

YOUNG AGE AT ARMY ENLISTMENT IS ASSOCIATED WITH GREATER WAR ZONE RISKS

AN ANALYSIS OF BRITISH ARMY FATALITIES IN AFGHANISTAN

David Gee and Anna Goodman

August 2013

SUMMARY

When enlisting into the British Army, minors (aged 16 or 17) are more likely than adults to join the combat Infantry,¹ which has suffered a higher rate of fatality in Afghanistan than has the rest of the Army.² This gives cause for concern that enlisted minors, once deployable to Afghanistan at age 18, may have faced a relatively higher risk of fatality, non-fatal injury or traumatic stress-related psychiatric disorder.

This study examines the relative risk of fatality in Afghanistan among enlisted Army recruits who joined as minors versus those who joined as adults.

We researched the enlistment ages and enlistment dates of soldiers³ who died as a consequence of deployment to Afghanistan and had enlisted during a ten-year period between 1999-00 and 2008-09 (n=209). Using published data on the enlistment ages of the Army's total intake for each of the ten years under investigation, we then calculated the relative odds of fatality for those who enlisted in each of three age groups: at age 16, at age 17 and at age 18 or over.

Given that rates of drop-out during training were known to be higher among minors (39.4%) than adults (24.1%) over a five-year period from 2007-08 to 2011-12,⁴ we used this as a basis for estimating the number of soldiers who enlisted in each age group and also successfully completed their training; we then ran the analysis for each age group again.

We found that **soldiers who had joined the Army at age 16 were approximately 50% more likely to die as a consequence of deployment to Afghanistan** than were those who had enlisted as adults (odds ratio 1.52, 95% CI 1.10-2.10 p=0.01). When we accounted for estimated training drop-out rates among minors and adults, **soldiers who enlisted at age 16 and completed training were almost twice as likely to die as a consequence of deployment to Afghanistan** than were those who enlisted as adults and completed training (odds ratio 1.92, 95% CI 1.39-2.66), p<0.001). **We found no significant evidence that those enlisting at age 17 faced a level of risk different from those who enlisted at 18 or above**, although a non-significant trend was seen after including their higher drop-out rates in the model.

We speculate that the substantially higher relative risk faced by soldiers who enlisted at 16 is due mainly to two factors: i) the over-representation of this enlistment age group in the Infantry, where the fatality rate in Afghanistan has been approximately six times the rate in the rest of the Army;⁵ and ii) the longer average career length among soldiers who enlist at age 16 and complete their training, leading to a larger number of tours of duty.⁶

Finally, we hypothesise that the elevated risk of fatality among soldiers who enlisted at age 16 may also indicate an increased risk of non-fatal physical injury and mental health problems. We do this on the basis of: (i) evidence that rates of non-fatal injuries and fatalities in Afghanistan show a constant relationship;⁷ (ii) studies showing that fatality rates show a similarly constant relationship to psychiatric casualties⁸ and a higher prevalence of mental health problems among personnel with combat roles^{9 10 11 12} including the Infantry;^{13 14} and (iii) studies which show that young people from disadvantaged backgrounds have heightened vulnerability to trauma-related mental health problems.^{15 16 17 18 19}

This paper indicates that, whilst minors in the Army are protected from the dangers of deployment until they reach adulthood at age 18, they are likely to face a greater long-term risk of physical and psychiatric harm when compared with those who enlist as adults.

BACKGROUND

The UK is the only state in the European Union and the only United Nations Security Council Permanent Member state to recruit from age 16 into the armed forces. Concerns have been raised at the United Nations,²⁰ in Parliament^{21 22} and by human rights groups²³ about the policy. In support of the practice, the Ministry of Defence has argued that the policy allows the armed forces to provide opportunities to young people.²⁴

British and US research on risk in military populations has identified the relatively greater vulnerability of younger recruits to mental health problems,^{25 26 27 28 29 30 31} harassment,^{32 33} and committing violent behaviour after exposure to combat and traumatic events.^{34 35} There has been less emphasis on the relative risk to enlisted minors of fatality and injury once they are deployed to war zones.

Recruitment patterns give reason to hypothesise that minors enlisting into the armed forces face a greater risk of fatality during deployment when compared with those enlisting as adults. Four out of five minors who enlist join the Army,³⁶ where they are over-represented in non-technical roles among front-line regiments/corps.³⁷ Of these, the Infantry is the largest, accounting for a quarter of the Army but containing one third of all its enlisted minors.³⁸ Records of soldiers killed in Afghanistan show that the fatality rate in the Infantry has been approximately six times that in the rest of the Army.³⁹ Once minors become eligible for deployment at 18, it is therefore plausible that they face a higher risk of fatality than those who enlisted as adults, who are statistically less likely to have joined the Infantry.

Some evidence already lends credence to this hypothesis. British Infantry fatalities in Afghanistan are on average two years younger than those in the

rest of the Army; and of the 34 armed forces fatalities in Afghanistan aged 18 and 19 to the end of March 2013, 30 were Infantrymen and 27 had enlisted as minors.⁴⁰

There are two principal reasons why a relatively large number of minors join the Infantry.

First, the Infantry is the single largest part of the Army so requires the greatest number of new recruits each year to replace those who leave; between 2007-08 and 2011-12, 35.3% of new Regular Army recruits joined Infantry regiments (39.2% of all minors and 33.8% of all adults).⁴¹ The Infantry is also chronically under-manned so, unlike many other armed forces trades, there are invariably vacancies available.

Second, whilst many technical armed forces trades are barred to recruits without good GCSE and/or 'A' Level grades, the Infantry accepts school-leavers without any qualifications. For this reason, it contains a higher proportion of younger recruits who left school at 16. As of March 2013, 19.4% of Infantry soldiers were under 22, compared with 11.7% of soldiers in the rest of the Army.⁴²

In addition to the over-representation of minors in high-risk Infantry roles, their slightly longer average career length when compared to adult recruits also gives reason to hypothesise that they may be at greater risk in Afghanistan. Although minors are more likely than adults to drop out of training,⁴³ those who successfully complete training stay in the Army for an average of 10 years (this includes the period before they become deployable at age 18). Adult recruits who complete training stay in the Army for an average 7.6 years.⁴⁴ The period of potential exposure to warfare for soldiers who enlisted as minors and became deployable to war zones at age 18 is therefore correspondingly slightly longer than it is for those who enlisted as adults.

STUDY AIM

We sought to discover whether, over a ten-year period, the risk of fatality among British Army soldiers in Afghanistan varied between those who enlisted at age 16 or 17 and those who enlisted at 18 or older.

Given that Army training drop-out rates differ between minors and adult recruits, we also aimed to compare fatality risks among those who enlisted in each age group and also successfully completed their training.

METHOD

We obtained data published by the Ministry of Defence on the enlistment ages of Regular recruits joining the Army at 16, 17 and 18 or above over a ten-year period from 1999-00 to 2008-09 (see column (a) of Table 1).⁴⁵ The financial year 1999-00 is the earliest date for which this information is published. We chose 2008-09 as the most recent year in our analysis in order that all individuals studied would have had at least two years of potential exposure to the risk of fatality in Afghanistan, including those who enlisted as minors and therefore would not have been sent to war zones until aged 18.

We also used Ministry of Defence data showing that drop-out rates of Army trainees between 2007-08 and 2011-12 inclusive were 39.4% among minors and 24.1% among adults.⁴⁶ Drop-out rates in earlier years are not available.

Using information published by the Ministry of Defence⁴⁷ and, in 27 cases, other sources such as press reports and memorial websites, we sought to assign the enlistment ages and dates to all 298 Regular

soldiers⁴⁸ who died as a result of deployment to Afghanistan between the beginning of the war in October 2001 and 31 March 2013. We were able to do so in 283 cases (95%), of whom 209 had enlisted during the ten-year period under investigation.

These 209 fatalities included 10 individuals for whom age group at enlistment (16, 17 or 18+) could not be calculated with certainty but could be estimated using other data, such as date of birth and year of enlistment.⁴⁹ Our findings were almost unchanged in sensitivity analyses which excluded these 10 individuals.

We divided the 209 fatalities into three groups according to whether they enlisted at age 16, at age 17, or at age 18 or over (see column (c) of Table 1). We fitted a logistic regression model to calculate the odds of fatality for those enlisting at 16 or 17 vs. 18+, adjusting the analysis for financial year of enlistment. Given that the total risk of fatality was low, the odds ratios generated in this regression model provide a good approximation of the risk ratio.

Table 1: (a) Regular Army intake; (b) estimated numbers completing training; and (c) numbers of fatalities in Afghanistan, by financial year of enlistment and by age at enlistment.⁵⁰

Year of enlistment	a) Total Regular Army intake by enlistment age			b) Estimated number successfully completing training, by enlistment age ⁵¹			c) Number of fatalities in Afghanistan from January 2001 to March 2013, by enlistment age (n=209)*		
	16	17	18+	16	17	18+	16	17	18+
FY 99-00	3377	3641	9467	2046	2206	7185	3	4	5
FY 00-01	3248	3136	8330	1968	1900	6322	8	0	5
FY 01-02	3400	3065	8315	2060	1857	6311	5	6	13
FY 02-03	3600	3330	9625	2182	2018	7305	8	2	9
FY 03-04	3225	2985	8980	1954	1809	6816	8	3	8
FY 04-05	2470	2385	6835	1497	1445	5188	5	3	12
FY 05-06	2445	2685	7555	1482	1627	5734	5	3	12
FY 06-07	2005	2865	8915	1215	1736	6766	4	7	13
FY 07-08	2200	2550	9785	1333	1545	7427	7	7	22
FY 08-09	1980	2155	10375	1200	1306	7875	1	3	18
Total	27950	28797	88182	16937	17449	66929	54	38	117

FY=financial year. * Fatalities include 10 with estimated ages of enlistment

We then calculated the odds of fatality among soldiers who enlisted at 16 vs. 18+ and 17 vs. 18+ and also completed training. We did this by tentatively assuming that known Army in-training drop-out rates for minors and adults between 2007-08 and 2011-12 can also be applied to the ten-year period 1999-00 to 2008-9, and scaling down the 'intake' denominators at each age accordingly (see column (b) of Table 1).

Finally, in view of calls on the UK government by the United Nations Committee on the Rights of the Child,

British Parliamentary Committees and others to raise the minimum age of enlistment to 18, we repeated these analyses comparing those enlisting at age 18 with those enlisting age 19+ in order to discover whether or not those enlisting at 18 had faced a higher risk of fatality. This involved assigning probable enlistment ages to 11 individuals; again, our findings were unchanged in sensitivity analyses excluding these individuals.

RESULTS

Across the duration of the conflict to 31 March 2013, the risk of fatality in Afghanistan to soldiers enlisted between 1999-00 and 2008-09 has been 1.92 per 1,000 for those who enlisted at age 16, 1.32 per 1,000 for those who enlisted at age 17 and 1.33 per 1,000 for those who enlisted at age 18+. ⁵²

When comparing the risk of fatality between those who enlisted at ages 16 versus 18+, we calculated an odds ratio of 1.52 (95% confidence interval (CI) 1.10-2.10 $p=0.01$). This means that **Regular Army soldiers who enlisted at 16 between 1999-00 and 2008-09 were approximately 50% more likely to die as a result of deployment to Afghanistan than those who had enlisted aged 18 or older.** ⁵³

When we included estimated training drop-out rates, the ratio increased to 1.92 (95% CI 1.39-2.66), $p<0.001$). This means that **soldiers who enlisted at 16 between 1999-00 and 2008-09 and successfully completed training were almost twice as likely to die as a result of deployment to Afghanistan than those who had enlisted at 18 and above and completed training.**

The p values of 0.01 and <0.001 , respectively, indicate that **these results are statistically significant and very unlikely to have occurred by chance.**

We found **no statistically significant evidence that recruits who had enlisted at age 17 faced a level of risk any different from those who enlisted at other ages.** This was true irrespective of whether the cases with estimated enlistment ages were included in the analysis. However, a non-significant trend was seen after modelling differential drop-out rates (all $p\geq 0.17$, see Table 2 and Figure 1).

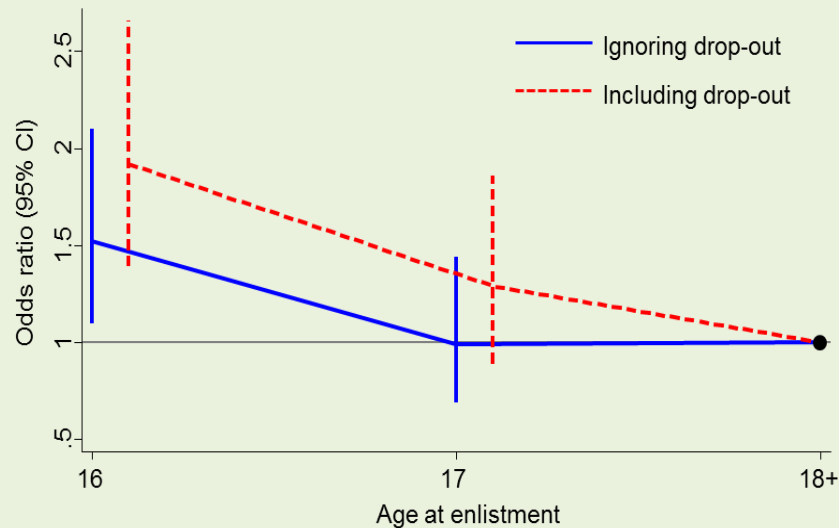
There was also no significant evidence that fatality risks differed between those who had joined the Army at 18 and those who enlisted at 19 and above. This was true irrespective of whether the probabilistic recruitment ages and assumed drop-out rates were included or excluded (all $p\geq 0.33$, results not shown).

In summary, we found that the risk to those enlisting at 16 was substantially higher than it was to those who enlisted at 18 and above. We found no evidence that enlisting at 17 or 18 involved a level of risk any different from enlistment at older ages.

Table 2: Association between age of enlistment and risk of fatality in Afghanistan among Regular Army soldiers enlisted between 1999-00 and 2008-09 inclusive, a) ignoring estimated in-training drop-out rates and b) accounting for estimated constant in-training drop-out rates of 39.4% for minors and 24.1% for adults. ⁵⁴

<i>Enlistment age group</i>	<i>a) Odds ratios (95% confidence intervals) ignoring differences in drop-out rates</i>	<i>b) Odds ratios (95% confidence intervals) including estimated differences in drop-out rates</i>	<i>Interpretation</i>
16	1.52 (1.10, 2.10), $p=0.011$	1.92 (1.39, 2.66), $p<0.001$	Significant; very unlikely to be due to chance
17	0.99 (0.69, 1.44), $p=0.97$	1.29 (0.89, 1.86), $p=0.17$	Non-significant; likely to be due to chance
18+ <i>[reference group]</i>	1	1	

Figure 1 showing results in Table 2:



DISCUSSION

Our analysis shows that Army recruits enlisting at age 16 have faced a substantially greater risk of fatality in Afghanistan than have those enlisting at 18 or older. This difference is shown to be larger still after accounting for estimated training drop-out rates. There are no clear differences in fatality risk between those enlisting at age 17 vs. 18+ or 18 vs. 19+.

Explaining the differences in fatality rates

The elevated fatality risk among those who enlisted at age 16 is in line with our hypothesis and, as outlined in the introduction, we believe it is likely to reflect a combination of two factors:

1. The over-representation of minors enlisting in the Infantry,⁵⁵ where the fatality rate has been approximately six times higher than in the rest of the Army;⁵⁶ and
2. The longer average career length among minors who do not drop out of training, at 10 years for Infantry recruits, compared with adults, at 7.6 years, resulting in a longer period of potential exposure to warfare.⁵⁷

There was no evidence for our hypothesis that the 17 year old enlistment group would also face a higher fatality risk. This finding does not seem to reflect a lower probability of the 17 year old enlistment group joining the Infantry, as the number of 16 and 17 year old Infantry recruits in each age group has been similar between 2007-08 and 2011-12 (figures are not available for earlier years).⁵⁸ A more plausible explanation involves the duration of potential

exposure to the Afghanistan war. Of the 209 soldier fatalities in our study sample, we found that those who enlisted aged 16 had served for an average of 8.6 years, whereas those who enlisted at 17 or 18 had served for an average of 6.1 years and 6.0 years, respectively.⁵⁹ Those enlisting at 16 would not have been deployable until age 18, but their period of potential exposure to the Afghanistan war would still be longer than those enlisting at other ages; this could partly account for our different findings for the 16 and 17 year old enlistment age groups.

We conclude that the relative risks associated with Infantry and non-Infantry roles, as well as the differing periods of potential exposure to warfare, are important explanatory factors for the differing fatality rates in each enlistment age group.

Do minors face higher risks in other respects?

Although the substantially higher risk of fatality among the 16 year old enlistment group is cause for concern, it is important to stress that fatalities among British forces have been uncommon. However, there are good grounds to speculate that the elevated risk among the 16 year old enlistment group also indicates higher odds of incurring non-fatal physical injury and trauma-related mental health problems, both of which are much more common than fatalities.

The fatality rate in Afghanistan, despite fluctuating annually, has shown a constant relationship to the rate of non-fatal physical casualties at a ratio of approximately 5:1.⁶⁰ This indicates that the fatality

rate among British Forces in Afghanistan may serve as a proxy for the rate of non-fatal injuries, with the 16 year old enlistment group disproportionately affected accordingly.

A similarly constant relationship has been found in historical wars between rates of fatalities and psychiatric casualties.⁶¹ In addition, studies of UK personnel deployed to Iraq and/or Afghanistan have found a higher prevalence of mental health problems among those with front-line roles. For example, post-traumatic stress disorder (PTSD) has been more common in personnel with combat roles,^{62 63 64} including the Infantry,⁶⁵ and/or who spend significant time in forward areas in battle.⁶⁶ Intensity of exposure to the traumatic events of warfare, such as coming under fire, killing people and handling dead bodies, is also associated with higher risk of PTSD.^{67 68} These findings repeat those of other studies investigating the mental health effects on British and other nations' forces of current and past wars.^{69 70 71 72 73 74 75} Another factor is the relatively greater vulnerability of young people from

disadvantaged backgrounds to the mental health effects of warfare, including PTSD.^{76 77 78 79 80} This social group is not only the most vulnerable to trauma, but also more likely than others to occupy the most dangerous armed forces roles.

The relationship between fatalities, non-fatal injuries and psychiatric disorders permits the hypothesis that recruits who enlist into the British Army at 16 face a higher risk not only of fatality, but also of physical and psychiatric harm. Although there has been no British study of the relationship between enlistment age and mental health to date, evidence from US studies of Vietnam veterans appears to support this conclusion. One US study found that young age and low educational attainment predicted intensity of war-zone exposure;⁸¹ another found that recruits who enlisted youngest were more likely than others to develop PTSD.⁸²

Therefore, we believe there are strong grounds for concern regarding the risks faced by those who enlist as minors with respect to non-fatal injuries and mental health trauma.

CONCLUSION

Our study indicates that in the British Army, soldiers who enlisted youngest have faced a relatively greater risk of fatality in Afghanistan. Previous research indicates that these young recruits are also likely to have come from the poorest backgrounds and may also be at higher risk of non-fatal injuries and trauma-related mental health problems.⁸³

Whilst minors in the Army are protected from the risks of deployment until they reach adulthood at age 18, they have still been at proportionally greater risk of fatality in Afghanistan than have soldiers who enlisted as adults. We believe this is due to the way in which recruitment policy channels the youngest, most disadvantaged recruits into some of the most dangerous armed forces roles, as well as the longer career length of recruits who enlist youngest and successfully complete their training.

Had the minimum age for armed forces recruitment been 18 during the ten-year period we studied, we cannot say with confidence whether this would have protected individuals who would otherwise have enlisted at 16 or 17. It is possible that a 16 year old without good GCSE results would still enlist at age 18 without gaining further qualifications in the meantime. In this case, the individual would be no

less likely to join the Infantry at age 18 than he would, had it been possible to enlist at age 16. Alternatively, the individual might have re-sat GCSEs or gained other qualifications before enlisting at 18, thereby becoming eligible for a wider variety of armed forces roles.

What can be said with confidence is that raising the minimum enlistment age to 18 would end the present situation which allows long-term risks to be borne disproportionately by recruits who are legally minors when they enlist.

The military situation in Afghanistan is changing. A large-scale draw-down of British troops is anticipated and so the results of our study cannot be a reliable guide to the future. Nonetheless, any future ground war is likely to deploy the Infantry in a key front-line role involving relatively high exposure to risk. If the current recruitment structure of the British Army remains the same then disproportionately large numbers of 16 year olds will continue to join the Infantry and face consequently higher risks from deployment than will adult recruits.

APPENDIX: ADDITIONAL TABLES

Table 3: Number and proportion of regular soldiers who enlisted in the Army aged under 18 and 18 or above and who left before completion of their Phase Two training since 2007.⁸⁴

<i>Financial year</i>	<i>Number enlisted in each year⁸⁵</i>		<i>Number enlisted in each year who subsequently dropped out before completion of Phase Two training⁸⁶</i>		<i>Proportion dropped out</i>	
	<i>Aged <18</i>	<i>Aged 18+</i>	<i>Aged <18</i>	<i>Aged 18+</i>	<i>Aged <18</i>	<i>Aged 18+</i>
2007-08	4750	9785	2000	2400	42.1%	24.5%
2008-09	4135	10375	1570	2210	38.0%	21.3%
2009-10	3630	10555	1480	2360	40.8%	22.4%
2010-11	2400	5640	1050	1710	43.8%	30.3%
2011-12	2930	7550	930	1900	31.7%	25.2%
Total	17845	43905	7030	10580	39.4%	24.1%

Table 4: Fatality rates of British Infantry and non-Infantry personnel across the duration of the Afghanistan war, estimated based on known relative size of Army and Infantry in 2013 (including officers and other ranks).

<i>Financial year</i>	<i>a) Strength (trained and untrained) (January/February 2013)^{87 88}</i>	<i>b) Fatalities in Afghanistan to 31 March 2013⁸⁹</i>	<i>c) Risk of fatality per 10,000 (B / A x 10,000)</i>
1. Army	94,610	358	38/10,000
2. Infantry	23,272 (24.6% of total)	236 (65.9% of Army total)	101/10,000
3. Rest of Army	71,338 (75.4% of total)	122 (34.1% of Army total)	17/10,000
		Relative risk of Infantry fatality vs. rest of Army (c2 / c3)	5.93

BIBLIOGRAPHY

- BBC News. (2013). 'Army recruits must get chance to study, says Labour', 25 June 2013, online at <http://www.bbc.co.uk/news/uk-politics-23053690> (accessed 5 July 2013).
- Child Soldiers International and ForcesWatch. (2013). 'One Step Forward: The case for ending the recruitment of minors by the British armed forces' (London).
- Coalition to Stop the Use of Child Soldiers (now known as Child Soldiers International). (2011). 'Catch 16-22: Recruitment and retention of minors in the British armed forces' (London).
- Defence Analytical Services and Advice (DASA):
- _____. (2010). 'Historical National Statistics Publications: TSP 19 - UK Regular Forces Intake and Outflow by Age' online at <http://www.dasa.mod.uk/applications/newWeb/www/index.php?page=67&pubType=1&thiscontent=190&date=2010-06-10> (accessed 30 March 2013).
- _____. (2011). 'Suicide and open verdict deaths in the UK Regular Armed Forces: numbers and standardised mortality ratios, 1984 - 2010, males only' online at <http://www.dasa.mod.uk/modintranet/UKDS/UKDS2011/c3/table306.php> (accessed 22 August 2012).
- _____. (2011). 'TSP Annual Report – Sex and ethnicity of the UK regular forces (Table 7: UK Regular forces intake by Service and age, Financial Year 2010/11)' online (accessed 26 May 2011) [no longer available online, available from authors].
- _____. (2011). 'UK Regular Forces Intake And Outflow By Age For Financial Year 2009-10' online at <http://www.dasa.mod.uk> (accessed 11 June 2012).
- _____. (2012). 'TSP Annual Report – Sex and ethnicity of the UK regular forces (Table 7: UK Regular forces intake by Service and age, Financial Year 2011/12)' online (accessed 15 January 2013) [no longer available online, available from authors].
- Fear, N *et al.* (2010). 'What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK armed forces? A cohort study', *The Lancet*, 22 May 2010, **375**, pp. 1783 – 1797.
- Friedman, J *et al.* (1994). 'Post-traumatic stress disorder in the military veteran', *Psychiatric Clinics of North America*, June 1994, **17** (2), pp. 265-277.
- Gee, D. (2008). 'Informed Choice: Armed Forces Recruitment Practice in the United Kingdom' (London) online at www.informedchoice.org.uk (accessed 19 April 2013).
- Gee, D. and Goodman, A. (2010). 'Army recruiters visit London's poorest schools most often' (London) online at <http://www.informedchoice.org.uk/armyvisitschools.pdf> (accessed 23 May 2013).
- Green, B *et al.* (1990). 'Risk Factors for PTSD and Other Diagnoses in a General Sample of Vietnam Veterans', *American Journal of Psychiatry*, **147** (6), pp. 729-733.
- Hansard, HC Deb:
- _____. 19 January 2011, c824W.
- _____. 12 September 2011, c1007W.
- _____. 22 March 2013, c827W.
- _____. 13 May 2013, c99W.
- _____. 13 May 2013, c100W.
- Hoge, C *et al.* (2004). 'Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care', *The New England Journal of Medicine*, 1 July 2004, **351** (1), pp. 13-22.
- Hoge, C W and Castro, C. (2006). 'Post-traumatic stress disorder in UK and US forces deployed to Iraq' [correspondence], *The Lancet*, 2 September 2006, **368**, p. 837 [includes reply by Hotopf, M *et al.*].
- Hotopf, M *et al.* (2006). 'The health of UK military personnel who deployed to the 2003 Iraq war: a cohort study', *The Lancet*, 16 May 2006, **367**, pp. 1731–41.
- House of Commons Defence Committee. (2013). *The Armed forces Covenant in Action? Part 4: Education of Service Personnel* (Fifth Report of Session 2013-14), (London: The Stationery Office).
- House of Commons and House of Lords Joint Committee on Human Rights. (2009). *Children's Rights* (Twenty-fifth Report of Session 2008–09), (London: The Stationery Office).

-
- Ikin, J F *et al.* (2004). 'War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War' *British Journal of Psychiatry*, **185**, pp. 116-126.
- Ismail K, *et al.* (2000). 'Occupational risk factors for ill health in Gulf veterans of the United Kingdom'. *The Journal of Epidemiological and Community Health*, 2000, May, **54**, pp. 834-838.
- Iversen, A *et al.* (2007). 'Influence of childhood adversity on health among male UK military personnel', *The British Journal of Psychiatry*, 31 August 2007, **191**, pp. 506-511.
- Iversen, A *et al.* (2008). 'Risk factors for post-traumatic stress disorder among UK Armed Forces personnel', *Psychological Medicine*, **38**, pp. 511-522.
- Iversen, A *et al.* (2009). 'The prevalence of common mental disorders and PTSD in the UK military: using data from a clinical interview-based study' *BMC Psychiatry*, **9** (68) online at <http://www.biomedcentral.com/1471-244X/9/68> (accessed 18 April 2013).
- Jones, E and Wessely, S. (2001). 'Psychiatric battle casualties: an intra- and interwar comparison', *British Journal of Psychiatry*, **178** (3), pp. 242-247.
- Jones, M *et al.* (2006). 'The burden of psychological symptoms in UK Armed Forces', *Occupational Medicine* 2006, **56**(5), pp. 322-328.
- Jones, M *et al.* (2012). 'What explains posttraumatic stress disorder (PTSD) in UK service personnel: deployment or something else?', *Psychological Medicine*, 13 November 2012.
- Kok, B C *et al.* (2012). 'Posttraumatic Stress Disorder Associated With Combat Service in Iraq or Afghanistan: Reconciling Prevalence Differences Between Studies', *Journal of Nervous and Mental Disease*, May 2012, **200** (5), pp. 444-450.
- MacManus, D. *et al.* (2012). 'Violent behaviour in UK military personnel returning home after deployment', *Psychological Medicine*, 25 November 2011, **42**, pp. 1663-1673.
- Macmanus, D *et al.* (2013). 'Violent offending by UK military personnel deployed to Iraq and Afghanistan: a data linkage cohort study', *The Lancet*, 16 March 2013.
- McManus, S *et al.* [eds.] (2009) 'Adult psychiatric morbidity in England, 2007: Results of a household survey' National Health Service, online at <http://www.ic.nhs.uk/pubs/psychiatricmorbidity07> (accessed 13 May 2010).
- Ministry of Defence:
_____ (2013). 'British Fatalities: Operations in Afghanistan' online at <https://www.gov.uk/government/fields-of-operation/afghanistan> (accessed 13 March 2013).
_____ (2013). 'Op Herrick casualty and fatality tables' online at <https://www.gov.uk/government/publications/op-herrick-casualty-and-fatality-tables> (accessed 13 March 2013).
- O'Brien, L S and Hughes, S J. (1991). 'Symptoms of post-traumatic stress disorder in Falklands veterans five years after the conflict', *British Journal of Psychiatry*, **159**, pp. 135-141.
- Rona, R *et al.* (2009). 'The Contribution of Prior Psychological Symptoms and Combat Exposure to Post Iraq Deployment Mental Health in the UK Military', *Journal of Traumatic Stress*, **22** (1), pp. 11-19.
- Rutherford, S; Schneider, R; and Walmsley, A. (2006). *Quantitative & Qualitative Research into Sexual Harassment in the Armed Forces* [report], (London: Equal Opportunities Commission and the Ministry of Defence).
- Sundin, J *et al.* (2010). 'Mental health among commando, airborne and other UK infantry personnel', *Occupational Medicine*, **60**, pp. 552-559
- United Nations Committee on the Rights of the Child [UNCRC]. (2008). *Consideration of Reports Submitted by States Parties Under Article 8 of the Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict – Concluding Observations: United Kingdom of Great Britain and Northern Ireland (CRC/C/OPAC/GBR/CO/1)*. Geneva: UN, 17 October 2008.

AUTHORS

David Gee is founder of www.BeforeYouSignUp.info, an independent information service for potential armed forces recruits; co-founder of ForcesWatch; and author of *Informed Choice? Armed Forces Recruitment Practice in the United Kingdom* (2008), a report funded by the Joseph Rowntree Charitable Trust.

Anna Goodman is a public health research fellow based at the London School of Hygiene and Tropical Medicine, with a longstanding interest in the mental health and well-being of young people.

This work represents independent research conducted by David Gee and Anna Goodman on behalf of ForcesWatch and Child Soldiers International.

SPONSORING ORGANISATIONS

Child Soldiers International is an international human rights research and advocacy organisation. We seek to end the military recruitment and the use in hostilities, in any capacity, of any person under the age of 18 by state armed forces or non-state armed groups. We advocate for the release of unlawfully recruited children, promote their successful reintegration into civilian life, and call for accountability for those who unlawfully recruit or use them.

ForcesWatch is a British-based campaigning organisation. We seek to scrutinise the ethical basis of the recruitment of young people into the armed forces. We advocate changes to policy, raise public awareness of the issues and challenge the armed forces on their recruitment practices, especially those aimed at the youngest and most disadvantaged groups.

THANKS

David Gee and Anna Goodman would like to thank Owen Everett, Iain Lang, Lianne Minasian, Emma Sangster and Rachel Taylor for comments on an earlier draft of this paper.

CONTACT

David Gee via office@forceswatch.net

This report may be copied and distributed freely after the embargo date.

Clarifications and corrections from interested parties are welcome.

CITATION

Please cite this paper as:

Gee, D. and Goodman, A. (2013). 'Young age at Army enlistment is associated with greater war zone risks' (London: ForcesWatch; Child Soldiers International) online at

<http://www.forceswatch.net/content/youngest-soldiers-face-greatest-risks>

REFERENCES

- ¹ Hansard: HC Deb, 19 January 2011, c824W.
- ² See Appendix: Table 4.
- ³ Excludes officers, reservists, Gurkhas and Home Service battalions of the Royal Irish Regiment.
- ⁴ See Appendix: Table 3.
- ⁵ See Appendix: Table 4.
- ⁶ Hansard: HC Deb, 12 September 2011, c1007W (based on age at enlistment of those leaving the Army between 1 July 2009 and 31 July 2011).
- ⁷ Calculated from Ministry of Defence (2013) 'British Fatalities: Operations in Afghanistan' op. cit. and Ministry of Defence (2013): 'Op Herrick casualty and fatality tables' online at <https://www.gov.uk/government/publications/op-herrick-casualty-and-fatality-tables> (accessed 13 March 2013).
- ⁸ Jones, E and Wessely, S. (2001). 'Psychiatric battle casualties: an intra- and interwar comparison'. *British Journal of Psychiatry*, **178** (3), pp. 242-247.
- ⁹ Hotopf, M *et al.* (2006). 'The health of UK military personnel who deployed to the 2003 Iraq war: a cohort study', *The Lancet*, 16 May 2006, **367** pp. 1731-41.
- ¹⁰ Iversen, A *et al.* (2008). 'Risk factors for post-traumatic stress disorder among UK Armed Forces personnel', *Psychological Medicine*, **38**, pp. 511-522.
- ¹¹ Fear, N *et al.* (2010). 'What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK armed forces? A cohort study', *The Lancet*, **375**, pp. 1783-1797, 22 May 2010.
- ¹² Jones, M *et al.* (2012). 'What explains posttraumatic stress disorder (PTSD) in UK service personnel: deployment or something else?', *Psychological Medicine*, 13 November 2012.
- ¹³ Sundin, J *et al.* (2010). 'Mental health among commando, airborne and other UK infantry personnel', *Occupational Medicine*, **60**, pp. 552-559.
- ¹⁴ Kok, B C *et al.* (2012). 'Posttraumatic Stress Disorder Associated With Combat Service in Iraq or Afghanistan: Reconciling Prevalence Differences Between Studies', *Journal of Nervous and Mental Disease*, May 2012, **200** (5), pp. 444-450.
- ¹⁵ Ismail K, *et al.* (2000). 'Occupational risk factors for ill health in Gulf veterans of the United Kingdom'. *The Journal of Epidemiological and Community Health*, 2000, May, **54**, pp. 834-838.
- ¹⁶ Jones, M *et al.* (2006). 'The burden of psychological symptoms in UK Armed Forces', *Occupational Medicine* 2006, **56**(5), pp. 322-328.
- ¹⁷ Iversen, A *et al.* (2007). 'Influence of childhood adversity on health among male UK military personnel', *The British Journal of Psychiatry*, 31 August 2007, **191**, pp. 506-511.
- ¹⁸ Iversen, A *et al.* (2008). op. cit.
- ¹⁹ Fear, N *et al.* (2010). op. cit.
- ²⁰ In 2008 the UN Committee on the Rights of the Child called upon the UK to review the policy of recruiting under-18s into the armed forces and expressed concern that "[the] active recruitment policy may lead to the possibility of targeting those children who come from vulnerable groups". United Nations Committee on the Rights of the Child [UNCRC]. (2008). *Consideration of Reports Submitted by States Parties Under Article 8 of the Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict – Concluding Observations: United Kingdom of Great Britain and Northern Ireland (CRC/C/OPAC/GBR/CO/1)*. Geneva: UN, 17 October 2008, p. 3.
- ²¹ In 2009, the House of Commons and House of Lords Joint Committee on Human Rights endorsed the recommendations made by the UN Committee on the Rights of the Child in 2008 (see above). House of Commons and House of Lords Joint Committee on Human Rights. (2009). *Children's Rights* (Twenty-fifth Report of Session 2008-09), pp. 47-48.
- ²² In 2013, the House of Commons Defence Committee questioned '...why the Army is so dependent on recruiting personnel under the age of 18 years compared to the other two Services'. House of Commons Defence Committee. (2013). *The Armed Forces Covenant in Action? Part 4: Education of Service Personnel (Fifth Report of Session 2013-14)*, (London: The Stationery Office), p. 7.
- ²³ Child Soldiers International and ForcesWatch. (2013). 'One Step Forward: The case for ending the recruitment of minors by the British armed forces' (London).
- ²⁴ BBC News. (2013). 'Army recruits must get chance to study, says Labour', 25 June 2013, online at <http://www.bbc.co.uk/news/uk-politics-23053690> (accessed 5 July 2013).
- ²⁵ Ismail K, *et al.* (2000). 'Occupational risk factors for ill health in Gulf veterans of the United Kingdom'. op. cit.
- ²⁶ Jones, M *et al.* (2006). op. cit.
- ²⁷ Iversen, A *et al.* (2007). op. cit.
- ²⁸ Iversen, A *et al.* (2008). op. cit.
- ²⁹ Rona, R *et al.* (2009). 'The Contribution of Prior Psychological Symptoms and Combat Exposure to Post Iraq Deployment Mental Health in the UK Military', *Journal of Traumatic Stress*, **22** (1), pp. 11-19.
- ³⁰ Fear, N *et al.* (2010). op. cit.
- ³¹ Defence Analytical Services and Advice (DASA). (2011). 'Suicide and open verdict deaths in the UK Regular Armed Forces: numbers and standardised mortality ratios, 1984 - 2010, males only' online at <http://www.dasa.mod.uk/modintranet/UKDS/UKDS2011/c3/ta ble306.php> (accessed 22 August 2012).
- ³² Rutherford, S; Schneider, R; and Walmsley, A. (2006). *Quantitative & Qualitative Research into Sexual Harassment in the Armed Forces* [report], (Equal Opportunities Commission and the Ministry of Defence, 22 March 2006), p. 22.
- ³³ There is some evidence to indicate that bullying in armed forces training establishments is higher than among the trained strength. See Coalition to Stop the Use of Child Soldiers (now known as Child Soldiers International) (2011): 'Catch 16-22: Recruitment and retention of minors in the British armed forces' (London), pp. 9-10.
- ³⁴ MacManus, D. *et al.* (2012). 'Violent behaviour in UK military personnel returning home after deployment', *Psychological Medicine*, 25 November 2011, **42**, pp. 1663-1673.

- ³⁵ Macmanus, D *et al.* (2013). 'Violent offending by UK military personnel deployed to Iraq and Afghanistan: a data linkage cohort study', *The Lancet*, 16 March 2013.
- ³⁶ Defence Analytical Services and Advice (2011). 'UK Regular Forces Intake And Outflow By Age For Financial Year 2009-10' online at <http://www.dasa.mod.uk> (accessed 11 June 2012).
- ³⁷ Hansard: HC Deb, 19 January 2011, c824W.
- ³⁸ Data from 2009-10: 33.7% of minors in the Army were in the Infantry; calculated from Hansard: HC Deb, 19 January 2011, c824W. Note that the proportion of Army entrants who are minors joining the Infantry is higher than this, at 35.8% in the same year; calculated from Hansard: HC Deb, 13 May 2013, c99W.
- ³⁹ See Appendix: Table 4
- ⁴⁰ Ministry of Defence. (2013) 'British Fatalities: Operations in Afghanistan' op. cit.
- ⁴¹ Calculated from Hansard: HC Deb, 13 May 2013, c99W; DASA. (2010). 'TSP 19 – Intake to and Outflow from UK Regular Forces' online at <http://www.dasa.mod.uk/applications/newWeb/www/index.php?page=48&thiscontent=190&pubType=1&date=2010-06-10&PublishTime=09:30:00> (accessed 22 May 2013); DASA. (2011). 'TSP Annual Report – Sex and ethnicity of the UK regular forces (Table 7: UK Regular forces intake by Service and age, Financial Year 2010/11)' online (accessed 26 May 2011) [no longer available online]; DASA. (2012). 'TSP Annual Report – Sex and ethnicity of the UK regular forces (Table 7: UK Regular forces intake by Service and age, Financial Year 2011/12)' online (accessed 15 January 2013) [no longer available online].
- ⁴² Hansard: HC Deb, 13 May 2013, c100W.
- ⁴³ See Appendix: Table 3.
- ⁴⁴ Based on data from the Infantry, calculated based on age at enlistment of those leaving between 1 July 2009 and 31 July 2011. Hansard: HC Deb, 12 September 2011, c1007W.
- ⁴⁵ The data for Regular enlisted personnel excludes officers, reservists, Gurkhas and Home Service battalions of the Royal Irish Regiment. DASA. (2010). 'Historical National Statistics Publications: TSP 19 - UK Regular Forces Intake and Outflow by Age' online at <http://www.dasa.mod.uk/applications/newWeb/www/index.php?page=67&pubType=1&thiscontent=190&date=2010-06-10> (accessed 30 March 2013).
- ⁴⁶ See Appendix: Table 3.
- ⁴⁷ Ministry of Defence. (2013). 'British Fatalities: Operations in Afghanistan' op. cit.
- ⁴⁸ Excluding officers, reservists, Gurkhas and Home Service battalions of the Royal Irish Regiment.
- ⁴⁹ Where we were able to discover only the calendar year of enlistment, we converted this to a financial year proportionally (i.e. in one quarter of randomly selected cases, the financial year was deemed to begin in the preceding calendar year).
- ⁵⁰ Excludes officers, reservists, Gurkhas and Home Service battalions of the Royal Irish Regiment.
- ⁵¹ See Appendix: Table 3.
- ⁵² Excludes officers, reservists, Gurkhas and Home Service battalions of the Royal Irish Regiment.
- ⁵³ Ibid.
- ⁵⁴ Ibid. Training drop-out rates based on known rates between 2007-08 and 2011-12 inclusive; Hansard: HC Deb, 13 May 2013, c99W.
- ⁵⁵ Hansard: HC Deb, 19 January 2011, c824W.
- ⁵⁶ See Appendix: Table 4.
- ⁵⁷ Based on data from the Infantry, calculated based on age at enlistment of those leaving between 1 July 2009 and 31 July 2011. Hansard: HC Deb, 12 September 2011, c1007W.
- ⁵⁸ Hansard: HC Deb, 13 May 2013, c99W.
- ⁵⁹ Calculated from Ministry of Defence. (2013). 'British Fatalities: Operations in Afghanistan' op. cit.
- ⁶⁰ Between 2007 and 2012 the number of British armed forces fatalities in Afghanistan per year varied from 41 to 109 but the ratio of non-fatal injuries to fatalities remained relatively constant (range from 4.5:1 to 6.1:1). Calculated from Ministry of Defence. (2013). 'British Fatalities: Operations in Afghanistan' op. cit. and Ministry of Defence. (2013). 'Op Herrick casualty and fatality tables' op. cit.
- ⁶¹ Jones, E and Wessely, S. (2001). op. cit.
- ⁶² Hotopf, M *et al.* (2006). op. cit.
- ⁶³ Fear, N *et al.* (2010). op. cit.
- ⁶⁴ Jones, M *et al.* (2012). op. cit.
- ⁶⁵ Sundin, J *et al.* (2010). op. cit.
- ⁶⁶ Iversen, A *et al.* (2008). op. cit.
- ⁶⁷ Ibid.
- ⁶⁸ Rona, R *et al.* (2009). op. cit.
- ⁶⁹ Green, B *et al.* (1990). 'Risk Factors for PTSD and Other Diagnoses in a General Sample of Vietnam Veterans', *American Journal of Psychiatry*, **147** (6), pp. 729-733.
- ⁷⁰ O'Brien, L S and Hughes, S J. (1991). 'Symptoms of post-traumatic stress disorder in Falklands veterans five years after the conflict', *British Journal of Psychiatry*, **159**, pp. 135-141.
- ⁷¹ Orner, R J; Lynch, T; and Seed, P. (1993). 'Long-term traumatic stress reactions in British Falklands War veterans', *British Journal of Clinical Psychology*, **32**(4), pp. 457-459.
- ⁷² Friedman, J *et al.* (1994). 'Post-traumatic stress disorder in the military veteran', *Psychiatric Clinics of North America*, June 1994, **17** (2), pp. 265-277.
- ⁷³ Hoge, C *et al.* (2004). 'Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care', *The New England Journal of Medicine*, 1 July 2004, **351** (1), pp. 13-22.
- ⁷⁴ Ikin, J F *et al.* (2004). 'War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War' *British Journal of Psychiatry*, **185**, pp. 116-126.
- ⁷⁵ Rona, R *et al.* (2009). op. cit.
- ⁷⁶ Ismail K, *et al.* (2000). op. cit.
- ⁷⁷ Jones, M *et al.* (2006). op. cit.
- ⁷⁸ Iversen, A *et al.* (2007). op. cit.
- ⁷⁹ Iversen, A *et al.* (2008). op. cit.
- ⁸⁰ Fear, N *et al.* (2010). op. cit.
- ⁸¹ Green, B *et al.* (1990). op. cit.
- ⁸² Friedman, J *et al.* (1994). op. cit.
- ⁸³ For sources, see 'Discussion' section.

⁸⁴ Figures prior to 2007 are not available; figures provided for 2012-13 do not cover a full financial year and so are excluded. Hansard: HC Deb, 13 May 2013, c99W.

⁸⁵ DASA. (2010). 'TSP 19 – Intake to and Outflow from UK Regular Forces' online at <http://www.dasa.mod.uk/applications/newWeb/www/index.php?page=48&thiscontent=190&pubType=1&date=2010-06-10&PublishTime=09:30:00> (accessed 22 May 2013); DASA. (2011). 'TSP Annual Report – Sex and ethnicity of the UK regular forces (Table 7: UK Regular forces intake by Service and age, Financial Year 2010/11)' online (accessed 26 May 2011) [no longer available online]; DASA. (2012). 'TSP Annual Report – Sex and ethnicity of the UK regular forces (Table 7: UK Regular forces intake by Service and age, Financial Year 2011/12)' online (accessed 15 January 2013) [no longer available online].

⁸⁶ Hansard: HC Deb, 13 May 2013, c99W.

⁸⁷ DASA. (2013) 'Table 2: Full time trained strengths and requirements of UK Armed Forces at 1 Jan 2013' in Quarterly Personnel Report, 14 February 2013, online at <http://www.dasa.mod.uk/> (accessed 25 March 2013).

⁸⁸ Infantry strength at 1 February 2013, provided by DASA (personal communication), 25 March 2013.

⁸⁹ Calculated from Ministry of Defence. (2013). 'British Fatalities: Operations in Afghanistan' online at <https://www.gov.uk/government/fields-of-operation/afghanistan> (accessed 1 April 2013).