was removed as this was a test entry (necessary to test run to survey prior to launch). Thirdly, 80 respondents were removed because they did not complete any measures or only answered the first few initial demographic questions. Finally, 6 respondents were removed because they did not meet the study inclusion criteria in relation to veteran status in line with the MOD definition. This left an overall eligible (useable) sample size of 1,329 respondents.

Specifically for the analysis within the current report, a further 62 respondents were removed as we could not establish with confidence their endorsement of home service status (which is an integral feature of the current report). This left an eligible sample size of 1267 participants. This report presents the data from these 1267 participants.

## 2.4. PARTICIPANT DEMOGRAPHICS

The following table presents information about the sociodemographics of all participants who responded to the psychological wellbeing survey. We present this information both by the full group and then sub-divided by those who reported having military service in the home services and those who did not.

### WHY DO THE NUMBERS OF PARTICIPANTS CHANGE SO MUCH FROM THE START TO THE END?

Missing data is very common in online surveys where participants can answer only the questions they choose to answer. There is an option in survey software packages such as Qualtrics (which we used in this study) to force choices on each question. We presented both options in addition to the pros and cons of each to our study advisory board. It was agreed that we should allow people to freely skip through questions that perhaps made them feel uncomfortable. The view was that this would allow people to participate in the full range of questions rather than the alternative which would have minimised any loss of data through forced choice responding but which may have resulted in people exiting the survey early as they felt uncomfortable with a single question.

**Table 3.** Demographic Characteristics of those who completed the survey<sup>16</sup>.

| Variable                                              | Full sample <sup>17</sup> <i>N</i> = 1267 |              | Group comparison <sup>18</sup> | <i>n</i> = 503 (43.3%)<br><i>n</i> = 659 (56.7%) |                                           |
|-------------------------------------------------------|-------------------------------------------|--------------|--------------------------------|--------------------------------------------------|-------------------------------------------|
|                                                       | <i>N</i> <sup>†</sup>                     | <i>n</i> (%) |                                | <i>N</i> <sup>†</sup>                            | Home service<br><i>n</i> (%) <sup>‡</sup> |
| <b>Served in UDR or the Royal Irish (HS) Regiment</b> | <b>1162</b>                               |              | <b>1162</b>                    |                                                  |                                           |
| Yes                                                   |                                           | 503 (43.3)   |                                | 503 (43.3)                                       | -                                         |
| No                                                    |                                           | 659 (56.7)   |                                | -                                                | 659 (56.7)                                |
| <b>Gender<sup>19</sup></b>                            | 1265                                      |              | 1160                           |                                                  |                                           |
| Male                                                  |                                           | 1114 (88.1)  |                                | 429 (85.5)                                       | 611 (92.9)                                |
| Female                                                |                                           | 151 (11.9)   |                                | 73 (14.5)                                        | 47 (7.1)                                  |
| <b>Age</b>                                            | 1246                                      |              | 1150                           |                                                  |                                           |
| 18-24                                                 |                                           | 14 (1.1)     |                                | 0 (0.0)                                          | 2 (0.3)                                   |
| 25-34                                                 |                                           | 34 (2.7)     |                                | 0 (0.0)                                          | 30 (0.46)                                 |

<sup>16</sup> Further graphical details of participant demographics are located in appendix 1 and appendix 2

<sup>17</sup> Please note that some people did not answer all the questions and so there are varying numbers of people responding across the questions – e.g., 1266 told us their age but only 1162 told us about whether they had served in the home services. Analyses is based on all those you responded to a particular question.

<sup>18</sup> Home service veterans are defined as those who reported serving in the home services at any point of their military careers. The exact wording of the question was ‘Did you serve in the UDR or the Royal Irish (HS)?’ and participants answered either Yes or No.

<sup>19</sup> We queried other gender categories (e.g., transgender and gender variant/non-conforming) but these were not selected by any participants and so we report only on male and female gender.

|                                                       |      |             |      |            |            |
|-------------------------------------------------------|------|-------------|------|------------|------------|
| 35-44                                                 |      | 76 (6.1)    |      | 0 (0.0)    | 64 (9.8)   |
| 45-54                                                 |      | 457 (36.7)  |      | 223 (44.6) | 209 (32.2) |
| 55-64                                                 |      | 413 (33.1)  |      | 202 (40.4) | 185 (28.5) |
| 65+                                                   |      | 252 (20.2)  |      | 75 (15.0)  | 160 (24.6) |
| <b>Relationship status</b>                            | 1261 |             | 1161 |            |            |
| Single or never married                               |      | 91 (7.2)    |      | 27 (5.4)   | 41(6.2)    |
| Married or living with a partner                      |      | 906 (71.8)  |      | 356 (70.8) | 492 (74.8) |
| Separated or divorced                                 |      | 206 (16.3)  |      | 98 (19.5)  | 95 (14.4)  |
| Widowed                                               |      | 49 (3.9)    |      | 21 (4.2)   | 25 (3.8)   |
| Other                                                 |      | 9 (0.7)     |      | 1 (0.2)    | 5 (0.8)    |
| <b>Ethnicity<sup>a</sup></b>                          | 1262 |             | 1162 |            |            |
| White                                                 |      | 1250 (99.0) |      | 500 (99.4) | 655 (99.4) |
| Asian                                                 |      | 3 (0.2)     |      | 0 (0.0)    | 0 (0.0)    |
| Black/African/Caribbean                               |      | 0 (0.0)     |      | 0 (0.0)    | (0.0)      |
| Gypsy or Irish traveller                              |      | 1 (0.1)     |      | 0 (0.0)    | 1 (0.2)    |
| Mixed                                                 |      | 4 (0.3)     |      | 2 (0.4)    | 1 (0.2)    |
| Other                                                 |      | 4 (0.3)     |      | 1 (0.2)    | 2 (0.3)    |
| <b>Highest level of education</b>                     | 1104 |             | 1102 |            |            |
| No qualifications                                     |      | 219 (19.8)  |      | 119 (25.1) | 100 (15.9) |
| GCSE or equivalent                                    |      | 284 (25.7)  |      | 132 (27.8) | 152 (24.2) |
| A Level or equivalent                                 |      | 112 (10.1)  |      | 39 (8.2)   | 73 (11.6)  |
| Certificate/Diploma of higher education or equivalent |      | 200 (18.1)  |      | 83 (17.5)  | 116 (18.5) |
| Undergraduate degree or equivalent                    |      | 106 (9.6)   |      | 36 (7.6)   | 70 (11.1)  |
| Postgraduate degree or equivalent                     |      | 113 (10.2)  |      | 35 (7.4)   | 77 (12.3)  |
| Other                                                 |      | 70 (6.3)    |      | 30 (6.3)   | 40 (6.4)   |
| <b>Current employment status</b>                      | 1105 |             | 1103 |            |            |
| Unemployed                                            |      | 43 (3.9)    |      | 16 (3.4)   | 26 (4.1)   |
| Employed (self-employed, part-time, full-time)        |      | 614 (55.6)  |      | 267 (56.2) | 346 (55.1) |
| Student                                               |      | 19 (1.7)    |      | 5 (1.1)    | 14 (2.2)   |
| Unable to work                                        |      | 108 (9.8)   |      | 59 (2.4)   | 49 (7.8)   |
| Retired                                               |      | 277 (25.1)  |      | 89 (18.7)  | 188 (29.9) |
| Medically retired                                     |      | 108 (9.8)   |      | 59 (12.4)  | 49 (7.8)   |
| Other                                                 |      | 19 (1.7)    |      | 10 (2.1)   | 9 (1.4)    |
| <b>Branch of service<sup>b</sup></b>                  | 1159 |             | 1157 |            |            |
| Royal Navy                                            |      | 131 (11.3)  |      | 44 (8.8)   | 86 (13.1)  |
| Royal Marines                                         |      | 16 (1.4)    |      | 2 (0.4)    | 13 (2.0)   |
| Army                                                  |      | 1003 (86.5) |      | 495 (98.8) | 506 (77.1) |
| Royal Air Force                                       |      | 96 (8.3)    |      | 5 (1.0)    | 90 (13.7)  |
| <b>Reservist status</b>                               | 1163 |             | 1161 |            |            |
| Yes                                                   |      | 74 (6.4)    |      | 33 (6.6)   | 40 (6.1)   |
| No                                                    |      | 1089 (93.6) |      | 470 (93.4) | 618 (93.9) |



|                                                                 |      |             |      |                                  |
|-----------------------------------------------------------------|------|-------------|------|----------------------------------|
| <b>Length of service in Regular Forces<sup>20</sup></b>         | 1150 |             | 1148 |                                  |
| Never served with Regulars                                      |      | 91 (7.9)    |      | 47 (9.5) 44 (6.7)                |
| Less than 4 years                                               |      | 104 (9.0)   |      | 61 (12.4) 43 (6.6)               |
| 4-10 years                                                      |      | 368 (32.0)  |      | 129 (26.2) 239 (36.5)            |
| 11-15 years                                                     |      | 164 (14.3)  |      | 61 (12.4) 102 (15.6)             |
| 16-20 years                                                     |      | 101 (8.8)   |      | 55 (11.2) 46 (7.0)               |
| 21+ years                                                       |      | 322 (28.0)  |      | 140 (28.4) 181 (27.6)            |
| <b>Length of service in Reserve Forces</b>                      | 1096 |             | 1095 |                                  |
| Never served with Reserves                                      |      | 552 (50.4)  |      | 250 (53.9) 302 (47.9)            |
| Less than 4 years                                               |      | 201 (18.3)  |      | 73 (15.7) 128 (20.3)             |
| 4-10 years                                                      |      | 190 (17.3)  |      | 80 (17.2) 109 (17.3)             |
| 11-15 years                                                     |      | 59 (5.4)    |      | 30 (6.5) 29 (4.6)                |
| 16-20 years                                                     |      | 43 (3.9)    |      | 13 (2.8) 30 (4.8)                |
| 21+ years                                                       |      | 51 (4.7)    |      | 18 (3.9) 33 (5.2)                |
| <b>Age at joining the Armed Forces</b>                          | 1101 |             | 1101 |                                  |
| 16-17                                                           |      | 416 (37.8)  |      | 121 (24.9) 295 (47.9)            |
| 18-19                                                           |      | 380 (34.5)  |      | 193 (39.8) 187 (30.4)            |
| 20-24                                                           |      | 247 (22.4)  |      | 140 (28.9) 107 (17.4)            |
| 25+                                                             |      | 58 (5.3)    |      | 31 (6.4) 27 (4.4)                |
| <b>Deployed in NI<sup>21</sup></b>                              | 1115 |             | 1115 |                                  |
| Yes                                                             |      | 957 (85.8)  |      | 488 (99.2) 469 (75.3)            |
| No                                                              |      | 158 (14.2)  |      | 4 (0.8) <sup>22</sup> 154 (24.7) |
| <b>Deployed outside NI</b>                                      | 1073 |             | 1073 |                                  |
| Yes                                                             |      | 760 (70.8)  |      | 189 (42.0) 571 (91.7)            |
| No                                                              |      | 313 (29.2)  |      | 261 (58.0) 52 (8.3)              |
| <b>Suffered physical injuries whilst operationally deployed</b> | 1154 |             | 1153 |                                  |
| Yes                                                             |      | 534 (46.3)  |      | 285 (57.2) 249 (38.0)            |
| No                                                              |      | 620 (53.7)  |      | 213 (42.8) 406 (62.0)            |
| <b>Medically discharged from service</b>                        | 1151 |             | 1150 |                                  |
| Yes - physical injury                                           |      | 73 (6.3)    |      | 30 (6.0) 43 (6.6)                |
| Yes - mental ill-health                                         |      | 16 (1.4)    |      | 5 (1.0) 11 (1.7)                 |
| Yes - both                                                      |      | 30 (2.6)    |      | 19 (3.8) 11 (1.7)                |
| No                                                              |      | 1032 (89.7) |      | 446 (89.2) 585 (90.0)            |
| <b>Given mental health diagnosis since discharge</b>            | 1150 |             | 1147 |                                  |

<sup>20</sup> Note that 40.9% (n=443) reported serving in the regulars and reserves. We have broken this down in the table by each category but these categories are not mutually exclusive.

<sup>21</sup> Deployed in NI and deployed outside of NI are not mutually exclusive with some respondents reporting experiences of both types of deployment.

<sup>22</sup> We note that 4 individuals stated they were not deployed in NI despite being part of the home services – we do not have further detail on this but speculate it may relate to different interpretation of deployment whereby deployment relates to being out of country or in active combat and they felt they did not have this experience. The two questions specified “were you operationally deployed [1. outside of] OR [2. in] Northern Ireland?”

|     |  |            |  |  |            |            |
|-----|--|------------|--|--|------------|------------|
| Yes |  | 339 (29.5) |  |  | 188 (38.1) | 150 (23.0) |
| No  |  | 811 (70.5) |  |  | 306 (61.9) | 503 (77.0) |

**Note:** <sup>a</sup> This was a select all that apply question therefore categories are not mutually exclusive; <sup>b</sup> Some participants served in more than one branch

# Section 2.

## Results

### 3.0. RESULTS

In the following section we present the results of our analyses which describes the sociodemographic profile of the full sample of participants who responded to our survey and then also by the two groups which have been defined by their service history; 1. home service veterans and 2. general service veterans. To assess if the two groups differed from each other we present the percentage of people who responded in a particular way and then we conduct either a chi-squared difference test or an independent samples T-test to determine if the two groups were statistically different from each other.

#### WHAT IS A CHI-SQUARE ANALYSIS?

A chi-square test is a statistical technique typically used to compare two categorical variables (e.g. employed vs unemployed or single vs married) in order to determine whether they statistically differ from one another.

#### WHAT IS AN INDEPENDENT SAMPLES T-TEST?

An independent t-test is a statistical technique that determines whether there is a statistically significant difference between the mean scores of two unrelated groups/variables (e.g., home service vs. general service veterans).

Please note that due to the way in which the survey was designed there are variable levels of missing data (we allowed people to choose which questions they wanted to answer rather than forcing choices to questions); this means that different numbers of people will have answered different questions. We present the results variable by variable and therefore you will see frequent changes in the total number of participants.

### 3.1. Military Experiences

#### *Feelings about the military*

Participants were asked three questions about their feelings in relation to the military. Across the full sample the majority (83.2%) reported not regretting that they joined the military. 69.2% reported being '*really glad*' that they joined. There was a wider spread of responses to the question whether they feel that they have been at risk because they had been in the military. Overall, 11.3% of the sample stated they were '*Not at risk at all*' and 32.1% stated they felt they were '*At severe risk*'.

The home service and general service veterans had similar feelings in relation to having been in the military. Most of both groups said that they '*did not regret at all*' having joined (82.6% and 83.9%) and that they were '*really glad*' that they had joined (68.8% and 70.0%). In relation to feeling at risk because one has been in the military, a lower proportion of the home service veterans (5.0% vs. 16.3%) said that they '*did not feel at risk at all*' because they had been in the military. On the other hand, a higher proportion of the home service veterans said that they felt they were '*at severe risk*' (45.3% vs. 21.7%).

Statistically significant differences between home service and general service veterans in relation to these feelings regarding military experiences were explored using independent t-tests. Each of the three military experiences questions were treated as continuous variables (each question is scored on a likert scale ranging from 1 to 10, higher scores indicate higher degrees of agreement with each military experience statement). Results revealed there was no statistically significant difference between those who were home service veteran's vs those who were general service regarding regret at joining the military or feeling glad that they joined. However, regarding feeling at risk due to being a member of the military, the findings revealed there was a statistically significant difference between home service vs general service veterans;  $t(726) = 7.29, p < .000$ . Specifically, home service ( $M = 8.00, SD = 2.65$ ) were statistically more likely to report greater feelings of perceived risk due to their military membership ( $M = 6.44, SD = 3.13$ ).

#### *Favourable and unfavourable military experiences*

Participants were presented with a list of 14 positive (i.e., favourable) and 14 negative (i.e., unfavourable) experiences that have previously been reported to be associated with military service across several studies<sup>23</sup>. Participants were asked to indicate to what extent they felt they had had those experiences. These responses are presented in Table 4.

Of note, in the full sample, just over a quarter of participants felt that military service contributed *a lot* to improved life chances through education (27.5%) and better job skills and options (28.2%). Cooperation and teamwork was an experience endorsed at the highest rate by the participants (70.4%). Concerning unfavourable experiences, separation from loved ones had the highest endorsement rate (29.4%).

#### *Favourable and unfavourable military experiences by home service status*

A combined score was derived to quantify the total no of favourable experiences reported by participants and another to quantify the total number of unfavourable experiences. The results

<sup>23</sup> Some questions were adapted to align better with the Northern Irish Military experience

showed that the home service veterans scored lower (mean score 28.84;  $SD=8.98$ ) on favourable military experiences than the general service veterans (mean score 31.74;  $SD=8.55$ ). This was statistically significant, meaning that the home service veterans reported having fewer favourable experiences ( $t(687) = -4.33, p<.000$ ). The home service veterans also scored higher (mean score 18.4;  $SD=10.95$ ) on the unfavourable experiences compared to the general service veterans (mean score 14.80;  $SD=10.15$ ), meaning that the home service veterans reported having more unfavourable military experiences. This was statistically significant, ( $t(685) = 4.52, p<.000$ ).

**Table 4.** Summary of favourable and unfavourable experiences

| Favourable and unfavourable experiences   | N <sup>1</sup> | Proportion of veterans reporting these experiences.<br>n (%) |            |            |            |
|-------------------------------------------|----------------|--------------------------------------------------------------|------------|------------|------------|
|                                           |                | A lot                                                        | Moderately | Mildly     | Not at all |
| <b>Favourable</b>                         |                |                                                              |            |            |            |
| Cooperation and teamwork                  | 700            | 493 (70.4)                                                   | 123 (17.6) | 57 (8.1)   | 27 (3.9)   |
| Became more independent                   | 699            | 483 (69.1)                                                   | 134 (19.2) | 56 (8.0)   | 26 (3.7)   |
| Increased pride in national identity      | 698            | 483 (69.2)                                                   | 127 (18.2) | 49 (7.0)   | 39 (5.6)   |
| Greater self-discipline and dependability | 698            | 476 (68.2)                                                   | 145 (20.8) | 56 (8.0)   | 21 (3.0)   |
| More appreciation of peace                | 697            | 421 (60.4)                                                   | 157 (22.5) | 73 (10.5)  | 46 (6.6)   |
| Broader perspective in life               | 698            | 373 (53.4)                                                   | 191 (27.4) | 91 (13.0)  | 43 (6.2)   |
| Learned to cope with adversity            | 699            | 387 (55.4)                                                   | 210 (30.0) | 74 (10.6)  | 28 (4.0)   |
| Made lifelong friends.                    | 697            | 337 (48.4)                                                   | 143 (20.5) | 137 (19.7) | 80 (11.5)  |
| Increased value for life                  | 699            | 336 (48.1)                                                   | 190 (27.2) | 106 (15.2) | 67 (9.6)   |
| Clearer direction and purpose in life     | 699            | 216 (30.9)                                                   | 228 (32.6) | 160 (22.9) | 95 (13.6)  |
| Rewarding memories                        | 698            | 349 (50.0)                                                   | 205 (29.4) | 109 (15.6) | 35 (5.0)   |
| Positive feelings about oneself           | 699            | 210 (30.0)                                                   | 250 (35.8) | 150 (21.5) | 89 (12.7)  |
| Improved life chances through education   | 698            | 192 (27.5)                                                   | 189 (27.1) | 139 (19.9) | 178 (25.5) |
| Better job skills and options             | 696            | 196 (28.2)                                                   | 202 (29.0) | 140 (20.1) | 158 (22.7) |
| <b>Unfavourable</b>                       |                | A lot                                                        | Moderately | Mildly     | Not at all |
| Separation from loved ones                | 698            | 205 (29.4)                                                   | 196 (28.1) | 187 (26.8) | 110 (15.8) |
| Disrupted life                            | 697            | 171 (24.5)                                                   | 172 (24.7) | 183 (26.3) | 171 (24.5) |
| Delayed career                            | 695            | 106 (15.3)                                                   | 119 (17.1) | 148 (21.3) | 322 (46.3) |
| Misery and discomfort                     | 696            | 96 (13.8)                                                    | 146 (21.0) | 242 (34.8) | 212 (30.5) |
| Waste of time/boredom                     | 697            | 57 (8.2)                                                     | 108 (15.5) | 204 (29.3) | 328 (47.1) |
| Economic problems for oneself or partner  | 697            | 80 (11.5)                                                    | 122 (17.5) | 156 (22.4) | 339 (48.6) |

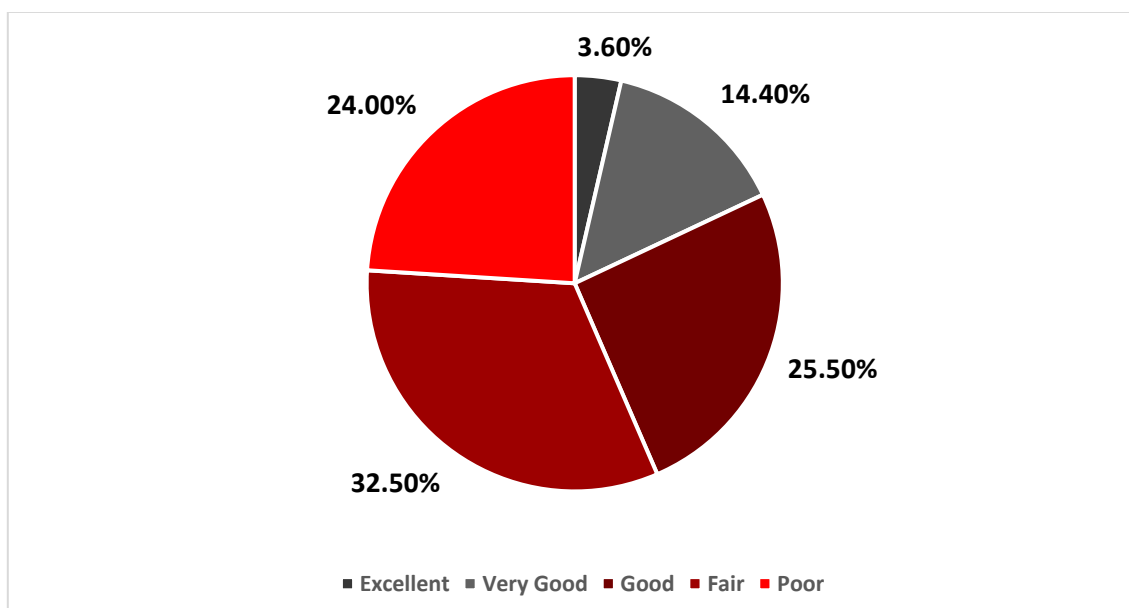
|                                        |     |            |            |            |            |
|----------------------------------------|-----|------------|------------|------------|------------|
| Combat anxieties/apprehension          | 698 | 137 (19.6) | 121 (17.3) | 205 (29.4) | 235 (33.7) |
| Loneliness for partner and/or children | 699 | 151 (21.6) | 154 (22.0) | 188 (26.9) | 206 (29.5) |
| Loss of friends                        | 699 | 139 (19.9) | 180 (25.8) | 199 (28.5) | 181 (25.9) |
| Bad memories and nightmares            | 699 | 164 (23.5) | 130 (18.6) | 182 (26.0) | 223 (31.9) |
| Loss of good health                    | 698 | 172 (24.6) | 126 (18.1) | 127 (18.2) | 273 (39.1) |
| Drinking problems                      | 699 | 90 (12.9)  | 101 (14.4) | 122 (17.5) | 386 (55.2) |
| Experienced death and destruction      | 699 | 75 (10.7)  | 103 (14.7) | 143 (20.5) | 378 (54.1) |
| Hurt my marriage                       | 696 | 136 (19.5) | 80 (11.5)  | 120 (17.2) | 360 (51.7) |

Note. <sup>1</sup> Sample size (number of people answering the question) for a given analysis.

### 3.3. Physical Health (Self-Report)

#### *General health*

When asked how they would rate their general health, 24.0% of the sample said *poor*, 32.5% said *fair*, with the rest (43.5%) rating their health as *good / very good / excellent*.



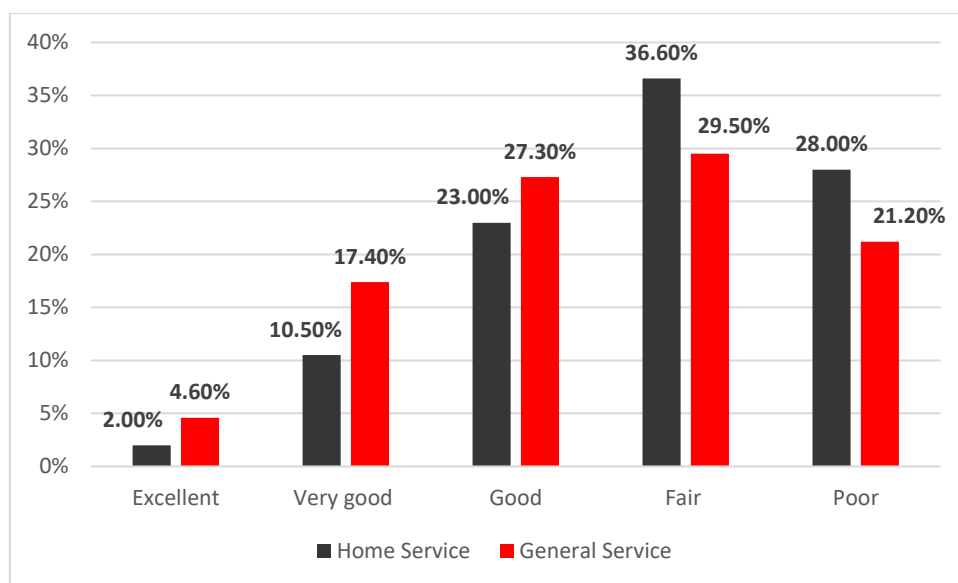
**Figure 3.** In general, would you say your health is... (N= 1028)

#### *General health by home service status*

When asked how they would rate their general health, a trend was uncovered where fewer home service veterans compared to general service veterans reported good / very good / excellent health and more home services veterans reported fair or poor health compared to

general service veterans. For example, a greater proportion of the home service veterans said fair (36.6%) and poor (28.0%) compared to general service veterans (29.5% and 21.0%).

An independent samples t-test was conducted to examine if home service vs general service veterans statistically differed across their average score in terms of their perceived level of general health. The results suggested that home service veterans were significantly more likely to rate their general health as poorer in comparison to general service veterans (as higher scores on this question indicates higher levels of endorsement of poor general health;  $t(988) = 4.81, p < .000$ ).



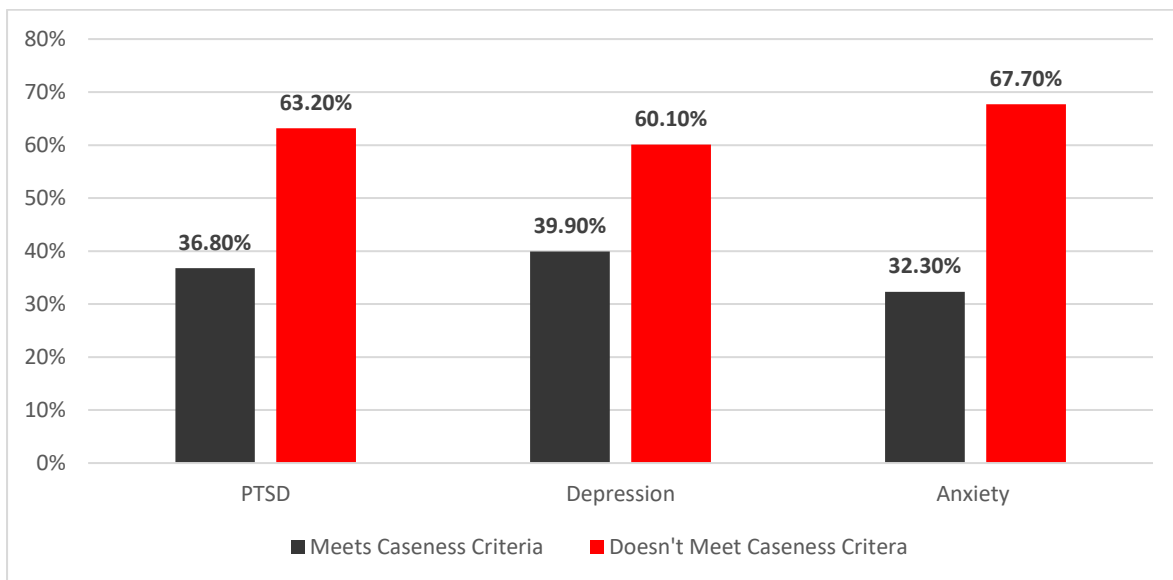
**Figure 4.** In general, would you say your health is... \*By home service status ( $N = 1026$ )



### 3.4. Mental Health & Other Health Related Factors (Self-Report)

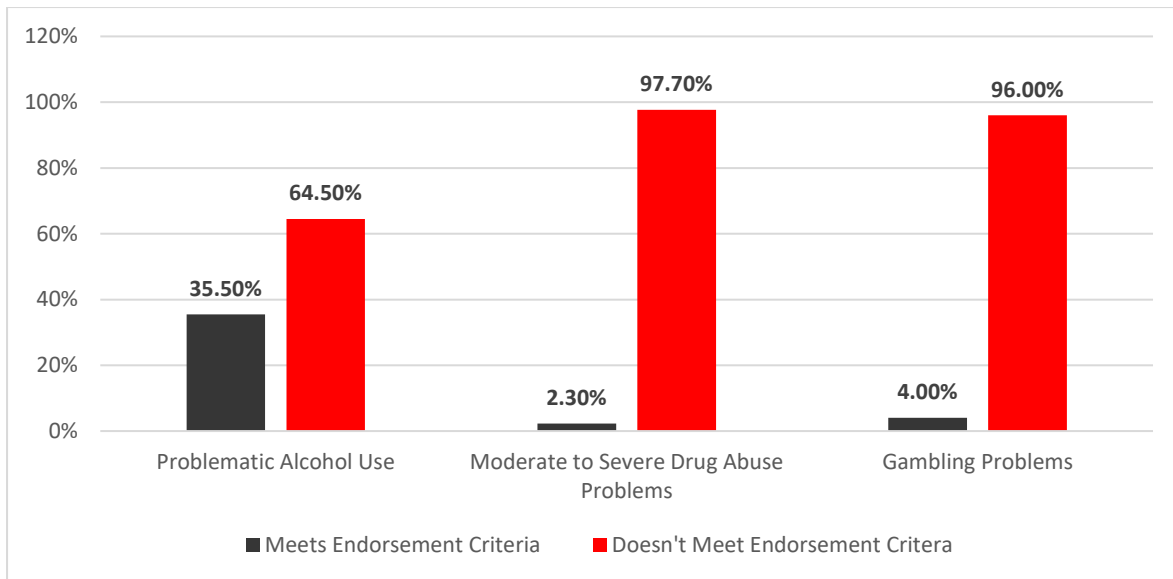
Concerning the next set of results, we report the percentage of participants who have answered standardised measures of psychological ill health<sup>24</sup> and the proportion who would meet the criteria required for clinically significant levels of distress. This is referred to as 'caseness criteria' and as 'probable diagnosis'.

Concerning the current survey, 36.8% of participants met the criteria for probable PTSD, 39.9% for depression, and 32.3% for anxiety (Figure 5). Regarding endorsement of other conditions (Figure 6), 35.5% met the criteria for problematic levels of alcohol use, 4% for gambling problems and 2.3% for moderate to severe levels of drug abuse.



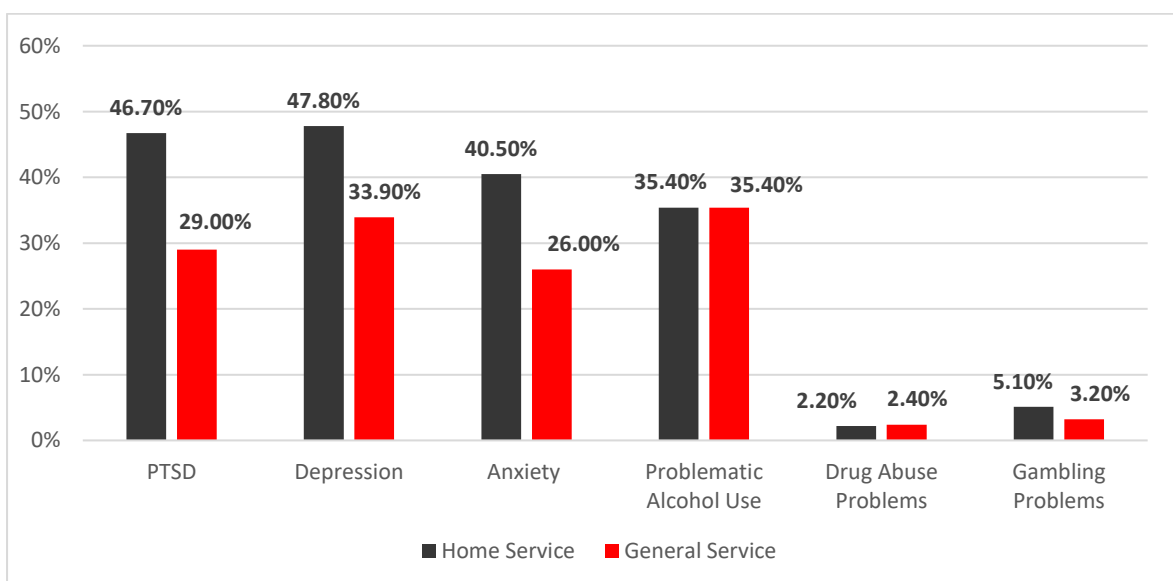
**Figure 5.** Proportion of veterans meeting criteria for different mental health conditions <sup>a</sup>. ( $n = 679-788$ )

<sup>24</sup> These diagnoses are based on self-reported symptoms and can therefore only be considered probable diagnoses. An evaluation by a clinician would be needed to confirm the diagnoses.



**Figure 6.** Endorsement of problematic alcohol and drugs usage and gambling concerns ( $n=645-648$ )

Concerning the differences across the two groups, a higher proportion of home-service veterans, compared to the general service veterans, had probable PTSD, anxiety, depression, and gambling. The rate of alcohol problems and moderate to severe levels of drug abuse was very similar in the two groups. A chi-square test revealed that home service vs general service veterans were significantly more likely to meet the criteria for depression ( $\chi^2 = 13.52$ ,  $df = 1$ ,  $p < 0.001$ ), anxiety ( $\chi^2 = 15.87$ ,  $df = 1$ ,  $p < 0.001$ ), and PTSD ( $\chi^2 = 26.18$ ,  $df = 1$ ,  $p < 0.001$ ). The groups did not statistically differ in terms of alcohol usage, drug usage or gambling concerns.



**Figure 7.** Mental health and other conditions by home service status ( $n = 644-788$ )

### 3.6. Physical and Mental Health Diagnoses

Participants were presented with a list of 10 physical illnesses and 20 mental health conditions and were asked if a GP or other healthcare professional ever said they were experiencing one of them. The results are shown in Table 5. From all the physical illnesses, high blood pressure was the most reported (42.1%), followed by diabetes/high blood pressure (16.5%) and heart disease (13.4%). Participants reported, on average, 1.1 different diagnosed physical health conditions (between 0 and 5). PTSD was the most reported diagnosed mental health condition (26.9%). This was followed by alcohol use disorder (7.9%), panic disorder (6.1%) and generalised anxiety disorder (5.9%).

Differences across both the five most reported physical health conditions and five most reported mental health conditions in terms of age were explored using t-tests. The decision made to focus on the five most common across each grouping due to low levels of endorsement for the other conditions across the sample. Age as a variable was scored continuously.

Regarding physical health conditions first, those who reported high blood pressure were significantly more likely to be older (mean age =58.9;  $SD=9.9$ ) than those who did not report high blood pressure (mean age = 54.6;  $SD=10.6$ ), ( $t(668) = 5.3$ ,  $p<.001$ ). This was also true for heart disease (mean age = 65.3 vs 55.0;  $t(668) = 9.1$ ,  $p<.001$ ), diabetes (mean age = 59.6 vs 55.8;  $t(214) = 4.5$ ,  $p<.001$ ) and stomach ulcers (mean age = 58.5 vs 56.1,  $t(668) = 1.9$ ,  $p<.05$ ). There was no statistically significant difference in terms of age for asthma (mean age = 56.9 vs 56.3,  $t(668) = .5$ ,  $p>.05$ ).

Regarding mental health conditions first, those who reported PTSD were significantly more likely to be younger (mean age =54.9;  $SD=8.8$ ) than those who did not report PTSD (mean age = 56.9;  $SD=11.1$ ), ( $t(668) = -2.3$ ,  $p<.05$ ). There was no statistically significant difference in terms of age for alcohol use disorders (mean age = 55.2 vs 56.5,  $t(668) = -.8$ ,  $p>.05$ ), generalised anxiety disorder (mean age = 55.4 vs 56.5;  $t(668) = -.6$ ,  $p>.05$ ), panic disorder (mean age = 57.7 vs 56.3,  $t(668) = .8$ ,  $p<.05$ ) or social phobia (mean age = 54.1 vs 56.4,  $t(668) = -1.1$ ,  $p>.05$ ).

**Table 5.** Summary of physical and mental health diagnosis by a GP or healthcare professional

| Lifetime diagnoses         | Proportion of veterans reporting being diagnosed with a condition (N =674)<br><i>n</i> (%) |
|----------------------------|--------------------------------------------------------------------------------------------|
| Physical Health Conditions |                                                                                            |

|                                         |            |
|-----------------------------------------|------------|
| High blood pressure                     | 284 (42.1) |
| Diabetes or high blood sugar            | 111 (16.5) |
| Heart disease                           | 90 (13.4)  |
| An ulcer in stomach or intestine        | 86 (12.8)  |
| Asthma                                  | 87 (12.9)  |
| Any other chronic lung disease          | 43 (6.4)   |
| Cancer                                  | 39 (5.8)   |
| Epilepsy or seizures                    | 12 (1.8)   |
| Tuberculosis                            | 7 (1.0)    |
| HIV infection or AIDS                   | 0 (0.0)    |
| <b>Mental Health Conditions</b>         |            |
| PTSD                                    | 181 (26.9) |
| Alcohol use disorder                    | 53 (7.9)   |
| Generalized anxiety disorder            | 40 (5.9)   |
| Panic disorder                          | 41 (6.1)   |
| Social phobia                           | 22 (3.3)   |
| Dysthymia                               | 22 (2.6)   |
| Major depressive disorder               | 21 (3.1)   |
| Obsessive compulsive disorder           | 14 (2.1)   |
| Separation anxiety disorder             | 14 (2.1)   |
| Schizophrenia or any psychotic disorder | 8 (1.2)    |
| Conduct disorder                        | 4 (0.6)    |
| Agoraphobia                             | 3 (0.4)    |
| ADHD                                    | 3 (0.4)    |
| Any eating disorder                     | 2 (0.3)    |
| Specific phobia                         | 1 (0.1)    |
| Bipolar disorder                        | 1 (0.1)    |
| Substance use disorder                  | 1 (0.1)    |
| Neurasthenia                            | 1 (0.1)    |
| Oppositional defiant disorder           | 1 (0.1)    |
| Intermittent explosive disorder         | 0 (0.0)    |

*Physical and mental health diagnoses by home service status*

In both groups, high blood pressure was the most diagnosed physical health condition (44.0% in home service veterans and 40.8% in general service veterans), this difference was not statistically significant. Concerning mental health conditions, the most diagnosed condition in both groups was PTSD. The rate of this diagnosis was higher in the home service veterans (34.8%) than the general service veterans (20.8%). This difference was statistically significant ( $\chi^2 = 16.55$ ,  $df = 1$ ,  $p < .000$ ).

**Table 6.** Summary of mental and physical health diagnosis by serving history status.

| Lifetime diagnoses                      | Home service<br>veterans<br>(n = 293) | General<br>Service<br>(n = 380) | $\chi^2$ <sup>1,2</sup>                                              |
|-----------------------------------------|---------------------------------------|---------------------------------|----------------------------------------------------------------------|
|                                         | N = 673                               |                                 |                                                                      |
| <b>Physical illnesses</b>               |                                       |                                 |                                                                      |
| High blood pressure                     | 129 (44.0)                            | 155 (40.8)                      | $\chi^2 = .71$ , df = 1, $p > 0.05$                                  |
| Diabetes or high blood sugar            | 47 (16.0)                             | 64 (16.8)                       | $\chi^2 = .08$ , df = 1, $p > 0.05$                                  |
| An ulcer in stomach or intestine        | 45 (15.4)                             | 41 (10.8)                       | $\chi^2 = 3.09$ , df = 1, $p > 0.05$                                 |
| Asthma                                  | 47 (16.0)                             | 40 (10.5)                       | <b><math>\chi^2 = 4.47</math>, df = 1, <math>p &lt; 0.05</math></b>  |
| Heart disease                           | 42 (14.3)                             | 48 (12.6)                       | $\chi^2 = .41$ , df = 1, $p > 0.05$                                  |
| Any other chronic lung disease          | 24 (8.2)                              | 19 (5.0)                        | $\chi^2 = 2.82$ , df = 1, $p > 0.05$                                 |
| Cancer                                  | 16 (5.5)                              | 23 (6.1)                        | $\chi^2 = .11$ , df = 1, $p > 0.05$                                  |
| Epilepsy or seizures                    | 6 (2.0)                               | 6 (1.6)                         | /                                                                    |
| Tuberculosis                            | 3 (1.0)                               | 4 (1.1)                         | /                                                                    |
| HIV infection or AIDS                   | 0 (0.0)                               | 0 (0.0)                         | /                                                                    |
| <b>Mental health conditions</b>         |                                       |                                 |                                                                      |
| PTSD                                    | 102 (34.8)                            | 79 (20.8)                       | <b><math>\chi^2 = 16.55</math>, df = 1, <math>p &lt; .000</math></b> |
| Alcohol use disorder                    | 29 (9.9)                              | 24 (6.3)                        | $\chi^2 = 2.93$ , df = 1, $p > 0.05$                                 |
| Generalized anxiety disorder            | 18 (6.1)                              | 22 (5.8)                        | $\chi^2 = .04$ , df = 1, $p > 0.05$                                  |
| Panic disorder                          | 19 (6.5)                              | 22 (5.8)                        | $\chi^2 = .14$ , df = 1, $p > 0.05$                                  |
| Social phobia                           | 12 (4.1)                              | 10 (2.6)                        | $\chi^2 = 1.12$ , df = 1, $p > 0.05$                                 |
| Major depressive disorder               | 13 (4.4)                              | 8 (2.1)                         | $\chi^2 = 2.98$ , df = 1, $p > 0.05$                                 |
| Dysthymia                               | 12 (4.1)                              | 10 (1.5)                        | $\chi^2 = 1.12$ , df = 1, $p > 0.05$                                 |
| Obsessive compulsive disorder           | 7 (2.4)                               | 7 (1.8)                         | /                                                                    |
| Separation anxiety disorder             | 7 (2.4)                               | 7 (1.8)                         | /                                                                    |
| Schizophrenia or any psychotic disorder | 4 (1.4)                               | 4 (1.1)                         | /                                                                    |
| Conduct disorder                        | 3 (1.0)                               | 1 (0.3)                         | /                                                                    |
| Agoraphobia                             | 1 (0.3)                               | 2 (0.5)                         | /                                                                    |
| ADHD                                    | 2 (0.7)                               | 1 (0.3)                         | /                                                                    |
| Any eating disorder                     | 0 (0.0)                               | 2 (0.5)                         | /                                                                    |
| Oppositional defiant disorder           | 1 (0.3)                               | 0 (0.0)                         |                                                                      |
| Specific phobia                         | 0 (0.0)                               | 1 (0.3)                         | /                                                                    |
| Bipolar disorder                        | 0 (0.0)                               | 1 (0.3)                         | /                                                                    |
| Substance use disorder                  | 0 (0.0)                               | 1 (0.3)                         | /                                                                    |
| Neurasthenia                            | 0 (0.0)                               | 1 (0.3)                         | /                                                                    |
| Intermittent explosive disorder         | 0 (0.0)                               | 0 (0.0)                         | /                                                                    |

Note. <sup>1</sup> Group differences analysis could not be conducted across several diagnosis due to low cell counts i.e. there was not a sufficient enough sample size to detect group based differences. Therefore, these cells are left blank: <sup>2</sup> Chi-square tests to indicate whether there is a statistically significant difference between the groups, if  $p = < 0.05$  there is significant relationship. Significant results are in **BOLD**. Age differences were not assessed by service status groups as cell counts were further reduce.

### 3.6. Mental Health Service Utilization

#### *Medication and psychotherapy*

Of those responding to this module, 42.1% reported that at some point in their life, they took prescription medication for a mental health or emotional problem. About half of these (52.8%) said that they found the medication helpful, about a quarter (23.0%) said that it was not helpful, and the rest (24.1%) were not sure.

43.9% of participants reported that at some point in their life, they received psychotherapy or counselling from a qualified professional for a mental health or emotional problem. Almost half of these (49.3%) said that their problem improved because of the treatment, 23.1% said it did not improve and the rest (27.6%) were not sure. 59.2% of those who received psychotherapy/counselling at some point in their lives said that they went to see more than one therapist/counsellor about their mental health problem.

At the time of completing the survey, over a quarter (27.3%) of participants were taking prescription medication for a mental health or emotional problem. Of these, 56.6% found the medication helpful, 14.3% did not find it helpful and 29.1% were not sure.

9.6% of participants were in psychotherapy or counselling for a mental health or emotional problem at the time of completing the survey. Of these, almost a half (47.5%) found the treatment helpful, 6.6% did not find it helpful, 45.9% were not sure.

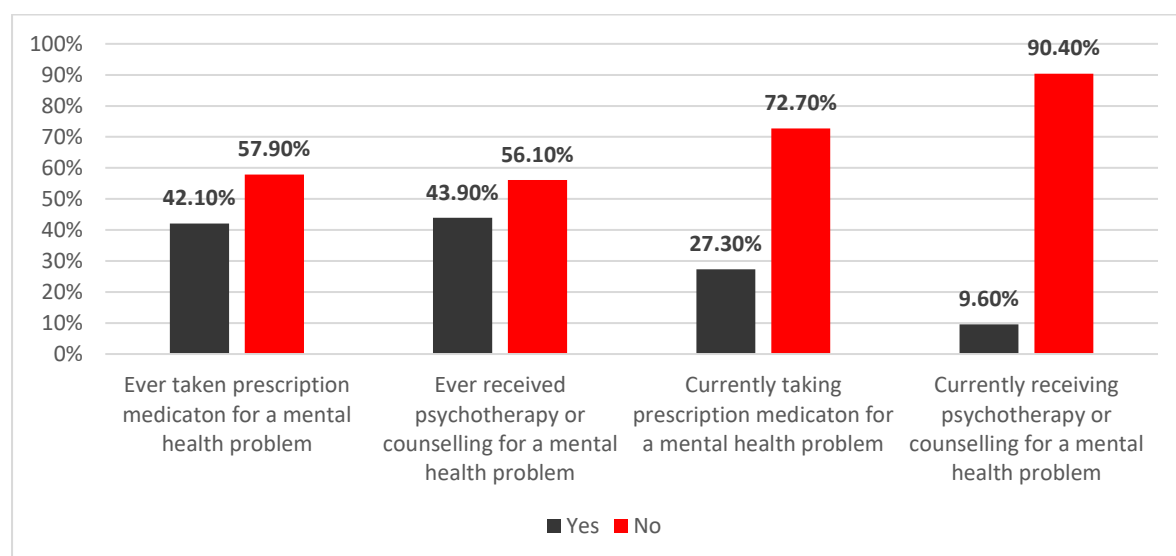
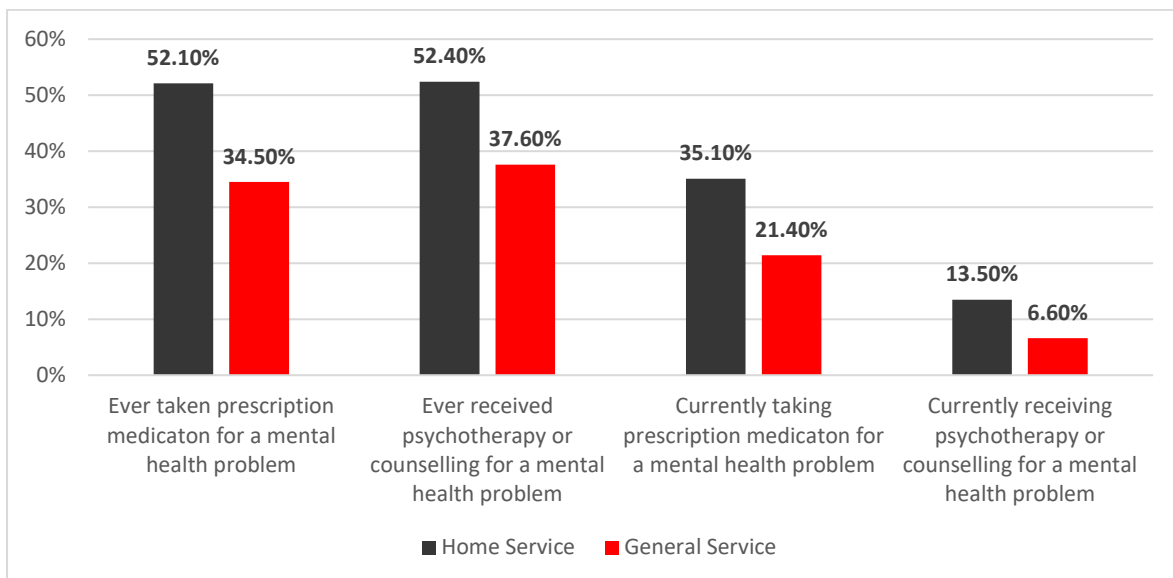


Figure 8. Service utilization ( $N = 668 - 670$ )

### *Medication and psychotherapy by service history status*

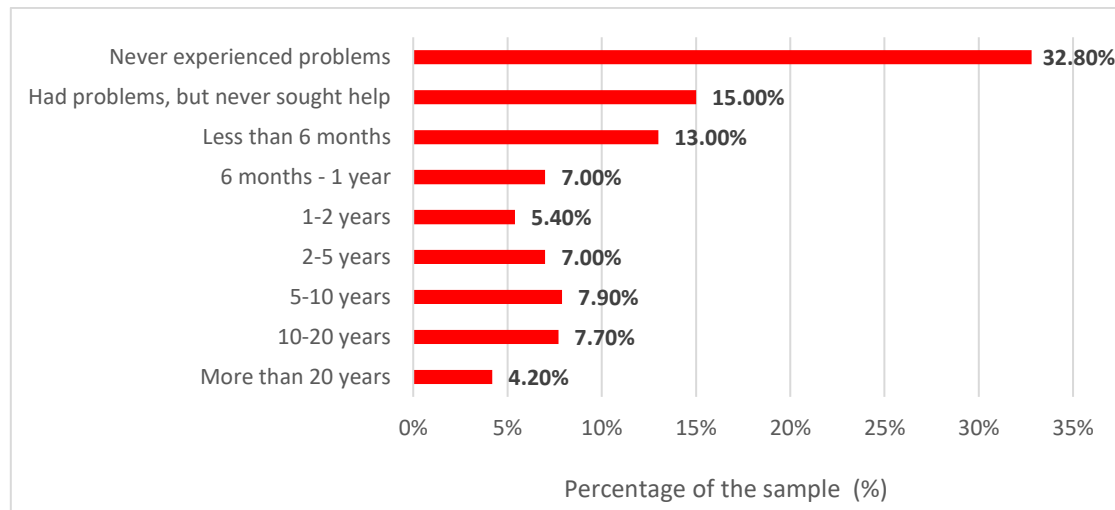
A significantly higher proportion of the home service veterans, compared to general service veterans, reported; 1) that they ever took prescription medication for a mental health or emotional problem (52.1% vs. 34.5%;  $\chi^2 = 20.84$ ,  $df = 1$ ,  $p < .000$ ); 2) that they ever received psychotherapy or counselling for a mental health or emotional problem (52.4% vs. 37.6%;  $\chi^2 = 14.68$ ,  $df = 1$ ,  $p < .000$ ); 3) that they were currently (i.e. at the time of completing the survey) taking prescription medication for a mental health or emotional problem (35.1% vs. 21.4%;  $\chi^2 = 15.36$ ,  $df = 1$ ,  $p < .000$ ); and 4) that they were currently in psychotherapy/counselling for a mental health or emotional problem (13.5% vs. 6.6%;  $\chi^2 = 8.94$ ,  $df = 1$ ,  $p < .01$ ).



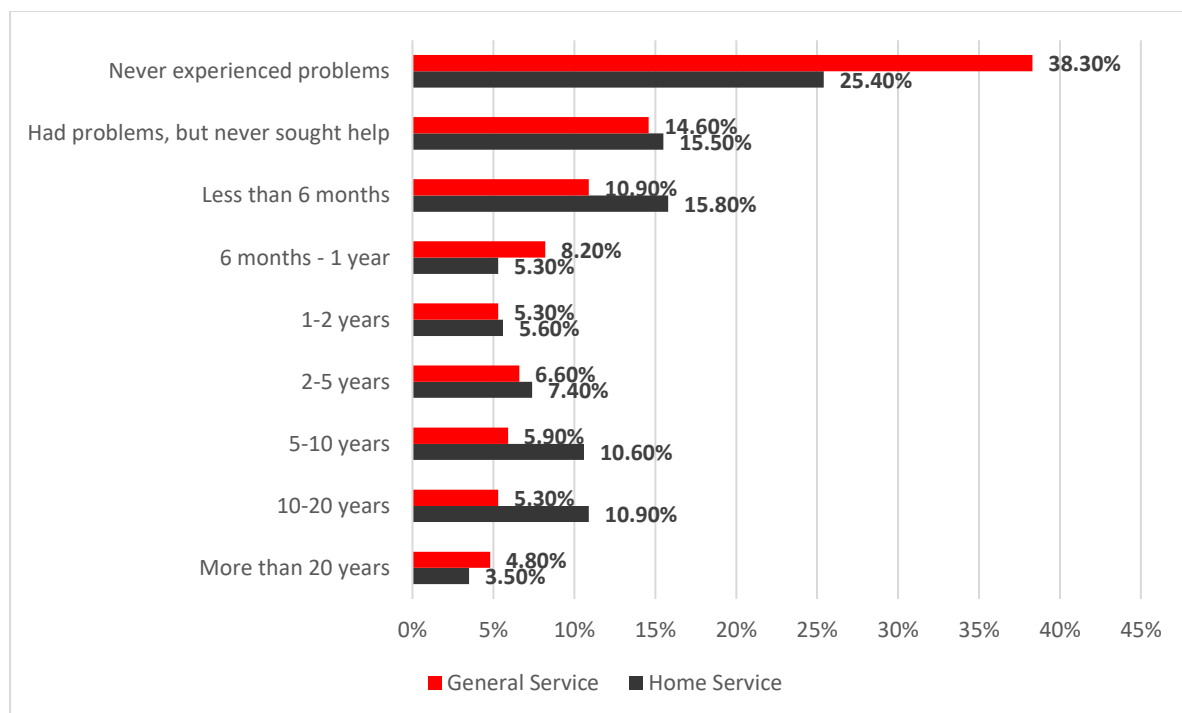
**Figure 9.** Service utilization by service history status ( $N = 667 - 669$ )

### *Time taken to seek help for mental health.*

Participants were asked how long it was since they noticed that they were having mental health/emotional problems until they sought professional help.



**Figure 10.** Time taken to seek help for mental health problems ( $N = 661$ )



**Figure 11.** Time taken to seek help for mental health problems by service history status ( $n = 660$ )

### 3.8. Mental Health Help-seeking



### *Barriers to help-seeking.*

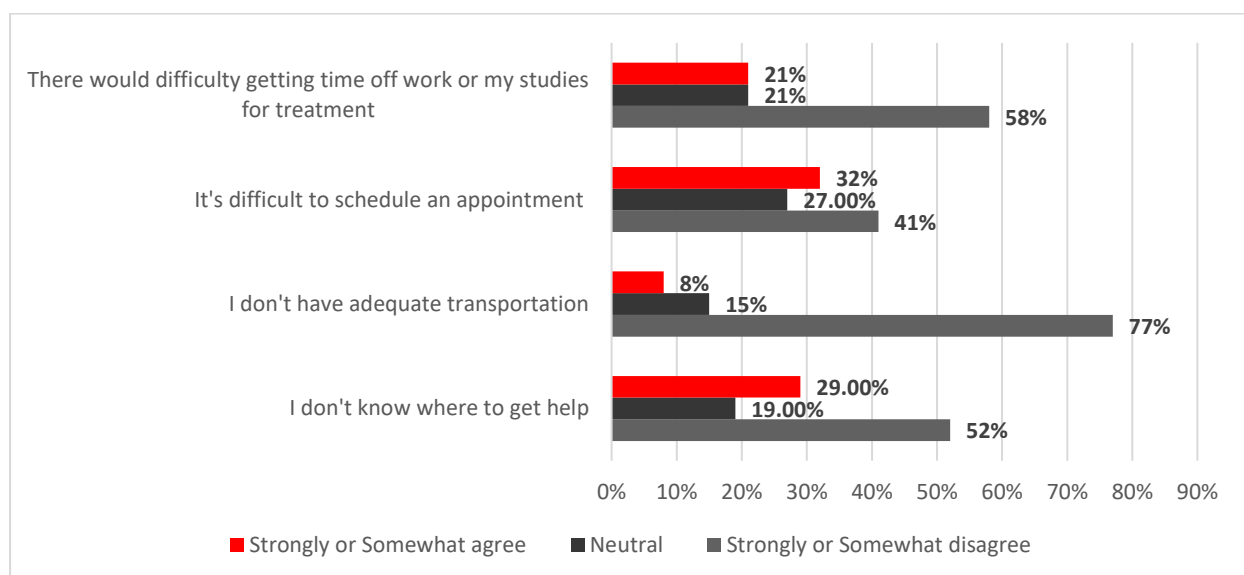
To examine potential barriers to seeking help from a mental health professional, participants were presented with a list of 15 statements illustrating concerns that may prevent one from seeking help and were asked to express their agreement/disagreement with these. The different statements reflected access issues, stigma, negative perceptions of mental health care, and safety concerns. (See Figures 12 - 17)

For example, participants were presented with the statement, 'I don't know where to get help' and asked to report the extent to which they agreed with this. The possible response options were 1 = 'strongly disagree', 2 = 'disagree', 3 = 'neutral', 4 = 'agree' and 5 = 'strongly agree'.

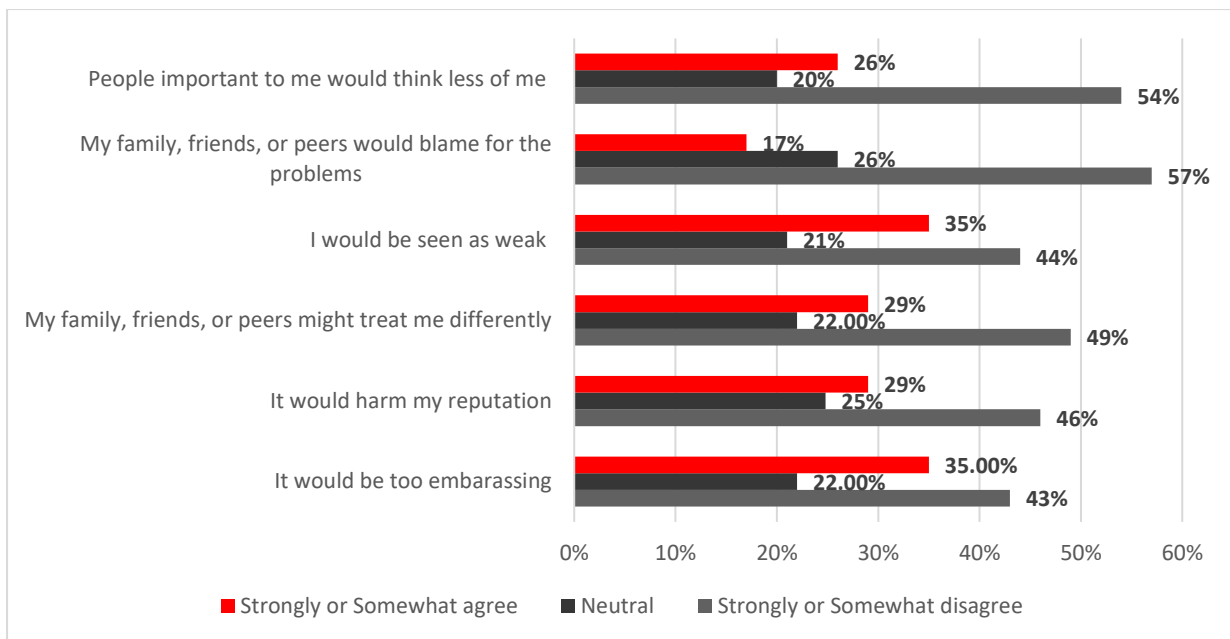
The following section will focus on reporting the percentage of endorsement for those participants who either agreed or strongly agreed with each of the 15 statements in relation to service utilisation barriers for the full sample, then by home service status.

### *Barriers to Help seeking - Full sample.*

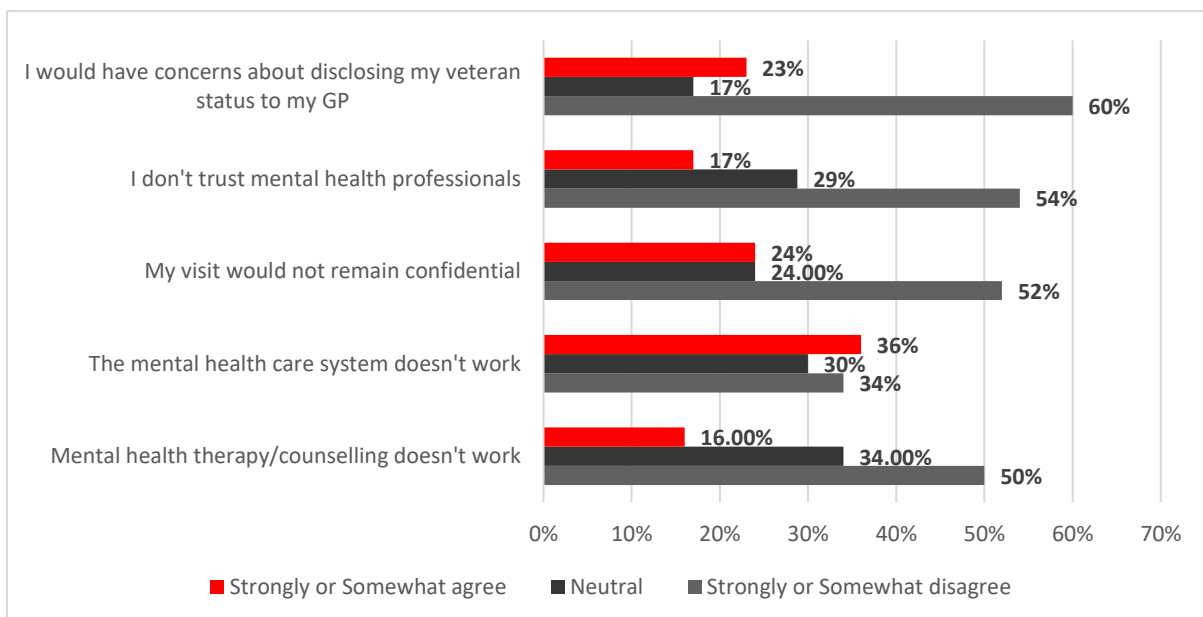
Looking at the 'somewhat agree' and 'strongly agree' responses for the full sample, the belief that *'the mental health care system doesn't work'* appears to be the most reported barrier to seeking help for mental health problems: 36% of participants *somewhat agreed* or *strongly agreed* with this statement. Other commonly reported barriers were, *'I would be seen as weak'* (35%), *'It would be too embarrassing'* (35%), *'It is difficult to schedule an appointment'* (32%), and *'my family, friends or peers might treat me differently'* (29%). Hence, stigma appears to be a big issue in this population. (See Figure's 12-14 below)



**Figure 12.** Access barriers ( $n = 761-771$ )



**Figure 13. Stigma barriers (N =760-765)**



**Figure 14. Negative perceptions of mental health care and safety concerns (N = 762-766)**

#### *Barriers to help-seeking by Home Service status.*

As with the findings for the full sample, the following section will focus on reporting the percentage of endorsement for those participants who either agreed or strongly agreed with each of the 15 statements in relation to service utilisation barriers by home service status. Additionally, it is important to investigate whether any significant differences exist between the

two groups (home vs general service veterans) in relation to barriers to help seeking. In order to do this a combined score was derived in order to determine an overall average score based on the extent to which participants agreed with the 15 barrier statements overall.

The results showed that looking at the overall average score across all 15 statements, the home service veterans reported more barriers to service utilisation (mean score 38.00;  $SD=12.41$ ) than the general service veterans (mean score 35.44;  $SD=12.79$ ). This was statistically significant, meaning that the home service veterans reported higher degrees of agreement in relation to the 15 barriers to service utilisation statements as a whole ( $t(747) = 2.76, p<.01$ ).

Focusing on the individual percentages of endorsement for those participants who either agreed or strongly agreed with each statement, for the home service veterans, the biggest barriers appear to be *I would be seen as weak* (40% of the sample) and *It would be too embarrassing* (37.9%), both of which are stigma-related barriers. *The mental health care system doesn't work* (39%) was also endorsed by a large proportion of the home service veterans. (See Figures 15-17 below)

For the general service veterans, the biggest barriers to help-seeking appear to be *The mental health care system doesn't work* (34%), *It would be too embarrassing* (32.6%), and *I would be seen as weak* (31.6%) (See Figures 15-17 below). Stigma-related barriers therefore seem to play a big role in both groups.

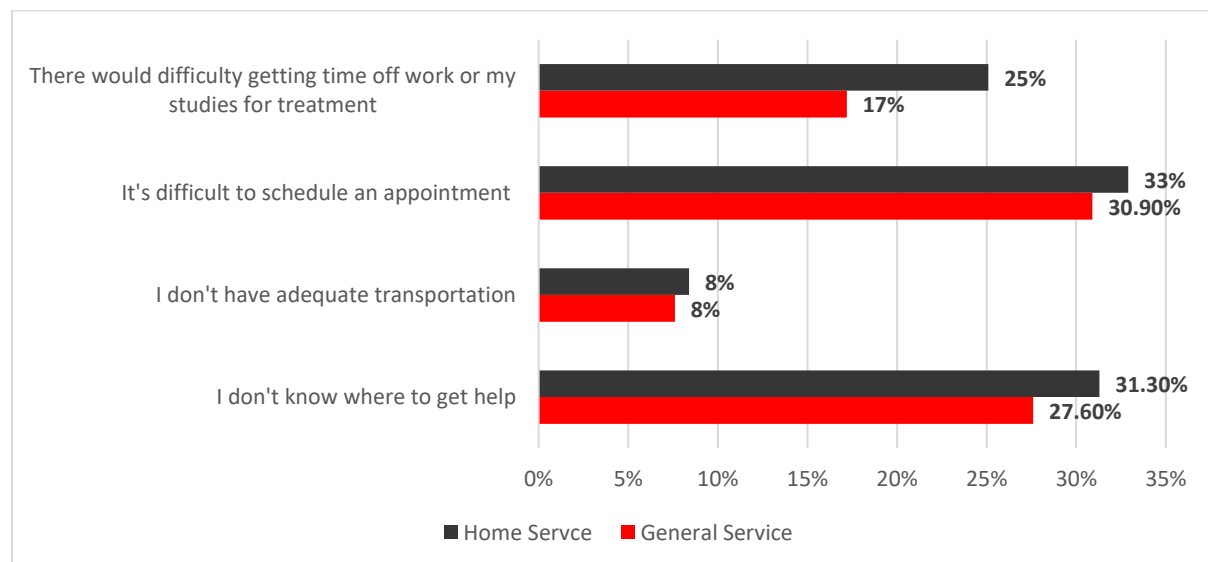


Figure 15. Access barriers by home service status (N = 760-770)

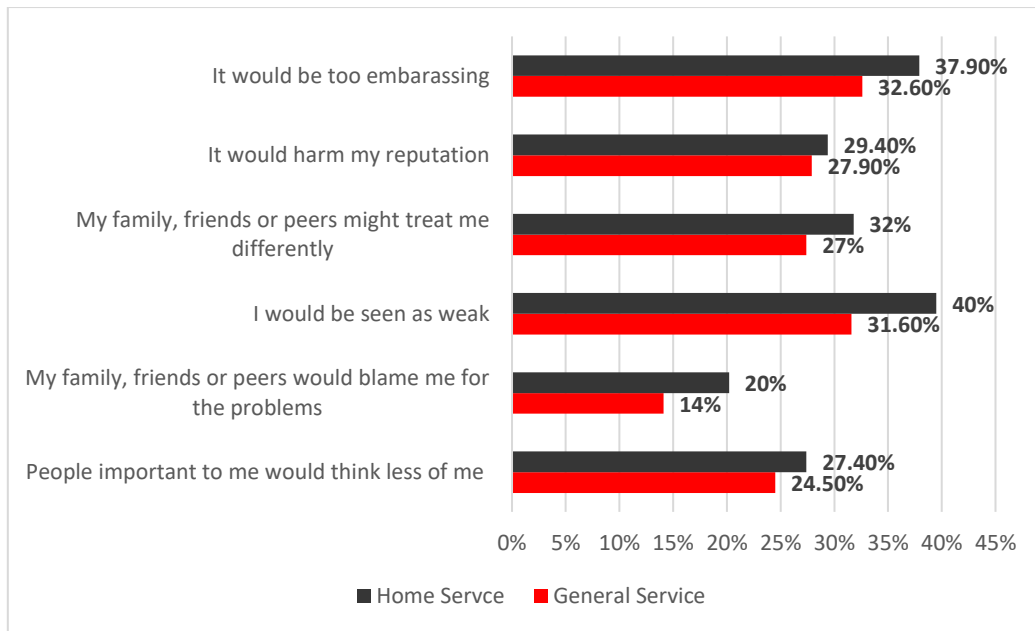


Figure 16. Stigma barriers by home service status (N =759-765)

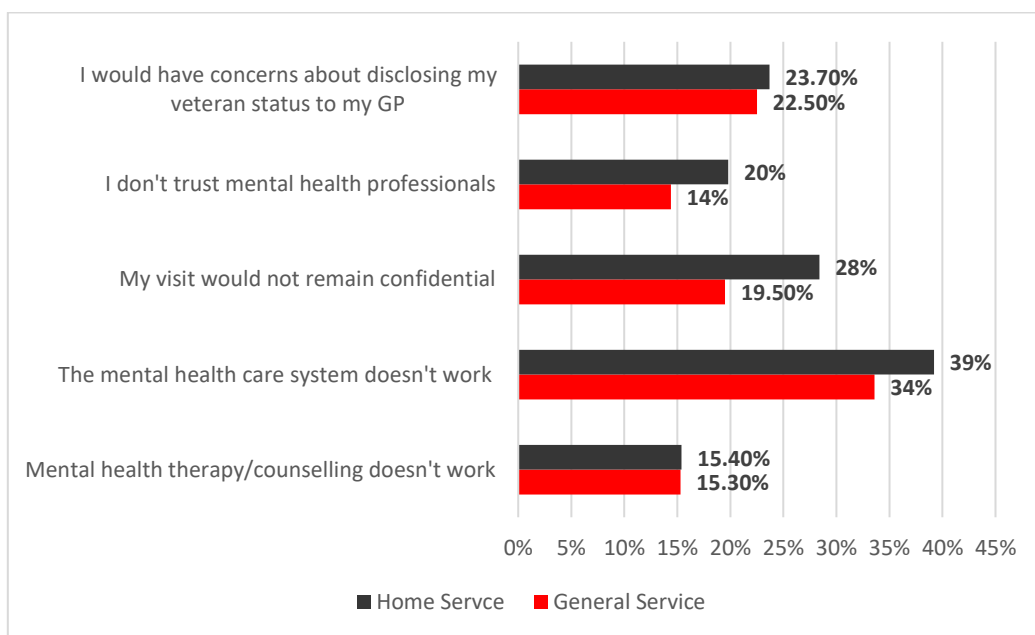




Figure 17. Negative perceptions of mental health care and safety concerns by home service status (N =761-765)



# Section 3.

## Discussion of Results & Recommendations



## 4.0. DISCUSSION

The NIVHWS psychological wellbeing survey is the first piece of academic evidence to:

- Examine the sociodemographic profile of a large UK Armed Forces veteran sample who are resident in NI ( $N= 1267$ )
- Identify key physical and mental health outcomes and associated mental health service use and help seeking behaviours.
- Identify and examine differences between home service veterans and general service veterans<sup>25</sup>
- Provide key recommendations to better support the veteran community in NI.

Responding to the first aim (to examine the sociodemographic profile of a large UK Armed Forces veteran sample who are resident in NI), Table 2 herein presents the demographic characteristics of those who completed the survey as an entire sample and of those who completed the survey based on their histories of being a home service veteran or a general service veteran. The demographic profile of those responding to the survey was as expected (in line with an MOD report of the veteran profile in Great Britain), with the majority being male (88.2%), white (99.1%), married or living with a partner (72.2%), having served in the British Army (87.1%) and reporting an average age of 55 years.

In response to the second aim (to identify key physical and mental health outcomes and associated mental health service use and help seeking behaviours) we have presented data based on the following within the results section above:

- Military Experiences
- Physical Health (Self Report)
- Mental health (Self Report)

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<sup>25</sup> Home service veterans are defined as those who reported serving in the home services at any point of their military careers. The exact wording of the question was 'Did you serve in the UDR or the Royal Irish (HS)?' and participants answered either Yes or No. Home service veterans are those who answered, 'Yes' and general service veterans are those who answered 'No'.

- Alcohol, Gambling, Drugs (Self-report)
- Diagnosis by Healthcare Professionals
- Mental Health Service Utilisation
- Mental Health Help-seeking

The findings will now be discussed in relation to each of these areas, first for the whole sample, then by home service vs general service status.

### **Mental Health (Self-Report & Diagnosis by Healthcare Professionals)**

The results concerning the reported rates of mental ill health in veteran's resident in NI are concerning given the higher-than-expected rates of mental ill health being experienced. This is particularly notable as this is a community-based sample whereby all veterans in NI had an equal chance of participation. Overall, depression was the most reported mental ill health concern (39.9%), followed by PTSD (36.0%), then anxiety (32.3%). It is worth reflecting, for comparative reasons, on several studies that reported on mental ill health problems among UK Armed Forces veterans more widely (namely those by Oster et al, 2017; Rhead et al, 2020; Palmer et al, 2021; Stevelink et al, 2018) however this must be done in the context of challenges discussed previously about comparisons across studies with different methodologies and sample characterises.

In our study depression emerged as the most common self-reported mental ill health concern of veterans residing in NI. A recent rapid review (Oster, Morello, Venning, Redpath & Lawn, 2017) found that most of the empirical literature examining mental ill health among both serving and veteran personnel largely neglects disorders such as depression and anxiety in favour of studying PTSD. If then, the focus on PTSD over other disorders is a general trend within the academic research literature, it may also be an issue reflected in clinical practice. Indeed, an important question to consider is, should a practitioner know a patient's service history, will they then target PTSD symptoms via assessments and thus 'identify' PTSD over and above other disorders? It is worth acknowledging here that there is a much wider debate in the academic literature on diagnosis, misdiagnosis, and diagnostic comorbidity that can inform such questions. In the current study, we assessed both self-reported depressive symptomatology and queried whether veterans had ever been in receipt of a diagnosis of depression from a GP or health care professional. Our study uncovers a wide disparity between self-reported symptoms of depression and GP/healthcare professional assigned diagnosis of depressive disorders. Specifically, 39.9% of the sample met clinical levels for

depression using self-report measures, but only 2.6% and 3.1% had been informed they were experiencing depressive disorders in the form of Dysthymia and Major Depressive disorder. Multiple issues may be at play here related to under detection by healthcare workers or related to a lack of help-seeking specific to depressive disorders - it is likely a mix of both.

The probable rates of clinically significant PTSD in veteran's resident in NI (36.0% based on self-report and 26.9% based on diagnosis by a healthcare professional), based on the current results, are higher than in studies by Fear et al. (2010) and Palmer et al. (2021) who found probable PTSD rates of 4.0% and 13% for ex-serving personnel of the UK Armed Forces, respectively. Moreover, the rate is higher than that found by Rhead et al. (2020) in cases of UK veterans (7%). It is important however to note that there were some key methodological differences between our study and these UK studies. For example, Palmer et al. (2020) assessed ex-serving personnel ( $N=3,538$ ) who had left service by phase 3 of the KCMHR cohort studies with the majority reporting having left the service less than 11 years prior on premature voluntary release. Also notable are that three quarters of the full sample (not separated by serving/ex-serving status) are under 39 years of age. Rhead et al., (2020) use the same data as Palmer et al (2020) as this is again data from phase 3 of the King's Centre for Military Health Research (KCMHR) cohort study used to assess veteran experiences and mental health. However, the differing rates of PTSD here are explained by a different approach to handling the overall data set, In Rhead et al (2020) the data has been age and gender matched to population representative data sets. Thus, small differences across samples can influence the end results around rates of mental ill health as a myriad of factors predict who will vs. won't develop adverse psychological symptoms. These factors include local cultural context, and data collection time frame, as well as different geographic spread e.g., UK focused, as opposed to NI alone. This may, in part, account for some of the differences in reported probable PTSD rates. Indeed, it is particularly likely that the NI socio-political context impacting upon veterans living in the region plays a role in heightened rates of PTSD.

It is further notable that the rates of clinically significant PTSD (36.0%) reported herein are considerably higher than those reported in studies which have focused on the rates of PTSD in the general population in England (4%; McManus, Bebbington, Jenkins & Brugha, 2016) and in Northern Ireland (8.8%; Bunting et al. 2013). Previously it has been accepted that the higher rates of PTSD in the NI general population compared to the English population are as a direct result of trauma associated with the NI Troubles. Therefore, finding higher rates of PTSD in veterans residing in NI compared to veterans residing in England is unsurprising; indeed, we predicted this result at the start of this programme of research. However, to find that the rates are considerably higher are concerning (at best, based on the current availability



of data and noting methodological differences, the comparison is 13% (Palmer et al., 2021) in the UK vs 36.4% in NI).

Another key finding is that when comparing participants' item-level self-reported PTSD symptomatology and participants responses to whether veterans had ever been in receipt of a diagnosis of PTSD from a GP or health care professional, the disparity is far less than when considering depressive disorders (as discussed above). Indeed, concerning PTSD, 36.0% of the sample met or exceeded clinical cut off levels and when considering a reported diagnosis from a GP or other healthcare professional, 26.9% reporting being in receipt of this. This closer alignment potentially confirms Oster, et al's (2017) assertion of a focus on PTSD for serving and ex-service personnel; thus, bridging the gap between symptomatology and diagnosis.

Concerning anxiety, the rates of self-reported probable anxiety by veteran's resident in NI is high (33.3%). This is higher compared to several veteran specific studies and general population-based studies. For example, a recent (2018) study examined the past 12-month prevalence of generalised anxiety disorder among the general population in England found 2.2% suffered with this disorder (Remes et al., 2018), compared with 14.6% in the NI general population for a 2013 study also studying past 12-month prevalence rates for the same disorder (Bunting et al. 2013).

In a similar way to the discussion above focused on depression and PTSD and aligned to the recent rapid review by Oster et al. (2017), we again see a large discrepancy in our results for anxiety when comparing self-reported symptomatology to self-reported receipt of diagnoses. Indeed, only 6.3% of veterans reported having been in receipt of a GP or healthcare professional diagnosis of generalised anxiety disorder, compared to the 36% of veterans reporting clinically relevant levels of symptoms that would suggest a probable diagnosis.

It is pertinent to note that, regarding specific UK military based studies, it is difficult to draw comparison in terms of either depression or anxiety, as depression and anxiety-based disorders (or symptoms) are often combined to form a 'common mental health disorders (CMDs)' category (Fear et al. 2010; Rhead et al. 2020; Stevelink et al. 2018). In addition, and broadly speaking, studies on mental ill health as experienced by veterans vary widely by sample characteristics, geographical location, and the measurement of conditions (particularly anxiety and depression but also PTSD). Comparisons should therefore be conducted cautiously with this in mind.

In summary, there is potentially a large degree of mental ill health being experienced by veterans resident in NI, which is misdiagnosed or undetected, for which veterans are not seeking help. The situation is most apparent in relation to the common mental ill health disorders of depression and anxiety but also concerning PTSD<sup>26</sup>.

### **Substance Abuse & Gambling Behaviours**

Overall, the results of the current study demonstrated higher rates of problematic alcohol use (36.0%), compared with other similar UK based veteran studies, specifically that of Rhead et al. (2020) who examined rates of problematic alcohol use across a large UK based veteran sample and compared these results with a large-scale UK general population sample finding rates of 11% and 6% respectively. The findings of the current study however are lower than that of Murphy et al. (2019) (35.0% in the current study vs 43% demonstrated by Murphy et al. 2019), however these findings were based on a treatment seeking sample and therefore are not directly comparable.

Regarding drug abuse, the current study found rates of moderate to severe drug abuse were 2.3%, however at present, to our knowledge there are no UK based veteran studies which examine drug misuse to contextualise these findings. Overall, the lack of investigation in this area highlights an important gap for future research. To compare these findings in the context of the patterns of drug abuse among the NI general population is also challenging given the lack of empirical studies on the topic. However, recent statistics from the United Kingdom Drug Situation (2021) report found that the prevalence of any drug use in the last year was 9.4% in England and Wales, 12% in Scotland, and 5.9% in Northern Ireland. Therefore, this suggests rates of drug abuse are lower among the NI veterans responding to our survey compared with individuals in the general population. However, given differences across measures used to assess drug abuse and sampling procedures, any direct comparisons should again be made with caution.

Regarding gambling behaviour, 4.0% of the veterans in the current sample reported problematic levels of gambling behaviour, which is higher than similar projects using UK based veteran data, as well as that of the general population and NI specific general population. Dighton et al. (2018) compared levels of problematic gambling among UK veterans and matched general population controls from the APMS (2007) and found rates of problematic gambling to be significantly higher among the UK veteran population (1.4% vs 0.2%). Further

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<sup>26</sup> Note that self-report and diagnostic discrepancies are within person effects and thus not limited by the fact the data cannot be guaranteed as being representative of the total population of veterans in NI.

findings from the 2016 Northern Ireland Gambling Prevalence Survey reported that the 2.3% of participants identified as problem gamblers (NISRA, 2017). This suggests that a higher proportion of NI resident veterans report problematic gambling behaviour than those in the general population. Notably base rates are low but the extent of the issue is potentially doubled (4% vs 2.4%).

### **Physical Health (Self-Report & Diagnosis by Healthcare Professionals)**

Across the entire sample high blood pressure was the most reported physical health condition by a health professional (42.1%), followed by diabetes/high blood pressure (16.5%) and heart disease (13.4%). Further 24.0% rated their general health as *poor*. To date little is known regarding the physical health conditions experienced by the UK veteran population which makes comparisons challenging. However, issues with blood pressure have been highlighted as a common issue experienced by UK treatment seeking veterans (Sharp et al. 2019). However, rates cannot be directly compared because this is a treatment seeking population, differing measures of these health conditions have been used across studies and the rate (24.8%) reported by Sharp et al. (2019) includes issues with high and/or low blood pressure. Additionally, as previously stated, it is difficult to draw definitive inferences given the increasing age of the UK veteran population (average age in the current study was 55.8 years) and difficulties around ascertaining whether physical health conditions are directly related to military service or to general ageing (Williamson et al, 2019). Regarding diabetes among UK veterans' evidence is extremely limited. However, one recent study examining UK veterans who had lost a limb (Scotland focused sample) and found the rates of type 2 diabetes to be 41% (Bergman et al, 2021). Given the limited available evidence it is too early to draw definite conclusions regarding the prevalence and nature of physical conditions among the NI veteran population but this is certainly an area for future exploration.

### **Mental Health Service Utilisation**

Almost half of the sample reported utilising medication (42.1%) or psychotherapy (43.9%) for a mental health problem at some point in their life. However, there was mixed feelings regarding the effectiveness of both of these approaches to treatment of mental health problems, about a quarter (23.0%) said medication was not helpful, and the rest (24.1%) weren't sure if it was helpful. Moreover, 23.1% said psychotherapy did not help improve symptoms and 27.6% were not sure whether psychotherapy was effective. Almost 60% of those who received psychotherapy/counselling at some point in their lives said that they went to see more than one therapist/counsellor about their mental health problem. These results

paint a complex picture of service utilisation suggesting that services are being utilised by some veterans in NI, however there is uncertainty around the effectiveness of these services. Closer examination of perceived barriers to help-seeking may shed light on these findings.

Overall stigma and negative attitudes towards mental health services were prevalent issues/concerns within the current sample, with the belief that *'the mental health care system doesn't work'* (36%) being the most reported barrier to seeking help for mental health problems. These was accompanied by *'I would be seen as weak'* (35%), *'It would be too embarrassing'* (35%), *'It is difficult to schedule an appointment'* (32%), and *'my family, friends or peers might treat me differently'* (29%). This is in keeping with the existing literature, where several studies have demonstrated that negative attitudes to mental health disorders or therapies, or the fear of disclosure of such symptoms, impedes one's ability to seek support from the available services (both among the general population and among military samples; Mellotte et al, 2017; Williamson et al., 2019). For example, Mellotte et al. (2017) demonstrated that initial barriers to service utilisation among veterans was stigma (both self and public) and treatment barriers were attitudes and beliefs towards health care professional and services (Mellotte et al, 2017). A recent study by Williamson et al. (2019) interviewed over 1400 UK military personal (including reserves, active and veteran samples) to examine perceived stigma and barriers to accessing services. The findings suggested that those who met the criteria for mental health problems (specifically either PTSD, anxiety, depression, and also problematic alcohol use) were significantly more likely to report worries relating to stigmatisation and barriers to care when compared to those personnel who did not meet the criteria for a mental health problem (Williamson et al., 2019).

Tackling stigma associated with mental health problems should be a priority going forward, however this presents unique challenges given the socio-political climate of NI, where in the context of this report, 23% stated they had serious concerns about disclosing their veteran status to their GP. Current evidence suggests that a mistrust of mental health practitioners is one of the most common barriers (aside from stigma) preventing those who need help from accessing care or services (Williamson et al., 2019). In a NI context we must also acknowledge that if mental health symptomatology is in any way related to military service or presents the risk that the disclosure of mental ill health symptomatology would also require a disclosure of military service, this will act as a barrier for our veterans. Previously, within the broader NIVHWS we have reported that veterans in NI have many concerns or fears regarding theirs and their loved one's safety as a direct consequent of any disclosure of their prior military service.

Overall, few studies appear to have tackled the issue of evaluating strategies to mitigate perceived or internalised stigma nor have they examined the effectiveness of existing efforts to improve this among military personal. Previous studies have suggested that a possible way forward is to address raise awareness and knowledge surrounding the core aspects of mental ill health and ways to help tackle these issues. It has been suggested that public impact events or the publication of ‘success stories’ which may take the form of previous patient testimonies are good strategies to consider (Williamson et al., 2019). This will be discussed more fully within the context of the recommendations section.

## Home Service vs General Service Veterans Comparisons

The following section will discuss a variety of key findings regarding the health and wellbeing differences reported by those veterans who experienced military service in the Home Service and who still reside in NI, and those veterans who experienced military service outside of the Home Service and still reside in NI. A general trend has been identified whereby more of those who served in the Home Services report unfavourable experiences, mental ill health, and have more perceived barriers to help-seeking for mental health problems.

### Military Experiences

- For both groups, the majority ‘*did not regret at all*’ having joined the military (82.6% and 83.9%)
- A significantly higher proportion of the home service veterans said that they felt they have been ‘*at severe risk*’ because they were in the military (45.3% vs. 21.7%).
- Home service veterans were statistically more likely to report more unfavourable military experiences.

### Mental Health

- A higher proportion of home service veterans, compared to the general service veterans, had probable depression, PTSD, and anxiety.
- The groups did not statistically differ in terms of alcohol usage, drug usage or gambling concerns.
- The most diagnosed mental health condition (as per reports of a diagnosis provided by a GP or other health care professional) in both groups was PTSD. The rate of this diagnosis was significantly higher in home service veterans (34.8%) than the general service veterans (20.8%).

- In both groups, high blood pressure was the most diagnosed physical health condition (44.0% in home service veterans and 40.8% in general service veterans), but this difference was not statistically significant.

### **Mental Health Service Utilisation & Mental Health Help-seeking**

A significantly higher proportion of the home service veterans, compared to the general service veterans, reported that they had, in their lifetime:

- Taken prescription medication for a mental health or emotional problem (52.1% vs. 34.5%)
- Received psychotherapy or counselling for a mental health or emotional problem (52.4% vs. 37.6%)

A significantly higher proportion of the home service veterans, compared to the general service veterans, reported that they are currently:

- Taking prescription medication for a mental health or emotional problem (35.1% vs. 21.4%)
- In psychotherapy/counselling for a mental health or emotional problem (13.5% vs. 6.6%).
- Perceiving a higher degree of barriers to help-seeking for mental health problems

Stigma-related barriers played a big role in both groups.

### **Summary**

A greater proportion of home service veterans experienced mental ill health and had more perceived barriers to help-seeking for mental health problems in comparison to general service veterans. The legacy of the conflict in NI may explain this. Previous literature detailing the legacy of the Troubles suggests decades of conflict in NI has had a detrimental impact on the population's mental health overall (McLafferty, Armour, O'Neill, Murphy, Ferry & Bunting, 2016; O'Connor & O'Neill, 2015; O'Neill, Corry, McFeeters, Murphy & Bunting, 2016; O'Neill, 2014). Further, the results of a recent study by McLafferty and colleagues (2016) found that participants who grew up during the peak time of the Troubles were significantly more likely to have experienced multiple traumas and endorse a range of psychological disorders.

Recent research (Armour et al, 2017; 2018) has highlighted that for many years since Operation BANNER, veterans in NI have lived and still live with hypervigilance associated with sustained levels of threat which has, in turn, negatively impacted the likelihood of their disclosing their veteran status to civilian healthcare practitioners. Prior research demonstrated that exposure to conflict in NI was related to higher realistic threat perceptions surrounding an individual's physical safety (Schmid, Tausch, Hewstone, Hughes, & Cairns, 2008); while Schmid and Mulddon (2015) found that threat perceptions were associated with poorer levels of psychological well-being among a general population sample of NI.

Threat perception in NI veterans may therefore play a key driving role related to both their heightened mental ill health and decreased help-seeking. Taken together, these concerns serve to hinder the identification and treatment of related disorders, resulting in a considerable amount of hidden suffering. This may in turn link back to what we see in this data concerning the discrepancies between self-reported mental ill health symptoms and diagnoses received from GPs/healthcare providers.

These results support the findings of previous studies (Armour et al, 2017; 2018) in which both veterans and service providers reported that the unique circumstances for home service veterans are particularly relevant for the mental ill health being experienced within the population.

## 5.0. RECOMMENDATIONS

While it is important to echo the findings of previous research that most veterans who leave the Armed Forces do not experience mental ill health, this report has highlighted that in the context of this sample, high rates of clinically relevant symptoms of depression, PTSD, anxiety, and problematic alcohol use are evident among veterans currently residing in NI, particularly those who served in the home services. It is essential that those who need it have access to timely care which meets their needs and that steps are taken to reduce barriers to help-seeking where possible.

The following recommendations are made:

**Increase awareness of the potential for mental ill health concerns in Armed Forces veterans residing in NI and increase the availability of support services.**

This psychological wellbeing survey has highlighted that many veterans in Northern Ireland are experiencing clinically significant mental ill health in the form of Depression, Anxiety, and PTSD. The

rate of self-reported symptoms of mental ill health that form a probable disorder far exceed those of diagnoses provided by GPs and other healthcare providers. This suggests that there is a high level of unmet and under-identified support needs within the population.

It is therefore imperative that those who are working with veteran populations in any capacity, including charitable organisations and general practitioners, should take a more proactive approach to monitoring and identifying when a veteran's mental health might be deteriorating. Training GPs and those in contact with / providing support to veterans to ask supportive and non-judgmental questions around how a veteran is feeling and managing on a day-to-day basis will assist with the provision of early support.

In addition, increasing awareness and understanding of possible mental ill health symptoms in veterans within their families and social networks will add an additional line of defence whereby a deterioration of mental health can be responded to quickly through the provision of informal support or referrals to formal support providers.

Given what we know about post-service mental ill health outcomes for veterans in NI there must be increased awareness and recognition of this across a person's time in-service, during transition, and post-service with continuity of care along the way. Indeed, in England, both serving personnel approaching discharge from the military and ex-forces with mental health difficulties can secure support from the Veterans' Mental Health Transition, Intervention and Liaison Service (TILS) and for more complex mental health presentations from the Veterans' Mental Health Complex Treatment Service (CTS). These are dedicated mental health services provided via NHS England which are regarded as good practice and thus should be discussed and considered for adoption in Northern Ireland. We acknowledge that there will be many unique Northern Ireland centric challenges and complications on the road to implementation of such statutory services but feel this should not be a deterrent to exploring ways to increase the availability of support services.

In Northern Ireland, a new Mental Health Strategy is under development which states a core action of developing a regional mental health service, operating across the five HSC Trusts, with regional professional leadership, responsible for consistency in service delivery and development. The strategy acknowledges that at times certain groups such as pregnant mothers, and those with eating disorders may need specialist mental health services. The Mental Health strategy specifically states:

*"The evidence from other countries is clear. Specialist interventions set up correctly within a wider generalist mental health system works and provides better outcomes for patients and shorter recovery times. Going forward we will address the shortfall in Northern Ireland and will provide specialist interventions where they are needed" (point 150; p.48).*

We would recommend consideration of a specialist veteran mental health service like the Veterans' Mental Health Complex Treatment Service (CTS) provided by NHS England.



The Mental Health strategy authors state they “*need to build on existing and new evidence to allow [them] to be ambitious and innovative as [they] seek to bring about lasting change*”. We hope that the evidence presented herein and in our subsequent peer reviewed publications will facilitate the group to do so for the many veterans residing in Northern Ireland with unmet and unidentified mental health needs.

In the short-term we need to urgently understand the nuances behind mental health help-seeking (or lack thereof) by veterans in NI and the inter-relationships between with alcohol usage and traumatic life histories and the socio-political context in NI because of the legacy of the NI Troubles.

It is imperative that support structures where available are visible, accessible, and innovative in their support offerings. Such support structures may include independent and anonymous bespoke military veteran mental health telephone helplines, and the wider role out of apps, such as PTSD coach, that have been developed as bespoke to NI-based military veterans.

### **Mitigate against barriers to mental health care for UK Armed Forces veterans in NI and understand why dissatisfaction with healthcare exists.**

Veterans reported a wide range of barriers to mental health help-seeking including access barriers such as not knowing where to get help from and having difficulties with securing appointments, stigma barriers such as feeling embarrassed and worrying that friends and family would treat them differently. In addition, 36% agreed that the mental health care system does not work, and around 25% agreed that visits would not be confidential and that they had concerns about disclosures of their military status to GPs. On top of this, 40-50% reported that when pharmacological or psychotherapy treatments had been provided, they did not improve their condition, or they were not sure if they improved their condition. The results also demonstrated a high discrepancy between those meeting criteria for clinically significant mental ill health and those in receipt of corresponding professional diagnoses, with the latter considerably lower.

It is therefore imperative that we continue to change the conversation around mental health in Northern Ireland, where we communicate key messages such as the fact that a post traumatic outcome is a normal reaction to an abnormal event. We need to develop carefully crafted public awareness campaigns which work not only to educate people on what mental ill health is, but also normalises these experiences for veterans and thus facilitate them to seek support when required.

Further consideration from both a research and service provider standpoint should consider how positive mental health and wellbeing can be fostered among members of the Armed Forces, particularly focusing on how stigma around mental health and help seeking can be improved and how mental health

and wellbeing can become a more routinely heard part of the conversation in a manner akin to physical health.

It is suggested that a more widespread promotion of mental health and wellbeing awareness elements should be consistently present at veteran events and conferences, and be a core part of any Armed Forces training. It is essential that veterans themselves are part of the conversation surrounding how to best reduce stigma and improve help seeking and attitudes to mental ill health.

In addition, civilian GPs and mental health practitioners' understanding of the Armed Forces in general, and the veteran community specifically, should be improved. This should include improving awareness of the unique context for veterans living in NI and the barriers they face in seeking treatment, such as fear of disclosing their veteran status, or perceived lack of understanding of their situation from civilian practitioners. Specific training targeting these elements is recommended to help veterans have better confidence in NI's mental health services, including confidence that their experiences will be understood.

Education is also required to ensure that researchers and practitioners alike understand that PTSD is not necessarily the most common mental ill health disorder experienced by those who have served in the Armed Forces; other mental ill health disorders such as depression and / or anxiety may be more common. Assessment and identification of mental ill health should therefore span a broad cadre of psychological distress disorders including but of course not limited to PTSD, depression and anxiety.

Concentrated efforts on these fronts may improve the rate by which veterans receive formal diagnoses and thus become recipients of formal evidenced based treatments from trained healthcare professionals, in turn alleviating mental ill health symptomatology.

### **Increase awareness of problematic alcohol usage in UK Armed Forces veterans residing in NI and increase the availability of support services.**

The current study revealed that 36% of those responding reported problematic alcohol. Previous research has suggested that recognition of alcohol misuse problems and help-seeking for these problems in the UK military is low. Indeed, recognition of problems with alcohol only appears to occur when those problems become severe. This is a concern given that early identification and swift intervention often results in better outcomes. Hazardous and harmful drinking can have deleterious impacts on an individual's ability to function professionally, socially, and personally resulting in many comorbid alcohol related harms such as employment loss and financial pressures. In addition, alcohol problems are known to be comorbid with mental ill health concerns. When alcohol use becomes problematic it is also known to result in a high degree of perceived stigma which impedes help seeking.

The Military has traditionally had high alcohol-endorsing norms which studies have shown are associated with higher levels of alcohol use (e.g., Fear et al., 2007) and in turn difficulties in recognition of when that use becomes problematic.

Like mental ill health, it is imperative that those who are working with veteran populations in any capacity, including charitable organisations and general practitioners, take a more proactive approach to monitoring and identifying when a veteran's alcohol usage is potentially escalating and becoming problematic. In addition, increasing the awareness and understanding of the difference between safe and hazardous alcohol usage for a veteran's family and social network will add an additional line of defence potentially improving the availability and provision of informal support or referrals to formal support providers when required. Finally, veterans themselves need further education around the difference between safe and hazardous alcohol usage, particularly as research has shown that acceptance of alcohol problems is low, and the associated perceived stigma of having an alcohol problem requiring help is high.

It is also worth noting that despite low rates of drug use in this data, the Fall Out report<sup>27</sup> which examined compulsory drug test discharge stated that "*without exception, respondents said that their alcohol consumption increased after joining the Armed Forces. Many were heavy drinkers and often made decisions about using drugs when drinking heavily*". This suggests a need to be conscious of the potential for other substances misuse in veterans who are heavy drinkers. One participant reported that "*There is a direct correlation between people taking these recreational drugs and alcohol and things like depression and anxiety and other mental issues....(p.9)*". It is therefore pertinent that we also increase the awareness and understanding of the potential for co-occurring drug use in some veterans who are misusing alcohol.

Brief alcohol interventions (BAI's) have been shown to be both accessible and effective in the general population<sup>28</sup> In a feasibility study, an electronic BAI called 'Information about Drinking for Ex-serving personnel' (InDEx (now Drinks;Ration)<sup>29</sup>), has been shown to have positive outcomes and has been perceived as acceptable by serving personnel, therefore will potentially generalise to veterans. Engagement with electronic interventions such as this might prove to be effective in supporting individuals in NI who may prefer a more discrete option which negates the need for any in person disclosures of military status. Considering their reluctance and many perceived barriers around formal help-seeking this could again prove a useful intervention in NI. We recommend the exploration of BAI's by NI based healthcare providers and if found to be acceptable that they encourage uptake in clients who are presenting with alcohol misuse issues.

<sup>27</sup> <https://s31949.pcdn.co/wp-content/uploads/20210322-Galahad-Fall-Out-Briefing-Report-FINAL.pdf>

<sup>28</sup> Kaner, E.F.S., et al., Effectiveness of brief alcohol interventions in primary care populations. Cochrane Database of Systematic Reviews, 2018(2)

<sup>29</sup> Leightley, D., et al., InDEx: Open Source iOS and Android Software for Self-Reporting and Monitoring of Alcohol Consumption. Journal of Open Research Software, 2018. 6(13).

The Mental Health strategy, discussed above, which is currently in development in NI, acknowledges that some groups are currently under disadvantaged concerning access to service, and included those who use substances as a key group. The strategy further states that co-occurring mental health and substance use problem, often called “dual diagnosis”, has been an ongoing concern and that the best approach for dual diagnoses patients is not specialised services rather it is mental health and substance use services that work together (Combat Stress set a good example here as they currently accept clients who have comorbid alcohol and mental health problems).

We have recommended the consideration of a specialist veteran mental health service like the Veterans’ Mental Health Complex Treatment Service (CTS) provided by NHS England for implementation in NI. In addition, we would recommend that any discussions of this are cognisant of the likelihood of veterans with dual diagnoses of mental ill health and substance use disorder and thus specialised expertise focused on dual diagnosis should be consulted to ensure that the development of a veteran mental health service fully meets the needs of those with co-occurring concerns and that there is access to support and treatment for co-occurring alcohol misuse and mental health issues. In addition, we recommend joined up working with the local voluntary and community sector given that veterans in NI are known to typically approach this sector as a first point of call for support.

### **Increase awareness of differing sub-populations of UK Armed Forces veterans in NI and understand why differences exist concerning their social and psychological wellbeing.**

The current study clearly delineates between home service and general service veterans regarding their psychological health. On the whole, those veterans who report being home service veteran’s vs general service veteran have more negative psychological outcomes including Depression, Anxiety and PTSD, Furthermore, they report a greater degree of unfavourable military experiences and they report a higher number of barriers to their help seeking. They additionally more frequently report negative perceptions of mental health care, they take longer to seek help and they have concerns around disclosing their status to general practitioners (notable general service veteran also report these GP disclosure concerns at almost the same rate).

It is imperative that these findings are not ignored, and that service providers across the board acknowledge that home service veterans are often more likely to require support. Now this does not in any way suggest we do not also support general service veterans (a population who will steadily increase in size over the coming years) but it does mean that we need to be cognisant of why our home service veterans may be experiencing a greater degree of difficulty.

It is likely that the socio-political context in NI and a wide range of aspects of service life interplay in a unique and complexity way for home service veterans that do not play out in a similar way for general service veterans. Increasing awareness and understanding of this is key in the delivery of support services.

Additionally, all the recommendations above which apply to the full group of course apply individually to our two sub-groups of home service and general service veterans including **increasing** the awareness of mental ill health and substance use concerns, increasing, and improving support services, mitigating against barriers to mental health care, and understanding why dissatisfaction with healthcare exists. We should however do all of this whilst being cognisant of sub-population differences.

It would be remiss of us not to mention the Armed Forces Covenant, indeed section 75 of the Northern Ireland Act (Defence Committee, 2019) is still regularly cited as a reason for the non-implementation of the Armed Forces Covenant, and this is regularly debated nationally and regionally. Given the unique political climate where the political sensitivities around the Armed Forces Covenant are such that potential solutions to the implementation of the Covenant are complex, it is recommended that a public engagement exercise be conducted as a priority with key stakeholders, policy makers, governing bodies/political figures, representatives from community and statutory services, as well as veterans themselves.

Several recommendations for future research are also suggested:

This is the first study of its kind in NI and as such offers unique insights into an understudied group of UK Armed Forces veterans. Herein we have reported several descriptive statistics related to sociodemographics, mental health and behavioural outcomes, and health service utilisation. However, as outlined and discussed there is now a wealth of data that can be utilised for further study which will allow for a more nuanced understanding of the health and wellbeing of UK Armed Forces veterans residing in NI. To do this we aim to conduct many more detailed analyses of the data (please see the appendix for studies which we currently have underway). Future research recommendations are as follows;

- A rapid review of the provision of mental health awareness training available within the armed forces and the armed forces aftercare procedures would be welcomed, with the goal of reducing stigma around mental ill health for new recruits and to improve (where appropriate) after care procedures for those leaving the armed forces; in particular those planning to settle in NI.

- Qualitative or quantitative studies are needed which further explore health and social care workers' (who work in statutory services and in the voluntary and community sector that is not bespoke to veteran care) knowledge and attitudes to the experiences and barriers faced by veterans in NI. This should then be followed by an educational initiative to fill gaps in knowledge and in turn break down barriers.
- A key finding herein related to the many difficulties veterans in NI face when seeking help, but as mentioned this is a surface level presentation of the barriers to help seeking and service utilisation. A more in-depth examination is required around help-seeking by NI veterans that involves further interrogation of the current data set to examine the interplay between alcohol, mental health, life and military specific experiences and barriers to help seeking, in addition to an in-depth account of help seeking using qualitative methods directly from veterans themselves. Of note, this research is currently underway as a PHD project at Queens University Belfast.
- An examination of the interplay between the three addictive behaviours of alcohol, drug use and gambling and how this relates to mental ill health for NI veterans would be a useful line of enquiry, particularly given the huge research gap on drug use by veterans in the UK.
- An examination of the rates of comorbid presentations of mental ill health in veterans in NI would again be useful. We do not yet know if the same veterans are experiencing the range of psychological disorders or if different veterans with varying service histories and characteristics may be more or less likely to report certain outcomes.
- The psychological wellbeing study included a measure of community reintegration which is a proxy for transition success, therefore future research should examine in detail both service-related predictors of successful community reintegration and mental ill health outcomes of poor community reintegration.

Overall, such research is important for establishing a case for the sufficient allocation of mental health resources at both a prevention and clinical intervention level to help alleviate mental ill health concerns in veterans residing in NI.

### *Challenges to Service Provision and Policy change in Northern Ireland*

At present, across the four nations, there are vast differences at both a local and national level regarding service provision for veterans, meaning there is considerable variation in the degree of care a veteran will receive (Defence Committee, 2019). A recent report by the House of Commons stated that the worst affected UK Armed Forces Veterans are those living in NI as

there is no bespoke statutory provision of mental health care (Defence Committee, 2019). This is supported by the findings of this report which suggest high rates of mental ill health, particularly among home service veterans in NI. Governing bodies and policy makers have a responsibility for ensuring that a consistent provision of care, which is properly resourced and funded, and which meets the current demand, be made available. We aim to closely work with the NI Veterans Commissioner to support this ambition in becoming a reality. We will do this by regularly being responsive to local questions on the health and wellbeing of NI veterans which require an evidence base. We hope this opens a continued dialogue around the issues and helps identify innovative solutions that can break down barriers to enact meaningful change.

## 6.0. STRENGTHS & LIMITATIONS

### 6.1. Strengths

- Never has such detailed and informative data been collected directly from veterans residing in Northern Ireland. This was an extensive process requiring years of face-to-face contact and relationship and trust building within the community. The efforts that went into the recruitment of participants to this study should not be underestimated.
- This is the first report to provide a comprehensive investigation of the sociodemographic profile of a NI veteran sample and the rates of a range of mental and physical health disorders among NI veterans in addition to insight into service utilisation and barriers to help seeking.
- The study adopted a novel approach to analysis by comparing home service veterans with general service veterans across a variety of sociodemographic variables and health and wellbeing outcomes.

### 6.2. Limitations

- The data cannot be regarded as representative of the total population of veterans residing in Northern Ireland as the total population is currently unknown. This prevents researchers from claiming that the figures reported herein represent the full cadre of veterans residing in Northern Ireland. As we have repeatedly stated 'they do not'.
- The sample was Northern Irish focused (which was the purpose of the study), consisting of mainly male participants (as expected in military veteran studies). Therefore, given the potential unique climate in NI the findings may not be

generalisable to other veteran populations nor to female veterans (including female veterans residing in NI).

- This study used self-report methods rather than clinical diagnostic interviews, however previous research has shown that the concordance rate between such instruments is often moderate to high.
- The current study utilised a cross-sectional design, arguably this was a necessity due to the need to ensure anonymity for participants who may be fearful of disclosing their military veteran status. In an ideal situation, we would have collected recontact details and monitored health and wellbeing across time to determine if changes in certain characteristics influence longer-term changes in mental health outcomes.
- Due to the length of the questionnaire and participants being able to skip as many questions as they wished, there were large amounts of missing data in the final dataset; this was a necessary design component to ensure that participants could skip questions that caused them discomfort without entirely leaving the questionnaire.

## 7.0. Conclusion

In sum, it is hoped that this report, a locally focused resource in Northern Ireland, can be used by the general public, policy makers, and funders of key services to highlight areas where resources may need to be allocated or refined. Furthermore, from a research perspective, this report has generated considerable data for further academic and theoretical debate and adds to the now growing evidence base of research examining the psychological wellbeing of the veteran population in NI.



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# Appendices

## The Northern Ireland Veterans' Health and Wellbeing Study: A Methodological Overview and Results of a Cross-Sectional Survey

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**Background:** The presentation of mental ill health among UK Armed Forces veteran's resident in Northern Ireland (NI) is currently unknown. The legacy of the conflict in NI and the well-established link with mental health outcomes, suggests that mental ill health in NI veterans may exceed mental ill health in veterans in other nations of the UK and internationally. The current study aimed to 1) provide a methodological overview of our survey; 2) examine the demographic characteristics and the rates of mental and physical health conditions; alongside engagement with pharmacological and psychological supports and 3) compare veteran groups differentiated by their service histories (home service veterans vs general service veterans). **Method:** Data were collected through an anonymous cross-sectional survey of UK Armed Forces veterans living in NI ( $N= 1267$ ; 88.1% male). Participants completed a detailed questionnaire assessing an array of sociodemographics, psychological and behavioural outcomes including mental health disorders and alcohol usage, physical health ailments, and engagement with pharmacological and psychological supports. **Results:** Using clinically relevant threshold scores on standardised measures of mental ill health, 36.8% of the overall sample met criteria for PTSD, 32.3%, met criteria for anxiety, and 39.9% met criteria for depression. Home service veterans were significantly more likely to report increased adverse psychological and behavioural outcomes compared to general service veterans. **Limitations:** This study utilised cross sectional data and relied on self-report. **Conclusions:** The importance of continued research and the need for adequate mental health service provision for veterans residing in NI is highlighted.



## Identifying service-related predictors of community reintegration difficulties in Northern Irish military veterans

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**Background:** Community reintegration in Northern Irish veterans after their military service has not been examined before. Existing studies from other parts of the world indicate that life after military service can be challenging for many veterans. **Objective:** The current study aimed to identify service-related predictors of community reintegration difficulties in a sample of 749 Northern Irish military veterans. **Method:** Data was collected through a cross-sectional self-report survey of UK Armed Forces veterans (89.3% male) residing in Northern Ireland. Service-related variables were examined as predictors of community reintegration difficulties using multiple regression. Multivariate multiple regression was then conducted to examine predictors of six different domains of community reintegration, assessed with the Military to Civilian Questionnaire (Sayer et al., 2011). **Results:** Higher levels of combat exposure, more time spent on deployment in Northern Ireland, shorter length of service, being medically discharged and having suffered a physical injury during service were all significant predictors of community reintegration difficulties, even after controlling for participants' age and whether or not they received a mental health diagnosis since discharge ( $R^2 = 0.373$ ,  $SE = 0.028$ ,  $p < .001$ ). Receiving a mental health diagnosis since discharge and having been medically discharged were the two strongest predictors of reintegration difficulties. **Conclusion:** Post-service adjustment to civilian life is affected by the nature of one's military history, which has implications for both the military and post-military interventions aimed at mitigating potentially difficult transition experiences.

## **Reintegration difficulties are associated with negative mental health outcomes in Northern Irish military veterans.**

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**Background:** The psychological impact of community reintegration following military service has not yet been examined in Northern Irish veterans. While previous research conducted with other military populations demonstrates that many veterans experience difficulties associated with re-entering community life, potential links between issues with reintegration and mental health outcomes remain poorly understood. **Objective:** The current study aimed to examine associations between communication reintegration difficulties and mental health outcomes in a sample of 626 Northern Irish military veterans. **Method:** Data was collected using a cross-sectional self-report survey of UK Armed Forces veterans (89.8% male) residing in Northern Ireland. A multivariate multiple regression was used to examine reintegration difficulties as a predictor of four mental health outcomes: PTSD, depression, anxiety, and alcohol use. The analysis was replicated with the six reintegration domain scores as predictors of the four mental health outcomes. Both analyses were then adjusted for the effects of age, combat exposure and medical discharge. **Results:** Community reintegration difficulties were a significant predictor of all four mental health outcomes. These effects remained significant after controlling for age, combat exposure and medical discharge (PTSD:  $R^2 = 0.66$ ,  $SE = 0.02$ ,  $p < .001$ ; depression:  $R^2 = 0.66$ ,  $SE = 0.03$ ,  $p < .001$ ; anxiety:  $R^2 = 0.61$ ,  $SE = 0.03$ ,  $p < .001$ ; alcohol use:  $R^2 = 0.06$ ,  $SE = 0.02$ ,  $p < .001$ ). Reintegration difficulties were the strongest predictor of depression, followed by PTSD, anxiety and finally alcohol use. Further results are discussed concerning the sub-domains of reintegration difficulties. **Conclusion:** Experiencing difficulties with community reintegration post-service is associated with multiple negative mental health outcomes for veterans. This finding highlights the need to support veterans as they navigate their reintegration journeys and the importance of addressing reintegration difficulties within veteran mental health interventions.

## Understanding symptom level relationships between Posttraumatic Stress Disorder and Dissociation in a Veteran Sample using Network Analysis

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**Background:** A well-established body of literature has identified the frequent co-occurrence between PTSD and dissociation. Thus, the DSM introduced a dissociative subtype of PTSD into their newest edition. The current study aimed to extend what is currently known about this dissociative subtype among a population where PTSD is highly prevalent – military veterans. We aimed to examine symptom-level associations between PTSD and dissociation using network analysis among military veterans in Northern Ireland (NI) to identify there are certain symptoms that may act as bridges for the two constructs. **Methods:** A large-scale cross-sectional survey was conducted examining the physical and mental wellbeing of UK Armed Forces Veterans living in NI. The total eligible sample size was 831 (90% male), with a mean age of 55.78 years ( $SD = 10.55$ ). Two networks were estimated, (1) a network consisting of 20 DSM-5 PTSD items and (2) a network consisting of 20 PTSD items and 2 dissociative items. Expected influence bridge centrality was calculated to examine symptoms with the most/strongest cross-domain associations (i.e., between PTSD and dissociation). **Results:** The PTSD symptoms 'concentration problems' (0.88), 'exaggerated startle response' (0.67) and 'negative emotional state' (0.52) had the highest relative bridge expected influence centrality. Of the four dissociative items, 'gaps in awareness' had the highest relative bridge expected influence centrality (3.66), followed by 'cognitive-behavioural re-experiencing' (1.19). **Conclusions:** These symptom-level associations further our understanding of the PTSD-dissociation relationship in military veterans by investigating specific symptoms of PTSD and dissociation that may influence the co-occurrence between the two constructs. These findings may inform clinical case conceptualisation, formulation, and intervention.

## **Making the transition: How finding a good job is a risky business for military Veterans in Northern Ireland**

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**Background:** Veterans transitioning from the military to civilian life may encounter difficulties in different domains of functioning. Most research in this area comes from the US and Israel, with Veterans in Northern Ireland (NI) in the United Kingdom, remaining an understudied population.

**Method:** This qualitative study aimed to examine the nature of transition experiences of NI Veterans by analyzing responses ( $N = 252$ ) to an open-ended question related to the transition process, in a self-report survey. **Results:** Thematic analysis highlighted both positive and negative experiences across high-level themes. These were related to (1a) how good the military life had been, (1b) the transition had been easy for some Veterans, and (1c) the skills gained in the military have been valuable; (2) it was hard to adjust to civilian life/still adjusting; (3) negative employment experiences; (4) lack of trust; (5) transitioning is hard in NI; and (6) inadequate support, post-service. The findings highlight that NI

**Discussion:** Veterans share some of the same challenges as other Veterans; however, the challenges in NI are compounded by ongoing security concerns and political tensions, which means living under the radar is a reality for many, making finding meaningful work and community integration difficult. The findings indicate that preparation for civilian life and the acculturation process needs to start many months before discharge. **Conclusion:** Perhaps more crucially, regiments should work closely with and support civilian employers to equip them to recognize and value the skills ex-Services Veterans can offer and find a good fit for their skills within their organizations.

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## Disentangling the Symptom-Level Nuances in Comorbid Posttraumatic Stress Disorder and Problematic Alcohol Use in Northern Irish Military Veterans: A Network Analysis

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**Background:** Posttraumatic stress disorder (PTSD) and alcohol use are highly prevalent among military veteran populations. Several theories have been proposed to account for the comorbidity between PTSD and problematic alcohol use, but research examining the symptom-level associations between the two is limited. **Methods:** The current study used network analysis to examine the associations between PTSD and problematic alcohol use. Data were collected through a cross-sectional survey of veterans of the United Kingdom Armed Forces living in Northern Ireland. The sample comprised 511 (91.2% male) veterans with a history of trauma exposure and current alcohol use. **Results:** A network consisting of PTSD symptoms from the PTSD Checklist for DSM-5 (PCL-5) and items from the Alcohol Use Disorders Identification Test (AUDIT) was constructed, and the bridge centrality of all items was estimated to identify items with the highest number of associations and the strongest associations between the two constructs. The PTSD symptom “reckless behavior” (2.43) had the highest bridge centrality values and thus the strongest connections and most connections to the alcohol use items. For the alcohol use items, “not being able to stop drinking” (2.31) and “number of drinks” (1.24) demonstrated the strongest bridge connections to the PTSD items. **Conclusion:** These results highlight the role of specific PTSD symptoms involved in the interaction between PTSD and problematic alcohol use

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## Factor Structure of the International Trauma Questionnaire in UK Armed Forces Veterans residing in Northern Ireland.

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**Background:** Complex Posttraumatic Stress Disorder (C-PTSD) was recently included in the revised International Classification of Diseases (ICD-11) by the World Health Organisation (WHO, 2018). C-PTSD is a new trauma related disorder which may develop after prolonged and multiple exposures to trauma. It is a sibling disorder of PTSD and is further characterised by symptomatology of disturbances in self-organisation (DSO). To qualify for the diagnosis, individuals must first meet the diagnostic criteria for PTSD, then report DSO symptoms and functional impairment. A body of work is emerging which has focused on the underlying dimensionality of C-PTSD across both adult and more recently adolescent populations from differing index trauma groups and from across several nations and cultures. However, few studies have been conducted in populations exposed to combat trauma despite the obvious prolonged and multiple nature of their trauma histories. **Methods:** This is the first factor analytic study to explore C-PTSD in a sample of UK Armed Forces veterans residing in Northern Ireland (N=732). C-PTSD was measured via the ITQ and we utilised CFA to assess the fit of 7 competing models. **Results:** Based on established CFA fit indices, a correlated, first order, 6-factor model of C-PTSD, representing 3 PTSD and 3 DSO symptom groupings, was deemed to provide superior fit to the data compared to 6 alternative C-PTSD models. The superiority of the model was further supported by statistical comparisons of competing C-PTSD models. All factor loadings (0.866-0.998) and inter-factor correlations (.746-.975) of the optimally fitting model were statistically significant and high. **Conclusion:** These results provide support for the construct validity of ICD-11 C-PTSD in a unique sample of Armed Forces veterans residing in Northern Ireland.

## **Examining Depression, Anxiety and PTSD in Military Veterans in Northern Ireland; comparing older (65+ years) and younger cohorts**

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**Background:** Military Veterans in Northern Ireland (NI) have a unique socio-political military history related to a protracted period of civil conflict known as 'The Troubles' which may have impacted on their psychological well-being. To date, no study has collected data and examined the rates nor predictors of depression, anxiety, and PTSD in military veterans in NI nor in younger vs. older veterans residing in NI. **Objective:** The current study examined the rates of probable depression, anxiety, and posttraumatic stress disorder (PTSD) in veterans who participated in the NI veterans' health and wellbeing study (NIVHWS). We also assessed if rates differed by age (younger [<65 years] vs. older [65+ years]). Additionally, a series of psychosocial predictors of mental health (MH) outcomes were examined for each age group. **Method:** Participants ( $N = 1,329$ ) completed a cross-sectional self-report survey. Data collection occurred 10 years after 'The Troubles' ended. The effective sample consisted of 832 veterans (91.4% male); 668 younger (<65 years) and 164 older veterans (65+ years). Logistic regression analyses examined predictors of MH outcomes. **Results:** Rates of MH outcomes were significantly higher in younger veterans. High levels of anger and poor self-reported general health were consistently associated with increased risk for MH outcomes across both age groups. Age group-specific predictors included alcohol use, length of service and age at joining the military. **Conclusions:** This study provides important and clinically informative insights into the rates and predictors of MH outcomes in veterans residing in NI. Considering the high rates of MH outcomes reported and the previously acknowledged reluctance from veterans to disclose their veteran status, future efforts should focus on identifying ways that would make veterans feel more comfortable in discussing their military experiences, so that appropriate treatments can be delivered.

## **The Mediating role of Resilience on Psychopathology following Childhood Adversities among UK Armed Forces Veterans in Northern Ireland**

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**Background:** Childhood adversities can have a deleterious impact on mental health. Elevated levels of such adversities have been reported in veteran populations. Levels of resilience may be protective but early adverse experiences may impact on the development of resilience in the first instance. **Objective:** This study aims to identify classes of childhood adversities among UK military veterans residing in Northern Ireland (NI) and explore levels of resilience and the mediating role resilience may play following such experiences in relation to mental health. **Method:** The study utilizes data from the Northern Ireland Veterans' Health and Wellbeing Study (n=656). All participants were UK Armed Forces veterans who were residents of NI with an average age of 56 (586 male, 70 female). **Results:** Four childhood adversity classes were revealed, with almost a half of the sample experiencing early adverse experiences. Individuals who experienced a range of adversities, particularly those related to maltreatment were more likely to have PTSD, mood and anxiety disorders and lower levels of resilience. However, those who experienced adversity related to family dysfunction had similar levels of resilience as the low-risk class, suggesting tentatively that some adversity may be protective. Mediation analyses revealed that veterans with elevated levels of resilience were less likely to have psychological problems following negative childhood experiences. **Conclusions:** The study highlights the importance of promoting resilience building programmes among military veterans, especially among those who experienced maltreatment as a child.



## **Typologies of adverse childhood experiences and associated risk of post-service incarceration in a exclusively male sample of UK Armed Forces military veterans resident in Northern Ireland**

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**Background:** Exposure to adverse childhood experiences (ACEs) confers increased risk for a range of adverse outcomes including criminal justice system involvement. Military veterans are known to experience a disproportionate rate of ACEs compared with the general population. However, military service may act protectively against incarceration in some cases. Few studies have investigated the relationships between ACEs and incarceration among veterans. **Methods:** The present study therefore examined patterns of early adversity in a male UK Armed Forces veteran sample resident Northern Ireland using the exploratory technique of latent class analysis. **Results:** Four classes were identified: a baseline class, a chaotic home class, a physical and psychological abuse class, and a multi-adversity class. Subsequent regression analysis identified that the multi-adversity class was associated with significantly increased odds of post-military service incarceration ( $OR = 4.16, 95\%; CI 1.57-10.97, p = .004$ ) when controlling for both age and alcohol usage. **Conclusion:** These findings illustrate the importance of attending to ACE histories in the design of interventions and initiatives designed to facilitate veterans' re-integration and adjustment to civilian life.

## ICD-11 C-PTSD and Psychiatric Comorbidity Among Military Veterans in Northern Ireland: A Latent Class Analysis

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**Background:** There is evidence to suggest that Complex Trauma and Disturbances in Self-Organisation (DSO) symptoms associated with Complex Posttraumatic Stress Disorder (C-PTSD) are associated with elevated risk of several mental ill health comorbidities. The current study seeks to contribute to the growing literature on C-PTSD comorbidity by examining the relationship between C-PTSD diagnosis and Suicidality, Depression and Generalised Anxiety in a military veteran sample. **Methods:** This study utilised data from the Northern Ireland Veteran Health & Wellbeing Study (NIVHWS). The NIVHWS is a cross sectional survey measuring several psycho-social outcomes among 1329 veterans based in Northern Ireland. The effective sample for this study consisted of 638 trauma-exposed veterans responding to questions related to mental ill-health. Logistic regression analyses were used to examine probable C-PTSD diagnosis as a predictor of other mental health outcomes. Latent Class Analysis was then conducted determine the optimal number and nature of classes in relation to C-PTSD, Depression, Anxiety and Suicidality. **Results:** Probable diagnosis of C-PTSD was found to significantly predict an increase in symptoms of all other mental health outcomes with odd ratios ranging from 5.91 (Suicide Attempt) to 42.61 times (Depression). Overall, four latent classes emerged from the data, with each of these classes characterised by varying degrees of co-morbidity: a 'Low Comorbidity' class, a 'Moderately Suicidal' class, 'Depression- Anxiety' class and a 'High Comorbidity' class. **Conclusion:** C-PTSD may be considered a highly co-morbid and poly-morbid condition increasing the risk for multiple mental health pathologies concurrently. These findings highlight the relevance of considering potential comorbidities with C-PTSD in both research and treatment of veteran groups.