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Cohesion, leadership, mental health stigmatisation and perceived barriers to care in UK military personnel

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Abstract

Background: Military research suggests a significant association between leadership, cohesion, mental health stigmatisation and perceived barriers to care (stigma/BTC).

Aim: Most studies are cross sectional, therefore longitudinal data were used to examine the association of leadership and cohesion with stigma/BTC.

Method: Military personnel provided measures of leadership, cohesion, stigma/BTC, mental health awareness and willingness to discuss mental health following deployment (n = 2510) and 4–6 months later (n = 1636).

Results: At follow-up, baseline leadership and cohesion were significantly associated with stigma/BTC; baseline cohesion alone was significantly associated with awareness of and willingness to discuss mental health at follow-up. Over time, changes in perceived leadership and cohesion were significantly associated with corresponding changes in stigma/BTC levels. Stigma/BTC content was similar in both surveys; fear of being viewed as weak and being treated differently by leaders was most frequently endorsed while thinking less of a help-seeking team member and unawareness of potential help sources were least common.

Conclusion: Effective leadership and cohesion building may help to reduce stigma/BTC in military personnel. Mental health awareness and promoting the discussion of mental health matters may represent core elements of supportive leader behaviour. Perceptions of weakness and fears of being treated differently represent a focus for stigma/BTC reduction.

Keywords

Mental Health, stigmatisation, barriers to care, military, leadership, cohesion

History

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Introduction

Recent studies suggest that a minority of UK Armed Forces (UK AF) personnel with mental health problems seek help (Gould et al., 2008; Jones et al., 2010) while most do not seek any formal psychological support (Hines et al., 2014; Iversen et al., 2010). Multiple factors may influence the decision to seek help including stigmatising beliefs about mental health and perceived barriers to care (stigma/BTC) (Kim et al., 2010; Pietrzak et al., 2009). Symptomatic personnel with arguably the most to gain from support, reportedly experience the highest levels of stigma/BTC (Gould et al., 2010; Hoge et al., 2008; Jones et al., 2013a,b). Reduced help-seeking does not relate to inaccessible provision; among UK AF personnel, ignorance of potential help sources is consistently the least frequently endorsed stigma/BTC factor (Osorio et al., 2013) and a broad range of evidence-based mental health care is readily available (McAllister, 2006). Welfare support and a variety of educational inputs are provided which aim to inculcate a tolerant environment where those in need of help can access care without fear or prejudice. Psychological support is exemplified by peer-led systems, such as Trauma Risk Management (TRiM) (Greenberg et al., 2008) and third location decompression (TLD) (Fertout et al., 2011); a brief rest, relaxation and personal reflection period taken following deployment which includes a psychoeducation component that aims to signpost those in need to helping services (Jones et al., 2011). A comprehensive system of psychoeducation-based stress management is also delivered at key points during a military career (Ministry of Defence, 2004). Stigma reduction and the promotion of help-seeking are central to most primary prevention activity. Overall, most of the supportive interventions have a positive although modest effect upon military mental health (Greenberg et al., 2010; Jones et al., 2013a,b) implying that military planners may need to look beyond supportive interventions to promote help-seeking and reduce stigma/BTC.

Unit cohesion and leadership may be associated with both mental health status (Jones et al., 2012) and stigma/BTC...
(Zinzow et al., 2012), however as most studies use cross-sectional data, cause and effect are difficult to determine. The present study therefore used longitudinal data to evaluate the effect of leadership and cohesion upon stigma/BTC, awareness of and willingness to discuss mental health matters. Four hypotheses were tested; firstly, that higher baseline subjective levels of leadership (H1) and cohesion (H2) would predict lower levels of stigma/BTC at a later time; secondly that higher baseline subjective levels of leadership (H3) and cohesion (H4) would predict awareness of and willingness to discuss mental health matters when the latter were assessed at a follow-up point.

Methods

A secondary analysis was conducted using data derived from a cluster randomised controlled trial of an intervention known as UK Battlemind (see Mulligan et al. (2012) for details). Study participants were members of the UK Armed Forces assessed in spring 2009 during a 24–36 h rest period in a TLD facility immediately post-deployment. After receiving one of the two forms of psychoeducation at baseline (Time 1 – T1), study participants were re-surveyed some 4–6 months later (Time 2 – T2) to assess the differential effects of the intervention. Follow-up was carried out as personnel resumed non-deployed working life within their military units.

Measures

Participants completed an eight-item mental health stigmatisation and barriers to care scale adapted from a measure developed for use in US military research (Adler et al., 2012; Mulligan et al., 2012). The stem question was: ‘here is a list of concerns that a person might have when they consider seeking help for a stressful, emotional, mental health or family problem. Please rate each of the possible concerns that might affect your decision to receive help’. The questions assessed:

(1) Fears of being seen as weak or being treated differently by commanders if help were sought.
(2) Fear of potential career harm, embarrassment and confidentiality breaches.
(3) Practical barriers to care, such as difficulty in getting time off work for treatment and not knowing where to get help.
(4) Thinking less of a team member if they were receiving mental health treatment.

The individual scale items are shown in full in Table 2. Questions were rated using a five-point Likert scale. For each item, a binary variable was created where disagree and strongly disagree responses, indicating low levels of stigmatising beliefs, were combined, as were agree or strongly agree responses, indicating high levels of stigma/BTC. As they could not be allocated to agree or disagree categories, neutral scores were recorded as missing and deleted. A count variable was then generated. To create a binary variable representing the overall stigma/BTC level, scores of ≥3 endorsements, which fell above the upper tertile of scores, represented heightened stigma and scores ≤2 represented lower levels. To assess the relative contribution of each stigma/BTC scale item, items were ranked by frequency of endorsement at T1 and time T2. To assess change over time, T1 stigma/BTC total scores were subtracted from T2 stigma/BTC total scores to produce change scores. Tertiles were computed for the change scores and a binary variable was generated by combining increased stigma/BTC scores with minimal or no change scores; decreased scores were not modified.

Three items that represented mental health awareness and willingness to discuss mental health matters comprised the second dependent variable:

(1) I could spot colleagues who are distressed.
(2) I can talk to my friends and family about my thoughts or feelings.
(3) I can talk to military colleagues about my thoughts or feelings.

Each question was scored on a five-point Likert scale. Agree and strongly agree responses were combined as were disagree and strongly disagree responses to generate a binary response to each question. As they could not be allocated to an agreement or disagreement category, neutral responses were treated as missing and were deleted. A count variable was computed and a binary variable was generated, where zero scores were classified as the lowest levels of awareness of and willingness to discuss mental health matters and the endorsement of one to three items were classified as the highest.

The independent variables were leadership and cohesion measured at T1. Leadership was measured using a four-item scale ( Castro, 2009). The stem question was, how often have your leaders:

(1) Embarrassed juniors (subordinates) in front of other unit members.
(2) Treated all members of the unit fairly.
(3) Showed concern about the safety of unit members.
(4) Accepted extra duties or tasks for the unit in order to impress their seniors.

Responses were given to a five-item Likert scale; items 1 and 4 were reverse scored. A binary variable was derived for each scale item by combining the seldom and never responses and combining sometimes, often and always responses. A count variable of 0–4 items was generated and three or more item endorsements represented higher levels of perceived leadership. Leadership levels were similarly assessed at T2. To assess changes in perceptions of leadership over time, leadership total scores at T1 were subtracted from those reported at T2 to produce change scores. Tertiles were computed for the change scores and a binary variable was generated; increased scores were combined with minimal or no change scores to represent stable or better perceived leadership, and decreased scores representing worse perceived leadership were not modified.

Unit cohesion was measured using a four-item scale (Wright et al., 2009). The questions were:

(1) I feel a sense of comradeship (or closeness) between myself and other people in my unit.
(2) I could go to most people in my unit if I had a personal problem.
(3) My seniors are interested in what I do or think.
(4) I feel well informed about what is going on in my unit.

Responses were rated using a five-item Likert scale ranging from strongly disagree through disagree, neither
agree nor disagree, agree and strongly agree. Neutral responses were re-coded as missing and deleted as they could not be allocated to an agreement or disagreement category. Binary variables were derived by combining agree or strongly agree responses and combining disagree and strongly disagree responses. A count variable of 0–4 items was generated and those who endorsed ≥3 items were conceptualised as having higher levels of unit cohesion. Cohesion levels were similarly assessed at T2. To assess changes in perceptions of cohesion over time, cohesion total raw scores at T1 were subtracted from those reported at T2 to produce change scores. Tertiles were computed for the change scores and a binary variable was generated, where greater levels of perceived cohesion were combined with minimal or no change, representing stable or improved cohesion, and the lower perceived cohesion category was not modified.

Symptoms of Post Traumatic Stress Disorder (PTSD) and Common Mental Disorder (CMD) were obtained both at T1 and T2. The 17-item Post Traumatic Stress Disorder Checklist (Weathers et al., 1994) (PCL-C) was used to assess symptoms of PTSD. The PCL-C has a possible score range of 17–85 and scores ≥50 are considered indicative of probable PTSD. The measure has been validated in US military samples (Bliese et al., 2008) and is widely used in UK military surveys (Fear et al., 2010; Hotopf et al., 2006). The 12-item General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988) is a validated measure of common mental disorder symptoms (Goldberg et al., 1997) which has been previously used in research with military personnel (Bridger et al., 2008). Each of the 12 questions were rated on a four-point scale which was scored 0, 0, 1 and 1, respectively to generate possible total scores ranging from 0 to 12. In keeping with recommended scoring conventions, scores ≥4 indicated common mental disorder caseness. Personnel are not permitted to drink alcohol during deployment therefore alcohol use was measured at T2 only using the World Health Organization Alcohol Use Disorders Identification Test (AUDIT) (Babor et al., 2001). The 10-item measure has a possible range of 0–40. Scores ≥16 were defined as “hazardous alcohol use that is also harmful to health”. Cut-off scores ≥16 are commonly used in UK military studies, rather than scores ≥8 due to the high prevalence of hazardous alcohol use found among UK Service personnel (Fear et al., 2007).

Ethical approval

The original study received approval from the Ministry of Defence Research Ethics Committee and the King’s College Hospital Ethics Committee. All participants gave written informed consent for their data to be used in research.

Although, the study was a secondary analysis of existing data, the randomised controlled trial that provided the dataset was conducted with approval from the UK Ministry of Defence Research Ethics Committee and the King’s College Hospital Research Ethics Committee. All participants gave written informed consent.

Statistical analysis

All analyses were conducted in the Statistical Package for Social Sciences (SPSS) version 21 for Windows (IBM Corp., Armonk, NY). Statistical significance was p < 0.05. The effect of the independent variables, leadership at T1 and cohesion at T1, upon the dependant variables, stigma/BTC and mental health awareness and willingness to discuss mental health matters, was assessed using binary logistic regression to generate odds ratios (ORs) with 95% confidence intervals (CIs). Univariable ORs were adjusted for observed potentially confounding variables including socio-demographic factors (gender, age, rank, reservist or regular engagement and service background) and operational factors (deployed alone or with known others, combat arm, combat exposure level, previous operational tours). As prevailing mental health symptoms can affect stigma/BTC, mental health outcomes at T2 were controlled for (PCL ≥50 at T2, potentially harmful use of alcohol at T2 and GHQ12 ≥4 at T2) as were leadership at T2 and cohesion at T2. Finally, ORs were adjusted for all confounding variables. The total number of responses to each of the survey items varied as a result of missing data, therefore numbers and percentages shown in the results section may not always sum to the total sample n (%).

Results

Baseline characteristics

Two thousand five hundred and ten personnel responded at T1 and 1636 at T2 (response rate of 65.2%). Army personnel (OR 1.72, 95% CI 1.04–2.86); Combat Support personnel (OR 1.63, 95% CI 1.34–1.99), Combat Service Support personnel (OR 1.32, 95% CI 1.12–1.72) and personnel who had served for longer than 12 years (OR 1.87, 95% CI 1.46–2.38) had increased odds of responding at T2. Personnel <25 years of age were substantially less likely to respond at T2. Table 1 shows the variables that were assessed at T1 and T2.

Stigma/BTC levels

22.3% (n = 516) of respondents endorsed ≥3 of the eight stigmatisation scale items at T1 and 29.7% (n = 462) at T2 (p < 0.0001). The most frequently reported stigma/BTC items at both T1 and T2 were not seeking help for fear of being seen as weak and being treated differently by leaders. The least frequently endorsed items at T1 and T2 were thinking less of a team member receiving mental health treatment and not knowing where to get help. All individual stigma/BTC items were reported at significantly higher levels at T2 with the exception of thinking less of a team member if it were known that he or she was receiving mental health treatment (Table 2).

Leadership levels

Overall, perceived leadership was positively endorsed at a significantly higher level at T2; 55.5% (n = 1380) of personnel reported ≥3 leadership items at T1 and 59.0% (n = 956) at T2 (X² = 9.40, d.f.1, p < 0.01). The most frequently endorsed item at both survey points was showing concern about the safety of unit members, but was lower at T2 [83.0% (n = 2059) at T1 and 76.1% (n = 1227) at T2]. The least frequently endorsed item was accepting extra duties or tasks for the unit in order to impress seniors [37.6% (n = 920) at T1 and 38.2% (n = 607) at T2]. The proportion of respondents reporting that their leaders did not embarrass juniors in front...
of other unit members was significantly higher at T2 [62.6% (n = 1554) at T1 and 72.0% (n = 1161) at T2] \( \chi^2 = 38.91, \text{ d.f.} 1, p < 0.0001 \), conversely, showing concern for unit members was significantly lower at T2 [76.1% (n = 1227) at T2 and 83.0% (n = 2059) at T1] \( \chi^2 = 29.86, \text{ d.f.} 1, p < 0.0001 \). Accepting extra duties and treating subordinates fairly were reported at similar levels at T1 and T2.

### Cohesion levels

Overall, cohesion levels were perceived as being significantly lower at T2 [67.1% (n = 1659) of personnel reported \( \geq 3 \) cohesion items at T1 and 62.4% (n = 1014) at T2] \( \chi^2 = 9.22, \text{ d.f.} 1, p < 0.01 \). At both time points, the most frequently endorsed cohesion item was feeling a sense of comradeship (or closeness) between oneself and other people in the unit [89.4% (n = 2244) at T1 and 86.6% (n = 1405) at T2]. The least frequently endorsed item was feeling well informed about what was going on in the unit [62.4% (n = 1567) at T1 and 56.8% (n = 920) at T2]. Endorsing the statement that personnel could go to most people in their unit if they had a personal problem was significantly less frequent at T2; 67.2% (n = 1554) than at T1 and 62.9% (n = 1021) at T2 \( \chi^2 = 8.42, \text{ d.f.} 1, p < 0.05 \). The level of endorsement of all other cohesion items was not significantly different at T1 and T2.

### Mental health awareness and willingness to discuss mental health matters

At T2, 90.1% of the respondents (n = 1116 of 1238) reported that they would be able to spot colleagues who were in distress; 86.2% (n = 1155 of 1340) reported that they could talk to family and friends about thoughts and feelings and 85.1% (n = 1065 of 1251) that they could talk to military colleagues about thoughts and feelings. Overall, at T2, 76.3% (n = 1180) of the respondents endorsed at least one item and 23.7% (n = 366) endorsed none.

### Adjusted model

Those who reported lower levels of leadership at T1 had significantly greater adjusted odds of reporting stigmatisation at T2 (AOR 1.56, 95% CI 1.19–2.05). Those who reported lower levels of cohesion at T1 had significantly greater
Discussion
Perceived leadership and cohesion levels assessed immediately after deployment were predictive of stigma/BTC measured four to six months later. Lower levels of baseline leadership and cohesion were both associated with significantly more stigma/BTC at T2. Changes in perceptions of leadership and cohesion over time were associated with corresponding changes in stigma/BTC levels. Perceiving that leadership quality had reduced and that unit cohesion levels had lessened over time were associated with higher levels of stigma/BTC, whereas increases were associated with lower levels of stigma/BTC. Greater levels of baseline leadership were not predictive of mental health awareness and willingness to discuss mental health matters at T2 after controlling for observed confounders, however, greater levels of baseline unit cohesion were predictive of greater awareness and willingness to discuss mental health at T2.

Previous UK (Du Pree et al., 2012) and US (Office of the US Surgeon General, 2013) studies suggest that better leadership and greater unit cohesion were associated with better mental health. Both factors are potentially modifiable, however, most data supporting this notion are limited as they are cross-sectional. Using longitudinal data, in relation to hypotheses one and two, we found that both baseline perceptions of leadership and subjective unit cohesion were important predictors of stigma/BTC. In relation to hypotheses three and four, only cohesion (H4) but not leadership (H3) was associated with awareness of and willingness to discuss mental health-related matters at T2. In adjusted regression analyses, baseline leadership was significantly associated with the latter until all potential confounding variables were entered into the model, at which point it became borderline non-significant. At follow-up, approximately 10% of personnel reported that they could not spot colleagues in distress and around 15% reported not being able to discuss mental health matters, suggesting that most UK military personnel are

Table 2. Stigma scale responses rank ordered by frequency.

<table>
<thead>
<tr>
<th>Stigma scale item</th>
<th>T1 (initial)</th>
<th>Rank order T1</th>
<th>T2 (follow-up)</th>
<th>Rank order T2</th>
<th>X², d.f., p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would be seen as weak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1199 (67.1)</td>
<td>1</td>
<td>723 (61.1)</td>
<td>2</td>
<td>X² = 11.20, d.f.1. p ≤ 0.001</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>589 (32.9)</td>
<td></td>
<td>461 (38.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My unit leaders/bosses might treat me differently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1236 (67.5)</td>
<td>2</td>
<td>652 (55.1)</td>
<td>1</td>
<td>X² = 47.14, d.f.1. p ≤ 0.0001</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>595 (32.5)</td>
<td></td>
<td>531 (44.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It would harm my career</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1424 (77.4)</td>
<td>3</td>
<td>760 (64.2)</td>
<td>3</td>
<td>X² = 62.50, d.f.1. p ≤ 0.0001</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>415 (22.6)</td>
<td></td>
<td>423 (35.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My visit would not remain confidential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1311 (77.9)</td>
<td>4</td>
<td>805 (71.1)</td>
<td>4</td>
<td>X² = 16.76, d.f.1. p ≤ 0.0001</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>373 (22.1)</td>
<td></td>
<td>328 (28.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There would be difficulty getting time off work for treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1506 (81.8)</td>
<td>6</td>
<td>976 (76.4)</td>
<td>6</td>
<td>X² = 13.18, d.f.1. p ≤ 0.001</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>336 (18.2)</td>
<td></td>
<td>301 (23.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would think less of a team member if I knew he/she was receiving mental health treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1771 (90.1)</td>
<td>7</td>
<td>1179 (90.1)</td>
<td>7</td>
<td>X² = 0.00, d.f.1. p = 0.96</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>194 (9.9)</td>
<td></td>
<td>130 (9.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t know where to get help</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree or strongly disagree</td>
<td>1929 (96.5)</td>
<td>8</td>
<td>1252 (94.0)</td>
<td>8</td>
<td>X² = 11.15, d.f.1. p ≤ 0.001</td>
</tr>
<tr>
<td>Agree or strongly agree</td>
<td>71 (3.6)</td>
<td></td>
<td>80 (6.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3. Leadership and cohesion effect on stigmatisation at 6-month follow-up.

<table>
<thead>
<tr>
<th>Variable (n)</th>
<th>≤2 stigma items n (%)</th>
<th>≥3 stigma items n (%)</th>
<th>OR (95% CI)</th>
<th>AOR\textsuperscript{a} (95% CI)</th>
<th>AOR\textsuperscript{b} (95% CI)</th>
<th>AOR\textsuperscript{c} (95% CI)</th>
<th>AOR\textsuperscript{d} (95% CI)</th>
<th>AOR\textsuperscript{e} (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership at T1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower levels of leadership (≤2 scale items) (n = 644)</td>
<td>401 (61.3)</td>
<td>253 (38.7)</td>
<td>2.08 (1.67–2.60)</td>
<td>2.12 (1.69–2.65)</td>
<td>2.16 (1.71–2.72)</td>
<td>1.84 (1.46–2.32)</td>
<td>1.51 (1.18–1.92)</td>
<td>1.56 (1.19–2.05)</td>
</tr>
<tr>
<td>Higher levels of leadership (≥3 scale items) (n = 890)</td>
<td>683 (76.7)</td>
<td>207 (23.3)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cohesion at T1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower levels of cohesion (≤2 scale items) (n = 474)</td>
<td>278 (58.6)</td>
<td>196 (41.4)</td>
<td>2.15 (1.71–2.70)</td>
<td>2.15 (1.70–2.71)</td>
<td>2.25 (1.77–2.86)</td>
<td>1.83 (1.44–2.34)</td>
<td>1.45 (1.16–1.93)</td>
<td>1.41 (1.07–1.87)</td>
</tr>
<tr>
<td>Higher levels of cohesion (≥3 scale items) (n = 1060)</td>
<td>798 (75.3)</td>
<td>262 (24.7)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Adjusted for socio-demographic factors (gender, age, rank, reservist or regular engagement and Service background).
\textsuperscript{b}Adjusted for operational factors (individual reinforcement or formed unit personnel, combat arm, combat exposure level, previous operational tours).
\textsuperscript{c}Adjusted for mental health at T2 (T2 PCL \geq 50, T2 potentially harmful use of alcohol, T2 GHQ12 \geq 4).
\textsuperscript{d}Leadership at T1 adjusted for leadership at T2 and cohesion at T2, cohesion at T1 adjusted for leadership at T2 and cohesion at T2.
\textsuperscript{e}Adjusted for all observed confounding variables.

### Table 4. Leadership, cohesion, mental health awareness and willingness to discuss mental health matters reported at T2.

<table>
<thead>
<tr>
<th>Variable (n)</th>
<th>Zero items reported n (%)</th>
<th>1–3 items reported n (%)</th>
<th>OR (95% CI)</th>
<th>AOR\textsuperscript{1} (95% CI)</th>
<th>AOR\textsuperscript{b} (95% CI)</th>
<th>AOR\textsuperscript{c} (95% CI)</th>
<th>AOR\textsuperscript{d} (95% CI)</th>
<th>AOR\textsuperscript{e} (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership at T1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower levels of leadership (≤2 scale items) (n = 643)</td>
<td>191 (29.7)</td>
<td>452 (70.3)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Higher levels of leadership (≥3 scale items) (n = 893)</td>
<td>173 (19.4)</td>
<td>720 (80.6)</td>
<td>1.76 (1.39–2.23)</td>
<td>1.69 (1.32–2.15)</td>
<td>1.70 (1.32–2.18)</td>
<td>1.56 (1.21–2.00)</td>
<td>1.37 (1.06–1.77)</td>
<td>1.22 (0.91–1.62)</td>
</tr>
<tr>
<td>Cohesion at T1</td>
<td></td>
<td></td>
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<tr>
<td>Lower levels of cohesion (≤2 scale items) (n = 470)</td>
<td>163 (34.7)</td>
<td>307 (65.3)</td>
<td>2.32 (1.81–2.96)</td>
<td>2.31 (1.81–2.96)</td>
<td>2.39 (1.85–3.10)</td>
<td>2.06 (1.59–2.67)</td>
<td>1.69 (1.29–2.21)</td>
<td>1.65 (1.23–2.23)</td>
</tr>
<tr>
<td>Higher levels of cohesion (≥3 scale items) (n = 1057)</td>
<td>197 (18.6)</td>
<td>860 (81.4)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tr>
</tbody>
</table>

\textsuperscript{a}Adjusted for socio-demographic factors (gender, age, rank, reservist or regular engagement and Service background).
\textsuperscript{b}Adjusted for operational factors (individual reinforcement or formed unit personnel, combat arm, combat exposure level, previous operational tours).
\textsuperscript{c}Adjusted for mental health at T2 (T2 PCL \geq 50, T2 potentially harmful use of alcohol, T2 GHQ12 \geq 4).
\textsuperscript{d}Leadership at T1 adjusted for leadership at T2 and cohesion at T2, cohesion at T1 adjusted for leadership at T2 and cohesion at T2.
\textsuperscript{e}Adjusted for all observed confounding variables.
aware of the value of speaking to peers about mental health matters.

For UK military personnel, stigma/BTC is considerably higher during deployment than in the home base (Osorio et al., 2012), however, levels appear to fall significantly immediately post-deployment, which might be related to a generally positive state of mind related to relief about leaving a dangerous and stressful situation. Considerable efforts are made by leaders to minimise stigma/BTC through psychoeducation which is delivered immediately post-deployment; our data suggest that stigma/BTC levels increased from initially low levels despite all personnel receiving psychoeducation during TLD. Placing greater emphasis on leadership and fostering cohesion may be more fruitful than providing stand-alone interventions, such as psychoeducation.

At both T1 and T2, fear of unit leaders treating help-seeking personnel differently and being seen as weak were commonly reported; both are potentially modifiable through supportive leadership activity and both factors should be the focus of post-deployment stigma-reduction campaigns. Osorio et al. (2012) argue however, that during deployment, heightened stigma/BTC might serve a positive military function by contributing to operational resilience. Post-deployment, stigma/BTC might be reduced through leadership activities that foster unit cohesion as this may well promote the discussion of mental health issues and help to identify those in need. It is a stated UK military aim to reduce stigma levels ("Don’t bottle it up" campaign, taken from https://www.army.mod.uk/welfare-support/23386.aspx, 26 Feb 14) therefore, stigma reduction strategies should include specific education for commanders which details the main stigma issues reported by military personnel and ways in which commanders can combat these, including methods of building unit cohesion and promoting disclosure, particularly when a military unit returns to readiness state after deployment.

Awareness of mental health problems in others and willingness to discuss mental health matters were related to unit cohesion rather than quality of leadership. Previous research similarly suggests that being in a cohesive unit contributes significantly to military personnel’s mental health (Iversen et al., 2008). Cohesion, represented by having a sense of comradeship, being able to access peers for support and seniors being interested in subordinate’s welfare, were linked to willingness to talk about mental health. Furthermore, thinking less of a team member receiving mental health treatment was the least frequently endorsed stigma item at both time points. Previous research suggests that this finding may not be confined to the current research; Royal Navy personnel reportedly felt confident that they could support distressed personnel, including those that talk about self-harm (Greenberg et al., 2007). This suggests that leaders are being effective in fostering cohesion, however, for the small number of personnel who felt that they could not spot colleagues who were distressed nor talk about thoughts and feelings, improving unit cohesion may be an important potential target for intervention by commanders.
Strengths and limitations

The strengths of this study include the substantial sample size and high response rate at follow-up. Validated mental health measures were used and the stigma scale items have been widely used in numerous studies of military personnel. The longitudinal nature of the data and the evaluation of change over time allow for causal inferences to be made particularly with regard to the predictive effects of leadership and cohesion over time. Study limitations include the use of a dataset which was collected for the purpose of conducting a randomised controlled trial, however, the intervention had no modifying effect upon levels of stigmatisation at follow up (data not shown – available from the authors). There may have been some sampling bias which might reduce confidence in extrapolating to the whole UK military force as data were gathered during a period of considerable operational activity in Afghanistan and combat personnel were over-represented in the study sample. The exploratory analyses suggested that there was some response bias arising from factors, such as age, Service, rank, combat role and length of service; although we adjusted for these in the logistic regression, it is not possible to rule out the effects of response and sample bias.

Conclusion

In this study, research hypotheses 1 and 2 were supported, whereby both leadership (H1) and cohesion (H2) measured immediately post-deployment were predictive of stigma/BTC when this was measured some four to six months later. In accordance with hypothesis four, cohesion (H4) was predictive of having an awareness of mental health in others and a willingness to discuss mental health matters; our third hypothesis, where leadership predicted the latter was not supported (H3), although leadership was borderline non-significant when all confounding variables were adjusted for. The results of the study imply that senior UK military commanders may be able to influence stigma/BTC by emphasising the positive mental health benefits of leadership and cohesion building activities, by raising mental health awareness and by encouraging the discussion of mental health among subordinates. The study results further suggest that combating stigmatising perceptions of weakness and fears of being treated differently should be the central focus of command activity.

Declaration of interest

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Norman Jones is a serving member of the British Army and Ben Campion is a serving member of the Royal Air Force. Mary Keeling and Neil Greenberg were recruited specifically for the study. Although, funding was received from DSTL and the UK Ministry of Defence, no direction was specifically for the study. Although, funding was received from DSTL and the UK Ministry of Defence, no direction was specifically for the study. No conflict of interest was declared by the remaining authors.

References


