

## THE MENTAL HEALTH AND WELLBEING OF THE UK ARMED FORCES COMMUNITY (March 2023 version)

This briefing note provides an outline of the current evidence on the mental health and wellbeing of the UK Armed Forces Community. It aims to provide information from research conducted at King's College London<sup>1</sup> and other relevant publications.

### 1. MENTAL HEALTH (REGULARS)

a. The rate of PTSD, in a combined sample of veterans and still serving personnel, was 4% in 2004/6 and 2009/10, and increased to 6% in 2014/16<sup>2</sup>. This compares to approximately 4% in the general population. The prevalence of PTSD is not uniform across groups. In 2014/16 among serving regular personnel, the overall prevalence is 5%. Amongst ex-serving regulars, the rate is higher at 7%.

b. Potentially harmful alcohol misuse remains a common problem but has declined steadily from 15% in 2004/6 to 10% in 2014/16.

c. The rate of common mental disorders (CMD) remained stable at around 20% from 2004/6 to 2014/16.

### Deployment

d. In 2014/16, PTSD was (non-significantly) lower among serving regulars who had deployed to Iraq or Afghanistan<sup>3</sup> (6% non-deployed, 4% deployed). This is probably due to personnel diagnosed with a mental health problem being less likely to deploy [known as the healthy worker or healthy warrior effect]. The rate of PTSD in ex-serving regulars with a history of deployment to Iraq or Afghanistan was 9%.

### Combat Role [in Iraq or Afghanistan since 2003]

e. PTSD rates varied depending on personnel's role during their last deployment. Having deployed in a combat role was consistently associated with an increase rate of probable PTSD. In 2014/16, PTSD in serving regular personnel in a combat role was 6% whereas in combat service support personnel it was 4%. **For those who had left service, who had deployed in a combat role, the rate of PTSD was 17%**<sup>4</sup> compared to 6% among veterans whose last deployment to Iraq or Afghanistan was in a service support role.

### Number of deployments

f. Among serving regular Royal Marines and Army personnel, there was no evidence that a greater number of deployments was associated with worse mental health outcomes. This is in contrast to US data which shows worse mental health in those who have deployed more often. It is important to note that US deployments are longer than UK deployments.

## 2. MENTAL HEALTH (RESERVES)

- a. In 2004/6 and 2009/10, **deployed reservists had higher rates of PTSD compared to deployed regulars**, but these differences have not persisted. By 2014/16, the prevalence of PTSD in deployed regulars and reserves was the same (7% in each). PTSD has been consistently higher in deployed than non-deployed reserves and in non-deployed reserves compared to non-deployed regulars.
- b. **Alcohol misuse was lower in reserves than in regulars across all time points**, but the prevalence in deployed reserves did not decline over time as we have found in regulars. In 2014/16 alcohol misuse was significantly higher among deployed reserves than non-deployed reserves.
- c. The increase in mental health problems, and associated difficulties, in deployed reserves compared to non-deployed reserves persisted over five years between 2009/10 and 2014/16. However, in 2004/6, compared to reserves who had not deployed, deployed reserves were more likely to report higher rates of CMD; in 2009/10, they reported higher rates of PTSD and in 2014/16, they reported higher rates of PTSD, CMD and alcohol misuse.

## 3. SUICIDE AND SELF-HARM

- a. **Overall, rates of suicide are lower in male serving Armed Forces personnel than they are in the general population.** However, over the last five years the rate of suicide among Army males increased from seven per 100,000 in 2015 to 12 per 100,000 in 2019. Whilst the rates of suicide in the Naval service and RAF remain below the UK general population rate, since 2017 the rate in Army men is the same as the UK general rate<sup>5</sup>. Recent evidence (2022) shows that, compared to the general population, suicide risk is higher for younger veterans (aged under 25) and lower for older veterans (aged over 35). Those who had served for the least time were most at risk of suicide suggesting that any increased risk of suicide in veterans is due to pre-Service vulnerabilities, such as childhood adversity<sup>6</sup>. Self-harm in Service personnel appears mainly impulsive, is not associated with deployment and is a poor predictor of subsequent increased suicide risk. Thus **long-serving personnel appear to be an increasingly select and resilient group**.
- b. **It is not true that “more Falklands Veterans died of suicide than in conflict”.** Defence Statistics (Health) have shown that suicide rates are not higher among Falkland veterans compared to members of the Armed Forces who did not deploy to the Falklands, or the general population<sup>7</sup>.
- c. Findings from our cohort study data show that the rates of self-harm have significantly increased from 2% among serving personnel and 5% among veterans in 2007/09 and to 4% and 7% in 2014/16 in the two groups respectively. Veterans were more likely to report self-harm than serving personnel. Current mental disorder symptoms, stigmatization, poor social support, suicidal ideation and seeking help from medical sources were all significant determinants of lifetime self-harm.<sup>8</sup>

## 4. SCREENING

- a. KCMHR completed the first ever randomised controlled trial of post-deployment mental health screening. This showed that mental health screening and the provision of tailored advice carried out with around 9000 personnel within 6 to 12 weeks since the end of deployment had no impact on either mental health or help seeking; at present **post deployment screening cannot be recommended**.<sup>9</sup>
- b. **Pre-deployment mental health screening does not reduce the rate of post-deployment mental health problems and fails to accurately detect those at risk of poorer post-deployment mental health.** The simplest way of remembering is that for every person that is correctly identified as being at risk, five

are incorrectly identified, with unacceptable consequences for the person, their family and the Armed Forces. Screening may lead to false reassurance of psychological robustness and also be discriminatory.<sup>10</sup>

## 5. HELP-SEEKING

- a. The most recent KCMHR interview study (2015/16) suggested that **help-seeking is increasing** among both serving personnel and those who have left service. One third of those with recent mental health problems had accessed a mental health specialist and half had consulted a GP or Medical Officer; women were more likely to have sought professional help than men<sup>11</sup>.
- b. Those who misused alcohol were the least likely to seek help.
- c. Overall, around 7% had not sought any help at all for their mental health problems.
- d. Ex-serving personnel were less likely to speak to friends, colleagues and other non-medical professionals than serving personnel but were more likely to visit a GP than serving personnel.
- e. Paradoxically, nearly all participants reported being willing to use mental health services for their mental health problems; however, in practice only about a third did so. The commonest reasons for not seeking help are the belief that their emotional problem is not sufficiently serious to warrant support, a wish to deal with the problem themselves or questioning the quality of mental health services.
- f. **Although mental health-related stigmatisation prevents help-seeking, a preference for military personnel to deal with their own problems themselves is a bigger barrier to care.** Evidence shows that levels of stigma in the UK military has declined since at least 2008; with recent service leavers seeking help sooner than ever before. Stigma was particularly problematic for those who have not accessed mental healthcare before; however, perceived need for treatment was more of a barrier to care than stigma<sup>12</sup>. Personnel were particularly likely to seek care after a “crisis” had occurred.
- g. Unwillingness to use mental health services is a problem across society and is not specific to the UK military. Similar patterns of [poor] professional help-seeking exist in US, Canadian and Australian forces.

## 6. VIOLENCE AND OFFENDING

- a. The Ministry of Justice (MOJ) estimates that **about 3% of the prison population in 2020 have served in the UK military**.<sup>13</sup> This is lower than expected, and contrasts with common media narratives.
- b. Ex-service male personnel are no more likely to be in prison than men who had never served. However, they are more likely to be in prison for a sexual offence or violence against the person than the general population<sup>14</sup>. Rates of acquisitive offending are lower than in the general population.
- c. Self-reported violence increases after deployment and is associated with pre-Service adversity, alcohol misuse and PTSD. Personnel who deployed in a combat role are twice as likely to report violence post deployment compared to those who deploy in other roles. However, higher levels of pre-enlistment childhood adversity and deployment related mental ill-health account for much of this increased risk.
- d. **Overall, those who have served in the military have a lower lifetime rate of criminal convictions than those who have not.** However, violent conviction rates are increased. The main associations of offending are younger age, being male and having previous convictions. Violent offending is not associated with deployment *per se*, but is associated with deploying in a combat role; this association is mediated by alcohol use, traumatic exposures and PTSD.<sup>15</sup>

e. National data from Liaison and Diversion services in 2015-2016 found that among veterans, the presence of an anxiety disorder [which may include PTSD] was associated with interpersonal violence. Alcohol misuse was associated with increased motoring offences and illicit drug use was associated with increased acquisitive offending.<sup>16</sup>

## **7. RELEVANT IN-SERVICE POLICY INITIATIVES**

### **Trauma Risk Management**

a. The peer support programme TRiM (Trauma Risk Management) aims to help trauma-exposed personnel get good support and to encourage seeking professional care when that is needed. A randomised controlled trial found that TRiM was a safe and acceptable approach; it is now being used across the UK military. TRiM may help people access social support and mental healthcare following deployment and in non-military studies its use is associated with a reduction in traumatic-event related sickness absence and an increase in seeking professional help.

### **Leadership, Morale and Cohesion**

b. Our deployment studies confirm that good leadership, morale and cohesion are the main determinants of good mental health when deployed, rather than exposure to traumatic incidents<sup>17</sup>. However, events at home, including relationship problems and lack of family support are as important as combat exposure in impacting troop's mental health which is consistent with Armed Forces policies on supporting service families.

### **Deployment Clinical Care**

c. Our evaluations of clinical support provided during operations suggest that the provision of mental healthcare in the operational setting is associated with good occupational outcomes both in the short and long-term.

### **Third Location Decompression**

d. Decompression is popular, although personnel are initially reluctant to engage with it. Our research suggests that it has a modest positive impact upon mental health and alcohol misuse, but not post-deployment readjustment and is less helpful for troops with the highest levels of combat exposure . It appears equally useful for individual augmentees and personnel in formed units.

### **UK Battlemind**

e. In a large randomised controlled trial, a UK version of the US post-deployment Battlemind training did not reduce rates of PTSD but led to a modest decrease in problem drinking<sup>18</sup>.

### **Mental fitness**

h. HeadFIT is an online initiative developed specifically for Defence personnel which aimed to help foster mental fitness. Our evaluation found that HeadFIT was well received by MOD beneficiaries with most agreeing that the tools could support them to build their mental fitness. However, many personnel felt that they would primarily use HeadFIT if their mental health was poor. A thorough communications and implementation strategy is needed to ensure sustainable uptake of HeadFIT<sup>19</sup>.

## 8. RISK-TAKING

- a. Our cohort studies have shown that **risk-taking behaviours such as unsafe driving or alcohol misuse were more common among regulars and reserves who deployed to Iraq or Afghanistan**. These behaviours among regulars declined in 2009/10 and have continued to do so up to 2014/16. A number of factors including increasing age, the introduction of a hard-hitting in-service road safety campaign and changes in driving practices on deployment may have contributed to the decline. However, for deployed reserves, but not regulars, the rate of risky driving remained elevated following deployment.
- b. Veterans who were younger, in a relationship, had probable PTSD, common mental health difficulties and traumatic brain injury were all more likely to exhibit risk-taking behaviours.<sup>20</sup>

## 9. FAMILIES & RELATIONSHIPS

- a. The majority of regulars and reserves report satisfaction with their intimate relationships and deployment had no effect on this finding.
- b. Personnel deployed to Iraq and Afghanistan between 2009-2014, who perceived negative effects of deployment on their intimate relationships and children, were more likely to experience distress and PTSD symptoms<sup>21</sup>. However, it may also be that deployment-related mental health problems led to personnel perceiving their relationships with their families more negatively.
- c. The emotional and behavioural well-being of children in military families was not found to be associated with paternal deployment but was negatively associated with paternal probable PTSD; this was particularly true for those under 11 years of age and boys<sup>22</sup>.
- d. **Female spouses and partners of military personnel were significantly more likely to meet criteria for probable depression and hazardous alcohol consumption** compared to women in the general population. Additionally, binge-drinking was associated with greater periods of family separation<sup>23</sup>.
- e. Initial evaluations of UKV-CRAFT, a talking therapy programme developed to assist the loved ones of serving and ex-service personnel experiencing PTSD and common mental disorders, found it was viewed positively. Interviewees noting enhanced well-being and communication with their loved one.

## 10. PTSD TRAJECTORIES

- a. Our study using longitudinal data collected from UK military personnel over the course of 14 years found that **90% of UK AF personnel appeared resilient to symptoms of PTSD**. Approximately 10% of the cohort experienced PTSD symptoms at some point over the course of 14 years.
- b. Vulnerability factors for PTSD include childhood adversity and childhood antisocial behaviour, alcohol misuse and time since leaving service. Younger age and having a combat role were associated with a worse prognosis of PTSD.<sup>24</sup>

## 11. MILD TRAUMATIC BRAIN INJURY (mTBI)

- a. mTBI was reported by 4.4% of troops deployed to Iraq/Afghanistan between 2003 and 2007; this rate increased to 9.5% for those in combat role. mTBI was also associated with probable PTSD.
- b. Longitudinal study data showed that mTBI reported by personnel deployed to either Iraq or Afghanistan in 2007-2008 was associated with dizziness and loss of concentration seven years later, but

not with other post-concussion symptoms. The prevalence of most post-concussion symptoms increased over time in both those who had previously reported experiencing a mTBI and those who had not.<sup>25</sup>

## **12. PHYSICAL INJURIES, ILLNESSES AND THE LINK BETWEEN MENTAL AND PHYSICAL WELL-BEING**

a. Personnel medically evacuated during deployment due to a physical injury were more likely to develop PTSD and common mental health problems after deployment. Those medically evacuated from theatre because of illness were at similar increased risk of PTSD and common mental health problems.

b. **Personnel who suffered serious non-amputation injuries on deployment were more likely to report poor mental health (including anxiety, depression and PTSD); however those who had amputation injuries had similar mental health to uninjured personnel<sup>26</sup>.** Personnel with amputation injuries were also more likely to report Post-Traumatic Growth (PTG) than uninjured or personnel with non-amputation injuries. Current pain/discomfort increased the probability of reporting PTG, likely acting as a reminder of the trauma and encouraging rumination.<sup>27</sup>

c. In injured personnel, a wide range of PTSD symptoms are associated with cardiometabolic effects and haemodynamic functioning, but not inflammation. These associations may be early indicators of increased risk for developing cardiovascular disease.<sup>28</sup>

## **13. JUNIOR ENTRANTS**

a. Our cohort study (data collected between 2014 and 2016) found no evidence of an increase in symptoms of CMD or PTSD in junior entrants (personnel recruited when aged 16-17 years) when compared to standard entrants. However, there was an increase in alcohol misuse, multiple somatic symptoms and self-harm in junior entrants who commenced adult service after April 2003. Monitoring these concerns in new joiners is advisable.<sup>29</sup>

b. Junior entrants remain in service for longer and do not report more difficulties than standard entrants when they leave.

## **14. MORAL INJURY**

a. Our studies show that moral injury, or the psychological distress [often guilt, anger, shame or disgust] experienced after events which violate one's moral or ethical code, is experienced by UK veterans. Moral injury was found to result following acts of commission, omission and betrayal during military service. Exposure to potentially morally injurious events was significantly associated with probable PTSD, CMD and suicidal ideation.<sup>30,31</sup>

b. No validated treatment for moral injury-related distress exists and clinicians often report difficulty providing care to veterans with moral injury.

## **15. VETERANS**

a. Veteran hardship can include both mental health difficulties [such as PTSD, CMD and alcohol misuse] and socioeconomic issues [such as unemployment and financial difficulties]. Our research has found that veteran hardship is more strongly related to underlying socioeconomic factors (e.g. education, childhood adversity) than military factors.<sup>32</sup>

b. Those with medical and unplanned discharges are more at risk of veteran hardship than those whose discharge is planned.

c. **Around 20% of Service leavers receive unemployment benefits at some point after leaving;** however, this is largely concentrated into the first few months after leaving and drops to around 2% of veterans by two years after leaving.

d. Disability benefits are less frequently claimed (between 1% and 2% of veterans at any given time), but are more persistent and the proportion does not decrease over time.

e. A digital smartphone app called MeT4VeT, developed to support UK Armed Forces veterans experiencing mental health difficulties when transitioning out of service, has shown promise. An initial feasibility trial suggested that the app was considered a useful, accessible way for veterans to monitor and manage their mental health.

f. A randomised controlled trial of a smartphone app called DrinksRation, which aims to help manage, monitor and reduce the amount veterans drink, found that it was effective in reducing alcohol consumption by up to 14 units of alcohol. The app is freely available and can be downloaded via Google Play or Apple App stores<sup>33</sup>.

## **16. POST TRAUMATIC GROWTH**

a. Male UK military personnel who had deployed to Iraq or Afghanistan were more likely to endorse high levels of PTG if they reported a greater belief of being in danger whilst deployed, were a reservist, reported good/excellent general health, had more combat experiences, less alcohol misuse, better mental health, held a lower rank or were younger. Female personnel reported higher levels of PTG if they were single, had left military service, reported better mental health, were a reservist, reported a greater number of combat experiences or were younger.<sup>34</sup>

## **17. IMPACT of COVID-19 PANDEMIC ON VETERANS HEALTH AND WELLBEING**

a. Compared to our 2014-2016 cohort results, during the pandemic (June-September 2020), veterans reported a decrease in hazardous drinking from 49% to 28%, while levels of CMD remained stable. We identified stable levels of CMD and reduction in alcohol use, although alcohol use remains elevated compared to the general population.

b. Veterans reported similar levels of loneliness (27%) to the general population during the pandemic. Loneliness was associated with having children and caring responsibilities. Veterans who were key workers in health and social care were more likely to report feeling lonely than veterans working in other key worker roles.

c. COVID-19 stressors of reporting difficulties with family or social relationships, boredom and physical health difficulties were associated with higher rates of CMD, hazardous drinking and loneliness, even after adjustment for previous mental health/hazardous alcohol use, suggesting a COVID-19 impact.

d. Overall, veterans appeared to have experienced the pandemic in similar ways to the general population. However, substantial numbers of veterans would benefit from accessing mental health and alcohol treatment/support services.<sup>35</sup>

## **18. OLDER ADULTS**

a. We did not identify any notable relationship between a history of mental ill-health and dementia in UK military veterans over 65 years of age. The results also show no difference between those veterans

with a diagnosis of dementia and those without a diagnosis of dementia, for most of the known dementia risk factors.

b. Older (aged >65 years) veterans reported having ongoing physical health difficulties, such as deafness and chronic arthritis, which were perceived to be due to workplace exposure and the physically demanding nature of military service. Older non-veterans did not perceive such problems as being related to their civilian employment<sup>36</sup>.

## **CONCLUSIONS**

a. **In general terms, there have been modest, but important changes in the overall mental health of UK Armed Forces personnel throughout our period of study (2004-2021).** There has been a moderate increase in PTSD in recent years, largely accounted for by increases among ex-service personnel.

b. In still serving regulars with a combat role, PTSD increased from 6% in 2004/6 to 7% in 2009/10 and remained stable at 7% in 2014/16; amongst regulars in a non-combat or support role, PTSD increased from 3% in 2004/6 to 4% in 2014/16. There is little evidence of a “tidal wave” or “tsunami” of mental ill-health. However, rates of PTSD in ex-service personnel (overall 7%), especially those who have deployed in a combat role (17%), appear elevated. This different picture to that reported from the US.

c. Harmful alcohol use has decreased over the years, as it has in the general population, but remains high and is now significantly increased among reservists who have deployed. Higher rates of PTSD and CMD continue in deployed reserve personnel.

**King’s Centre for Military Health Research and Academic Department of Military Mental Health, March 2023**



## REFERENCES

- <sup>1</sup> The main data source for this briefing is the KCMHR cohort study. KCMHR completed three waves of questionnaire-based data collection from UK Armed Forces personnel in 2004-6 (phase 1), 2007-9 (phase 2) and 2014-16 (phase 3). The cohort comprises regular and reserve personnel both serving and ex-serving many of whom served in Iraq or Afghanistan. Service leavers constituted approximately 50% of the cohort in phase 3. These findings are supplemented with data from a range of other KCMHR research projects, research from Defence Statistics (Health) and US military health research, as well as open sources. The publications produced by KCMHR, ADMMH and our associates can be found at <https://kcmhr.org/pubdb/>.
- <sup>2</sup> All reported percentages are reported as whole numbers.
- <sup>3</sup> Deployment here refers to a history of any deployment to Iraq or Afghanistan since 2003.
- <sup>4</sup> This figure should not be misinterpreted; this does NOT mean that 17% of all personnel who last deployed in a combat role developed PTSD. Factors other than combat may well explain the PTSD rate in this specific group; we also know that mental health problems are associated with discharge from Service.
- <sup>5</sup> Suicides in the UK regular armed forces:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/972333/20210325\\_UK\\_AF\\_Suicide\\_National\\_Statistic\\_Accessible\\_Web\\_ready\\_2021\\_O.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972333/20210325_UK_AF_Suicide_National_Statistic_Accessible_Web_ready_2021_O.pdf)
- <sup>6</sup> Pinder, R. J., Iversen, A. C., Kapur, N., Wessely, S., & Fear, N. T. (2012). Self-harm and attempted suicide among UK Armed Forces personnel: Results of a cross-sectional survey. *International journal of social psychiatry*, 58(4), 433-439.
- <sup>7</sup> <https://www.gov.uk/government/news/falklands-official-statistics-released#:~:text=25%2C948%20UK%20Armed%20Forces%20personnel,suicide%20and%20open%20verdict%20deaths>
- <sup>8</sup> Jones, N., Sharp, M-L., Phillips, A., Stevelink, S.A.M. (2019). Suicidal Ideation, Suicidal Attempts, and Self-Harm in the UK Armed Forces. *Suicide and Life Threatening Behaviour: The Official Journal of the American Association of Suicidology*
- <sup>9</sup> Rona, R.J., Burdett, H., Khondoker, M., Chesnokov, M., Green, K., Pernet, D., Jones, N., Greenberg, N., Wessely, S. & Fear, N.T. (2017). Post-deployment screening for mental disorders and tailored advice about help-seeking in the UK military: a cluster randomised controlled trial. *The Lancet*, 389, 1410-1423.
- <sup>10</sup> Rona RJ, Hooper R, Jones M, et al. Mental health screening in armed forces before the Iraq war and prevention of subsequent psychological morbidity: follow-up study. *British Medical Journal* 2006;333(7576):991-994
- <sup>11</sup> Stevelink, S. A., Jones, N., Jones, M., Dyball, D., Khera, C. K., Pernet, D., ... MacManus, D. (2019). Do serving and ex-serving personnel of the UK armed forces seek help for perceived stress, emotional or mental health problems? *European Journal of Psychotraumatology*, 10 (1), 1556552.
- <sup>12</sup> Rafferty, L.A., Wessely, S., Stevelink, S.A.M. & Greenberg, N. (2019) The journey to professional mental health support: a qualitative exploration of the barriers and facilitators impacting military veterans' engagement with mental health treatment, *European Journal of Psychotraumatology*, 10:1, 1700613
- <sup>13</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/930714/Ex-service\\_personnel\\_in\\_the\\_prison\\_population\\_2020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/930714/Ex-service_personnel_in_the_prison_population_2020.pdf)
- <sup>14</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/280048/15-september-2010.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/280048/15-september-2010.pdf) [DASA 2010 report]
- <sup>15</sup> MacManus D, Dean K, Jones M et al. Violent off ending by UK military personnel deployed to Iraq and Afghanistan: a data linkage cohort study. *Lancet* 2013;381(9875):1360-60.
- <sup>16</sup> Short, R., Dickson, H., Greenberg, N., MacManus, D. (2018) Offending behaviour, health and wellbeing of military veterans in the criminal justice system. *PloS one*, 13(11), e0207282.
- <sup>17</sup> Jones N, Seddon R, Fear NT, McAllister P, Wessely S, Greenberg N. Leadership, Cohesion, Morale, and the Mental Health of UK Armed Forces in Afghanistan. *Psychiatry* 2012; 75 (1): 49-59
- <sup>18</sup> Mulligan, Kathleen; Fear, Nicola T.; Jones, Norman; Alvarez, Helen; Hull, Lisa; Naumann, Ulrike; Wessely, Simon; Greenberg, Neil. Post deployment Battlemind Training for the U.K. Armed Forces: A Cluster Randomized Controlled Trial. *Journal of Consulting and Clinical Psychology*, Mar 12, 2012, 331-341. doi: 10.1037/a0027664
- <sup>19</sup> McKenzie A, Croak B, Rafferty L, Greenberg N, Stevelink SAM. A Service Evaluation of the Military HeadFIT Initiative: An Implementation Study. *International Journal of Environmental Research and Public Health*. 2021; 18(14):7375
- <sup>20</sup> Ashwick, R., Syed, S., Murphy, D. (2018) Exploring demographics and health as predictors of risk-taking in UK help-seeking veterans. *Healthcare*, 6 (2), e6020058.
- <sup>21</sup> Mulligan, K., Jones, N., Davies, M., McAllister, P., Fear, N.T., Wessely, S. Greenberg, N. (2012). Effects of home on the mental health of British forces serving in Iraq and Afghanistan. *The British Journal of Psychiatry*, 201 (3), 193-198.
- <sup>22</sup> Fear NT, Reed RV, Rowe S, et al. Impact of paternal deployment to the conflicts in Iraq and Afghanistan and paternal post-traumatic stress disorder on the children of military fathers. *The British Journal of Psychiatry* 2018; 212: 347-355
- <sup>23</sup> Gribble R, Goodwin L & Fear NT. Mental health outcomes and alcohol consumption among UK military spouses/partners: a comparison with women in the general population. *European Journal of Psychotraumatology*, 2019. 10:1, 1654781.
- <sup>24</sup> Palmer, L., Thandi, G., Norton, S., Jones, M., Fear, N. T., Wessely, S., Rona, R. J. (2019). Fourteen-year trajectories of posttraumatic stress disorder (PTSD) symptoms in UK military personnel, and associated risk factors. *Journal of psychiatric research*, 109, 156-163.
- <sup>25</sup> Rona RJ, Jones M, Jones N, et al. Long-Term Correlates of Mild Traumatic Brain Injury on Postconcussion Symptoms After Deployment to Iraq and Afghanistan in the UK Military. *Journal of Head Trauma Rehabilitation* 2020;35(1):46-56. doi: 10.1097/htr.0000000000000497
- <sup>26</sup> Dyball, D., Bennett, A. N., Schofield, S., Cullinan, P., Boos, C. J., Bull, A. M., ... & Fear, N. T. (2022). Mental health outcomes of male UK military personnel deployed to Afghanistan and the role of combat injury: analysis of baseline data from the ADVANCE cohort study. *The Lancet Psychiatry*, 9(7), 547-554.
- <sup>27</sup> Dyball, D., Bennett, A. N., Schofield, S., Cullinan, P., Boos, C. J., Bull, A. M., ... & Fear, N. T. (2022). Post-traumatic growth amongst UK armed forces personnel who were deployed to Afghanistan and the role of combat injury, mental health and pain: the ADVANCE cohort study. *Psychological medicine*, 1-10.
- <sup>28</sup> Dyball, D., Bennett, A. N., Schofield, S., Cullinan, P., Boos, C. J., Bull, A. M., ... & Fear, N. T. (2023). The underlying mechanisms by which PTSD symptoms are associated with cardiovascular health in male UK military personnel: The ADVANCE cohort study. *Journal of psychiatric research*, 159, 87-96.
- <sup>29</sup> Jones, M., Jones, N., Burdett H, Bergman B.P., Fear, N.T., Wessely, S. & Rona, R.J. (2021). Do Junior Entrants to the UK Armed Forces have worse outcomes than Standard Entrants? *BMJ Mil Health* doi: 10.1136/bmjmilitary-2021-001787

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- <sup>30</sup> Williamson V., Murphy, D., Stevelink, S.A.M., Allen, S., Jones, E., & Greenberg, N. (2020). The impact of trauma exposure and moral injury on UK military veterans: a qualitative study. *European Journal of Psychotraumatology*, 11:1.
- <sup>31</sup> Williamson, V., Murphy, D., Stevelink, S.A.M. et al. (2021). The impact of moral injury on the wellbeing of UK military veterans. *BMC Psychol* 9, 73.
- <sup>32</sup> Burdett H, Fear NT, MacManus D, et al. Unemployment and benefit claims by UK veterans in the new millennium: results from a record linkage study. *Occupational and Environmental Medicine* 2019;76(10):726-32. doi: 10.1136/oemed-2019-105737
- <sup>33</sup> Leightley D, Williamson C, Rona RJ, Carr E, Shearer J, Davis JP, Simms A, Fear NT, Goodwin L, Murphy D Evaluating the Efficacy of the Drinks:Ration Mobile App to Reduce Alcohol Consumption in a Help-Seeking Military Veteran Population: Randomized Controlled Trial *JMIR Mhealth Uhealth* 2022;10(6):e38991
- <sup>34</sup> Dyball, D., Taylor-Beirne, S., Greenberg, N., Stevelink, S. A., & Fear, N. T. (2022). Post-traumatic growth among UK military personnel deployed to Iraq or Afghanistan: data from phase 3 of a military cohort study. *BJPsych Open*, 8(5), e170.
- <sup>35</sup> Sharp ML, Serfioti D, Jones M, et al. UK veterans' mental health and well-being before and during the COVID-19 pandemic: a longitudinal cohort study. *Bmj Open* 2021;11(8) doi: 10.1136/bmjopen-2021-049815
- <sup>36</sup> Williamson V, Harwood H, Greenberg K, Stevelink SAM, Greenberg N. The impact of military service on the mental health of older UK veterans: A qualitative study. *Int J Geriatr Psychiatry*. 2019 Oct;34(10):1412-1420. doi: 10.1002/gps.5131. Epub 2019 May 15. PMID: 31034673.