

Hearts, guts and minds Somatisation in the military from 1900

Edgar Jones*, Simon Wessely

Department of Psychological Medicine, GKT School of Medicine, 103 Denmark Hill, London SE5 8AZ, UK

Received 15 April 2002; accepted 11 September 2002

Abstract

Objectives: To identify patterns of somatisation in army personnel diagnosed with postcombat syndromes from the Boer War to the Gulf conflict. **Methods:** Using random samples of UK servicemen awarded war pensions, patterns of symptoms were compared and related to contemporary accounts. **Results:** Somatic symptoms continued to be common during and after World War II, suggesting that their decline was not great as claimed. Although

psychological presentations increased, they did not supplant conversion disorders. **Conclusion:** Somatoform disorders did not disappear from the military in a smooth progression as society's understanding of psychological issues advanced. Rather there was a change in physical focus from the heart to the gut as new medical priorities arose.

© 2004 Elsevier Inc. All rights reserved.

Keywords: Conversion disorder; Disordered action of the heart; Dyspepsia; Effort syndrome; Hysteria; Shell shock

Introduction

The incidence of somatoform disorders, common during World War I and before, is widely stated to have fallen during World War II [1–3]. Hadfield regarded “the far greater proportion of anxiety states . . . as against conversion hysteria” as “the most striking change” between the two conflicts [4]. An editorial in the *BMJ* for 30 June 1945 declared,

‘Disordered action of the heart’—a favourite diagnosis in the last war—has given place to ‘effort syndrome’; and now that that has been shown by Paul Wood, [T.] Lewis, M. Jones and others to be in every respect the equivalent of an anxiety neurosis, it too has lost favour and has become a rare diagnosis. No longer do we talk of ‘shell shock’: the organic approach has given place to a preference for psychological interpretation [5].

More recently, Bourke argued that “unlike the First World War when hysterical reactions greatly outnumbered fear reactions, from 1940 there were epidemics of acute anxiety” [6]. This apparent change from physical to

psychological symptoms was explained by administrative measures to outlaw diagnoses such as shell shock and the discrediting of effort syndrome by Paul Wood and Maxwell Jones. In addition, it was claimed, servicemen were increasingly made aware of unconscious mechanisms in so-called “war neuroses” through education and psychotherapy [7].

Despite powerful scholarly arguments, it remains conventional wisdom that as psychological enlightenment spread during the 20th century, psychiatric models for unexplained symptoms gained ascendancy over more intellectually suspect organic claims. To support this contention, it is claimed that hysteria, once common, has now almost vanished from the Western world [8]. An alternative suggestion is that the former popularity of the diagnosis was a cultural phenomenon, which may be unrelated to real changes in the incidence of hysteria [9]. Within the military, this disappearance is explained by the transition from crude models of war-related injury (soldier's heart, rheumatism, shell shock) to more sophisticated psychological paradigms [10], culminating in the admission of posttraumatic stress disorder to the diagnostic canon in 1980. The implication is that our superior understanding enables us to interpret somatic presentations for what they really are, and for patients to accept these explanations without demur.

* Corresponding author.

E-mail address: e.jones@hogarth7.demon.co.uk (E. Jones).

The military present an ideal opportunity to study these hypotheses: first, because they have something close to a monopoly on combat-related psychiatric disorder, and second, because they have kept relatively consistent and detailed records. Using randomly selected groups of servicemen awarded war pensions for postcombat disorders and contemporary accounts, we attempt to test these established views about the incidence and nature of somatic disorders in the armed forces.

Method

To identify the symptom patterns of servicemen with postcombat syndromes, randomly selected samples of war pensioners from various late Victorian campaigns, the Boer War, World War I and World War II were studied [11]. In addition, 400 veterans of the Gulf War, who had been examined at the Medical Assessment Programme, were also investigated. Servicemen suffering from organic disorders or a major mental illness were excluded. Because of their particular health problems, prisoners of war were not included. For each subject, biographical and military details were recorded, together with a possible 94 symptoms extracted from medical notes taken during service and, where possible, for a decade after discharge from the forces. The 94 symptoms were then reduced to the 25 most common and the resulting data set of 1856 soldiers subjected to cluster analysis.

Results

The analysis resulted in three clusters of postcombat syndromes: a debility cluster ($n=847$), a somatic cluster ($n=434$) and a neuropsychiatric cluster ($n=575$). Although a significant statistical difference was found between the three clusters (Table 1), there was considerable overlap in the presentation of symptoms. The debility cluster was characterized by fatigue, difficulty completing tasks, shortness of breath and weakness, while rapid heartbeat, tremor,

headache, dizziness, pains in joints, difficulty sleeping, changes in weight and anxiety were moderately represented. Psychological and neurological symptoms, such as depression, memory impairment, irritability and poor concentration were notably absent. The somatic cluster was typified by rapid heartbeat, shortness of breath, fatigue and dizziness. Difficulty completing tasks, headache, tremor and anxiety were moderately represented. This symptom cluster was indicative of a functional cardiac syndrome.

Distinguished from the somatic cluster by a number of psychological symptoms, fatigue, headache, depression, anxiety and difficulty sleeping were prominent in the neuropsychiatric group. Nevertheless, this cluster was also characterised by a range of somatic symptoms, including shortness of breath, tremor, pains in joints, back pain, excessive sweating and rapid or irregular heartbeat. In addition, difficulty completing tasks, forgetfulness, dizziness, weakness, irritability, poor concentration, jumpiness, changes in personality, nightmares and weight change were moderately represented.

Although no simple relationship existed between war and symptomatology, an underlying association was detected. The debility syndrome was largely drawn from veterans of late Victorian campaigns, the Boer War and World War I. The somatic syndrome represented World War I with subsidiary elements from the Boer War and World War II. The neuropsychiatric cluster was predominantly composed of World War II and Gulf War servicemen. Variations between the three clusters appear to be related to trends in the state of medical knowledge and technological changes in the nature of warfare.

Continuity: shell shock and effort syndrome

Shell shock is perhaps the best-known conversion disorder in the military. It is particularly associated with World War I because of the numbers diagnosed and because the term so vividly expressed the experience of combat in that conflict. Yet, the symptoms of shell shock were not unique to 1914–1918. Kennedy reported a “Dunkirk syndrome” in 1941, which bore a striking resemblance to cases described during World War I:

They show characteristic tremors. In the most severe cases these are coarse and slow, usually involving the whole upper limb. There are also nodding movements of the head, and these with pill-rolling movements of the fingers, give the patient a general resemblance to a case of Parkinsonism. . . . There is frequently a stammer or speech may be interrupted by sudden indrawals of breath [12].

An analysis of 231 admissions to a military hospital, published in 1944, revealed a range of functional somatic presentations: cardiac focus (22.9%), persistent headache (22.5%), respiratory and cough (15.6%), abdominal focus (10.8%), rheumatism (10.0%) and urinary complaints

Table 1
Distribution of syndrome clusters by war

War	Debility syndrome	Somatic syndrome	Neuropsychiatric syndrome	Total
Victorian campaigns	23 (82)	4 (14)	1 (4)	28 (100)
Boer War	308 (77)	91 (23)	1 (0.3)	400 (100)
World War I	292 (46)	213 (33)	135 (21)	640 (100)
World War II	76 (21)	83 (23)	208 (57)	367 (100)
Malaya/Korea	2 (10)	5 (24)	14 (67)	21 (100)
Gulf	146 (37)	38 (10)	216 (54)	400 (100)
Total	847	434	575	1856

$\chi^2 = 523$, $df = 10$, P value $< .001$.

Figures in brackets indicate percentages.

(5.7%); the remainder were nonspecific [13]. Other studies found physical symptoms, such as contractures and loss of power, in servicemen who had recovered from wounds or injuries [14]. Michaelson, an ophthalmic specialist, estimated that half of the referrals to his outpatient unit in the Middle East were without organic basis, and included defective day or night vision, asthenopia, diplopia, photophobia, spots before the eyes and epiphora [15]. In 1941, Bennet, an army psychiatrist who had served as an infantry officer in World War I, wrote that the “type of psychoneurotic illness seen today differs in no way from that of the Four Years War” [16]. Official statistics (Table 2) showed that hysterical symptoms were by no means absent during World War II, even though the term shell shock had been explicitly excluded from medical terminology.

Although DAH, or effort syndrome as it was renamed by Thomas Lewis in 1917, was a common presentation during World War I, its apparent disappearance during World War II should not be taken to imply that its characteristic symptoms had also vanished. In 1946, Maxwell Jones, who had run a special treatment unit at Mill Hill, argued “there is no reason to assume that the condition has become less common—it is simply that the diagnosis E.S. is out of favour; psychiatrists in this country prefer to classify patients according to their psychiatric disability rather than their effort intolerance” [17]. Indeed, 83 cases (19.1%) of our somatic cluster focused on the heart were World War II servicemen. Because Wood and Jones had shown that the symptoms of effort syndrome were functional rather than organic, physicians and psychiatrists now categorised such patients as suffering from “psychoneurosis” and its true incidence was disguised.

Changing physical focus: nonulcer dyspepsia

Whilst all postcombat syndromes of the 20th century had somatic features, there were changes to the physical focus. Grinker and Spiegel, writing of World War II, reported that “gastrointestinal symptoms flourish in an abundance and variety,” contrasting with “the frequent cardiac syndromes observed in the last war” [18]. By 1941, the incidence of nonulcer dyspepsia had become a “major medical problem” for the UK armed forces [19]. In May 1942, digestive disorders accounted for 17% of all discharges for diseases from the army and RAF [20]. At first, it was hypothesised

that dyspepsia represented a new entity akin to shell shock at the beginning of World War I; others suggested that it was due to an acute type of peptic ulceration. Yet, studies soon showed that the incidence of ulcer in the civilian population had been growing steadily during the interwar period and that most servicemen with gastric symptoms had suffered from them before enlistment. These findings led to the conclusion that most cases were of old-standing peptic ulceration, which had broken down under the conditions of active service [21]. At a time when diagnostic tools were at best unreliable, gastroenterologists and radiologists tended to err on the side of caution. Estimates of those with peptic ulcer among the vast numbers of servicemen suffering from chronic dyspepsia ranged from 89% in 201 cases invalided from France [22] to 45.5% in 88 consecutive UK admissions [23]. A 1941 study, which included veterans of Dunkirk and the Lofoten raid, found an incidence of 64.2% in 246 servicemen admitted to a military hospital with gastrointestinal pain. The authors concluded that a change in dietary habits together with the stress of adopting to a novel lifestyle were responsible [24]. It is interesting that the most obvious explanation, the heightened stress of combat, was not explored.

In March 1941, a special meeting, held at the Royal Society of Medicine, identified two potential causes: irregular mealtimes and the heavier nature of army food [25,26]. Psychological factors were excluded because “peptic ulcer and all dyspeptic disturbances were noticeably rare” during World War I when similar stresses arguably operated. Not everyone agreed with this conclusion. Hinds Howell reported 131 cases of “neurotic dyspepsia” in 1941 at a UK military hospital, an increase of 12.4% over the figure for 1940 [27]. By contrast, he proposed a constitutional explanation:

those people of poor personality who in peacetime are only just able to accommodate themselves to their home environment are no longer able to do so when this is changed on enlistment to the discipline of army environment. Whether it is pure chance that their neurosis is centred on their digestion it is difficult to say.

Although studies conducted at the beginning of the war excluded psychological explanations, increasing contact with patients led to a reevaluation. An analysis of the social class and lifestyles of peptic ulcer mortalities led Morris and

Table 2
Admissions of army personnel to UK hospitals

Rate per 1000 strength	1940	1941	1942	1943	1944	1945	Average
Hysteria	0.7 (18.3)	0.8 (20.9)	1.6 (24.9)	2.0 (24.4)	1.5 (21.4)	1.4 (17.9)	1.3 (21.5)
Dyspepsia and gastritis	2.8 (20)	2.9 (21)	3.8 (18)	3.7 (17)	2.7 (15)	2.7 (11)	3.1 (16)
Effort syndrome	0.3 (13.4)	0.3 (14.4)	0.3 (13.8)	0.3 (10.6)	0.2 (6.9)	0.2 (6.0)	0.3 (10.5)

Figures in brackets are percentages. Hysteria cases as a percentage of all psychiatric admissions; dyspepsia and gastritis cases as a percentage of all diseases of the digestive system; effort syndrome cases as a percentage of all diseases of the nervous system.

Source: Mellor F. Casualties and medical statistics. London: HMSO; 1972:112, 122, 129.

Table 3
UK army personnel with postcombat disorders from the Boer War to the Gulf conflict by rank

Cluster/Rank	Officers	NCOs	Other ranks	Nurses	Total
Debility cluster	45 (5.3)	228 (26.9)	527 (62.2)	47 (5.5)	847
Somatic cluster	12 (2.8)	113 (26.0)	298 (68.7)	11 (2.5)	434
Neuropsychiatric cluster	47 (8.1)	193 (33.6)	320 (55.7)	15 (2.6)	575

$\chi^2 = 37$, $df = 6$, P value $< .001$.

Titmuss [28] to conclude that duodenal ulcer was a psychosomatic disorder related to a particular “hypothalamic” type of personality. They considered that the stresses of metropolitan life, rather than nutritional factors, played a key causal role [28].

Retrospective studies, based on mortality statistics, established that the war years witnessed an epidemic of peptic ulceration that subsequently rose to a peak prevalence in the mid-1950s [29]. During World War II, there was no effective treatment for peptic ulcer, apart from risky gastrectomy, and a significant mortality from perforations fuelled a general fear of the disease [30]. This suggests that “pure chance” was probably not the explanation for the increase in nonulcer dyspepsia during World War II, and that form taken by conversion disorders are influenced by popular health fears and limitations of medical science.

Officers and other ranks: the class dimension

During World War I, W.H.R. Rivers [31] had argued that officers and private soldiers responded to the intense stress of warfare in markedly different ways. Officers, who were better educated and more mentally complex, he wrote, were “less likely to be content with the crude solution of conflict between instinct and duty which is provided by such disabilities as dumbness or the helplessness of a limb” [31]. Rivers also argued that “the private soldier has fewer scruples about giving expression to his fears” [26]. Frederick Mott, who treated servicemen at the Maudsley wing of King’s College Hospital, believed that officers were more prone to neurasthenia than other ranks because “the prolonged stress of responsibility” was exacerbated by loss of sleep [32]. Our research does not support this division along class lines (Table 3). Although officers were slightly more highly represented in the neuropsychiatric sample, they were also found in the debility and somatic groups characterised by the rarity of psychological symptoms. Equally, 89.3% of the neuropsychiatric cluster was composed of NCOs and other ranks.

Discussion

Doctors treating servicemen evacuated from the Normandy campaign questioned the assertion that somatic disorders, so typical of World War I, had in fact disappeared.

Once recovered from their wounds, some soldiers showed the symptoms of effort syndrome and gastritis [33]. Our research shows that the trend from somatic disorders towards neuropsychiatric syndromes has been exaggerated. Although there undoubtedly existed a growing understanding and recognition of psychological factors, conversion disorders remained a significant feature of World War II.

Whilst somatic features of postcombat disorders endured throughout the 20th century, explanations for their existence were subject to change. So long as cardiologists could not be sure that the symptoms of effort syndrome did not represent an organic lesion, the disorder was treated cautiously, veterans being awarded war pensions and told to take light employment. Equally, servicemen themselves were more alert to heart symptoms and likely to report them. When Paul Wood established an association with psychological disorders, cases were reclassified as “psycho-neurosis” and the problem of effort syndrome was assumed to have been solved.

Because it was impossible, using the medical technology of the day, to exclude the possibility of peptic ulcer, cases of chronic dyspepsia were also given the benefit of the doubt and many servicemen invalidated from the forces or assigned to home duties. Against a background of rising numbers of deaths from perforated ulcer, it was not surprising that soldiers considered dyspepsia a potentially hazardous warning.

Both areas of the body, which became a focus for somatic disorders, are associated with ideas of valour. The words heart and courage are derived from the same Latin root *cor*, and today we still describe demoralised troops as having “lost heart.” The abdomen is also associated with fighting spirit and we speak of courageous men as having “guts,” while cowards are said to lack “the stomach for the fight.” In modern western culture an association has existed between these two areas of the body and warlike qualities. It can be no coincidence, therefore, that they have been the focus of conflicts about exposure to personal danger.

The notion that hysteria has been driven to extinction by growing psychiatric understanding cannot be sustained. First, it is by no means clear that psychological explanations are significantly more acceptable than they were in the past. Only 8.3% of the 400 Gulf War veterans in our study believed that stress played a causal role in their unexplained symptoms, while 34.3% thought that their condition was the result of toxic exposure. By contrast, 13.8% of the 567 World War I veterans thought that the psychological pressures of active service had caused their physical symptoms [14]. A recent study of primary care showed a minimum prevalence figure of 48 per 100,000 for conversion disorders, although the authors believed that this was an understatement of their true incidence [34]. Furthermore, it has been suggested that the limited number of epidemiological investigations into hysteria has contributed to the impression that this remains a rare phenomenon [35]. It is not that

somatic disorders disappear, rather they change their form in response to powerful medical and cultural forces. Appearing in new clothes, they seem to have lost none of their former ability to mislead and attract public attention.

Acknowledgments

Edgar Jones was supported by a grant from the Ministry of Defence.

Table 1 is reproduced with kind permission of the *BMJ*.

References

- [1] MacKeith SA. Lasting lessons of overseas military psychiatry. *J Ment Health* 1946;92:548–9.
- [2] Walker AS. Clinical problems of war. Canberra: Australian War Memorial, 1952. p. 283.
- [3] Culpin M. Clinical psychology and some forgotten episodes. *BMJ* 1952;2:956.
- [4] Hadfield JA. War neurosis, a year in a neuropathic hospital. *BMJ* 1942;1:281.
- [5] Editorial. Progress in psychiatry during the war. *BMJ* 1945;1:913.
- [6] Bourke J. Disciplining the emotions: fear, psychiatry and the Second World War. In: Cooter R, Harrison M, Sturdy S, editors. *War, medicine and modernity*. Thrupp, Stroud: Sutton Publishing, 1998. p. 226.
- [7] Rickman J. A case of hysteria, theory and practice in the two world wars. *Lancet* 1941;1:785–6.
- [8] Veith I. *Hysteria, the history of a disease*. Chicago: University of Chicago Press, 1965.
- [9] Micale M. On the “disappearance of hysteria,” a study in the clinical deconstruction of a diagnosis. *Isis* 1993;84:496–526.
- [10] Neill JR. How psychiatric symptoms varied in World War I and II. *Mil Med* 1993;149:149–51.
- [11] Jones E, Hodgins Vermaas R, McCartney H, Everitt B, Beech C, Poynter D, Palmer IP, Hyams KC, Wessely S. Post-combat syndromes from the Boer War to the Gulf War: a cluster analysis of their nature and attribution. *BMJ* 2002;324:321–4.
- [12] Kennedy A. Hysteria in war conditions. *Med Press Circ* 1941; 205(7):137.
- [13] Douglas-Wilson I. Somatic manifestations of psychoneurosis. *BMJ* 1944;1:413–5.
- [14] Scott PD, Mallinson P. Hysterical sequelae of injuries. *BMJ* 1944;1: 450–3.
- [15] Michaelson IC. Ocular manifestations of neuroses commonly found among soldiers. *BMJ* 1943;2:538–41.
- [16] Bennet EA. Anxiety states in war. *Med Press Circ* 1941; 205(7):128.
- [17] Jones M, Mellersh V. A comparison of the exercise response in anxiety states and normal controls. *Psychosom Med* 1946;8:180.
- [18] Grinker RR, Spiegel JP. *Men under stress*. London: J. & A. Churchill; 1945. p. 108, 254–5.
- [19] Hutchison JH. The incidence of dyspepsia in a military hospital. *BMJ* 1941;2:78.
- [20] Editorial. The rise in peptic ulcer. *BMJ* 1944;2:665.
- [21] Editorial. Dyspepsia in the army. *BMJ* 1940;2:836–7.
- [22] Payne RT, Newman C. Interim report on dyspepsia in the army. *BMJ* 1940;2:819–21.
- [23] Hutchison JH. The incidence of dyspepsia in a military hospital. *BMJ* 1941;2:78–81.
- [24] Graham JG, Kerr JDO. Digestive disorders in the forces. *BMJ* 1941;1:475.
- [25] Tidy HL. Discussion on dyspepsia in the armed forces. *Proc R Soc Med* 1941;34:413–4.
- [26] Tidy HL. Peptic ulcer and dyspepsia in the army. *BMJ* 1943;2: 473–7.
- [27] Hinds Howell CA. A comparison of dyspepsia in the army for 1940 and 1941. *BMJ* 1941;1:692–3.
- [28] Morris J, Titmuss R. Epidemiology of peptic ulcer, vital statistics. *Lancet* 1944;2:841.
- [29] Langman MJS. *The epidemiology of chronic digestive disease*. London: Edward Arnold, 1979. p. 15.
- [30] Doctor-made (editorial). *Lancet* 1945;2:240.
- [31] Rivers WHR. *Instinct and the unconscious, a contribution to a biological theory of the psycho-neuroses*. Cambridge: Cambridge University Press, 1920. p. 209.
- [32] Mott F. *Neuroses and shell shock*. London: Henry Froude/Hodder & Stoughton, 1919. p. 131.
- [33] Bourne WA. Functional disorders since D-Day. *Lancet* 1945;1:258.
- [34] Sing SP, Lee AS. Conversion disorders in Nottingham: alive but not kicking. *J Psychosom Res* 1997;43:425–30.
- [35] Akagi H, House A. The clinical epidemiology of hysteria: vanishing rare or just vanishing? *Psychol Med* 2002;32:191–4.