Systematic review: deployment length and the mental health of diplomats

R. Dunn¹, R. Williams², V. Kemp³, D. Patel⁴ and N. Greenberg⁵

¹King's Centre for Military Mental Health, King's College London, Weston Education Centre, London SE5 9RJ, UK, ²Welsh Institute of Health and Social Care, University of South Wales, Pontypridd CF37 1DL, UK, ³Health Planning Ltd, Reading, Berkshire, RG6 1QB, UK, ⁴Foreign and Commonwealth Office, London SW1A 2AH, UK, ⁵King's College London, London, UK.

Correspondence to: R. Dunn, King's Centre for Military Mental Health, King's College London, Weston Education Centre, 10 Cutcombe Road, London SE5 9RJ, UK. Tel: +44 (0)207 848 5351; fax: +44 (0)207 848 5407; e-mail: rebecca.r.dunn@kcl.ac.uk

Background While there has been considerable research into the psychosocial consequences of tour length for military personnel, this subject has not been studied in other occupational groups who also deploy staff to high-threat areas.

Aims To carry out a comprehensive review of relevant published literature to inform diplomatic organizations that deploy staff in high-threat postings (HTPs).

Methods We searched appropriate scientific databases for studies relevant to deployment length, mental health and well-being for diplomats. A systematic review related to military personnel was found and used as the foundation for the literature review. Other relevant papers identified by the search have also been included.

Results The majority of identified papers had examined military personnel. Results suggested that longer deployments were associated with poorer mental health including post-traumatic stress disorder, depression and alcohol problems and this was most likely to be a function of increased exposure to potentially traumatic events. Exceeding a threshold of 6–12 months within a 3 year period, for military personnel, appeared to elevate the risk of psychosocial problems. Furthermore, diplomats deploying on their first HTP, and those whose tour length is altered after deployment, could be especially vulnerable.

Conclusions While further research of this topic is required, this review provides an evidence-based insight into the increased risks of developing mental health problems when deployed to HTPs. This information is relevant to generating policies, which may reduce the impacts of adverse psychosocial effects on diplomatic staff and their families.

Key words Deployment length; diplomats; mental health; military; occupational exposure.

Introduction

Many organizations, including military forces, humanitarian aid agencies, security and media companies and diplomatic organizations, routinely deploy staff to highly threatening environments. Their staff may be at risk of exposure to adversity, violence, abduction, death and sexual crimes among a wide range of atrocities, injustices and inequities while they are working in threatening locations. Traumatic exposure can be direct (e.g. seeing dead bodies at temporary mortuaries, attending the scenes of bombings or other terrorist or insurgent incidents) or indirect (e.g. dealing with a deceased person’s relatives or working in operational crisis response teams). There is a considerable body of evidence showing that direct or indirect traumatic exposure is clearly linked with subsequent development of a range of psychosocial problems including, but not limited to, post-traumatic stress disorder (PTSD) [1].

It is clear from published literature [1] that most people who are affected directly or indirectly by traumatic events experience pressure and stress. The spectrum of psychosocial impact is wide and may range from enhancing resilience and personal skills (sometimes described as post-traumatic growth) through to precipitating new mental disorders [2,3] or provoking episodes of previous...
However, the majority of people who are exposed to trauma remain resilient and cope well. While there are many potential definitions of resilience, most infer that it is the sum of the processes which allow a person to cope with adversity [4], including social support, acceptance of reality, self-belief and improvisation [5]. Group membership and social identity also have powerful importance in how people process their experiences of trauma. In a military context, for instance, both good leadership and strong unit cohesion (camaraderie) have been shown to be highly protective of troops’ mental health [5]. As deployment to threatening locations leaves personnel open to experiencing a range of traumatic events such as those mentioned above, it is plausible to presume that the longer a deployment, the greater the likelihood of experiencing trauma. Thus, such social influences and protective factors are particularly important.

While there has been a considerable amount of research into the psychosocial effects of deploying military personnel to threatening environments [6,7], little scrutiny has been given to how highly challenging deployments might affect other occupational groups. The paucity of research into this topic is important because it is difficult to directly translate military findings to other occupational groups because of the differing natures of the work. The Foreign and Commonwealth Office (FCO) regularly deploys staff to high-threat postings (HTPs). The FCO has operated a deployment policy to date that is based on military experience and expert advice. As part of its plan to update its approach to deployment and increase business requirements to deploy to HTPs, the Health and Welfare Department of the FCO commissioned a comprehensive review of published scientific work relevant to the topic.

**Methods**

We aimed to identify published peer-reviewed articles containing information relevant to the possible impact of deployment to HTPs on diplomatic staff. This included but was not limited to conflicts in Iraq and Afghanistan. Relevant papers were a priori considered to be those concerning the staff of organizations which also deploy to HTPs and, alongside military studies relevant to deployment length and mental health and well-being, we also reviewed literature on journalists, security staff, staff of humanitarian aid agencies and field researchers.

We used the following databases: NCBI, PsycINFO, PsycARTICLES, Informa Healthcare and EMBASE and used the following key search terms: tour length, deployment length, tour duration, operations tempo, deployment plan, deployment rotation, time on tour, time in theatre. These terms were coupled with: armed forces, air force, navy, army, marines, military personnel, conflict zone, diplomat mental health, diplomats, war, combat and non-military personnel, war journalists, embedded journalism, humanitarian aid, relief workers, security staff, diplomats.

We identified a systematic review [8] of the impact of deployment length on military personnel through this search process. Consequently, the nine articles from that review have been included in the present study as they are considered to be the most influential on this topic. The paper summarizing those articles was used as the foundation for our literature review. Table 1 shows the

| Table 1. Quality criteria used in the systematic review by Buckman et al. [8] |
|---------------------------------|-----------------|
| **Rating criteria** | **Scoring** |
| Type of study | 2: cohort, controlled observation or case–control |
| Selection method | 2: random or representative sampling |
| Aimed to assess tour length | 1: yes |
| Prospective | 1: yes |
| Appropriate control group | 1: yes |
| Method of health outcome assessment | 3: clinical interview/assessment |
| Sample size | 3: >15 000 |
| Response rate >60% | 1: yes |
| Adjustment for confounders of deployment length | 1: yes |
| Appropriate statistical tests used | 1: yes |
| Conclusions substantiated by data | 1: yes |
| Overall quality | Very high: >14 |

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quality criteria. Our search process also identified two additional papers as being pertinent to military deployment research and three articles were identified as being pertinent to non-military deployment research. The quality of papers (high, moderate or poor) was decided on by the authors, through discussion about whether papers included explicit measurement of tour length, had at least one health-related outcome, had standardization of assessment methods and included analysis and interpretation of findings.

Results

The systematic review of military literature on deployment length, which considered nine papers, as well as two further military population studies and three non-military studies, met our criteria and are included in Table 2. Thus, we identified 14 studies that have examined the psychosocial effects of deployment on military personnel and their families. Four of the 14 studies reported adverse psychosocial effects as deployment length increased [11,12,15,16]. Particularly, noteworthy findings included the negative impact of being away for longer than anticipated [14,21] and that first time deployers may be considerably more vulnerable [10,18]. Interestingly, results showed that although the psychosocial effects on non-military personnel of their exposure to HTPs appeared to be similar to those experienced by the armed forces [11–13], length of time deployed had not in itself been found to significantly correlate with poor mental health outside military populations [11].

Findings from various studies [11,12,18] highlighted the importance of vulnerability (demographic groups, stressor novelty) and potential protective factors (social support and personal coping mechanisms) in determining the outcome of mental, physical and general well-being, particularly with regard to deploying to HTPs (see Table 3 below). Although the one study of diplomats posted to HTPs showed an association between symptoms of PTSD and HTP deployment, there was no indication that deployment in itself was associated with an increase in frank mental disorder.

Discussion

This study found only a limited number of scientific papers that have researched the psychosocial effects of deployment to HTPs and which have relevance for many organizations. However, the papers we reviewed, most of which had examined military personnel, suggested that a number of key factors are relevant. Peoples’ experiences of their first deployment [10,18], alterations in tour lengths [14], longer tours of ~6 months or more (or 12 months within a 3 year period) [14] and exposure to trauma [11,12,18] were all found to adversely affect personnel and their families. These findings suggest that policies relating to diplomatic deployments to HTPs should consider tour length, support requirements for diplomats themselves and for their families and training and preparation.

It is noteworthy that a number of studies that we examined suggest that, as deployment length increased, the risk of adverse psychological health effects increased as well [11,12,15,16,19]. It is likely that increasing tour length is associated with an accumulation of highly challenging exposures that may degrade resilience leaving personnel vulnerable to developing PTSD, depression and alcohol problems. A threshold has been suggested for military personnel of 6 months or 12 months within a 3 year period [6,15,18] after which substantially more psychosocial difficulties may develop. However, vulnerabilities have also been suggested in first or initial deployments. First deployments are suggested to be the most challenging, and first time deployers may be particularly vulnerable [10,18]. Perhaps this could be because they lack the experience to make sense of their experiences during their deployments or it might be the first time they have had to encounter particularly challenging situations without access to their ‘usual’ support mechanisms during their initial HTP deployments [18].

The literature review highlighted the detrimental effects of having to deal with circumstances outside of one’s control and a perceived lack of predictability about one’s future is known to predispose to poor mental health [23]. In particular, our literature review highlighted the impact of deployments being unexpectedly extended as adversely affecting mental health presumably by inducing personnel to perceive they had lost an element of control [21] as well as depriving personnel of the social support of friends and family (Table 3 summarizes the possible protective and vulnerability factors). It is unclear how effectively the information provided by diplomatic organizations to deploying personnel mitigates their uncertainty about deployment. It is also unclear whether providing information might prevent people adopting maladaptive ways of coping (e.g. using alcohol to excess). Research reported in one relevant paper [24] examined (among other matters) the impact of pre-deployment psycho-education provided for UK military personnel. It found that troops who received pre-deployment stress briefings also reported significantly better ‘during deployment’ mental health. The effect of this association remained significant after controlling for the quality of unit leadership in multivariate analyses.

One topic which we did not find evident in the literature review relates to whether or not selection processes can be applied effectively to choosing personnel who are likely to cope well with their deployment. Previous research has shown that deploying to a HTP, rather than a low-threat posting, is associated with a modest increase in symptoms of PTSD [11,13]. However, what is unclear
### Table 2. Overview of the literature included in this review

<table>
<thead>
<tr>
<th>Author and year of publication</th>
<th>Rating</th>
<th>Range/mean/modal deployment length measured in months</th>
<th>Deployment location or war</th>
<th>Population studied: country, service, sample size, gender</th>
<th>Health outcomes (and standardized measures used)</th>
<th>Brief summary of findings</th>
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<tbody>
<tr>
<td>Additional military literature</td>
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<tr>
<td><strong>Buckman et al. [8]</strong>: systematic review of military literature of deployment length</td>
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<tr>
<td>Shen <em>et al.</em> (2009) [9]</td>
<td>High</td>
<td>Mode: Army: ≥180 days Navy: ≥180 days Marines: ≥180 days Air Force: ≤120 days</td>
<td>Iraq Afghanistand USA, all services, 774100, 85.2% male</td>
<td>TRICARE medical records (healthcare for uniformed service members) for PTSD diagnosis</td>
<td>The location of deployment, Iraq and Afghanistan (defined as HTPs in the present study), significantly increased the likelihood of subjects being diagnosed with PTSD, with the highest effects found in Navy and the lowest in Air Force personnel. The likelihood of developing PTSD more than doubled for people who were deployed ≥180 days to such locations, when compared with personnel whose tours were ≤120 days. Being deployed to an HTP appears to only worsen the detrimental impact of increased tour length for the Army and Navy personnel specifically.</td>
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<td><strong>Huffman et al. (1999) [10]</strong></td>
<td>High</td>
<td>Range: 1–9 months</td>
<td>Former Yugoslavia USA, 57 854, 89% male</td>
<td>PTSD checklist formulated by the US Army Medical Research Unit-Europe, Depression (SDS-20) and CAGE questionnaire for alcohol misuse</td>
<td>Deployment length was found to be directly associated with greater rates of participants reporting psychosocial distress. The scores of participants who had been deployed for longer periods of time generally exceeded the criteria for PTSD, depression and alcohol misuse. Scores were found to be significantly higher for persons on their first tour, compared to those who had been on previous tours. However, the positive impact of more than one previous deployment was only found to be the case when those deployments were to a maximum of 6 months.</td>
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<tr>
<td>Non-military literature</td>
<td>Moderate to high</td>
<td>Basic descriptive statistics not stated</td>
<td>HTPs: Iraq and Afghanistan LTPs: other lower conflict zones UK, non-military diplomats, 289, 59% male</td>
<td>GHQ-12, CFS, PCL-C, AUDIT and qualitative collection of posting/deployment experience</td>
<td>Staff who deployed to HTPs and were exposed to a traumatic event scored significantly higher in the number of symptoms of PTSD than those who were deployed to other overseas postings. However, those who experienced trauma on other overseas postings also scored high for PTSD symptoms. This difference may be explained by the increased chances of experiencing trauma on HTPs. No significant correlations were found between the length of deployment to HTPs and general well-being nor were further differences found between the groups in terms of fatigue, alcohol use or general mental health.</td>
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is whether or not diplomats who deploy to HTPs are different to other diplomatic personnel. We think that it is likely, for example, that diplomats who volunteer to deploy to HTPs are more likely to be people who are keen on seeking adventure or they may be keen to advance their careers through their HTP deployment. A recent paper concerning using scrutiny of the pre-deployment medical records of US armed forces showed that when military personnel with a recent or current history of serious mental health problems were prevented from deploying, the incidence of poor mental health on deployment was substantially reduced. Overall, however, the possible benefits of using selection procedures, and indeed what optimal selection procedures might be, to increase ‘force resilience’ remains unclear.

The extensive literature relating to the short-term and longer term psychosocial impacts of peoples’ exposure to adversity, conflict, violence and hardship suggests a strong role of social networks and social support as pro-resilience factors. Evidence suggests that how the circumstances and events to which diplomats are exposed impact on them, and their family’s well-being and mental health, depends on the availability of good social networks perhaps even more than it does on the personal histories, attitudes and capacities of the people involved. There is also considerable evidence that

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**Table 2.** Continued

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<tr>
<td>Eriksson et al. (2001) [12]</td>
<td>Moderate</td>
<td>Mean: 30 months</td>
<td>Overseas (countries not stated)</td>
<td>International relief workers, 195, 42% male</td>
<td>Los Angeles Symptom Checklist Surveys for PTSD, the Support Rating Scale and an Exposure to Traumatic Events survey, which was adapted from two surveys: Community Violence and War Trauma Exposure</td>
<td>High rates of exposure to life-threatening trauma were found with approximately one third of workers reporting symptoms consistent with probable PTSD. The duration of the most recent post (mean of 30 months) was significantly associated with indirect exposure to life-threatening trauma and additional traumas, but not with personal exposure to trauma, suggesting that the number of exposures may play a role in determining who develops PTSD. Less symptoms of PTSD were found when accompanied with subjects perceiving that they had high levels of social support.</td>
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<tr>
<td>Feinstein et al. (2002) [13]</td>
<td>Moderate to high</td>
<td>Investigated deployment location rather than length</td>
<td>War zones</td>
<td>International journalists, 247, 75% male</td>
<td>Impact of Event Scale–Revised, the Beck Depression Inventory and the GHQ-12; clinical interviews for Axis 1 DSM-IV disorders</td>
<td>War journalists had significantly more psychiatric disorders, specifically: higher rates of depression than in non-war journalists with a life time prevalence for major depression 4% higher than for the general population (female prevalence double that for males); prevalence of PTSD (28.6%) close to that for the Armed Forces at the time and higher alcohol consumption than non-war journalists. Despite the study not aiming to assess deployment length, it did cover deployment location of non-military personnel, which is important in acknowledging psychosocial distress in diplomats who work in HTPs.</td>
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</table>

For a summary of the nine studies in the systematic review, please refer to Buckman et al. [8]. For their individual papers, please refer to references [14–22]. LTP, low-threat posting.
the pressures experienced during the homecoming period, including pressure from work, home or other sources, also affect peoples’ abilities to make successful transitions home [27,28].

One important concept is that of psychological safety of teams, workplaces and environments. Psychologically safe environments are those in which actions are taken to appropriately minimize exposure to inherent and non-inherent risks and to appropriately deal with exposure of staff to traumatic situations [26,29]. In respect of the latter point, the FCO have already adopted the use of Trauma Risk Management (TRiM) [30] to deal with the personnel aspects of aversive experience, an approach that has also recently been adopted by other organizations too: media companies, emergency services and the National Health Service (NHS). Psychological safety also requires staff to be encouraged, coached or otherwise prevented from manufactured risks. A psychologically safe environment is one in which staff can, and do, ask questions and make suggestions about the best courses of action without feeling that they have stepped beyond their legitimate roles or that their comments are unwelcome [26,29].

Our review of the literature shows that the evidence on which we can draw is limited by the paucity of studies that have been conducted and, in some cases, the quality of those that have. Our findings indicate that there is likely to be a link between increasing lengths of deployment and the degradation of well-being, and, in a small number of cases, increasing the need for mental healthcare. The evidence for this association is more tenuous for non-military populations and low-intensity deployments. A multitude of contributory factors appear involved in the adverse effects on diplomats’ mental health and well-being, and therefore, consistent guidelines about helping staff to manage themselves when they are exposed to highly challenging environments are required. In our opinion, in light of the considerable available evidence about improving organizational psychosocial resilience, diplomatic organizations should consider how best to embed their approaches to policy on tour lengths for diplomats, within a wider framework for supporting staff who are exposed to potentially challenging and traumatizing situations.

### Key points

- Longer deployments are associated with poorer mental health, including post-traumatic stress disorder, depression and alcohol problems.
- Diplomats deploying on their first high-threat posting and those whose tour length is altered after deployment are especially vulnerable.
- Vulnerability and protective factors are summarized, highlighting the need for organizations to consider how to improve the monitoring of mental health in diplomats that deploy to high-threat postings.

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### Conflicts of interest

None declared.

### References


