

Gulf war illness—better, worse, or just the same? A cohort study

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Abstract

Objectives Firstly, to describe changes in the health of Gulf war veterans studied in a previous occupational cohort study and to compare outcome with comparable non-deployed military personnel. Secondly, to determine whether differences in prevalence between Gulf veterans and controls at follow up can be explained by greater persistence or greater incidence of disorders.

Design Occupational cohort study in the form of a postal survey.

Participants Military personnel who served in the 1991 Persian Gulf war; personnel who served on peacekeeping duties to Bosnia; military personnel who were deployed elsewhere ("Era" controls). All participants had responded to a previous survey.

Setting United Kingdom.

Main outcome measures Self reported fatigue measured on the Chalder fatigue scale; psychological distress measured on the general health questionnaire, physical functioning and health perception on the SF-36; and a count of physical symptoms.

Results Gulf war veterans experienced a modest reduction in prevalence of fatigue (48.8% at stage 1, 43.4% at stage 2) and psychological distress (40.0% stage 1, 37.1% stage 2) but a slight worsening of physical functioning on the SF-36 (90.3 stage 1, 88.7 stage 2). Compared with the other cohorts Gulf veterans continued to experience poorer health on all outcomes, although physical functioning also declined in Bosnia veterans. Era controls showed both lower incidence of fatigue than Gulf veterans, and both comparison groups showed less persistence of fatigue compared with Gulf veterans.

Conclusions Gulf war veterans remain a group with many symptoms of ill health. The excess of illness at follow up is explained by both higher incidence and greater persistence of symptoms.

Introduction

Consensus exists that service in the 1991 Persian Gulf war resulted in increased symptomatic ill health among those deployed.¹⁻⁸ We know of no studies on the prognosis of symptoms among Gulf war veterans. In 1997 we studied a large random sample of members of the armed forces who served in the 1991 Gulf war,¹ including those who had left the services. We compared the "Gulf cohort" with two military control cohorts. This study assesses the outcomes of these cohorts four years later. Our two main aims were, firstly, to compare the prevalence of various health outcomes over time and between cohorts, and, secondly, to determine rates of incidence and remission for clinically important fatigue and psychological distress after adjusting for potential confounders.

Method

Participants

Our original study consisted of three groups: personnel who served in the Persian Gulf war between 1 September 1990 and 30 June 1991 (the Gulf cohort); personnel who served on UN peacekeeping duties in Bosnia between 1 April 1992 and 6 February 1997 (the Bosnia cohort); and personnel who were serving in the armed forces on 1 January 1991 but who were not deployed to the Gulf (the "Era" cohort).¹ We took a random sample of all Gulf veterans, with oversampling of women. Sampling of the other two cohorts was frequency matched in terms of sex, age, reservist status, officer status, service (Royal Navy, Army, or Royal Air Force), and a measure of fitness.

Of 8196 participants who responded to the first survey 503 refused permission for future contact and 449 failed to complete the relevant section of the questionnaire. We used random stratified sampling to select respondents from stage 1 into the present study. All women were selected. We stratified the sampling on the severity of fatigue at stage 1. The selection process included all male veterans with a fatigue score greater than 8 (511 Gulf, 115 Bosnia, and 120 Era); for Gulf, a 50% sample of veterans with fatigue scores of 4-8 (484 veterans), along with all those in Bosnia (n = 333) and Era (n = 364) who scored in this range; and an approximately one in eight sample of veterans with fatigue scores less than 4 in order to represent asymptomatic individuals (n = 250 in each group).

Mailing method

We used three mailings. To trace non-responders we used the NHS central registry to obtain health authority ciphers and current addresses. We used the online electoral registry "Cameo" to check addresses. Service pension and discharge sources supplied updated addresses. We sent the second and third mailings via commanding officers, asking for their help in disseminating the questionnaires on our behalf. Following an agreement with the War Pensions Agency, the UK Department of Social Security sent two further mailings. In order to comply with data protection regulation, we were not informed which addresses the Department of Social Security had on their records.

Questionnaire and outcomes

The questionnaire included a fatigue scale⁹; the 12 item general health questionnaire (a screening questionnaire for common mental disorders)¹⁰; the SF-36 instrument for physical health and functional capacity¹¹⁻¹³; and a list of 50 common symptoms. We defined cases of fatigue as having a score on the fatigue scale of greater than 3 and cases of psychological distress as having a score greater than 2 on the general health questionnaire. We defined cases of "stress reaction" from a checklist of symptoms described in previous work.¹

