

# Smoking rates in the staff of a military field hospital before and after wartime deployment

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## SUMMARY

In the past, high rates of cigarette smoking have been reported in the British Armed Forces. We conducted an anonymous questionnaire survey in the 623 employees and attached staff of 34 Field Hospital on their sixth week of deployment to Iraq, in the course of Gulf War II. Information was sought on smoking status before and during the deployment, and self-declared reasons for smoking.

556 questionnaires were returned (response rate 89%). The median age of respondents was 33.3 SD 7.9 years (range 18–62) and 61% were male. Before deployment the number of regular smokers was 160 (29%) but it had now risen by 52 to 212 (38%). Of the extra smokers 33 were restarting an old habit but 19 were first-timers. Moreover, those who were regular smokers before deployment increased their daily consumption from a mean of 15 cigarettes to 21. Smoking rates did not differ between clinical and non-clinical staff or between men and women; the rates were lower in officers than in non-officers, and in reservists than in regular Army personnel. The reasons most commonly cited for starting smoking or increasing consumption were boredom, social factors and stress. Few respondents could recall having received smoking-related health education during previous service with the military.

Smoking rates in this medical unit increased substantially during the overseas deployment. There were no data on cigarette consumption after return to ordinary duties, so we cannot say whether these effects are short-term or long-term. However, even the pre-existing rate of 42% in regular army personnel is high enough to demand urgent action by an employer.

## INTRODUCTION

In the British Armed Forces, cigarette smoking has not shown the decline seen in the civilian population and is reflected by excess rates of coronary heart disease.<sup>1–3</sup> For the same reason we can expect military personnel to be at excess risk of other tobacco-related conditions including stroke, peripheral vascular disease and lung cancer.<sup>4</sup> There are also immediate consequences: in military recruits smoking reduces physical fitness and increases exercise-related physical injury.<sup>5–7</sup> The adverse effects extend to passive smoking.<sup>8</sup>

In December 1998, the UK Government set targets for smoking in adults.<sup>9</sup> The white paper's aim is to reduce adult smoking in all social classes from the 1998 overall rate of 28% to 24% or less by 2010 (26% by 2005). In response, a multiprofessional working group developed targeted

evidence-based clinical guidelines for smoking cessation within the British military and these were disseminated widely in July 2001.<sup>10</sup> With the establishment of a field hospital in the Second Gulf War we had an opportunity not only to determine smoking rates in medical and support workers but also to assess the effect of wartime conditions on the tobacco habit.

## METHODS

In April 2003, in the sixth week of deployment to Iraq of 34 Field Hospital, we administered an anonymous non-compulsory 12-item questionnaire (Box 1) to all staff on the hospital's personnel roll. We had obtained approval for the study from an *ad hoc* local ethics committee comprising the hospital's commanding officer, the Armed Forces Professor of Military Medicine and the hospital's clinical director and lead clinician.

Clinical staff were defined as persons with medical qualifications, including medical assistants, doctors, nurses and professions supplementary to medicine. A regular

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## Box 1 Questionnaire

Age
Sex (M/F)
Rank
Reservist or regular
Occupation within the hospital
Are you a current smoker? (Y/N)
Are you an ex-smoker? (Y/N)
Have you <i>never</i> smoked? (Y/N)
In an average month <i>prior</i> to this deployment, on how many days did you smoke (and how many cigarettes did you smoke per day, on average)?
During <i>this</i> month, on how many days did you smoke (and how many cigarettes did you smoke per day, on average)?
Have you ever received any smoking prevention advice, while in the Armed Forces? (Y/N)
If you are smoking more / have started smoking during this deployment, why is this?

smoker was any person who smoked one or more cigarettes on at least four days during an average month.

Data were analysed by use of GraphPad InStat version 3.00 for Windows 95 (GraphPad Software, San Diego, California, USA). We calculated median and mean values and standard deviation (SD) with 95% confidence intervals (CI) where appropriate. For categorical variables we used a combination of Fisher's exact test and the chi-squared test of significance. Continuous variables were assessed by paired or unpaired *t* tests as appropriate. A two-sided *P* value of <0.05 was taken as significant.

## RESULTS

From a target population of 623 personnel, 556 questionnaires were returned (response rate 89%). Of these, 327 (59%) were from clinical staff and the remainder from supporting staff. The mean age of the respondents was 33.3 SD 7.9 years (range 18–62), and 61% were male. 160 (29%) of the respondents were regular smokers before deployment. At six weeks into the deployment this number had increased by 52 to 212 (38%); and, of these 52, 33 had resumed the habit and 19 were new starters. No smokers had stopped smoking within the period of the deployment. Among the 160 individuals who smoked regularly before the deployment, mean daily cigarette consumption increased from 15 to 21 (95% CI 19.0 to 22.7; *P*<0.0001). 90 said their cigarette consumption had increased, 22 that it had decreased and 48 that there had been no change.

There were no significant differences in smoking rates between clinical and non-clinical staff or between men and women, but the rates were higher in regular Army personnel (135/322 [42%] than in reservists (74/234 [32%]; *P*=0.017) and in non-officers (107/226 [47%] than in officers (45/118 [38%]; *P*=0.048). Current regular smokers were younger (median 31.9 SD 8.5 years, 95% CI 30.8 to 33.0) than non-smokers (median 34.4 SD 8.8 years, 95% CI 33.5 to 35.4, *P*<0.0001).

The reasons given for starting to smoke, or for smoking more, were boredom (54%), the perceived social benefits (24%), stress (13%), the smoking culture in the Army (6%) and the low price of cigarettes locally (3%). Only 159 (29%) respondents could recall having received any form of smoking-related health education during their previous service with the British military.

## DISCUSSION

This study indicates that British military personnel smoke heavily during peacetime, and that smoking rates increase with overseas deployment. Most of the increase was accounted for by ex-smokers returning to the habit, but 9% of the self-declared regular smokers had started smoking for the first time after arriving in the war zone.

The high baseline rate of smoking of this population is of particular concern because it was a medical workforce, which one would expect to show a low or very low rate. It is even more surprising that only a minority of the personnel could recall ever having encountered military-specific smoking-related health education.

Regarding the effects of wartime deployment, our data mirror the findings of a retrospective postal survey of US servicemen conducted after Operation Desert Storm.<sup>11</sup> Forgas *et al.* reported that, during their time in the Persian Gulf, 7% of their naval study population had started smoking for the first time. Their findings differed from ours, however, in that only 29% of pre-existing regular smokers increased their consumption of cigarettes while deployed, compared with our 56%. Also, in explaining why they smoked more, the US servicemen mentioned stress first and then boredom (compared with boredom and social benefits in our group).

Our study has several limitations. First, the findings relate to medical personnel, and a much more important issue is the prevalence of smoking in the Army as a whole. The higher smoking rates in regular Army personnel than in reservists might reflect an Army 'smoking culture', but it might also reflect socioeconomic differences. Secondly, the study depended on accurate individual recall of recent smoking habits and there was no way to validate the responses. Thirdly, our survey was carried out within a rigidly hierarchical organization and at a time of intense

war-fighting, three weeks after the outbreak of hostilities. This unit arrived in Kuwait three weeks before the onset of hostilities and moved into Iraq, at the onset of fighting, to assemble the 200-bed canvassed field hospital. These factors may have introduced information bias into the responses.<sup>12</sup> It is notable that none of our respondents mentioned fear as a reason for starting smoking, or for smoking more. Finally, it is unfortunate that we have been unable to ascertain whether the personnel who started smoking on deployment will quit once they have returned home, or whether those who increase their cigarette consumption will return to the previous level.

Smoking endangers not only the smoker but also the bystander. Unrestricted public smoking limits the personal choice not to inhale tobacco smoke, and brings the risk of future litigation against employers or businesses. Moreover, reduction of opportunities to smoke leads to lower consumption.<sup>13-16</sup> Many employers now benefit from workplace smoking restrictions through reduced sickness absence, increased productivity, lower corporate insurance and reduced cleaning costs. An integrated approach to smoking cessation and prevention may be the best policy.<sup>16-19</sup>

The present study suggests that even a medical workforce in the British Armed Forces has failed to act on scientific knowledge about the adverse effects of smoking. The pre-deployment smoking rate of 42% in regular Army personnel is high enough to demand urgent action. The need for smoking prevention in other sectors may well be greater. An important topic for further research is the time course of tobacco use associated with the physical and psychological stresses of war.

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