

Parental reports of serious illness and disability among children aged 3-16 years from UK military families

Charandeep K Khera¹, Sharon AM Stevelink¹, Nicola T Fear^{1,2}

¹King's Centre for Military Health Research, King's College London, Weston Education Centre, London, SE5 9RJ, UK.

²Academic Department of Military Mental Health, King's College London, Weston Education Centre, London, SE5 9RJ, UK.

Corresponding author: Dr Sharon Stevelink, King's Centre for Military Health Research, King's College London, Weston Education Centre, London, SE5 9RJ, UK. Tel: 020 7848 5351. Email: Sharon.stevelink@kcl.ac.uk

Keywords: community child health, disability, illness, military, parent report.

Word count: 2,224

ABSTRACT

Background: Prevalence rates of child illness according to parents have been found to vary greatly in the general population, with even less known about children of military parents. Mothers are generally considered more informed about their children's problems than fathers. This paper aimed to establish the prevalence of serious illness and disability among children from military families, noting the difference between parental reports.

Methods: Male serving and ex-serving personnel with children aged 3-16 years were invited to take part in an online questionnaire and telephone interview based on their child's health. The mothers of their children were invited via post if the father gave permission to make contact. Data was analysed using descriptive statistics and Cohen's kappa.

Results: 378 fathers and 383 mothers provided information for 610 children. The vast majority of parents did not perceive their child to have a serious illness or disability, fathers reported problems in 7.7% of their children (respiratory conditions most common), while mothers reported problems in 6.2% (physical health problems rated most prevalent). A moderate agreement was found between parent's reports Kappa = .51 ($p < .001$).

Conclusions/implications: The prevalence of serious illness and disabilities is low among military children according to parent reports. Fathers were more likely to disclose a problem in their child, and these differences were visible in the type of problem reported also. This disparity suggests mothers' and fathers' views should both be considered when making decisions that involve the child's care, in addition to clinical diagnoses.

INTRODUCTION

Parental reports of a child's illness are a valuable area of investigation as mothers and fathers have a unique relationship with their children¹. Literature examining this perspective into child illness is lacking, with focus often placed on clinician report. Among the general population, rates of serious illness and disability have been found to vary by condition, for example, from 1.5% (for autism) to 39% (for allergies)^{2,3}. A UK survey of approximately 8,000 children aged 5-16 years found 10% of these children to have a clinically diagnosable mental disorder, according to a clinician rated assessment⁴. Concerns have arisen with clinical diagnoses in research as frequent methodological issues have been found, such as the varying criteria used to diagnose disorders⁵. This highlights the need to investigate the feasibility of alternative sources of information such as identifying illness rates according to the children's parents. Previous research has noted a disparity between mothers' and fathers' accounts, Waters, et al.⁶ found a strong association among mothers' reports of their own poor global health and their reports of their children's poor health that were not seen among fathers. Mothers are generally considered to be better informed and more involved in their child's care, supported by evidence suggesting single father families display poorer access to health care than other family structures⁷. Furthermore, fathers have been noted to report fewer and less frequent occurrences of behavioural problems in their children⁸. There is a paucity of research done with regards to child illness and disability among children of military parents and information is lacking into the prevalence rates and kinds of illness present in this population. They face differing stressors to their civilian counterparts due to the nature of the military role, for example the threat of redeployment every 2-3 years which disrupts schooling and social networks as well as an absent parent or parents with the threat of injury and/or death. This article aims to determine the prevalence and types of serious illness and disability among UK military children aged 3-16 years via parental reports. Given the lack information about illness rates in this population, a vital insight into awareness of issues among parents can be provided. It is expected that mothers will be more likely to report a problem in their child than fathers, supporting previous general population findings^{7,8}.

METHODS

A sample of 1030 serving and ex-serving males was obtained from the second phase of the King's Centre for Military Health Research's tri-service cohort study which examined the health and wellbeing of UK Service personnel (N=9990)⁹. This group of males consented to follow up and were identified as Service personnel with children aged 3-16 years. Between July 2010 and July 2012, eligible individuals were sent an information pack which included an invitation to complete an online questionnaire and telephone interview. A consent form was included for participants to complete and return, also asking for permission to contact the mother or mothers of their children; who were then sent a postal invitation pack and asked to complete an online questionnaire. 511 fathers gave consent, which resulted in 522 mothers being asked to participate, as some men fathered children by multiple women (Figure 1). The online questionnaire focussed on information about the child's health, in addition to questions on the father's involvement with the child. Furthermore, data were collected on the parent's mental health and alcohol use. The telephone interview was only administered to the military fathers, to collect further details on PTSD status and alcohol misuse. Only data from the online questionnaire have been included in the present study.

Parents were asked to provide demographic details for their children, as well as information about their children's health and wellbeing. The question of interest for this article being: 'Does this child have a history of serious illness or a disability?' If applicable, parents were requested to provide further details of this serious illness or disability. These responses were coded by type (or types) of problem by the research team. When multiple problems were reported, these were coded separately.

Only children who had data provided by both parents were included. An interrater reliability analysis using the Kappa statistic was performed to determine agreement between mothers and fathers. All analyses were conducted using STATA (Version 11).

Ethical approval was sought and received from the US Department of Defense's research ethics committee, the UK Ministry of Defence's research ethics committee and King's College Hospital local research ethics committee.

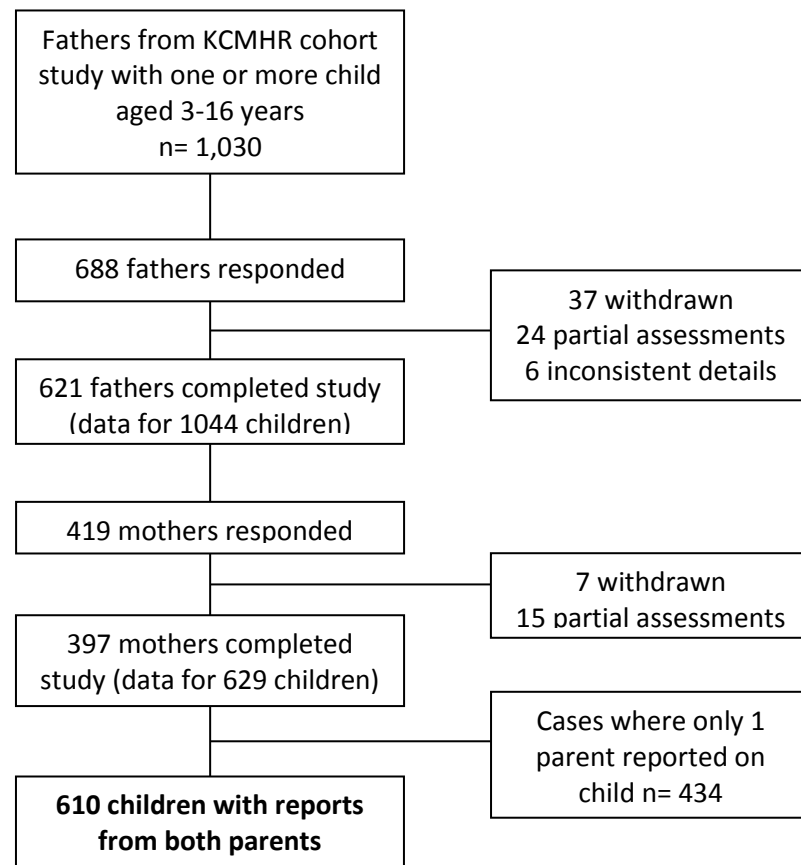


Figure 1. Participant selection

RESULTS

Of the serving and ex-serving males that were invited to participate, there were 621 (66.7%) respondents, 397 (77.1%) mothers took part. Cases where mothers and fathers both responded to the question relating to presence of a difficulty in their child resulted in a sample of 610 children, which came from 383 mothers and 378 fathers. The majority of fathers were married and still serving in the military (Table 1). Just over half of the children were male ($n=318$, 52.1%). Most children were under 11 years old ($n=362$, 59.3%). The vast majority of parents did not perceive their child to have a history of serious illness or disability. Fathers reported a problem in 47 (7.7%) children overall, while mothers reported the presence of a serious illness or disability in 38 (6.2%) (data not shown). The variation in parent's responses can be seen in Table 2. The interrater reliability was found to be $Kappa = .51$ (95% CI, .43 to .59) ($p < .001$), indicating a moderate level of agreement in parents reports. Parents suggested the same type of serious illness or difficulty in all 23 cases where mothers and fathers both reported the presence of a difficulty in their child (data not shown). Individual cases were examined; the most common problem reported by fathers, when mothers did

not report an illness in the child, were respiratory conditions (n=9). In the case of mothers, where fathers did not disclose an illness, the most prevalent were equally sensory impairments and learning disabilities (n=4). Details of the types of serious illnesses and disabilities parents reported can be seen in Table 3. The majority reported 1 diagnosis, some parents disclosed multiple while others disclosed none, with the maximum recorded as 5.

Table 1. Father demographics (n=378)

Characteristic		
Demographic factors	Number	%
<i>Average age (years), (range)</i>	40 (25-62)	
<i>Relationship status</i>		
- Single	7	1.9
- Married	328	86.8
- In a relationship	43	11.3
<i>Military factors</i>		
<i>Serving status</i>		
- Serving	237	62.7
- Ex-service	141	37.3
<i>Engagement type</i>		
- Regular	327	86.5
- Reserve	51	13.5
<i>Service</i>		
- Royal Navy	46	12.2
- Royal Marines	21	5.6
- Army	337	62.7
- RAF	74	19.6
<i>Rank</i>		
- Officer	99	26.2
- Non-Commissioned Officer	236	62.4
- Other rank	43	11.4
<i>Family factors</i>		
<i>Number of mothers per father</i>		
- 1	360	95.2
- 2	18	4.8
<i>Number of children</i>		
- 1	167	44.2
- 2	162	42.9
- 3	43	11.4
- 4+	6	1.6

Table 2. Distribution of parental reports of children's serious illness/ disability

		Mother		Total
		Yes, n (%)	No, n (%)	
Father	Yes, n (%)	23 (60.5)	24 (4.2)	47
	No, n (%)	15 (39.5)	548 (95.8)	563
Total		38	572	610

Table 3. Types of serious illness or disability reported by parents who disclosed that their child had a problem

	Father (<i>n</i> =42)	Mother (<i>n</i> =37)
Allergies, <i>n</i> (%)	5 (11.9)	4 (10.8)
Behavioural difficulties, <i>n</i> (%)	2 (4.8)	1 (2.7)
Birth defects/ genetic conditions, <i>n</i> (%)	7 (16.7)	4 (10.8)
Developmental disorders of communication, <i>n</i> (%)	6 (14.3)	7 (18.9)
Learning disability, <i>n</i> (%)	3 (7.1)	5 (13.5)
Physical health, <i>n</i> (%)	8 (19.0)	8 (21.6)
Respiratory conditions, <i>n</i> (%)	14 (33.3)	6 (16.2)
Sensory impairment, <i>n</i> (%)	3 (7.1)	6 (16.2)
Miscellaneous, <i>n</i> (%)	1 (2.4)	2 (5.4)

Note – mothers (*n*=1) and fathers (*n*=5) with missing response for type of serious illness or disability are not included.

DISCUSSION

Children of military fathers have low levels of serious illness or disability with a rate of approximately 1 in 20, based on parental reports. Despite mothers and fathers recording similar overall prevalence rates, the types of illness disclosed varied with fathers suggesting respiratory conditions as most common while mothers placed general physical health concerns as most frequent. A moderate agreement was found between parent's reports, indicating an extent of discrepancy between mothers' and fathers' awareness of a child's health concerns. Fathers were more likely to disclose a problem than mothers, which goes against previous research and opposes the hypothesis suggesting mothers would be more likely to report a problem in their child. Despite parental differences, when mothers and fathers both reported the presence of a difficulty for the same child, the type of illness or disability was the same in all cases.

There is difficulty in comparing prevalence rates in this sample to the general population as rates of serious illness and disability vary by condition, although the 6.2% and 7.7% reported by mothers and fathers does fit with the general population range of 1.5% to 39% previously reported ²⁻⁴.

Determining accurate rates of illness among children are problematic due to the criteria used to diagnose disorders, such as varying classifications of caseness in previous studies ⁵, as well as the methodology for population selection. In general, the health of military personnel is comparable to the general population, with the exception of alcohol misuse ¹⁰, therefore, there may be expectation for military children to have similar rates of a serious illness or disability. Although evidence suggests military children's health is worse at certain times, such as during parent deployment¹¹.

The difference between mothers and fathers reports is of interest. Fathers reported the presence of slightly more problems than mothers, which is contradictory to many commonly held beliefs and general population reports that mothers have more awareness of their child's difficulties ⁷. It is particularly surprising in this population as the military parent in this sample is the father, thus they are more likely to be away due to deployments, training or other work demands. It could be expected this absence would make them less aware of the child's concerns. These findings propose involvement in the military may not lead to a decreased awareness of a child's difficulties. Although not all roles in the military involve being away for long periods of time.

The lack of clinical health data is a limiting factor in the present study. All information is based on parent reports which leave room for misclassification, supported by a previous study of more than 1,000 children (aged 9-13 years) who met diagnostic criteria for a mental health condition; it was

found only 39% of their parents reported the child had a problem¹². There is also the possibility of parental reporting bias. Waters, et al.⁶ found that children's symptoms were correlated with their mothers' symptoms, so mothers who were more distressed themselves were more likely to report problems with their child. Thus the parent reports in this study may be more indicative of their own problems than the child's. Furthermore, there is the concern that fathers may be over reporting problems to compensate for their lack of clear details of their child's health concerns. Although there are advantages to parental reports, the unique relationship mothers and fathers have with their children can facilitate parents to notice symptoms and communication abnormalities a clinician may not¹, highlighting the importance of using both clinician and parent input as parental reports are often lacking in clinical studies.

In conclusion, the levels of parental reports of serious illness or disability in children of military fathers are low, and similar to general population rates. A moderate agreement was found in mothers' and fathers' reports of the presence of health concerns in their child or children, although differences are noticeable in the types of illness reported overall. This disparity suggests parents may not have equal levels of awareness and understanding of their child's illness, indicating both parents should be involved in all care decisions. Depending on which parent accompanies them to an appointment, different concerns may, or may not, be reported. These findings demonstrate the need for further investigation into which illnesses mothers and fathers are more or less likely than the other to notice, if any, and how these compare with clinical diagnoses. Nevertheless, considering there has been limited information into the occurrence of serious illness or disability in children of serving and ex-serving UK military personnel to date, this provides a valuable insight into the levels of difficulties present.

CONTRIBUTORS

All authors conceived plans for data analysis. CK conducted data analysis and drafted the manuscript; SS and NTF reviewed and provided feedback. All authors read and approved the final manuscript.

FUNDING

The study was funded by the United States Department of Defense.

COMPETING INTERESTS

CK, SS and NTF are employed by King's College London, which receives funding from the UK MoD. This did not impact upon completion of the present manuscript.

1. Lemler M. Discrepancy Between Parent Report and Clinician Observation of Symptoms in Children With Autism Spectrum Disorders. *Discussions* 2012; 8(2).
<http://www.studentpulse.com/a?id=803>.
2. Baron-Cohen S, Scott FJ, Allison C, et al. Prevalence of autism-spectrum conditions: UK school-based population study. *British Journal of Psychiatry* 2009;**194**(6):500-09.
3. Gupta R, Sheikh A, Strachan DP, et al. Burden of allergic disease in the UK: secondary analyses of national databases. *Clinical and Experimental Allergy* 2004;**34**(4):520-26.
4. Green H, McGinnity Á, Meltzer H, et al. Mental health of children and young people in Great Britain, 2004: London: Palgrave Macmillan., 2004.
5. Brauner CB, Stephens CB. Estimating the prevalence of early childhood serious emotional/behavioral disorders: Challenges and recommendations. *Public Health Reports* 2006;**121**(3):303-10.

6. Waters E, Doyle J, Wolfe R, et al. Influence of parental gender and self-reported health and illness on parent-reported child health. *Pediatrics* 2000;**106**(6):1422-28.
7. Leininger LJ, Zioli-Guest KM. Reexamining the effects of family structure on children's access to care: The single-father family. *Health Services Research* 2008;**43**(1):117-33.
8. Koniak-Griffin D, Verzemnieks I. The relationship between parental ratings of child behaviors, interaction, and the home environment. *Maternal-child nursing journal* 1995;**23**(2):44-56.
9. Fear NT, Jones M, Murphy D, 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* (London, England) 2010;**375**(9728):1783-97.
10. Hotopf M, Hull L, Fear N, et al. The health of UK military personnel who deployed to the 2003 Iraq war: a cohort study. *Lancet* (London, England) 2006;**367**(9524):1731-41.
11. Gorman GH, Eide M, Hise-Gorman E. Wartime Military Deployment and Increased Pediatric Mental and Behavioral Health Complaints. *Pediatrics* 2010;**126**(6):1058-66.
12. Teagle SE. Parental problem recognition and child mental health service use. *Mental health services research* 2002;**4**(4):257-66.