

What happens to British veterans when they leave the armed forces?

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Background: Little is known about the factors associated with leaving the armed forces, or what predicts subsequent employment success for veterans. It is likely that there is a complex interaction of adverse social outcomes and mental health status in this group. **Method:** Analysis of existing data from the King's Military Cohort, a large, randomly selected, longitudinal cohort of service personnel, many of whom have now left the armed forces. The sample consisted of 8195 service personnel who served in the armed forces in 1991; a third deployed to the Gulf (1990–91), a third deployed to Bosnia (1992–97) and the final third an 'Era' control group in the Armed Forces in 1991 but not deployed. **Results:** The majority of service leavers do well after leaving and are in full-time employment. Those with poor mental health during service were more likely to leave and had a greater chance of becoming unemployed after leaving. Mental health problems appear to remain static for veterans after leaving. Veterans of the Gulf War enjoyed more favourable employment outcomes, provided that they came home well. **Conclusions:** Only a minority of veterans fare badly after service, even amongst those with active tours of duty behind them. Veterans with mental health problems during service seem to be at higher risk of social exclusion after leaving and therefore these individuals represent an especially vulnerable group of the veteran population.

Keywords: veteran, employment, mental health

Each year in the UK 18 000 men and women leave the armed forces and enter civilian life. They leave for a variety of reasons and in a variety of different circumstances. Some have served lengthy terms of service. Others have not even completed their basic training, and we know little about the fate of either group.

There has been a resurgence of interest recently in what happens to 'veterans'. Media coverage has focused on the minority who fare badly and drift down into social exclusion such as those who become homeless and/or have severe mental health problems.¹ In addition, there is increasing international recognition, both within the military and within civilian society, of 'post-conflict dysfunction'² including (but not limited to) Post Traumatic Stress Disorder (PTSD) in ex-service personnel, particularly amongst those who have served in the post-Cold War years.^{3–5}

We know from the American literature that military service, for most people, has a positive effect on the life trajectory.⁶ Studies of men who served during the Second World War demonstrated that, overall, veteran status afforded these individuals greater educational opportunities, better qualifications, higher employment rates and bigger wage packets.^{7,8} In Germany, although those who fought in the Second World War initially had unfavourable occupational outcomes, these effects diminished rapidly over time as the German economy started to recover.⁹

Vietnam returnees did not fare so well. Most of the US literature suggests that people returning from the Vietnam War

did worse than those who stayed at home in terms of earnings, jobs and educational attainment.^{10–12} This disadvantage was most acute in those with mental health problems.¹³ Leavers who suffered from PTSD often ended up with lower salaries,¹⁴ and more enduring drug and alcohol problems, as well as more chance of ending up in prison.¹⁵

The US literature of returnees from the Gulf War has been no more encouraging, particularly concerning symptomatic individuals exposed to combat.¹⁶ Individuals who experienced combat were more likely to end up unemployed or fired from their job,¹⁷ within the prison system or alcohol dependent.¹⁸ This is despite the fact that combat action during The Gulf War was not comparable in scale, duration or intensity with the other conflicts upon which the main body of literature is based.

In the military population in general (theatre-specific studies aside) those with mental health problems are more likely to leave service prematurely,¹⁹ experience lost work days¹⁶ and also more likely to end up socially excluded (e.g. homeless).^{20,21}

Whilst much has been written about veterans of the US armed forces, very little is known about their UK counterparts. There has never been any systemized follow-up of ex-service personnel in the UK. Whilst there is a substantial body of American literature, it must be interpreted with considerable caution for the UK, not least because of the existence of the Veterans Administration (VA) in the USA providing bespoke specialist services for veterans, which is not the case in the UK.

In this paper, the King's military cohort was used; a large random sample of the armed forces upon whom we have previously published.^{22,23} We have recently published the results of our follow-up of the cohort,²⁴ focusing on the health outcomes associated with serving in the Persian Gulf. The present study has a rather different focus, looking at social

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outcomes, and is interested in UK service-leavers in general, rather than Gulf Veterans in particular. The questions addressed were as follows:

1. What are the characteristics of leavers? What factors are associated with leaving?
2. Are people who leave early (< 4 years service) different from others?
3. What factors are associated with being employed after people leave?
4. What happens to people's symptoms once they leave the services?
5. Does outcome differ for early leavers?

Specific hypotheses to be tested are as follows:

1. Mental health will improve for those who leave the military early.
2. Those who serve longest in the military are more likely to have mental health problems on leaving due to institutionalization.

METHODS

Initial survey (phase 1)

Our analyses were conducted on a subset of the King's UK military cohort who completed the phase 1 Health Survey of Military Personnel ($n = 8195$) in 1997.²² The initial survey in 1997 consisted of a cross-sectional postal survey of three groups: those personnel who served in the Gulf region between 1 September 1990 and 30 June 1991 (Gulf cohort), personnel who had served in Bosnia between 1 April 1992 and 6 February 1997 (Bosnia cohort) and personnel who were serving in the Armed Forces on 1 January 1991 but who were not deployed to the Gulf conflict ('Era' cohort). Special Forces were excluded for security reasons. The final sample was a random stratified sample of 4250 who served in the Gulf. For comparison cohorts, 4250 service personnel deployed in Bosnia and 4246 non-serving but 'Era' service personnel were selected.

At the end of phase 1, we performed a series of detailed nested case controlled studies involving direct clinical investigations of sick and well veterans (see, for example, Sharief *et al.*)²⁵. These studies are not reported here, but to avoid confusion with the rest of our publications, we will continue to refer to the follow-up study that is reported in this paper as 'phase 3'.

Follow-up 2001 (phase 3)

For follow-up, two stratification variables were used, fatigue and gender. All female veterans who completed the phase 1 questionnaire ($n = 648$) were contacted, as females were over sampled in the original cohort. In addition, this allowed us to examine any gender differences in follow-up variables.

The initial research aims of the Gulf study focused on examining the health of symptomatic Gulf veterans. Several studies confirm that fatigue is the one symptom that consistently links the often otherwise disparate health complaints in Gulf War Veterans, and it is also the commonest. As a result, at follow-up, fatigue was utilized as a core outcome measure and a proxy measure for being symptomatic, and the sample stratified according to degree of fatigue reported. In order to ensure that the most severely ill were well represented, all male veterans with a fatigue score of 9 or more were included. A 1:2 sample of male Gulf veterans with mid range fatigue scores of 4–8, along with all Bosnia and Era veterans scoring in this

range were selected. Finally, an ~1:8 sample of veterans with fatigue score < 4 was selected in order to represent asymptomatic individuals (250 in each group). The total sample size at follow-up was 3322.

Measures (phases 1 and 3)

Full details of the questionnaire, the methods of data collection, efforts made to trace and the detailed analysis of responders and non-responders are contained in the full reports of the phase 1 study.²² To summarize, taking into account undelivered questionnaires, the phase 1 survey had an effective response rate of 70.6%. [At phase 1, response rates differed slightly between the cohorts: Gulf (70.4%), Bosnia (61.9%) and Era (62.9%).] The commonest reason for non-response was failure to identify a final valid address for participants, which introduces the small but appreciable bias of the possibility that these individuals were homeless. Full details of all outcome measures are contained in the final study reports.^{22,23}

At phase 3, the questionnaire was modified and tailored according to whether the participant was still serving. Full details of the follow-up methodology are presented elsewhere.²⁴ Again, exhaustive attempts were made to keep response rates high with three waves of mailing, telephone tracing of non-responders and use of the electoral register and Department of Social Security (DSS) records to verify correct address information. The response rate at phase 3 was 71.6%. [Again, response rate varied between cohorts: Gulf (73.8%), Bosnia (70.2%) and Era (69.5%).]

Design

The nature of the data set has allowed us to conduct two sorts of analyses:

- A cross-sectional analysis of the associations of leaving and employment from the phase 1 study.
- A more powerful prospective longitudinal design using phase 1 variables to predict outcomes at phase 3.

The cohort groups used are represented in figure 1.

Statistical analysis

The data was analysed using SPSS (version 11.0) and STATA (version 6.0). Several variables of interest were selected from the

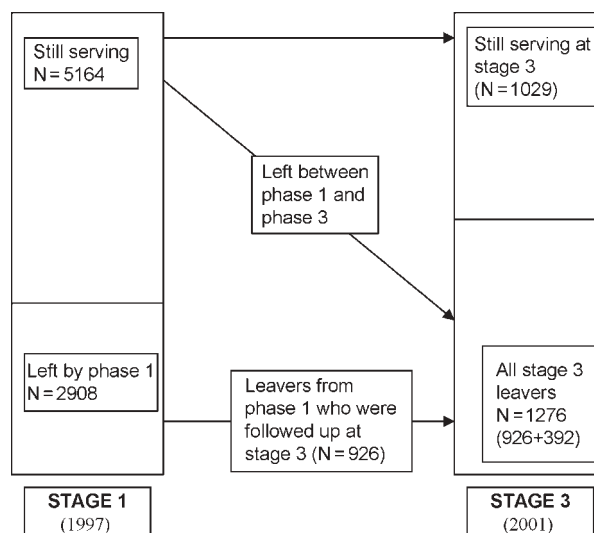


Figure 1 The evolution of the King's College military cohort

	Symptom
1) Intrusive thoughts:	<ul style="list-style-type: none"> Distressing dreams
2) Avoidance: at least one of:	<ul style="list-style-type: none"> Feeling distant or cut off from others Avoiding doing things / situations
3) Arousal: at least one of:	<ul style="list-style-type: none"> Feeling jumpy / easily startled Sleeping difficulties Increased sensitivity to noise
4) Irritability:	<ul style="list-style-type: none"> Irritability / outbursts of anger
5) Associated behaviours (2 or more required)	<ul style="list-style-type: none"> Feeling unrefreshed after sleep Fatigue Intolerance to alcohol Forgetfulness Loss of concentration Loss or decrease in appetite Loss of interest in sex

Figure 2 Diagnosis of the PTSR. Subjects had to endorse at least one symptom in each of the first four groups, plus two of the associated symptoms listed in Kulka et al.⁵

original data set. These were: demographic details (age, sex, education, marital status), military details (service status, rank, cohort, number of deployments), alcohol intake and cigarette smoking.

For the purposes of our analysis, we generated two new variables: 'employment' and 'education'.

A composite variable labelled 'Post Traumatic Stress Reaction' (PTSR) was created for questions asked at phase 1 and phase 3 (figure 2). This consisted of seven symptoms of PTSD taken from the Mississippi Scale.²⁶ In order to validate this measure, Pearson's Correlation Coefficient was calculated on a small subset of the original sample ($n = 66$) for summed PTSR score, and summed score on another extensively validated measure, the Post Traumatic Stress Disorder Checklist, Military Version.²⁷ The measures were highly correlated ($0.62, P \leq 0.01$). We chose deliberately to construct a *de novo* composite measure for post traumatic stress symptoms rather than using a full version of an existing PTSD schedule as historically/politically it was crucial at the time that this study was set up that the questions were not seen to be exclusively about mental health. Thus, we deliberately embedded the measure within other more general health measures.

A cut-off of 3 or more was used to decree 'psychiatric caseness' on the 12 item General Health Questionnaire (GHQ).²⁸ We carried out a logistic regression to investigate the factors associated with leaving the military and those associated with unemployment after leaving. Odds ratios (ORs) along with their 95% confidence intervals (CIs) were reported after adjusting for all the potential confounders. In any analyses which involved phase 3 data, we adjusted for those confounders that were the most significant from phase 1. Those were determined by using analysis of deviance. To take account of potential sampling bias, that is the probability of being selected at phase 3 depending on the fatigue score at phase 1, we generated probability weights (pweights). These are inversely proportional to the sampling fraction, which is the probability of a given observation in phase 1 being chosen for phase 3 (see table 7). Furthermore, analysis of covariance (ANCOVA) was carried out to assess formally a change in scores of ill-health outcomes from phase 1 to phase 3.

Results

We investigated the factors associated with leaving the military and those associated with unemployment after leaving by calculating adjusted ORs for each dependent variable, adjusting for other potential confounders.

Results are presented as OR and adjusted OR (AOR) with 95% CIs. Any analyses which involved phase 3 data have been adjusted for the sample bias at phase 3 caused by stratification by using pweights (details above). In the data tables this is referred to as 'adjusted for phase 3 sampling frame'.

Characteristics of leavers at phase 1 (table 1)

There were 2908 leavers by phase 1 (36%). When compared with 'non-leavers', by far the most significant predictors of leaving were cohort and rank. Those who deployed to Bosnia were less likely to be leavers than their counterparts in other cohorts (AOR 0.18, CI 0.15–0.23), even after adjusting for age and length of service. Officers (AOR 0.11, CI 0.08–0.15) and non-commissioned officers (NCOs) (AOR 0.20, CI 0.17–0.24) were less likely to leave than junior soldiers. Predictably, men were less likely to leave than women (AOR 0.61, CI 0.48–0.77). Military service arm was relevant with respondents who served in the Navy (AOR 0.77, CI 0.62–0.97) and RAF (AOR 0.53, CI 0.44–0.64) less likely to leave than Army participants. PTSR caseness was associated with being a leaver (AOR 1.75, CI 1.38–2.22).

Early leavers (those who had served ≤ 4 years) were compared with those who had served for longer (data available from authors). [A cut off rate of 4 years was used as those who leave before this time historically were not eligible for any formal resettlement help.] Men were much less likely to leave early than women (AOR 0.21, CI 0.13–0.31). Higher levels of education tended to predict leaving (AOR 1.55, CI 1.04–2.30). Those in the RAF and Navy seemed to be less likely to leave early than their Army counterparts, but the absolute numbers here were extremely small. Finally it seems that those who served in the Gulf were more likely to have a shorter length of service (AOR 1.43, CI 1.04–1.96) than the Bosnia or Era cohort, even after adjusting for poor psychological health. This may simply reflect the fact that the Gulf War was earlier (in time) than the Bosnia conflict and therefore more soldiers had had the chance to leave by the time the sample was taken.

Predictors of leaving (table 2)

A longitudinal analysis was undertaken of those who left the military between phase 1 and phase 3 ($n = 392$), compared to those who stayed in ($n = 1029$). Poor mental health at phase 1 predicted leaving by phase 3 (AOR 1.67, CI 1.18–2.36). Again, NCO status (AOR 0.47, CI 0.30–0.73) and officer status (AOR 0.33, CI 0.18–0.61) was predictive of retention compared to private soldiers.

Associations and predictors of employment (tables 3 and 4)

Analysis of the phase 1 leavers for whom we had employment data ($n = 2792$) revealed that 11.9% ($n = 333$) of the leavers were unemployed. Male gender (AOR 2.44, CI 1.50–3.98), being married (AOR 2.0, CI 1.42–2.83) and NCO status (2.21, CI 1.53–3.19) were associated with employment by phase 3. Interestingly, being deployed to the Gulf was also associated with getting a job (AOR 2.23, CI 1.56–3.18). Those who fulfilled GHQ caseness (AOR 0.43, CI 0.30–0.60) and those who are more symptomatic (AOR 0.96, CI 0.94–0.98) are less likely to be employed. None of these factors except symptoms score (AOR 0.94, CI 0.89–0.98) emerged as

Table 1 Odds of leaving the military by phase 1

Potential risk factors	Leavers		Non-leavers		Unadjusted OR (95% CI)	AOR (adjusted for all variables) (95% CI)
	n	%	n	%		
Age	2908		5164			
Mean (S.D.)	35.08 (7.9)		32.4 (6.7)		1.05 (1.03–1.06)	1.08 (1.07–1.09)
Gender						
Males	2630	91	4752	92	0.81 (0.69–0.96)	0.61 (0.48–0.77)
Females	263	9	385	8		
Education						
High	584	21	1231	25	0.82 (0.73–0.92)	1.06 (0.91–1.25)
Low	2207	79	3798	75		
Marital status						
Married	2069	72	3607	71	1.17 (1.05–1.33)	0.8 (0.68–0.94)
Divorced	273	10	424	8	1.31 (1.09–1.58)	0.75 (0.58–0.95)
Otherwise	529	18	1086	21		
Military status						
Army	2253	78	4229	82		
Navy	245	8	340	7	1.35 (1.13–1.61)	0.77 (0.62–0.97)
RAF	410	14	595	11	1.29 (1.13–1.49)	0.53 (0.44–0.64)
Rank						
Officer	319	12	845	17	0.37 (0.32–0.44)	0.11 (0.08–0.15)
NCO	1462	56	3430	67	0.42 (0.38–0.47)	0.20 (0.17–0.24)
Private	816	32	811	16		
Smoker						
Yes	1110	38	1696	33		
No	1174	62	3426	67	1.26 (1.15–1.38)	1.13 (1.01–1.28)
Alcohol						
≥ 21 units	335	12	819	16	0.69 (0.60–0.79)	0.76 (0.64–0.91)
≤ 20 units	2556	88	4319	84		
Number of deployments						
≥ 2	911	31	2117	41	0.65 (0.59–0.72)	0.53 (0.46–0.61)
At least 1	1997	69	3047	59		
GHQ						
Case	1074	38	1400	28	1.58 (1.45–1.75)	1.03 (0.89–1.19)
Non-case	1750	62	3636	72		
PTSR						
Case	385	13	265	5	2.86 (2.38–3.33)	1.75 (1.38–2.22)
Non-case	2509	87	4875	95		
Symptoms	2773		5022		1.05 (1.04–1.06)	1.03 (1.02–1.04)
Mean (S.D.)	9.72 (9.6)		6.56 (7.3)			
Cohort status						
Gulf (%)	1495	51	1976	38	0.94 (0.85–1.04)	1.05 (0.91–1.22)
Bosnia (%)	263	9	1761	34	0.18 (0.16–0.21)	0.18 (0.15–0.23)
Era (%)	1150	40	1427	28		

Table 2 Predictors of leaving; odds of leaving the military between phase 1 and 3

Potential risk factors	Leavers		Non-leavers		Unadjusted OR (95% CI)	AOR (adjusted for all other variables and sampling frame) (95% CI)
	<i>n</i>	%	<i>n</i>	%		
Age	390		1004			
Mean (S.D.)	33.7 (7.8)		32.1 (6.3)		1.03 (1.01–1.05)	1.06 (1.03–1.08)
Gender						
Males	309	79	801	80	0.96 (0.72–1.29)	0.75 (0.52–1.09)
Females	81	21	203	20		
Education						
High	94	25	257	26	0.93 (0.71–1.22)	1.16 (0.78–1.70)
Low	283	75	720	74		
Marital status						
Married	258	67	676	68	0.98 (0.75–1.23)	0.92 (0.64–1.34)
Divorced	26	7	53	5	1.27 (0.75–2.14)	0.77 (0.39–1.51)
Otherwise	102	26	264	27		
Military status						
Army	338	87	889	88		
Navy	17	4	39	4	1.14 (0.64–2.05)	0.93 (0.40–2.17)
RAF	35	9	76	8	1.21 (0.79–1.84)	1.06 (0.63–1.82)
Rank						
Officer	69	18	204	21	0.57 (0.38–0.86)	0.33 (0.18–0.61)
NCO	245	63	665	67	0.63 (0.45–0.87)	0.47 (0.30–0.73)
Private	72	19	123	12		
Smoker						
Yes	141	58	320	56	1.06 (0.78–1.44)	0.85 (0.57–1.26)
No	104	42	251	44		
Alcohol						
≥ 21 units	56	14	138	14	1.05 (0.75–1.47)	0.95 (0.61–1.47)
≤ 20 units	333	86	864	86		
Number of deployments						
≥ 2	170	44	429	43	1.03 (0.82–1.31)	0.97 (0.69–1.37)
At least 1	220	56	575	57		
GHQ						
Case	214	56	401	40	1.84 (1.45–2.33)	1.67 (1.18–2.36)
Non-case	171	44	589	60		
PTSR						
Case	42	11	74	7	1.51 (1.02–2.25)	0.99 (0.59–1.66)
Non-case	348	89	929	93		
Symptoms	385		981		1.03 (1.02–1.04)	1.02 (0.99–1.04)
Mean (S.D.)	11.3 (9.1)		8.8 (8.0)			
Cohort status						
Gulf (%)	162	42	388	39	1.02 (0.75–1.39)	0.68 (0.45–1.05)
Bosnia (%)	138	35	395	39	0.86 (1.09–1.91)	0.77 (0.51–1.17)
Era (%)	90	23	221	22		

significantly predictive when phase 1 data was analysed for leavers between phases 1 and 3 (table 5).

For early leavers, the protective effect of marriage was even more evident (AOR 2.95, CI 1.38–6.31). Also, the negative effects of a high GHQ (AOR 0.19, CI 0.08–0.43) and PTSD score (AOR 0.31, CI 0.11–0.94) appear to have been accentuated (table 3).

What happens to symptoms after leaving? (tables 5–7)

In order to see what happens to people's symptoms after they leave, we looked at the phase 3 data for those who had already left at phase 1 ($n = 926$) (see figure 1). After adjusting for potential confounders (length of service, age, sex, military

status, rank and cohort) and correcting for the phase 3 sampling frame (table 5), there was no significant change in mean PTSD score, or mean symptom score; but there was evidence for a slight improvement in GHQ [adjusted mean difference 0.37, CI 0.11–0.63 (corrected for sample stratification at phase 3)]. The pattern in 'unwell individuals' (those who were GHQ cases at phase 1) demonstrated much the same pattern (data available from authors).

When the leavers were further subdivided into early versus other (table 6), there was some evidence that early leavers fared slightly worse than others, in the domains of mean PTSD [mean increase 0.28 (CI –0.57, 0.01) versus 0.12 (CI 0.19, –0.05)] and mean symptom score [mean increase 0.76 (CI –2.2, 0.67) versus 0.64 (CI –0.92, –0.34)].

Table 3 Odds of getting a job for those who leave the military by phase 1

Potential risk factors	Getting a job at phase 1		Unemployed at phase 1		Unadjusted OR (95% CI)	Adjusted OR (adjusted for all variables) (95% CI)
	<i>n</i>	%	<i>n</i>	%		
Age	2462		333			
Mean (S.D.)	34.8 (7.6)		35.5 (9.8)		0.98 (0.97–1.0)	0.96 (0.93–0.98)
Gender						
Males	2253	92	283	85	2.01 (1.43–2.80)	2.44 (1.50–3.98)
Females	195	8	49	15		
Education						
High	484	20	69	22	0.91 (0.68–1.21)	0.84 (0.56–1.26)
Low	1898	80	247	78		
Marital status						
Married	1821	75	174	52	2.47 (1.89–3.24)	2.00 (1.42–2.83)
Divorced	206	8	60	18	0.81 (0.56–1.17)	0.91 (0.56–1.48)
Otherwise	414	17	98	30		
Military status						
Army	1899	77	270	81		
Navy	208	9	29	9	1.02 (0.67–1.53)	0.65 (0.38–1.08)
RAF	355	14	34	10	1.48 (1.02–2.16)	1.33 (0.85–2.09)
Rank						
Officer	244	11	49	16	0.90 (0.63–1.23)	1.29 (0.71–2.35)
NCO	1270	58	128	43	1.80 (1.38–2.35)	2.21 (1.53–3.19)
Private	677	31	123	41		
Smoker						
Yes	903	37	171	52	0.54 (0.43–0.68)	0.73 (0.55–0.98)
No	1543	63	159	48		
Alcohol						
≥ 21 units	273	11	49	15	0.72 (0.52–1.00)	0.98 (0.64–1.52)
≤ 20 units	2180	89	282	85		
Number of deployments						
≥ 2	775	32	97	29	1.12 (0.87–1.43)	1.05 (0.75–1.48)
At least 1	1687	68	236	71		
GHQ						
Case	835	35	202	64	0.30 (0.24–0.39)	0.43 (0.30–0.60)
Non-case	1564	65	116	36		
PTSR						
Case	282	12	92	28	0.34 (0.26–0.45)	0.74 (0.48–1.14)
Non-case	2166	88	241	72		
Symptoms	2348		317		0.95 (0.94–0.96)	0.96 (0.94–0.98)
Mean (S.D.)	9.15 (9.0)		14.6 (12.7)			
Cohort status						
Gulf (%)	1291	52	157	47	1.21 (0.95–1.55)	2.23 (1.56–3.18)
Bosnia (%)	217	9	35	11	0.91 (0.61–1.36)	0.97 (0.57–1.66)
Era (%)	954	39	141	42		

Table 4 Predictors of getting a job at phase 3

Potential risk factors	Getting a job at phase 3		Unemployed at phase 3		Unadjusted OR (95% CI)	AOR (corrected for sample frame) (95% CI)
	<i>n</i>	%	<i>n</i>	%		
Age	343		40			
Mean (S.D.)	33.8 (7.7)		32.9 (8.05)		1.01 (0.97–1.06)	1.01 (0.94–1.08)
Gender						
Males	272	79	34	85	0.67 (0.27–1.67)	1.43 (0.38–5.41)
Females	71	21	6	15		
Education						
High	87	26	6	16	1.89 (0.76–4.89)	1.51 (0.12–19.03)
Low	245	74	32	84		
Marital status						
Married	230	68	24	60	1.56 (0.77–3.15)	2.29 (0.83–6.37)
Divorced	24	7	2	5	1.95 (0.41–9.21)	1.62 (0.26–10.20)
Otherwise	86	25	14	35		
Military status						
Army	299	87	32	80		
Navy	17	5	0	0		
RAF	27	8	8	20	0.36 (0.15–0.86)	0.03 (0.005–0.18)
Rank						
Officer	62	18	5	13	1.35 (0.41–4.50)	0.89 (0.09–8.00)
NCO	213	63	28	70	0.83 (0.34–1.99)	0.26 (0.06–1.07)
Private	64	19	7	17		
Smoker						
Yes	121	57	19	63	0.77 (0.35–1.70)	1.06 (0.44–2.55)
No	91	43	11	37		
Alcohol						
≥ 21 units	46	13	9	23	0.53 (0.24–1.19)	0.89 (0.27–2.89)
≤ 20 units	296	87	31	77		
Number of deployments						
≥ 2	150	44	18	45	0.95 (0.49–1.84)	2.94 (0.98–8.87)
At least 1	193	56	22	55		
GHQ						
Case	184	54	25	62	0.71 (0.36–1.39)	1.01 (0.39–2.56)
Non-case	155	46	15	38		
PTSR						
Case	34	10	7	18	0.52 (0.21–1.26)	1.47 (0.41–5.22)
Non-case	309	90	33	82		
Symptoms	339		39		0.96 (0.92–0.99)	0.94 (0.89–0.98)
Mean (S.D.)	10.9 (8.7)		14.8 (12.6)			
Cohort status						
Gulf (%)	139	41	21	52	0.74 (0.32–1.70)	0.79 (0.24–2.65)
Bosnia (%)	124	36	10	25	1.39 (0.54–3.58)	1.22 (0.34–4.48)
Era (%)	80	23	9	23		

Adjusted for gender, marital status, rank, smoking, GHQ, symptoms and cohort status

Discussion

Two key findings emerge from the above results. The first is consistent with the findings of a majority of the international literature on veterans: most people do well when they leave the armed forces. The vast majority of our cohort who left between phases 1 and 3 were in full time employment (87.5%). It was a minority who fared badly. Although we did not look specifically at combat experiences, using Gulf service as a proxy measure there was also no robust evidence that deployment to conflict per se disadvantaged people

Individuals who served in the Gulf or in Bosnia were no more likely to leave the forces early, and deployment (including to the Gulf) did not adversely affect people's

chances of being in employment after leaving. Indeed, the adjusted data shows that serving in the Gulf was, in fact, predictive of employment. This association with Gulf service and employment needs explaining. Going to the Gulf was associated with worse symptoms and poorer psychological health and therefore, overall, no significant advantage to gaining employment. However, when adjustment is made for the negative confounding effect of poor psychological health, a positive association is revealed. This is because there is 'a healthy worker effect' for active duty service,²⁹ but also greater risk of ill health: a textbook example of negative confounding. It may also be that there is a 'medal effect' of a tour of duty; employers are impressed by combat military experience provided one comes home well. This is born out

Table 5 Mental health outcomes for all those who left at phase 1

	Phase 1	Phase 3	Unadjusted mean difference (95% CI)	Adjusted mean difference corrected for sample frame (95% CI)
GHQ				
Mean (S.D.)	4.48(4.2)	3.72(4.0)	0.76(0.51 – 1.02)	0.37 (0.11 – 0.63)
PTSR				
Mean (S.D.)	2.71(1.8)	2.68(1.8)	0.019 (–0.07, 0.11)	–0.08 (–0.19, 0.03)
Symptoms				
Mean (S.D.)	13.41 (10.6)	13.39 (10.8)	0.025 (–0.46, 0.51)	–0.29 (–0.79, 0.19)

Adjusted for length of service, age, sex, military status, rank, cohort status

Table 6 Outcome subdivided into 'early' and 'later' leavers

	Phase 1	Phase 3	Unadjusted mean difference (95% CI)	Adjusted mean difference corrected for sample frame (95% CI)
GHQ [mean (S.D.)]				
Early leavers	4.47 (4.1)	4.0 (4.2)	0.47 (–0.13, 1.07)	0.08 (–0.63, 0.80)
Later leavers	3.6 (3.7)	3.1 (3.7)	0.48 (0.32, 0.64)	0.12 (–0.03, 0.27)
PTSR [mean (S.D.)]				
Early leavers	2.55 (1.85)	2.69 (1.77)	–0.14 (–0.37, 0.08)	–0.28 (–0.57, 0.01)
Later leavers	2.31 (1.7)	2.30 (1.7)	0.008 (–0.05, 0.07)	–0.12 (–0.19, –0.05)
Symptoms [mean (S.D.)]				
Early leavers	12.1 (9.7)	13.1 (11.2)	–0.98 (–2.3, 0.37)	–0.76 (–2.2, 0.67)
Late leavers	10.9(9.5)	11.1(9.4)	–0.13(–0.43, 0.16)	–0.64(–0.92, –0.34)

Adjusted for age, sex, military status, rank, cohort status

Table 7 Summary statistics of number of veterans in phase 1 and phase 3 in each category of fatigue scale and its pweight by cohort status

Fatigue	Gulf			Bosnia			Era		
	Phase 1	Phase 3	pweight	Phase 1	Phase 3	pweight	Phase 1	Phase 3	pweight
<4	1799	272	6.6	1449	283	5.12	2009	276	7.3
4–8	1039	421	2.4	381	271	1.4	402	274	1.4
9	527	265	1.9	178	51	3.5	164	70	2.3

by the final analysis (table 8) which shows that well Gulf veterans were more likely to be employed than well veterans from the Era cohort who had not seen combat.

The second important finding is that psychological health is one indicator of whether a person is likely to stay in the military and, if they do not stay in, whether they will be in

Table 8 Comparison of Gulf well and Gulf ill and odds of employment

GHQ	Employed	Unemployed	OR
Gulf well	718	37	
Gulf ill	549	115	1.31 (Gulf well/Gulf ill)
Era well	700	64	1.77 (Gulf well/Era well)

full time employment as a civilian. People who had left the military by phase 1 had higher GHQ scores than those who stayed in. In addition, a higher GHQ score at phase 1 was predictive of leaving at phase 3 follow-up. There was also evidence that higher GHQ scores and symptom burden were associated with unemployment after leaving. These findings are in agreement with the US literature; a recent paper¹⁹ demonstrated that 47% of individuals hospitalized with mental health problems left military service within 6 months

We hypothesized that if some people were unhappy or unsuited for military life, their mental health might improve when they leave. Overall, this was not the case—if anything those who left the forces early fared slightly worse. This is in keeping with our previous findings in Gulf veterans who have persistent symptomatology.²⁴

Alternatively, we wondered if those who had served for longer in the military would find it difficult to cope on separation, something anecdotally called the 'The Military Retirement Syndrome'³⁰ Again we found no evidence for this frequently advanced hypothesis. Instead, we found that symptomatic mental health remains fairly static after leaving. Those who are well, remain well, those who are symptomatic, remain symptomatic. This is very much in keeping with the literature, albeit largely American, on the chronic nature of occupational ill health such as PTSD.³¹ Rosenheck has repeatedly described clear associations of poor mental health with social exclusion (including homelessness) in US veterans.²¹ In the context of developing UK veterans policy, this data suggests that UK servicemen whose mental health is poor are likely to be the most vulnerable to social exclusion or hardship such as unemployment, and it seems that this risk factor may be a chronic one extending into a veteran's life, with little evidence of remittance of ill health after leaving.

Limitations of this study

This study is a cohort study of those who were serving in the armed forces at one point of time in 1991. As such it captures a 'snapshot' of the military at that time. The research findings may not be applicable to earlier or later military cohorts.

By necessity, any study which relies so heavily on retrospective report must be vulnerable to a degree of recall bias. In addition, the measures of employment are based entirely on self report; we have no means of independent corroboration of people's employment status.

Although the response rates were good for the study and we know that, overall, non-responders were similar to responders, it is less likely that the severely social excluded members (e.g. homeless) of the cohort would have made it to follow up at phase 3.

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Key points

- Little is known about the factors associated with (and predictive of) leaving the armed forces, or predictors of subsequent employment for veterans in the United Kingdom.
- This study analyses existing data from a large randomly selected longitudinal cohort of service-personnel (commenced 1995), many of whom have now left the armed forces.
- The results show that the majority of service leavers do well after leaving and are in full time employment.
- Veterans with mental health problems during service seem to be at higher risk of social exclusion after leaving and therefore these individuals represent an especially vulnerable group of the veteran population.

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