

Impact case study (REF3b)

Institution: King's College London
Unit of Assessment: UoA4 - Psychology, Psychiatry & Neuroscience
Title of case study: 11: Mental health consequences of deployment and overstretch in the UK Armed Forces
<p>1. Summary of the impact King's College London researchers showed that increased length of deployment has a detrimental effect on the mental health of the UK Armed Forces, and that Reserves were particularly vulnerable to the effect of deployment. This evidence influenced the 'Harmony Guidelines', which determine policy and deployment for the UK military. This prevented an additional 308 (7%) cases of PTSD and 431 (8%) cases of alcohol misuse per year. Internationally it influenced the decision by the US Department of Defence to reduce their deployment length. KCL evidence on the mental health consequences of deployment for Reserves, as opposed to Regulars, greatly influenced policy and increased service provision for current and future Reserves.</p>
<p>2. Underpinning research King's College London (KCL) houses a research centre to assess the mental health and social consequences of serving in the Armed Forces, established by Prof Sir Simon Wessely (1991-present, Chair of Psychological Medicine), Prof Roberto Rona (1982-present, Chair of Public Health) and Dr Nicola Fear (2004-present, Reader in Military Epidemiology).</p> <p>In 2003 'Harmony Guidelines' developed by the UK Armed Forces assigned appropriate lengths of time for military personnel to be deployed on operations and optimal periods between deployments. These guidelines largely reflected opinion and experience rather than empirical evidence. Guidelines for the Naval Service suggest that in a 36 month period no one should exceed 660 days deployment; for the Army this is 6 months on operations in a 30 month period, for the Royal Air Force, 4 months on operations in a 20 month period. However, between 2005-7, while the Naval Service met its guidelines for all but less than 1%, in the Army an average of nearly 14% personnel exceeded theirs, with a corresponding average of over 5% in the RAF.</p> <p>Mental health effects of breaching Harmony Guidelines: The ability of the UK armed forces to cope with simultaneous major operations and to engage in intense, long-term combat operations, known as 'Overstretch,' may have effects on mental health. Based on a study involving 8,278 Regulars and 1,712 Reserves, KCL researchers established a 4.9% prevalence of probable PTSD, 13.0% for alcohol misuse and 19.7% for symptoms of common mental health disorders. Deployment was significantly associated with alcohol misuse for Regulars (Odds ratio [OR] 1.22) and probable PTSD for Reserves (OR 2.83) (1). By trying to elucidate which elements of deployment may be influencing the development of a mental health issue, KCL researchers found that Regulars (n = 5,547) deployed for 13 months or more in the past 3 years were more likely to fulfil the criteria for PTSD (OR 1.58), psychological distress on a general health questionnaire (OR 1.35) and have multiple physical symptoms (OR 1.49) compared to those deployed for shorter periods. This study also found a significant association between duration of deployment and severe alcohol problems (2). Another investigation found that in fact there were general alcohol use issues in the armed services, not necessarily related to length of deployment. Here, 67% of 7,937 men and 49% of 749 women who had been in service in March 2003 had a score on the Alcohol Use Disorders Identification Test indicating them as hazardous drinkers. These are higher than those for the UK general population (3).</p> <p>Mental health of Reserves vs Regulars: Work from the US has consistently demonstrated a high prevalence of PTSD related to deployment in Iraq and Afghanistan and these rates continue to increase once personnel have returned home. There was concern that the UK would witness the same "time bomb" of mental health problems. However, the 2010 Fear et al. study (1) found only a modest increase in the prevalence of probable PTSD with time since deployment. This was substantially lower than the rises reported from the USA. The most likely explanation is the shorter length of deployment, normally 6 months, in comparison 9 to 15 months in the US (4). However, the UK figures were obtained by looking at the armed services population as a whole. When KCL researchers looked at only Reserve personnel they found the effects of deployment on mental health did persist. In a comparison of 4,722 deployed and 5,550 non-deployed UK armed forces personnel, for Regulars only multiple physical symptoms was weakly associated with deployment</p>

(OR 1.32), in comparison for Reserves deployment was associated with common mental disorders (OR 2.47) and fatigue (OR 1.78) (5). In a long-term study involving 552 Reserves deployed to Iraq in 2003 and 391 non-deployed Reserves, KCL researchers found that, Reserve deployment was associated with increased common mental disorder and PTSD 16 months after deployment. Five years later, the deployed group continued to have over twice the odds of PTSD and were more likely to report actual or serious consideration of separation from their partner (6).

3. References to the research

1. Fear N, Jones M, Wessely S, et al. What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK Armed Forces? A cohort study. *Lancet* 2010;375(9728):1783-97. Doi: 10.1016/S0140-6736(10)60672-1 (97 Scopus Citations)
2. Rona R, Fear N, Wessely S, et al. The mental health consequences of "overstretch" in the UK Armed Forces. *BMJ* 2007;335:603-7. Doi: <http://dx.doi.org/10.1136/bmj.39274.585752.BE> (47 Scopus citations)
3. Fear N, Iversen A, Wessely S, et al. Patterns of drinking in the UK Armed Forces. *Addiction* 2007;102:1749-59. Doi: 10.1111/j.1360-0443.2007.01978.x (51 Scopus Citations)
4. Sundin J, Fear N, Wessely S, et al. PTSD after Iraq: conflicting rates, conflicting claims. *Psych Med* 2010;40:367-82. Doi: 10.1017/S0033291709990791 (51 Scopus Citations)
5. Hotopf M, Hull L, Wessely S, et al. The health of UK military personnel who deployed to the 2003 Iraq war: a cohort study. *Lancet* 2006;367(9524):1731-41. Doi: [http://dx.doi.org/10.1016/S0140-6736\(06\)68662-5](http://dx.doi.org/10.1016/S0140-6736(06)68662-5) (177 Scopus citations)
6. Harvey SM, Hatch SL, Wessely S, et al. The long-term consequences of military deployment: a 5-year cohort study of United Kingdom Reservists deployed to Iraq in 2003. *Am J Epidemiol* 2012;176:1177-84. Doi: 10.1093/aje/kws248 (5 Scopus Citations)

Grants

- 2003-7. S Wessely, M Hotopf, RJ Rona, C Dandeker, A Iversen, NT Fear. Monitoring the physical and psychological health of veterans of the recent deployment to Iraq (Op TELIC). Ministry of Defence, £2,365,600
- 2004-9. S Wessely, N Greenberg, NT Fear. Establishing a Centre for Defence Psychiatry. Ministry of Defence, £1,057,371
- 2006-9. S Wessely, M Hotopf, RJ Rona, NT Fear. Operation TELIC: Investigation of Possible Health Effects Post Conflict. Ministry of Defence, £2,198,000
- 2010-13. S Wessely, M Hotopf, RJ Rona NT Fear Maintaining and exploiting the King's Military Cohort. Ministry of Defence, £1,259,990
- 2010-13. RJ Rona, N Greenberg. A randomized controlled trial to assess and improve the effectiveness of post deployment screening. US Department Of Defence £1,856, 964

4. Details of the impact

Starting in 2003, the KCL research group has been the sole provider of data to the Ministry of Defence (MoD) on the mental health consequences of deployment to Iraq and Afghanistan. KCL researchers demonstrated an increase in the prevalence of mental health problems, mostly associated with combat exposure, being a Reservist and cumulative deployment length. KCL research has shown the importance of adherence to the Harmony Guidelines in reducing the prevalence of PTSD, psychological distress and alcohol misuse.

Influencing government policy on mental health care: In May 2011, the UK Government announced 'The Armed Forces Covenant' in which they stated a moral obligation to provide respect, support and fair treatment to members of the Armed Forces in return for them "sacrificing some civilian freedoms, facing danger and, sometimes, suffering serious injury or death as a result of their duty." To assess how this was being put into practice, in December 2011, the House of Commons (HC) Defence Select Committee published a report on military casualties (1) that uses information from a number of documents that cite KCL research:

- In 2008, the Defence Select Committee published results of an inquiry into the provision of healthcare for the Armed Forces. When discussing PTSD and Reservist mental health problems, the inquiry widely references KCL research. A statement within the report from the Royal British Legion says that "**the one issue that the health surveillance being carried out by King's [KCL] has brought to light is the heavy drinking culture that exists within the Armed Forces**" (2).
- In 2010, the MoD published a review of mental health services for serving personnel and

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veterans. This report quoted Fear et al. 2010 when discussing alcohol abuse. It also stated the importance of the **in-service mental health strategy rightly concentrating on the length of tours**.

- Following this report, the Government committed to acting on the recommendations of the review and announced **a dedicated 24-hour support line for veterans and the provision of 30 additional mental health nurses to specifically support veterans** (3) (see also 5)
- Information from the National Audit Office's 2010 report 'Treating Injury and Illness arising on Military Operations' was also included in the HC Defence Select Committee 2011 report. In their chapter on mental healthcare, they cite figures from Hotopf et al, 2006 to **highlight the prevalence of PTSD in deployed personnel** (4).

On June 15th 2011, Dr Fear and Prof Wessely were the only witnesses for the HC Defence Select Committee's hearing on the 'Military Covenant in Action' (1). Prof Wessely's evidence regarding mental health disorders led the committee to recommend that "the MoD continue to fund research into the mental health of those deployed on operations" and that **"the MoD should monitor Armed Forces personnel who have been deployed on operations to determine if PTSD or other mental health problems emerge while personnel are still serving."** Dr Fear's reporting on higher levels of alcohol misuse in the military led the Committee to conclude that **"the MoD has yet to recognise the seriousness of the alcohol problem and must review its policy in this area."** Additionally, KCL findings led to the recommendation that the **MoD needs to do more to improve the home coming experiences of Reserves** (1).

The MoD responded by accepting the Defence Committee's recommendations and also the similar themes that emerged from an MP's earlier report (3), including the necessity of continuing to monitor the impact of deployment length and time between deployments on mental health, thus enabling the work of KCL to continue.

Much of the MoD's work regarding screening for PTSD and other mental illnesses is in concert with KCL researchers and the evidence provided by KCL with regard to alcohol misuse prompted the MoD to start a review of its alcohol policy (5). In 2013, KCL was commissioned by the MoD to continue their work beyond the end of operations in Afghanistan to monitor the medium to long term mental health impact on UK Forces.

Impact on providing new mental health programs: A number of Government-backed or independent organisations have acknowledged the contribution of KCL research. Their finding that a single deployment has an effect on mental health of Reserves directly led to the Reserves Mental Health Programme in partnership with the NHS (6). The charity Combat Stress works with Veterans to deliver effective treatment and support for mental health problems. Their 2012 Annual Review cites KCL work when discussing the prevalence of mental health problems, especially among Reserves (7). A letter of testimony from the Chief Executive of Combat Stress says that KCL studies have **"acted as a catalyst for change across the military mental health sector, including third sector charities like Combat Stress"** (8). Similarly, a letter of support from the Director General of the Royal British Legion says that KCL "is a source of invaluable data and detailed analysis that cannot be obtained anywhere else and (they have) **been of enormous help to the Legion in the formulation of our policies and successful lobbying campaigns on issues such as the impact of deployment, marriage and the family and drug and alcohol misuse**" (9). KCL researchers also featured in a mental health policy report from the independent think tank Centre for Social Justice. When looking at the Armed Forces and mental health they used both KCL research, such as Fear et al. 2010, and personal testimony from Prof Wessely to recommend that **"the Armed Forces should do more to reduce alcohol consumption in service personnel"** (10).

Influencing tour length and pay structure: In 2011 the UK Armed Forces reviewed their policy on tour length, partly for financial reasons. The Chiefs of the Defence Staff and General Staff set up a committee including the most senior military officers and the Adjutant General, the three star head of Army Personnel to consider proposals for increasing tour length from 6 to 9 months. As KCL work was the only source of UK data on impact of tour length on mental health, KCL experts

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gave evidence to the review process. KCL figures show that if the rate of breaking of Harmony Guidelines continued there would be an estimated additional 308 cases of psychological distress and 431 cases of alcohol misuse for each year of continued operations. Expressed as population attributable fractions, adhering to the Harmony Guidelines prevents 7.1% of common mental illness and PTSD and 7.7% of alcohol problems. The review accepted that increases in tour length might have a negative impact on mental health and may lead to rates of PTSD moving towards the much higher rates observed in the US, hence the proposals were rejected (11). KCL research also influenced the May 2013 announcement by the Secretary of State for Defence that while to encompass the end of UK combat operations in Afghanistan in 2014 a small percentage of personnel would be deployed for 8 or 9 months, there would be extra allowances for those deployed for longer than 6 months, careful management of expectations and only minimal violation of overall Harmony Guidelines.

KCL research was also used by the MoD when presenting evidence to the Armed Forces Pay and Remuneration Board on how stress at work should be taken into consideration when calculating X-factor payments. These have been given since the 1970's to recognise the relative disadvantage of conditions of service experienced by members of the Armed Forces. The 2008 report discussed how research from KCL demonstrated that "some personnel returned from operations with psychological problems such as PTSD particularly when tour lengths exceeded expectations" and how "mental health problems increased when harmony guidelines were breached." This **evidence helped lead to the decision to increase X-Factor payments** (12).

International impact: When the RAND Arroyo Center were tasked by the US Department of Defence to review their policy on tour length, KCL research formed an essential part of the evidence that led to the **US decision to reduce its tour length from 1 year to 9 months**. Personal testimony from the RAND Corporation says that the findings of the KCL studies "served a vital role in informing the relationship between features of deployment such as length of deployment and dwell time" (13).

5. Sources to corroborate the impact

1. HCDC. The Armed Forces Covenant in Action? Part 1 Military Casualties. Report of Session 2010-12 (pgs 22-27; Ev 23, Q 126 to Q 245):
<http://www.publications.parliament.uk/pa/cm201012/cmselect/cmdfence/762/762.pdf>
2. HCDC 2008 report: Medical care for the Armed Forces (Ev 11, Q69; Ev 107; Ev 121):
<http://www.nhs.uk/nhsengland/militaryhealthcare/documents/defence%20committee.pdf>
3. Dr Andrew Murrison MP. Fighting Fit. A mental health plan for servicemen and veterans. November 2010 (p 1):
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/27375/20101006_mental_health_Report.pdf
4. 2010. National Audit Office and Ministry of Defence: Treating Injury and Illness arising on Military Operations (p 39) <http://www.nao.org.uk/wp-content/uploads/2010/02/0910294.pdf>
5. Ministry of Defence Response (pgs 5, 7, 11):
<http://www.publications.parliament.uk/pa/cm201012/cmselect/cmdfence/1855/1855.pdf>
6. Reserves Mental Health Programme: <http://www.army.mod.uk/welfare-support/23247.aspx>
7. Combat Stress 2012 Annual Review (pgs 4, 15):
http://www.combatstress.org.uk/media/56674/combat_stress_annual_review_2011-12.pdf
8. Letter of support from The Chief Executive of Combat Stress (on request)
9. Letter of support from The Director General of the Royal British Legion (on request)
10. Centre for Social Justice 2011. Completing the revolution transforming mental health and tackling poverty. A policy report by the mental health Working group (p84-92):
<http://www.centreforsocialjustice.org.uk/UserStorage/pdf/Pdf%20reports/CompletingtheRevolution.pdf>
11. Letters of confirmation: UK Surgeon General (on request)
12. Armed Forces' Pay Review Body. 37th Report – 2008. Chapter 4: X Factor P37: 4.23: Stress at Work. <http://www.official-documents.gov.uk/document/cm73/7315/7315.pdf>
13. Letter from RAND Organization (on request).