J R Army Med Corps 1999; **145:** 13-14

Trauma Related Symptoms in British Soldiers 36 months following a Tour In the Former Yugoslavia

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Summary: This paper measures the prevalence of psychological symptoms in two British Infantry battalions, 36 months after being involved in peace keeping operations in the former Yugoslavia during November 1992-April 1993. Those deployed had a high level of post traumatic stress disorder (16%) compared to (9%) in the control group. However, there was a high level of probable psychiatric disorder in both the Bosnia and control group of around 25%. The possible explanations for these findings are discussed.

British troops have been involved in peace keeping operations in the former Yugoslavia from late 1992. The first 6 month tours were particularly demanding and the soldiers involved served in arduous conditions under the constant threat of death or serious injury. They were exposed to a high frequency of events that would satisfy the criteria A of the DSM IV diagnosis of Post Traumatic Stress Disorder (PTSD), for example coming under direct fire, seeing colleagues or civilians being killed and injured and under the threat of being killed or seriously injured themselves. Operations in the former Yugoslavia involved exposure to dead body collections, witnessing death or serious injury to women and children and being by-standers to the process of 'ethnic cleansing'.

The incidence of PTSD in troops involved in high intensity combat is high. For example O'Brien (1), found that 22% of British infantry soldiers still serving in the Army 5 years after having fought in the Falklands war were suffering from PTSD and half had PTSD symptomatology. Kulka (2) found a 15% prevalence of current PTSD and 30% lifetime PTSD among Vietnam Veterans. The incidence following peace keeping operations is likely to be less. Litz *et al* (3) found an 8% incidence of PTSD in U.S. soldiers after serving in peace keeping operations in Somalia. There has been no previous published work on the incidence of psychological symptoms in British troops following peace-keeping operations.

There is no formal psychological screening process following an operational deployment in the British Army although there is informal screening in that individuals presenting with symptoms or who are noticed to have problems are offered psychological help. This study was conceived after concerns from various sources that there was considerable psychiatric morbidity in units who had served in Bosnia, and in particular during the early time of 1992-1993.

The aim of this study was to measure the prevalence of trauma related symptoms in those soldiers still serving 3 years after returning from a tour in the former Yugoslavia.

Method

The infantry units were identified who had deployed on the first tour to the former Yugoslavia. The infantry battalion deployed consisted of 400 men approximately from one unit (Battalion A) reinforced by a company (approximately 100 men) from another battalion (Battalion B). Permission was obtained from the Commanding Officers of both units. All available soldiers and officers on the study day were gathered in groups and an explanation of the study given. The study was approved by the Army Research and Ethics committee and the soldiers and officers completed a consent form. The volunteers were asked to complete the Impact of Events Scale (IES) Horowitz (4), a General Health Questionnaire - 28 version (5), a demographic questionnaire, and a Modified combat exposure questionnaire. The latter was based on Keane *et al* (6) and was modified to take into account the type of combat exposure relevant to low intensity peace-keeping operations. The sample was divided into two groups, those who had deployed to Bosnia on the tour (study group) and those who had not (controls).

Results

The results were analysed using SPSS for Windows 6.01. The mean IES, GHQ, CES scores and ages were compared between the two groups using the t test for independent samples. The proportion of soldiers whose IES scores indicated symptoms of PTSD and whose GHQ scores indicated psychiatric caseness were compared in the two groups using the Chi^2 test. A total of 397 questionnaires were returned, of which

382 (96%) were useable. No-one who attended the group explanation declined to enter the study. Of the 382, 145 soldiers has been to Bosnia (subjects) and 234 had not (controls). The mean IES, GHQ, CES and ages of the two groups are given in Table 1.

IES scores of greater than 35 have been shown to correlate well with the diagnosis of PTSD, Neal (7). Scores of between 15 and 35 were categorised as "partial PTSD", that is soldiers with intrusive and avoidant symptoms related to trauma exposure but not of sufficient intensity and/or frequency to reach diagnostic significance for PTSD. The distribution of full and partial PTSD for both subjects and controls is shown in Table 2.

A cut off of 5 is used in the GHQ-28 to indicate psychiatric caseness. Table 3 shows the distribution of psychiatric caseness between the two groups.

Table 1
Mean Age and IES, GHQ, CES scores

	Subjects	Controls	Independent t-test
Mean age (years)	26.00 (s.d. 4.25)	24.44 (s.d. 5.06	p=0.002*
Mean IES scores	13.81 (s.d. 17.0)	8.04 (s.d. 14.1)	p=0.001*
Mean GHQ scores	3.29 (s.d. 5.23)	3.30 (s.d. 4.84)	p=989
Mean CES scores	15.64 (s.d. 7.43)	9.24 (s.d. 8.75)	p<0.001*

Table 2
Distribution of PTSD

No PTSD (IES<15)	Partial PTSD (IES≥15<35)	PTSD (IES≥35)		
Control	192 (81%)	24 (10%)	21 (9%)	237
Subjects	96 (66%)	26 (18%)	23 (16%)	145
	288	50	44	

Chi^2 = 10.63, df 2, p=0.005*

Table 3
Distribution of Psychiatric Caseness

	No Case (GHQ <5)	Case (GHQ ≥5)	
Control	179 (75%)	58 (24%)	237
Subjects	113 (78%)	32 (22%)	145
	292	90	

Chi^2 = 0.288, df 1, p=0.591

Discussion

The study indicates a high level of post traumatic symptomatology as measured by the IES in both subjects and controls, although the level in subjects was significantly greater. British soldiers are subject to 'sequential traumatisation' with frequent tours to Northern Ireland as well as peace keeping duties to the former Yugoslavia. The majority of both subjects and controls had been on at least one additional operational tour other than Bosnia, which may explain the relatively high level of post traumatic symptoms in the controls.

The level of psychiatric cases as measured by the GHQ was also high (approximately 25%) in both groups but surprisingly there was no significant difference between subjects and controls. It is of concern that there is such a high prevalence of apparent psychological morbidity. The soldiers studied were all considered to be fully fit and could deploy on an operational tour at any time. There is a theoretical risk that deploying whilst a psychiatric case would place such an individual at risk of further traumatisation. In addition such a soldier may be less effective and place his or her colleagues at risk and also may require medical evacuation from the theatre of operations if they experienced a deterioration in psychiatric symptoms. One of the battalions was studied whilst stationed in Northern Ireland (during the cease fire) and hence although not under threat was nevertheless separated from families and working hard, which might explain the relatively high level of psychological symptoms.

The study has a number of limitations. Those who had deployed to Bosnia were significantly older than the controls, which may be a confounding variable. Secondly it is retrospective and it is difficult to be sure that the post traumatic symptoms are specifically related to the Bosnia tour. PTSD is measured somewhat indirectly using the IES. Although it has shown to be a well validated instrument, at low baseline levels it may over-estimate PTSD. It is not certain what reporting high levels of post traumatic symptoms means in a soldier who is apparently functioning normally at work. It may be that intrusive symptoms are accepted as normal in the military context and an individual is able to function well. This is supported by the fact that only half of soldiers with a high IES scores reach the threshold for caseness on the GHQ. Alternatively it is possible for soldiers with PTSD to function apparently well at work but be dysfunctional in a social or family context. This needs further investigation and would be best examined with semi-structured face to face interviews which would allow a more exact diagnosis and assessment of functional impairment.

REFERENCES

1. O'Brien LS, Hughes SJ. Symptoms of post-traumatic stress disorder in Falklands veterans five years after the conflict 1991. *Br J Psychiatry 1991*; **159:**135-41.
2. Kulka RA, Schlenger WE, Fairbank JA, *et al.* Trauma and the Vietnam War Generation: Report of findings from the National Vietnam Veterans Readjustment Study. New York: Burnner/Mazel, 1990.
3. Litz BT, Orsillo SM, Friedman M, Ehlich P, Batres A. Post Traumatic Stress Associated with Peacekeeping Duty in Somalia for U.S. Military Personnel. *Am J Psychiatry* 1997; **154:** 178-184.
4. Horowitz MJ, Wilner M, Alvarez W. Impact of Events Scale: a measure of subjective distress. Psychosom Med 1979; **41:** 209-218.
5. Goldberg DP, Williams P. The user's guide to the General Health Questionnaire. Slough: NFER/Nelson 1988.
6. Keane TM, Fairbank JA, Caddell JM, *et al.* Clinical Evaluation of a Measure to Assess Combat Exposure. *Psychol assessment* 1989; **1:** 53-55.
7. Neal LA, Busuttil W, Rollins J. Convergent validity of measures of PTSD in a mixed military and civilian population. *J Traumatic Streee* 1994; **7:** 447-450.