

Psychological Sequelae Following the Gulf War Factors Associated with Subsequent Morbidity and the Effectiveness of Psychological Debriefing

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Background. The aim was to study the effect of brief counselling and psychological debriefing following a trauma on subsequent morbidity.

Method. We investigated psychological morbidity in 62 British soldiers whose duties included the handling and identification of dead bodies of allied and enemy soldiers during the Gulf War. Of these soldiers, 69% received a psychological debriefing on completion of their duties. The subjects completed by post a demographic questionnaire, the General Health Questionnaire (GHQ-28) and the Impact of Events Scale.

Results. After nine months 50% had evidence of some psychological disturbance suggestive of posttraumatic stress disorder (PTSD); 18% had sought professional help; 26% reported relationship difficulties. Neither prior training nor the psychological intervention appeared to make any difference to subsequent psychiatric morbidity. Morbidity at nine months was more likely in those with a history of psychological problems and those who believed their lives had been in danger in the Gulf.

Conclusions. These findings show that a psychological debriefing following a series of traumatic events or experiences does not appear to reduce subsequent psychiatric morbidity and highlights the need for further research in military and civilian settings.

Post-traumatic stress disorder (PTSD), as well as a variety of other forms of psychiatric disturbance, have long been recognised as common sequelae following severe psychological stress (Ramsay, 1990). General population studies reveal a PTSD prevalence of 1–2% (Helzer *et al.*, 1987). In war veterans the prevalence of PTSD has been reported to exceed 31% (Kulka *et al.*, 1988). As many as 50% of Falklands War veterans were subsequently found to have at least some symptoms of PTSD (O'Brien & Hughes, 1991), as were 54% of survivors of a 'friendly fire' incident during the Gulf War (Searle & Bisson, 1992). It is not only the participants of war who are at risk: there are important similarities and parallels between the psychological stresses associated with war and those in other settings such as terrorist outrage (Curran, 1988), civilian disasters (Cobb & Lindenmann, 1943; Duckworth, 1986), and personal tragedy such as torture and rape (Mezey & Taylor, 1988).

Serious morbidity has also been reported in rescue workers and other personnel involved in the aftermath of disaster (e.g. McFarlane, 1986). Body handling and identification after disasters has also been associated with subsequent psychological morbidity (Taylor & Frazer, 1982; Jones, 1985) and recognised as a stressor that "can make victims of rescuers" (Ursano & McCarroll, 1990). Some negative findings have been reported: Alexander &

Wells (1991) found no increase in psychological morbidity among police officers involved in body handling duties following the Piper Alpha oil-rig disaster. This was attributed to the officers' coping strategies, as well as organisational and managerial factors which included a regular nightly debriefing.

It is widely believed that brief counselling and psychological or 'critical incident' debriefing (PD) following a trauma reduce subsequent morbidity (Mitchell, 1983; Dyregov, 1989). Debriefing is thought to allow victims of psychological trauma to be able to process their experience cognitively and emotionally. Immediacy is thought to enhance the effectiveness of debriefing. The earlier debriefing occurs, the less the opportunity for maladaptive and disruptive cognitive and behavioural patterns to become established (Rachman, 1980). The management of acute combat stress reactions includes the early recognition of stress and an opportunity for debriefing. Based on the experience of the Vietnam and Arab-Israeli wars there is evidence that such management helps restore victims to a state of normal psychological functioning and may reduce long-term psychological morbidity, including PTSD (Bloch, 1969; Jones & Johnson, 1975; Foy *et al.*, 1984; Solomon & Benbenishty, 1986).

Early psychological intervention based on the military model is employed in civilian practice

following disasters, as well as following other psychological traumas such as rape (Haywood, 1975). Professional groups which include lay counsellors, psychologists, social workers and psychiatrists have sought to establish a role following traumatic incidents (British Psychological Society, 1990). Although intuitively appealing and a response to perceived need, the available evidence is largely anecdotal and there are no controlled studies to demonstrate the effectiveness of early psychological intervention. In a group of fire-fighters who had handled dead bodies, no difference was found after two weeks between those who had been formally debriefed and those who had talked with their colleagues in informal settings (Hytton & Hasle, 1989).

Research into the whole field of post-traumatic stress has been hampered by a lack of clear diagnostic criteria and standardised instruments to rate symptoms (Raphael *et al.*, 1989). A lack of control groups makes it difficult to judge the efficacy of any professional intervention. If rapid psychological intervention is effective, it is unclear what form this should take, who should deliver it, when, and whether it should be offered to everyone or limited to selected 'high-risk' individuals. The unpredictability, setting, and chaos of war and civilian disaster alike make research, and in particular, controlled studies, extremely difficult. The effectiveness of early psychological intervention to prevent morbidity following traumatic experiences remains uncertain and untested (Dunning, 1990). It has been observed that an inappropriate and ill-timed intervention may only serve to accentuate symptoms of stress (Lieberman, 1982).

Despite the early Allied victory, many soldiers in the Gulf War had potentially traumatic experiences: one such group were those soldiers employed in the Army War Graves Service (AWGS). These soldiers received training for their duties which included the recovery, identification, and preparation for burial of both Allied and enemy war dead.

The study investigated psychological morbidity nine months after the Gulf War in AWGS personnel. The study is unusual for two reasons: firstly, all the individuals worked closely together and were exposed to the similar psychological stressor of body handling, and secondly, for operational reasons one group of subjects received a psychological debriefing and the other group did not, thereby creating a control group which enabled the effectiveness of early intervention to be assessed.

Method

The subjects were 74 British regular soldiers, serving with the AWGS in the Gulf War (median age 28 years, range 19–44; median length of service 9 years, range 1–22). Those soldiers who joined the AWGS in the UK received training which included preparation for the emotional and psychological consequences of their work; they were given the opportunity to withdraw from the AWGS and one did. In the Gulf, AWGS required reinforcements; these were all volunteers. The period of training was, by operational necessity, brief, but all the training included exposure to dead bodies in a mortuary. During the Gulf War the AWGS personnel worked in small teams recovering the bodies of Allied and enemy soldiers.

A psychological 'debriefing' by welfare professionals (chaplains, psychologist, psychiatrists or social workers) was organised as soon as possible, either in the Gulf or on return to the UK; for one group this was not operationally possible. The intervention included an educational component, in which the symptoms of post-traumatic stress were explained as a normal human reaction to abnormal stress, a small group debriefing session with two welfare professionals, using the Dyregov (1989) model, and finally advice on where to get help, if required. The emphasis was on the frequency and normality of any disturbing symptoms, in an attempt to destigmatise and facilitate help-seeking.

Nine months after their return from the Gulf the subjects were sent three questionnaires by post. Firstly, they were asked to complete a demographic questionnaire which also sought details of past psychological problems, previous experience of body handling, and specific questions about their experiences and duties in the Gulf, details of health or emotional problems, relationship difficulties and help-seeking since the conflict. It also asked subjects to give their subjective opinion of their Gulf experience and psychological debriefing (if they had received one). Subjects also completed the General Health Questionnaire, 28-item version (GHQ-28; Goldberg & Hillier, 1978). The GHQ is a reliable instrument designed to detect non-specific psychiatric morbidity, and it has been validated in a variety of settings, including disaster workers (McFarlane, 1988). Finally, subjects were asked to complete the Impact of Events Scale (IES; Horowitz *et al.*, 1979). The IES is a 15-item self-report instrument designed to measure the two principal groups of symptoms found in PTSD, namely 'avoidance' and 'intrusive repetitive images and thoughts'. χ^2 tests and confidence intervals (CI) were used to analyse

categorical variables and ANOVA to establish the significance of differences between continuous variables.

Results

The questionnaire was completed by 62 subjects (86%); 21 (34%) of the respondents had a GHQ-28 score of 5 or more, 31 (50%) of respondents had a IES score of 12 or more. Of these 31, 21 (34% total) had IES scores above 20, and 17 (27% total) had scores of 30 or more. There was a significant *bona fide* reliability between GHQ-28 and IES scores ($\kappa = 0.41$, $s.e. = 0.08$, $z = 5.13$).

The number of respondents who received a psychological debriefing either in the Gulf or on their return to the UK was 42. Of the 40 debriefed subjects who provided additional information, 20 (50%) reported that they found this helpful. In comparison with the 20 subjects who did not receive a debriefing, IES scores were not significantly different for the 'briefed' subjects: $F(1, 57) = 0.47$, $P > 0.2$ (mean and s.d. respectively, 15.9 (16.17) and 19.37 (21.87); 95% CI for the mean difference of -3.47 was -13.6 to 6.66). Similar results were obtained for GHQ-28 scores: $F(1, 56) = 0.02$, $P > 0.2$ (mean and s.d. respectively, debriefed subjects 4.90 (6.97) and 20 non-debriefed subjects 4.61 (7.00); 95% CI for the mean difference of 0.29 was -3.68 to 4.26).

There was no association between 'caseness' on either GHQ-28 (a score of > 5) or the IES instrument (a score of > 12) and debriefing status: for IES, 50% of those debriefed were classified as 'cases' in comparison with 42.1% for those 20 subjects not debriefed ($\chi^2 = 0.322$, 95% CI for the difference in proportions, -0.35 to 0.192). For GHQ-28, 37.5% of those debriefed were cases v. 33.33% for the non-debriefed ($\chi^2 = 0.093$; 95% CI for the difference in proportions -0.306 to 0.223).

There were no significant differences in GHQ-28 or IES scores between those who received psychological debriefing in the Gulf immediately after the war or in the UK following post-operational leave. Of the 18 who received a debriefing in either the Gulf or the UK, the mean IES score was 14.2 (s.d. = 16.1); of the 22 debriefed in the UK only, the mean IES score was 17.27 (s.d. = 16.5), $F(2, 56) = 0.37$, $P > 0.2$. For GHQ-28 these scores were respectively 5.74 (s.d. = 5.60) and 4.14 (s.d. = 5.18), $F(2, 55) = 0.27$.

There was a significant association between overall GHQ-28 and IES scores, and both (a) 'caseness' on either instrument, and (b) a subsequent change in close relationships, particularly separation from an established partner (IES $\chi^2 = 5.73$, $P < 0.05$; GHQ

$\chi^2 = 5.74$, $P < 0.05$). Altogether nine respondents reported separating from an established partner and another seven reported relationship difficulties.

IES 'caseness' was significantly less likely in those soldiers who had previous 'real-life' experience of handling human body remains ($\chi^2 = 3.87$, $P < 0.05$); 95% CI of the difference between proportions 0.057 to 0.627. Both IES and GHQ scores were unrelated to the numbers of bodies handled (median = 50), whether the bodies were of Allied or enemy soldiers, and whether the bodies were dismembered or intact.

GHQ-28 and IES 'caseness' were significantly more likely in individuals who perceived a significant threat to their own safety—that is, who at some point during their experience in the Gulf felt they were going to be killed (for GHQ-28, $\chi^2 = 6.05$, with 20.7% becoming a case if there was no felt threat v. 51.7% of those who perceived a threat; relative risk 0.40, 95% CI 0.181–0.885; for IES $\chi^2 = 4.80$, with 34.4% becoming a case with no perceived threat and 63.0% with a perceived threat; the relative risk was 0.546 with 95% CI 0.312–0.955). Soldiers with GHQ-28 or IES caseness were significantly more likely to report their experience as unpleasant (for GHQ-28, $\chi^2 = 16.26$, $P < 0.001$, difference -0.533 , 95% CI for the difference -0.0758 to -0.309 ; for IES $\chi^2 = 7.95$, $P < 0.01$, difference -0.391 ; 95% CI for the difference -0.064 to -0.142). Three soldiers who reported a past history of psychological problems, all had high GHQ and IES scores.

Eleven (18%) of the respondents had sought help after the conflict from welfare professionals and seven of these had been referred to a psychiatrist. Of this group of 11, at the time of the study, GHQ-28 or IES 'caseness' was still evident in seven: thus only seven of the 28 soldiers (25%) demonstrating GHQ-28 or IES 'caseness' had sought help since returning from the Gulf.

There were non-significant negative correlations between age, length of service and GHQ-28 and IES scores. There was no difference in scores on either of the two measures between individuals who had previously worked together as part of the same team, and those who were individually attached to the unit. There was no difference in subsequent morbidity and no significant difference in either GHQ-28 or IES scores, whether or not subjects received the longer training in the UK prior to their deployment, or the briefer training given to reinforcements in the Gulf.

Discussion

Our results show evidence of psychological morbidity in a group of fit young men nine months after their experiences during the Gulf War: this is comparable

with the results of other studies in military and civilian populations. Of particular interest is the small number of individuals who actually sought help for the symptoms they reported on the GHQ-28 and IES questionnaires. This probably reflects the prevailing culture in the armed forces and emergency services that emphasises 'tough-mindedness' and tends to militate against seeking help for psychological problems. It has been suggested that soldiers may accept their symptoms as an inevitable consequence of their experiences (O'Brien & Hughes, 1991) and do not want professional help, perceive that professional help would not be useful, or have high levels of perceived self-efficiency (Solomon, 1989). It is also well recognised that sufferers of PTSD avoid seeking help as part of the syndrome—to avoid reminders of the traumatic experience. The impact and clinical significance of the symptoms reported in this study are difficult to judge. It is not possible on the basis of these findings to distinguish distress from disorder and disability, but their association with the disruption of previously stable relationships suggests that they may be serious and that complacency over the suffering they cause would be inappropriate. In addition to relationship problems, PTSD is also known to be associated with, and may present as, behavioural disturbance, difficulties at work or with discipline, and abuse of alcohol and other substances. The symptoms of PTSD should always be actively sought in 'high-risk' individuals such as soldiers or emergency workers, who may present with a variety of apparently unrelated problems and who are reluctant to volunteer the underlying distressing intrusive and avoidant phenomena.

The failure of the psychological debriefing to reduce morbidity significantly is disappointing. We are unaware of any other study in which there has been a control group to compare the longer-term effectiveness of this type of intervention. Although the psychological debriefing was not rigorously standardised in terms of content and timing, it contained the same common elements and reflects the practical difficulties of gaining prompt access to individuals working under difficult circumstances. The need to regularly talk about their experiences had been emphasised to all the AWGS personnel during their training. It is possible that when informal debriefing within the teams is already established as a normal working practice, a formal intervention of this kind by welfare professionals offers little further protection from subsequent morbidity. Psychological debriefing may be more effective when carried out by individuals who have successfully survived body handling previously and been trained in the techniques of

debriefing. Our findings highlight the need for further studies to explore the effectiveness of professional psychological interventions following psychological stress.

Although no beneficial effect was observed as a result of group cohesion factors, in that soldiers who had previously worked together before the Gulf deployment had no less risk of morbidity, it is likely that the high morale and motivation of the force led to rapid integration and acceptance of new individuals within each team.

There was no apparent difference in post-traumatic morbidity between soldiers trained in the UK and those trained in the Gulf; the longer UK training appeared to confer no advantage. This does not mean, however, that training is ineffective: the two groups worked closely together and their association with comrades who were better trained and prepared may have had indirect benefits on the less well prepared group trained in the Gulf. Although soldiers with previous experience of body handling appeared to cope well, they represent a self-selected group; individuals who had found a similar previous experience distressing would be unlikely to volunteer for this type of duty. Training techniques for body handlers should employ graded exposure which may enhance the effectiveness of 'stress inoculation'. It is also important that training should seek ways of reducing identification and emotional involvement with victims; e.g. not looking at faces, not remaining with individual bodies throughout the entire process of recovery, identification, placement in mortuary and hand-over (Ursano & McCarroll, 1990).

It is of interest that morbidity was greater in those soldiers who felt their lives were at risk: this may reflect retrospective bias by a more distressed group but it serves as a reminder that AWGS personnel were working in a hostile environment and subject to other potential stressors. The high questionnaire scores by those individuals who had previously sought help for emotional problems is interesting, as it raises the potential importance of individual vulnerability and highlights the need for prospective studies to investigate whether there is a role for screening individuals recruited into 'high-risk' occupations. A variety of pre-morbid variables such as positive family or past personal psychiatric history, neuroticism and other personality factors, as well as social support, have all been implicated as vulnerability factors, increasing the likelihood of PTSD developing following traumatic stress.

No study in this area of research is ideal and this has its share of methodological problems. Our results rely on self-report questionnaires which, although

valid and reliable, are less satisfactory than results obtained from a standardised, structured clinical interview. Reluctance to disclose symptoms may lead to an underestimate of true morbidity. Despite these reservations, the high response rate and the presence of a control group lend weight to the study and its findings.

Despite our findings we remain committed to the principle of debriefing. Our clinical experience suggests that many soldiers valued the opportunity to express feelings of anger and guilt and derived comfort from the realisation that these were a normal emotional response to trauma. Many of the feelings expressed were intensely personal and although soldiers would share these with their comrades they had difficulty in confiding in, and tended to be suspicious of outsiders, including mental health professionals. In order to be effective, we believe debriefing should be carried out as locally and rapidly as possible. It should be a task for commanders, managers and primary health care workers. The primary task for mental health professionals should be directed towards educating these groups, rather than trying to deliver a service themselves.

Post-traumatic stress symptoms are common, distressing, and sometimes disabling: effective early help for those at risk may potentially reduce morbidity. However, any professional psychological intervention of the sort described here would be expensive on a large scale. If widespread effective help is to be made available to civilian and military personnel more research is required to establish the means of providing it.

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