Impact of paternal deployment to the conflicts in Iraq and Afghanistan and paternal post-traumatic stress disorder on the children of military fathers

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Background
Little is known about the social and emotional well-being of children whose fathers have been deployed to the conflicts in Iraq/Afghanistan or who have post-traumatic stress disorder (PTSD).

Aims
To examine the emotional and behavioural well-being of children whose fathers are or have been in the UK armed forces, in particular the effects of paternal deployment to the conflicts in Iraq or Afghanistan and paternal PTSD.

Method
Fathers who had taken part in a large tri-service cohort and had children aged 3–16 years were asked about the emotional and behavioural well-being of their child(ren) and assessed for symptoms of PTSD via online questionnaires and telephone interview.

Results
In total, 621 (67%) fathers participated, providing data on 1044 children. Paternal deployment to Iraq or Afghanistan was not associated with childhood emotional and behavioural difficulties. Paternal probable PTSD were associated with child hyperactivity. This finding was limited to boys and those under 11 years of age.

Conclusions
This study showed that adverse childhood emotional and behavioural well-being was not associated with paternal deployment but was associated with paternal probable PTSD.

Declaration of interest
N.T.F. is a trustee of the Warrior Programme, a charity supporting ex-service personnel and their families. She is also a member of the Independent Group Advising on the Release of Data (IGARD). S.W. is a trustee of Combat Stress, a charity supporting ex-service personnel and their families, and President of the Royal Society of Medicine. S.W. is partially funded by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emergency Preparedness and Response at King’s College London in partnership with Public Health England (PHE), in collaboration with the University of East Anglia and Newcastle University.

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Study protocol and procedures

Data collection began in July 2010 and ended in October 2012. Invitation packs consisted of an invite letter informing the father about the study, an information sheet, consent form and response sheet. Data were collected from fathers using standardised self-report online questionnaires and clinical telephone interviews. Instructions given prior to the online questionnaire stipulated that participation in the study was voluntary, participants were free to withdraw at any time and the study was funded by the US Department of Defense.

The online questionnaire was divided into seven sections: (a) consent; (b) service information (including information on most recent deployment, engagement type, and reasons for leaving the armed forces (if they have left)); (c) current employment; (d) mental health; (e) relationship adjustment; (f) details on each of their children (such as name, age, name of mother); (g) questions on the health and well-being of each of their children.

Once fathers had completed the online survey, they were contacted by the research team and booked in for a telephone interview (conducted by trained research assistants). CAPS14 and SAD-Q15 were used, but SAD-Q data are not presented here.

If fathers gave consent, mothers (s) of their children were invited to take part in the study. They were sent an invitation pack containing a letter informing them about the study, an information sheet, a consent form and a response sheet. Mothers were requested to fill in an online questionnaire, which was divided into four sections: (a) consent; (b) current employment; (c) mental health; (d) the health and well-being of each of their children. All participants were sent a cheque for £30 as a thank you for their time and a signposting sheet with a list of agencies that offer services and support for military personnel and their families.

PTSD symptoms were assessed using the 17-item PCL-C13, a cut-off score of ≥50 was used to determine individuals with probable PTSD, a cut-off of ≥40 was used for subthreshold PTSD.13,16 During the interview, all fathers (whether part of the PTSD group or not) were administered the Clinician-Administered PTSD Scale (CAPS-IV).14,17 Each symptom is rated on intensity and frequency using a five-point scale ranging from 0 to 4 (never to daily or almost every day). Standard diagnostic scoring uses a F1/I2 rule whereby a symptom is counted as ‘present’ if the frequency scores 1 or higher (i.e. it is present at least once in the past month), and the intensity scores 2 or higher (i.e. experiencing moderate distress or impairment). The frequency and intensity scores can be added to calculate a continuous score of PTSD severity ranging from 0 to 136. To meet diagnostic for PTSD on the CAPS, participants had to have at least one B (re-experiencing) symptom, three C (avoidance and numbing) symptoms and two D (hyperarousal) symptoms. Subthreshold PTSD was established using the definition employed by Cukor et al18 that requires that cluster B and either cluster C or cluster D criteria are met for at least 1 month and functional impairment is reported. Fulfilling the CAPS criteria (full or subthreshold) was the definition used in the subsequent analysis.

Primary outcome measure

Screening for emotional and behavioural difficulties in children was assessed using the 25-item Strengths and Difficulties Questionnaire (SDQ).19 Total scores were calculated for five subscales: emotional symptoms (i.e. worries a lot, often unhappy), conduct problems (i.e. temper tantrums, fights with other children), hyperactivity (i.e. restless, easily distracted), peer problems (i.e. solitary, picked on/bullied) and prosocial difficulties (i.e. considerate, unkind to others). 'Caseness' for ‘total difficulties’ is determined by combining four of the five individual SDQ subscales (excluding prosocial difficulties). Caseness for total difficulties and for each subscale, is categorised as normal, borderline or abnormal using defined and validated cut-offs.19 Mothers’ and fathers’ scores have been previously shown to be similar20 and this was reflected in the SDQ data collected here. Although fathers and mothers did not show perfect concordance when assessing their children, interrater comparisons using Cohen’s kappa showed that there were no statistically significant differences on any SDQ question (data available on request from the authors). Consequently, this study used mothers’ SDQ scores where available, substituting the father’s score where the mother’s was not provided.

Responders

Of the 1030 fathers invited to participate, 86 could not be followed up because of death (n = 3) or insufficient contact details (n = 83). A further 13 individuals were ineligible because their children were outside the 3–16 years age range. The final sample size was 931 eligible fathers. We obtained a response from 688 fathers (73.9%), with 621 (66.7%) fathers completing all aspects of the study (Fig. 1). Of the 621 fathers who responded in full, 511 gave us details to contact the mother(s) of their child or children. Of the 522 mothers contacted as a result, seven were ineligible as their child was outside the 3–16 years age range by the time they were invited to participate, or because the father withdrew his participation from the study. The final sample size of mothers was 515; a response was obtained from 397 (77.1%) of mothers (Fig. 2).

Responding was associated with age (responders being older), being a reserve, being in the follow-up sample v. operation HERRICK or the replenishment sample (i.e. those with a longer-term commitment to the KCMHR cohort study were more likely to respond), have a PCL score of <50 or a score of <16 on the Alcohol Use Disorders Identification Test11 at the time of sampling and being an officer or non-commissioned officer (v. holding a lower rank). Response weights were defined as the inverse probability of responding once sampled and driven by factors shown empirically to predict response (rank, age, sample, engagement type, PCL status and alcohol misuse). Response weights were taken into account in all analyses to adjust for non-response. The weighted analyses provide valid results under the assumption that the data are missing at random and that the observed variables modelled to drive non-response were correctly identified.

Statistical analyses

All analyses were undertaken using the statistical software package Stata (version 11.0), and statistical significance was defined as a P < 0.05. All analyses take account of the response weights by using the survey commands and the clustering by father by using the clustering commands. Weighted percentages and multinomial odds ratios are presented, together with unweighted cell counts. We describe the sociodemographic and military experiences of our sample, before presenting multinomial odds ratios, 95% confidence intervals and P-values, which were calculated to estimate associations between paternal deployment status, paternal PTSD status (as measured by CAPS), paternal reporting of symptoms of avoidance and numbing (as these symptoms are considered to be particularly socially impairing and to interfere with parenting) and childhood SDQ outcomes. SDQ scores used in these analyses were those given by the mother where available, and from the father where a maternal score was not available. Subanalyses were also performed involving stratification by age of the child (<11 years and ≥11 years) and by gender of the child. Univariable
and multivariable multinomial and binary logistic regression analyses were undertaken, sociodemographic (child age, paternal age, paternal relationship status, gender of child) and military (rank, service, engagement type (regular or reservist status), deployment status (not deployed to Iraq or Afghanistan or deployed to Iraq or Afghanistan, for the paternal PTSD analyses) factors were included in the multivariable analyses. Our sample size was devised to allow us at least an 85% power to detect a difference in the prevalence of SDQ caseness from 10 to 20% between the paternal PTSD case group and the paternal non-PTSD case group.

**Results**

Most study participants served in the army (68.3%) and were non-commissioned officers (67.2%) (supplementary Table 1, available at http://dx.doi.org/10.1192/bjp.2017.16). Although all were serving at the time of initial sampling in the underlying cohort study, over a third (36.7%) had left by the time they participated in this study. These 621 fathers have 1044 children, 87.9% have one or two children with 2.5% reporting four or more.

**Table 1** describes the emotional and behavioural difficulties (as measured by SDQ) of the 1044 children included in this study. Of the 1044 children, 13.3% were classified as cases for ‘total difficulties’ and a further 9.2% were borderline. The prevalence of difficulties ranged from 6.7% (for prosocial difficulties) to 16.6% for hyperactivity. The distribution by age and gender showed that there were approximately equal numbers of girls and boys (520 v. 524 respectively) but more aged <11 years than those aged ≥11 years (607 v. 437 respectively). Approximately a fifth of boys and those aged <11 years reported hyperactivity, with emotional problems the most prevalent difficulties among girls and those ≥11 years (16.2 and 19.5%, respectively).

**Impact of paternal deployment to the conflicts in Iraq and Afghanistan**

Paternal deployment to the conflicts in Iraq and Afghanistan was not associated with emotional and behavioural difficulties for children of military fathers (as measured by SDQ) (Table 2). Analyses by child age and gender did not reveal any notable associations (data available from the authors on request).

**Effect of paternal PTSD**

**Table 3** reports the association between paternal PTSD status (having subthreshold or full PTSD based on the CAPS) and the SDQ domains. Unadjusted analyses show that paternal PTSD is associated with childhood hyperactivity (odds ratio (OR) 2.01, 95%
CI 1.20–3.36), prosocial difficulties (OR = 2.24, 95% CI 1.04–4.81) and total difficulties (OR = 1.93, 95% CI 1.06–3.51). Following adjustment for child and father demographics and father’s military factors, only the association with childhood hyperactivity remained statistically significant (OR = 1.86, 95% CI 1.06–3.28).

Supplementary Tables 2 and 3 show the results by age of the child, adjusted for sociodemographic and father’s military factors. Among children <11 years of age, father’s PTSD was associated with hyperactivity, prosocial difficulties and total difficulties. The association with hyperactivity remained following adjustment. For children aged ≥11 years, paternal PTSD was not associated with any SDQ domain.

The analysis was repeated separately for boys and girls (supplementary Tables 4 and 5). For boys, unadjusted analyses revealed associations between paternal PTSD and childhood hyperactivity, conduct problems, prosocial difficulties and total difficulties. There is also a borderline association between paternal PTSD and childhood peer problems. Following adjustment, associations remained statistically significant for childhood hyperactivity. Unlike boys, there were no associations between paternal PTSD and any emotional and behavioural difficulties for girls.

**Effect of paternal avoidance/numbing symptoms**

Statistically significant associations were found between paternal symptoms of avoidance and numbing and childhood prosocial difficulties, this was removed following adjustment (Table 4). Additional associations were seen with peer problems for those <11 years of age and boys and conduct problems among boys (data available from the authors on request).

**Discussion**

**Main findings**

The aim of the study was to examine the emotional and behavioural well-being of children whose fathers were in the UK armed forces during the recent conflicts in Iraq and Afghanistan, particularly the effects of deployment to these conflicts and paternal PTSD. This large representative study of the children of military fathers, using validated measures has shown that the majority of children with fathers in the UK armed forces do not report adverse emotional or behavioural difficulties. None of the childhood outcomes examined were associated with paternal deployment to the conflicts in Iraq or Afghanistan. On the other hand, childhood hyperactivity was associated with paternal PTSD, and this association was most notable among boys and those children under 11 years of age. No associations were observed between childhood difficulties and paternal PTSD.
among girls or those children aged 11 or older. Analyses were repeated focusing on paternal symptoms of avoidance and numbing; these paternal symptoms were associated with childhood prosocial difficulties.

Comparisons with the literature – paternal deployment to the conflicts in Iraq and Afghanistan

Prior to this study, there had been indications from US studies that paternal deployment had a negative impact on children. US studies

| Table 1 | Characteristics of children of fathers who are or have been in the UK armed forces in the study (n = 1044)a |
|---------------------------------|-------------------------------------------------|-------------------------------------------------|-----------------|-----------------|
| SDQ ‘caseness’                  | Overall (n = 524) Boys (n = 520) Girls (n = 520) <11 years (n = 607) 11+ years (n = 437) |
|---------------------------------|-------------------------------------------------|-------------------------------------------------|-----------------|-----------------|
| Hyperactivity                   | Non-case 788 (76.8) 369 (71.5) 419 (82.2) 436 (72.4) 352 (83.4) Borderline case 65 (6.6) 34 (7.0) 31 (6.2) 42 (7.2) 23 (5.7) Full case 166 (16.6) 109 (21.6) 57 (11.5) 120 (20.3) 46 (10.9) |
| Emotional problems              | Non-case 778 (76.3) 369 (77.2) 382 (75.5) 479 (79.9) 299 (71.0) Borderline case 85 (8.4) 43 (8.9) 42 (8.3) 45 (7.8) 40 (9.5) Full case 156 (15.2) 73 (14.2) 83 (16.2) 74 (12.3) 82 (19.5) |
| Conduct problems                | Non-case 753 (73.2) 365 (70.3) 388 (76.0) 424 (70.1) 329 (77.6) Borderline case 119 (11.9) 60 (12.0) 59 (11.8) 82 (13.9) 37 (9.0) Full case 147 (14.9) 87 (17.6) 60 (12.2) 92 (16.0) 55 (13.4) |
| Peer problems                   | Non-case 780 (76.4) 384 (74.8) 396 (78.1) 475 (79.1) 305 (72.4) Borderline case 95 (9.1) 46 (8.8) 49 (9.5) 57 (9.4) 38 (8.8) Full case 144 (14.5) 82 (16.4) 122 (25.5) 66 (11.5) 78 (18.9) |
| Total difficulties              | Non-case 793 (77.5) 384 (74.5) 409 (80.5) 464 (77.1) 329 (78.0) Borderline case 92 (9.2) 46 (9.3) 46 (9.1) 57 (9.8) 35 (8.3) Full case 134 (13.3) 82 (16.2) 52 (10.4) 77 (13.1) 57 (13.7) |
| SDQ, Strengths and Difficulties Questionnaire.a Unweighted numbers and weighted percentages are reported. |

| Table 2 | Associations between paternal deployment status and childhood social and emotional problems (as measured by the Strengths and Difficulties Questionnaire (SDQ)) for children whose fathers who are or have been in the UK Armed Forcesa |
|---------------------------------|-------------------------------------------------|-------------------------------------------------|-----------------|-----------------|
| SDQ domains                     | Non-deployed Deployed to Iraq or Afghanistan Non-deployed Deployed to Iraq or Afghanistan |
|---------------------------------|-------------------------------------------------|-------------------------------------------------|-----------------|-----------------|
| Hyperactivity                   | Non-case 460 (77.4) 328 (76.1) 1.0 1.0 Borderline case 36 (6.2) 29 (7.2) 1.0 1.18 (0.69–1.99) 0.545 Full case 95 (16.4) 71 (16.8) 1.0 1.04 (0.72–1.50) 0.829 |
| Emotional symptoms              | Non-case 450 (76.5) 326 (76.2) 1.0 1.0 Borderline case 50 (8.8) 35 (8.0) 1.0 0.92 (0.58–1.47) 0.735 Full case 89 (14.8) 67 (15.8) 1.0 1.07 (0.73–1.58) 0.718 |
| Conduct problems                | Non-case 441 (73.9) 312 (72.1) 1.0 1.0 Borderline case 66 (11.4) 53 (12.5) 1.0 1.12 (0.76–1.66) 0.560 Full case 84 (14.7) 63 (15.3) 1.0 1.07 (0.72–1.63) 0.739 |
| Peer problems                   | Non-case 454 (76.8) 326 (75.9) 1.0 1.0 Borderline case 50 (9.0) 41 (9.3) 1.0 1.05 (0.68–1.63) 0.825 Full case 83 (14.3) 61 (14.7) 1.0 1.05 (0.71–1.55) 0.822 |
| Prosocial difficulties          | Non-case 517 (87.5) 369 (85.7) 1.0 1.0 Borderline case 38 (6.5) 28 (6.7) 1.0 1.06 (0.63–1.80) 0.818 Full case 36 (6.0) 31 (7.3) 1.0 1.28 (0.74–2.23) 0.377 |
| Total difficulties              | Non-case 460 (77.6) 333 (77.3) 1.0 1.0 Borderline case 50 (8.8) 41 (9.8) 1.0 1.12 (0.71–1.76) 0.635 Full case 80 (13.6) 54 (12.9) 1.0 0.95 (0.63–1.44) 0.812 |
| SDQ, Strengths and Difficulties Questionnaire.a Unweighted numbers and weighted percentages are reported. a. multinomial odds ratios and 95% confidence interval are reported. |
have reported children of a deployed parent showing more emotional difficulties (as measured by the SDQ) compared with national (USA) samples and longer deployment was associated with higher levels of emotional difficulties. Parental deployment predicted school-, family- and peer-related difficulties in girls (who had particular problems during post-operation reintegration) and older youths. Among children of US returnees from deployment to Afghanistan or Iraq, parental distress and cumulative duration of deployment predicted depression and externalising symptoms. Compared with samples that have been deployed, and the parents were all recently returned from deployment; collecting data from parents during the deployment cycle may give rise to different findings. Our analyses (and many of those previously conducted) have focused on separation because of deployment. We are aware that families will experience other forms of separation, for example, as a result of training exercises. Deployment to a conflict zone is potentially a stressful time for families and why it has been the focus of this, and other, work.

Comparisons with the literature – paternal PTSD

Previous studies that have investigated the role of paternal PTSD on childhood well-being have yielded inconclusive and mixed results, with common methodological issues being non-triangulated data or data being obtained from adult offspring. The few studies that have been conducted in the military context have shown paternal PTSD being associated with childhood low self-esteem, poorer family functioning and cohesion, poorer attitudes towards school, negative attitudes towards the father and increased emotional, behavioural and psychiatric disturbances.

There is understandable concern about the combined stressors of military life and parental mental ill health upon families and child development; in a previous study 75% of veterans referred for mental health treatment reported family readjustment difficulties, 58% reported intimate partner conflicts including ‘shouting, pushing or shoving’ and 28% acknowledged that their partner was afraid of them. In this current study, paternal PTSD was associated with childhood hyperactivity, and this association was more apparent in boys and younger children, whereas parental symptoms of avoidance and numbing were associated with childhood prosocial difficulties.
Table 4  Associations between paternal symptoms of numbing and avoidance and childhood social and emotional problems (as measured by the Strengths and Difficulties Questionnaire (SDQ)) for children whose fathers who are or have been in the UK Armed Forcesa

<table>
<thead>
<tr>
<th>SDQ domains</th>
<th>No avoidance and numbing symptoms</th>
<th>Symptoms of avoidance and numbing</th>
<th>No avoidance and numbing symptoms</th>
<th>Symptoms of avoidance and numbing</th>
<th>Adjusted OR (95% CI)</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>P</td>
<td>OR (95% CI)</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>No avoidance and numbing symptoms</td>
<td>Symptoms of avoidance and numbing</td>
<td>No avoidance and numbing symptoms</td>
<td>Symptoms of avoidance and numbing</td>
<td>P</td>
<td>OR (95% CI)</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-case</td>
<td>714 (77.5)</td>
<td>74 (71.5)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Borderline case</td>
<td>58 (6.6)</td>
<td>7 (7.0)</td>
<td>1.0</td>
<td>1.16 (0.51–2.64)</td>
<td>0.722</td>
<td>1.0</td>
</tr>
<tr>
<td>Full case</td>
<td>144 (16.0)</td>
<td>22 (21.5)</td>
<td>1.0</td>
<td>1.46 (0.87–2.46)</td>
<td>0.155</td>
<td>1.0</td>
</tr>
<tr>
<td>Emotional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-case</td>
<td>702 (76.7)</td>
<td>76 (73.8)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Borderline case</td>
<td>75 (8.3)</td>
<td>10 (9.5)</td>
<td>1.0</td>
<td>1.18 (0.56–2.49)</td>
<td>0.655</td>
<td>1.0</td>
</tr>
<tr>
<td>Full case</td>
<td>139 (15.0)</td>
<td>17 (16.7)</td>
<td>1.0</td>
<td>1.16 (0.63–2.11)</td>
<td>0.635</td>
<td>1.0</td>
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<tr>
<td>Conduct problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-case</td>
<td>681 (73.6)</td>
<td>72 (69.2)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Borderline case</td>
<td>110 (12.3)</td>
<td>9 (8.4)</td>
<td>1.0</td>
<td>0.73 (0.35–1.49)</td>
<td>0.384</td>
<td>1.0</td>
</tr>
<tr>
<td>Full case</td>
<td>125 (14.1)</td>
<td>22 (22.4)</td>
<td>1.0</td>
<td>1.69 (0.94–3.04)</td>
<td>0.080</td>
<td>1.0</td>
</tr>
<tr>
<td>Peer problems</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Non-case</td>
<td>708 (77.2)</td>
<td>72 (69.4)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Borderline case</td>
<td>83 (8.9)</td>
<td>12 (11.4)</td>
<td>1.0</td>
<td>1.43 (0.75–2.75)</td>
<td>0.279</td>
<td>1.0</td>
</tr>
<tr>
<td>Full case</td>
<td>125 (13.9)</td>
<td>19 (19.2)</td>
<td>1.0</td>
<td>1.54 (0.85–2.79)</td>
<td>0.152</td>
<td>1.0</td>
</tr>
<tr>
<td>Prosocial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficulties</td>
<td>Non-case</td>
<td>805 (87.7)</td>
<td>81 (78.8)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Borderline case</td>
<td>56 (6.3)</td>
<td>10 (9.3)</td>
<td>1.0</td>
<td>1.65 (0.82–3.32)</td>
<td>0.156</td>
<td>1.0</td>
</tr>
<tr>
<td>Full case</td>
<td>55 (6.0)</td>
<td>12 (12.0)</td>
<td>1.0</td>
<td>2.20 (1.07–4.51)</td>
<td>0.031</td>
<td>1.0</td>
</tr>
<tr>
<td>Total difficulties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-case</td>
<td>721 (78.4)</td>
<td>72 (69.5)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Borderline case</td>
<td>80 (8.9)</td>
<td>12 (11.0)</td>
<td>1.0</td>
<td>1.51 (0.75–2.92)</td>
<td>0.248</td>
<td>1.0</td>
</tr>
<tr>
<td>Full case</td>
<td>115 (12.7)</td>
<td>19 (18.7)</td>
<td>1.0</td>
<td>1.66 (0.93–2.98)</td>
<td>0.088</td>
<td>1.0</td>
</tr>
</tbody>
</table>

a. Unweighted numbers, weighted percentages, multinomial odds ratios, adjusted multinomial odds ratios and 95% confidence interval are reported. Adjusted multinomial odds ratios adjusted for child’s age, gender, father’s age, father’s relationship status, deployment status, engagement type, rank and service.
There is already some evidence from the literature that the numbing and avoidance symptoms of PTSD are the primary reason that PTSD leads to family dysfunction, possibly as the emotional inaccessibility that this creates acts as a barrier to communication within the family.26,30 Numbing also diminishes a fathers ability to seek out, engage in and enjoy interactions with his children, leading to a poorer father–child relationship.31 These factors may explain the association found in this study between paternal avoidance/numbing symptoms and child prosocial difficulties.

The social domain of the SDQ refers to the ability of the child to be sensitive, reciprocal and friendly during their interactions with peers and family. Children with fathers who have PTSD are likely to miss out on positive role modelling and at the same time are exposed to negative role modelling. With a father who may be experiencing numbing and withdrawal, it is likely that children may miss out on crucial opportunities to model appropriate social behaviour2,3,3 – and this is especially important for male children who may seek to emulate the behaviour of their fathers.

The influence of children’s gender and age

We report an association of paternal PTSD with emotional and behavioural problems in boys alone. There may be several explanations for this. It may be that boys are more susceptible to the influence of paternal psychopathology than girls, fathers may engage differentially with boys34 and boys may be more susceptible overall to a lack of engagement from fathers.35 Literature on paternal depression suggests an association with behavioural problems in boys, but not girls in the younger age group.36,37

Comparisons with the general population

Children of military fathers were more likely to demonstrate a higher frequency of emotional and behavioural problems than children in the general UK population.38 These differences were statistically significant for emotional problems (15.2 v. 11.4%), conduct problems (14.9 v. 12.7%), peer problems (14.5 v. 11.7%), prosocial difficulties (6.7 v. 2.3%) and total difficulties (13.3 v. 9.8%). Although statistically significant, the differences observed are relatively small with the exception of the least frequent outcome, prosocial difficulties. It should be noted that, being part of a military family, is likely to have a number of positive impacts39 (at least one parent in stable employment) and certain facets of military family life may act as protective factors for children.

Strengths and limitations

The cohort from which this study sample is drawn is representative of the deployable UK military population and we intentionally sampled servicemen with PTSD symptoms as UK rates of PTSD among service personnel are relatively low at around 4%.1,1,2 The sample of those who did not score highly for PTSD was representative of the total cohort.32 Based on data from the UK Ministry of Defence, approximately a third of male regular service personnel have children, with those children similarly distributed by service as studied here.40

Previous work has identified some differences in soldier-perceived and spouse-perceived ratings of children’s behaviour and well-being.41 The strengths of this study involved the use of a validated and internationally used measure of child well-being and the ability to triangulate the ratings of children’s well-being by use of both maternal and paternal reports; some studies have focused on single parental reports regarding their children’s behavioural and relational difficulties. Triangulation is recognised as important in differentiating between objectively recognised difficulties, and behaviours perceived as concerning or challenging by a parent with their own psychological difficulties.31,41,42 Although we primarily used maternal reports of the child’s emotional and behavioural well-being, our data showed similar reporting patterns among mothers and fathers. Use of maternal reports in this way also enabled us to minimise single-reporter bias, which is a problem in much of the literature on effects of parental mental health problems on children.

The SDQ was chosen to explore childhood difficulties as it has been widely used in both national and international studies, clinically and in population studies. Parental completed questionnaires tend to underestimate emotional problems. However, the questionnaire measures used are well-validated and used widely in clinical practice and research. The use of structured clinical assessments would be advantageous in future studies; however, it was not logistically possible to clinically assess 1044 children.

The primary aim of this study was to examine the impact of paternal PTSD on child well-being within military families, something that has not been previously examined in a UK context. Although we did collect data on maternal mental health from a subset of our families, we were dependent on the father providing us with the contact details of the mother (or mothers) of their children. Permission to contact the mothers was not always provided by the fathers, and analyses determined that paternal mental health status influenced the provision of these details (data available from the authors on request). Hence, it would be inappropriate to adjust for maternal mental health on this subset of children. Further, there is a known interplay between paternal and maternal mental health, meaning that when looking at paternal mental health on child well-being, maternal health is not a true confounder.

The mental health of military mothers and interplay with their children’s psychological well-being is an important topic not explored in this study, owing to the small number of military mothers in the cohort. In the UK context, women are rarely deployed in front-line roles. There is little published evidence on the impact of having a mother in the military on the well-being of children. Now that women are starting to be deployed on the front line, quantitative research on the impact upon children will be both feasible and important.

Future directions

Evidence supports the role for preventive intervention in reducing the incidence of psychological disorder in the children of parents with mental health difficulties in the general population.44 Further, there is encouraging emergent work on interventions to improve parenting in military families where there is PTSD, for example, the Families OverComing Under Stress (FOCUS) programme45,46 and the use of acceptance and commitment therapy combined with parenting psychoeducation, which has shown benefit on positive parenting behaviour, parenting satisfaction and psychological flexibility.47

In conclusion, this large representative study showed that, in general, paternal deployment to the conflicts in Iraq and Afghanistan was not associated with any adverse childhood outcomes. However, this study did find that paternal PTSD was associated with hyperactivity among children overall and specifically among younger children and boys. These results highlight the importance of ensuring appropriate evidence-based interventions for military families.
References

1 Diele H, Brooks SK, Greenberg N. Veterans are not the only ones suffering from posttraumatic stress symptoms: what do we know about dependent’s secondary traumatic stress? Soc Psychiatry Psychiatr Epidemiol 2017; 52: 35–44.


