

## Alcohol use and misuse within the military: A review

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### Abstract

Traditionally alcohol has been used by the military to cope with the intense stress of battle but also as a way of mediating the transition from the heightened experience of combat to routine safety. The use of alcohol has divided medical opinion. Some doctors viewed it as wholly harmful to both social and occupational function and to health, while others argued that alcohol had a specific role in lifting morale, aiding unit cohesion and protecting soldiers from adjustment disorders. Although alcoholism has always been identified as incompatible with military service, the effects of habitual heavy drinking among military personnel are less well understood. Recent studies have suggested that young single males and those who have undergone particularly stressful experiences are at greatest risk of misusing alcohol. These associations, observed in the aftermath of recent conflicts in Iraq and Afghanistan, have again raised questions about the place of alcohol in military culture.

### Introduction

Although alcohol has been associated with UK armed forces for many centuries, its role has been controversial. In 1875, for example, Edmund Parkes, professor of military hygiene, questioned the spirit ration given to British soldiers engaged in the Ashanti campaign of 1874, concluding that 'the reviving power of the first issue is not always so considerable as might be supposed and indeed I have been surprised to find how little good effect it has sometimes produced' (Parkes, 1875, p. xi). Accordingly, Parkes recommended alcohol only in 'emergencies, as when after great fatigue a sudden but short exertion is required, or, when a march being ended, there is a short depression and failure of the heart's action' (p. xi).

The UK armed forces, and indeed many other nations, have traditionally used alcohol as a means of mediating stress, both in theatre and in the aftermath of battle. Soldiers about to go over the top during World War One were issued a drink of rum. Indeed, the very term 'Dutch courage' derives from gin taken by English troops in the Low Countries to stiffen their resolve during the Thirty Years War. Indeed, during the Battle of Waterloo many British regiments gave out spirits both before and during the conflict. Seamen in the Royal Navy received a daily ration of alcohol (brandy until 1655 when replaced by rum) until July 1970 in recognition of the hazards not only of combat but routine life on a sailing vessel. The consumption of whiskey by Texan troops

during the 1835 war for independence was such that it seriously impaired their operational efficiency (Austerman, 2010). Although US troops deployed to Vietnam were popularly believed to have resorted to illegal drugs to provide release from stress and recreation, recent research has shown that alcohol abuse was far more common (Kuzmarov, 2007).

A study of 1,424 Australian veterans of the 1991 Gulf War showed that alcohol abuse was the most common psychological disorder ten years after the event (Ikin *et al.*, 2004). A recent investigation of UK troops deployed to Afghanistan and/or Iraq found that UK military personnel were more likely to report alcohol misuse after deployment than their non-deployed colleagues (Fear *et al.*, 2010). The aim of this review paper is to explore the relationship between being in the armed forces and excessive alcohol use to assess whether this is a recent phenomenon or one encountered in the past.

### Methods

An extensive literature review was conducted by: (1) hand searching leading medical and psychological journals relating to World Wars One and Two and (2) for more recent publications, MEDLINE, PsychLit, and Web of Knowledge were searched using combinations of keywords, which included alcohol, military, armed forces, drinking and psychological disorder. In addition, the bibliographies of retrieved

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publications were hand searched. The holdings of the National Archives, Wellcome Trust Archives and the Imperial War Museum were investigated for unpublished studies and classified reports.

### World War One

Because of the privations of trench warfare, most combatant nations issued alcohol in some form to front-line troops. Although the French government banned the manufacture and sale of absinthe and similar liquors in February 1915 because of their intoxicating qualities, soldiers were granted a daily allowance of half a litre of *vin ordinaire* (*Lancet*, 1917). Similarly, units of the German Army in combat zones received brandy or light beer. By contrast, on the outbreak of war the Russian state prohibited the distillation and sale of vodka to prevent both troops and factory workers from consuming excessive quantities of alcohol (*BMJ*, 1915). However, the intense privations of World War Two (WW2) saw Soviet troops on active duty issued with a daily ration of 100 g of vodka (Merridale, 2005).

The decision taken during the harsh winter of 1914–15 to reintroduce a rum ration for UK troops serving with the British Expeditionary Force caused fierce controversy in the medical press. Doctors were divided between those who saw this as a justified morale-boosting measure and those who considered it wholly harmful to health and performance. The official allowance was 2.5 fluid ounces (71 millilitres) twice a week increased to daily for soldiers in the trenches. Victor Horsley, the eminent surgeon, countered the widely held idea that alcohol had medicinal benefits (Horsley, 1915). In particular, soldiers believed that rum would both feed and warm them as well as serving as a stimulant. Although Horsley and other doctors showed that alcohol had deleterious effects on function, such as accuracy in shooting (Astley Cooper, 1915), rum continued to be issued throughout the conflict because of its popularity amongst front-line troops. Some doctors argued that its impact on morale was such that it outweighed any adverse effects: ‘when we are completely exhausted, and utterly incapable of further effort...the supreme value of alcohol at this desperate moment is that it frees this reserve [of energy], places at the service of the organism for that instant use’ (Mercier, 1915, p. 489). In his evidence to the 1922 enquiry into shell shock, Lt Colonel J.S.Y. Rogers, medical officer to the 4th Black Watch, observed ‘had it not been for the rum ration I do not think we should have won the war. Before the men went over the top they had a good meal and a double ration of rum and coffee’ (Southborough, 1922, p. 68).

The argument between doctors about the value of the rum ration in the field developed into a more general debate about military service and alcohol.

Many physicians believed that military routines and recreation encouraged drunkenness and for some led to alcoholism. A report by a group of doctors on a large army camp in Liverpool found that heavy consumption was ‘prevalent and excessive among the recruits’ (*BMJ*, 1916, p. 182). To counter this culture, they recommended the opening of officially controlled wet canteens for the sale of light ales and wines diluted with ice and sold at moderate prices. The problem of heavy drinking in the armed forces had long been recognized and in 1862 the British Army in India set up the Soldiers’ Total Abstinence Association, which in 1888 was reorganized as the Army Temperance Association. Similar organizations were formed for the Royal Navy in 1868, and for soldiers in Britain and Colonies outside India in 1893. Service personnel were encouraged to sign a pledge to abstain entirely from alcohol and medals were awarded for periods that a man had remained teetotal. By 1902 it was claimed that 25% of British Army personnel at home and 40% deployed to India were members of the Association (Stanley, 2003).

During World War One, alcohol was widely used as an initial treatment of shell shock. Rather than lose a nerve-shattered soldier to the hospital system, regimental medical officers often sought to treat cases in front-line aid posts by a tot of whisky to assist sleep; only if this intervention failed would they refer the soldier to a casualty clearing station. In addition, officers who could afford spirits used alcohol as a coping mechanism. For some the stress of combat led to excessive consumption, leading Lord Moran to ask whether drinking was a cause of breakdown or merely a symptom (Wilson, 1945, p. 36).

Whilst there was no evidence that alcohol consumption rose dramatically in the post-war period as servicemen returned to the UK and peacetime jobs, this may have been a consequence of economic forces and new regulations (Marwick, 1973). The Licensing Act of 1921 brought the sale of liquor under tight control throughout the country. A deep post-war recession and increased duty resulted in spirits becoming a luxury item beyond the reach of most working men, while weakened beer, known as ‘government ale’, also rose in price. Thus, any ex-serviceman who sought to deaden the emotional impact of their wartime experiences through alcohol required a significant income. Few working-class veterans possessed the means to damage their physical health, while long working hours limited the opportunities for excessive drinking.

### World War Two

Although the British Army resorted to a rum ration during World War Two, it was more strictly controlled

than in 1914–18. The issue required a medical officer's authorization and was commonly supplied before attacks and during periods of continuous combat. It did not inspire the controversy of 1915. Indeed, the subject was barely discussed in the UK medical press and surprisingly no major studies were conducted on the relationship between alcohol consumption and psychiatric disorder. Such information as survives is largely of an anecdotal nature. Lt Colonel S.A. MacKeith, an army psychiatrist who served in North Africa and Italy, argued that the rum ration was 'highly likely to be good for a period of waiting and might be good for going over the top' (MacKeith, 1945, p. 9).

In the Western Desert from July 1942, soldiers suffering from 'battle exhaustion' were treated at a specialist 'Army Exhaustion Centre' set up within 200 Field Ambulance. Treatment focused on rest, appetising meals and recreation designed to raise morale. Among the amenities was a bar that sold cigarettes, soft drinks, chocolate and beer (James, 1955, p. 59). Whilst alcohol was used therapeutically, heavy consumption was identified as a symptom of strain. Brigadier James, the senior army psychiatrist for the Eighth Army, investigated a sample of 200 officers from all three services who had been referred for a psychiatric assessment. He found that almost 60% had broken down in combat. He found it 'startling' that 38% had been drinking excessively 'for two purposes (1) to obtain sleep and as an aid to the assuagement of manifest anxiety symptoms (2) as a stimulant to get through very heavy periods of work' (James, 1955, pp. 108–109). James did not include the study in the published account of his work (James, 1945) possibly because the results conflicted with the widely held view that for most servicemen drinking within reasonable limits helped servicemen to bond and debrief informally after stressful missions.

The difficulty for the military was to draw a line between reasonable and excessive consumption in situations of extreme hazard. For the Royal Navy, for example, the inherent risks and arduous conditions of Arctic convoys saw a significant increase in the number of stress-related disorders (Jones & Greenberg, 2006). A report by the medical officer of HMS *Leda* recorded that some officers and seaman no longer able to cope with the unremitting danger sought 'a means of escape in alcoholic intoxication' (Coulter, 1956, p. 466), while others, who kept their consumption within reasonable limits, plausibly benefited from the relief it provided. It remains unknown how many might have broken down but for the boost to morale from social drinking in the wardroom.

The official history of medical services, which ran to twenty volumes, made no mention of alcohol problems. Indeed, only the Royal Navy published statistics on alcoholism (Table I) perhaps because the low rates were reassuring (Mellor, 1972).

Although the association between habitual heavy drinking and the military was recognized, the part played by combat was not explored. For example, a survey of 100 alcoholic ex-servicemen admitted to the Veterans Hospital, Knoxville in Iowa, between 1937 and 1942 recorded the reasons why these men resorted to drink. Although all had served during World War One, none mentioned their active service in France as a causative factor. Indeed, a common explanation for excessive alcohol consumption was family pressures, though some admitted that drink relieved anxiety or depression (Barrett, 1943). In part, this related to orthodox theories of breakdown. War was conceived as a trigger and vulnerability to battle exhaustion was considered largely constitutional (Jones & Wessely, 2007). Equally, the alcoholic was regarded as constitutionally vulnerable to explain why the majority of drinkers did not become addicted: 'predisposing constellations of personality traits which, in combination with appropriate physiological and socio-cultural conditions, make it likely that the individual...will become an alcoholic' (Lisansky, 1960, p. 330). Indeed, Major Berlien, a US Army psychiatrist, argued that he had never seen a case of alcoholism in 'a well-adjusted personality' (Berlien, 1944, p. 409). If this were the case, then most soldiers would cope with the trauma of battle provided that they were properly selected, trained, equipped and led, while alcohol was conceived as a useful morale boosting recreation harmful to only those with a predisposition to abuse.

This hypothesis appeared to be confirmed by a post-war investigation of 198 US enlisted flying personnel who had been hospitalized with psychological disorders following completion of combat tours (Grinker *et al.*, 1946). Compared with 171 controls who had similar combat experiences without developing 'operational fatigue', the study discovered that the patient group drank more than the controls and concluded that war had triggered breakdown in vulnerable individuals, identifying parental alcoholism as a predisposing factor.

During World War Two, the US Army made no routine issue of alcohol to its troops, though men could purchase beer when off-duty and officers had

Table I. Reported cases of alcoholism in the Royal Navy, 1940 to 1945.

Year	Number of cases	Total strength of the Royal Navy	Rate per 1000 RN personnel
1940	62	270,000	0.2
1941	83	396,000	0.2
1942	71	516,000	0.1
1943	107	670,000	0.2
1944	123	792,000	0.2
1945	98	772,000	0.1

Source: W. Franklin Mellor (1972).

a small monthly allowance of spirits for the mess (Holmes, 2003). The supply of liquor and beer varied according to theatre, little being available in the Pacific. Writing in 1944, Major Berlien, a US Army psychiatrist, argued 'excessive drinking in overseas theatres is not a major problem', though he conceded that in rear areas consumption was given added impetus by 'fatigue, nostalgia and limitations of entertainment and recreation' (Berlien, 1944, p. 409). The ending of prohibition in 1933 did not see alcohol restored to US warships and, unlike the Royal Navy, beer and spirits were prohibited aboard any vessel. Despite these tough regulations, alcohol was conceived as 'an excellent aid in quickly releasing tension' for sailors coming ashore after a period of combat 'and morale was greatly improved' (Harrison, 1944, p. 422). Furthermore, 'a few flight surgeons in the Pacific advocated and used alcohol routinely for aviation personnel as a sedative and to release pent-up emotional tension as a result of excessive strain and stress of war conditions' (Harrison, 1944, p. 423). Alcohol problems accounted for 0.2% (25,165 admissions) of all US Army hospital admissions and represented 4.5% of all psychiatric diagnoses (Brill, 1966, pp. 216, 241). US culture was less forgiving of alcohol than that of the UK and any serviceman admitted to hospital with alcoholism immediately forfeited pay during his time as a patient. Formal programmes of treatment did not exist and alcoholics risked a discharge without honour (West & Swegan, 1956). In such circumstances, doctors often resorted to other diagnoses, such as acute gastritis or polyneuritis, while servicemen themselves were reluctant to disclose information about their drinking.

### Vietnam

In part, the age of US servicemen drafted to Vietnam determined their behaviour. Drafted at 19, some resorted to drugs because the sale of alcohol was prohibited to those under 21 (Davenport-Hines, 2001). Whilst it is widely acknowledged that drug use was common amongst US troops deployed to Vietnam (Watanabe *et al.*, 1994), recent research has shown that alcohol consumption was a far greater problem. A study conducted by the Department of Defense in 1972 concluded that 88% of servicemen drank alcohol during their tour of duty and often 'in prodigious amounts' (Kuzmarov, 2007, p. 134). Provided to boost morale, beer was widely available in base camps at low prices or free of charge. Some psychiatrists in theatre considered alcohol abuse a greater problem than drug use. Huffman, an army psychiatrist deployed to Vietnam in 1965–1966 found that 18.5% of 610 psychiatric patients referred from battalion aid stations suffered from severe alcohol dependency compared with five (0.8%) cases of

drug abuse (Huffman, 1970). Indeed, total neuropsychiatric admissions rose in the latter phase of the conflict despite a fall in the killed and wounded rate. It is hypothesized that this increase was in part related to alcohol abuse by combat-support troops (Jones, 1995). However, no study has been conducted into the long-term consequences of excessive alcohol consumption in Vietnam.

### Recent conflicts

Based on a random sample of 3,184 US Air Force personnel, Polich (1981) compared the epidemiology of alcohol abuse between military and civilian populations. Although rates of serious alcohol abuse were higher in the Air Force group (4.6%), it was argued that most of the difference could be explained by its demographic characteristics, notably young single males. This led to the general conclusion that alcohol abuse in the military was comparable to that recorded for civilians. However, subsequent studies have shown that military personnel, and particularly those in high-risk roles, drink excessively. Bray *et al.* (1991) found that heavy drinking was twice as common in the US military as in a matched civilian sample. Furthermore, a study of 1,320 US Marines selected from four infantry battalions revealed a high rate of intense drinking (Schuckit *et al.*, 2001). A correlation was also established between excessive alcohol consumption and behavioural problems, which suggests that the military, as an organization employing a high proportion of young males, needs to be vigilant.

Although UK troops were traditionally issued alcohol when in theatre, the recent wars in the Middle East saw a significant change to this policy. During the 1991 Gulf War, no alcohol was issued to troops, in part to observe the custom and law of Saudi Arabia, which was the concentration area. In the 2003 Iraq conflict and subsequent TELIC operations, troops were governed by an allowance of two cans per person per day, the can being opened on issue to prevent hoarding. Forward units were dry and alcohol restricted in the main to base areas. UK troops serving in Afghanistan are not permitted alcohol, though some earlier deployments had access to limited supplies.

A large cross-sectional study of UK armed forces serving in 2003 showed that heavy drinking was associated with low rank, younger age, being single, deployment to Iraq on Operation TELIC 1 (the first phase of the war in 2003), having a combat role and having a parent with a drink or drug problem (Fear *et al.*, 2007). Excessive alcohol consumption was found to be more common in the UK armed forces than in the general population even after taking age and gender differences into account.

A prospective study of troops deployed to Iraq followed up a representative sample of 941 UK service personnel (Hooper *et al.*, 2008). After three years, alcohol consumption and binge drinking increased over time but the rise was greatest in those individuals who thought that they might be killed or who experienced hostility from Iraqi civilians. Results from a larger cross-sectional investigation carried out alongside this follow-up study showed an association between specific aspects of deployment (notably major problems at home during and following operations, together with poor unit leadership) and raised alcohol consumption (Browne *et al.*, 2008; Fear *et al.*, 2007). Heavy drinking was also linked to comradeship, being deployed with a parent unit and undertaking an unfamiliar role in theatre. Although a large study with a response rate of 61%, it relied on self-reported data gathered from service personnel.

A study (Hotopf *et al.*, 2006) of the UK military operation in Iraq from 2003 to 2005 found that the most frequent mental health problems encountered by returning UK armed forces personnel were alcohol misuse and common mental disorders, rather than probable post-traumatic stress disorder. A large sample of UK forces who had deployed to the Gulf (1990–1991), Bosnia (1992–1997) and an ‘era’ comparison group (service personnel who had not served in either theatre) found that heavy drinking (defined as a consumption of more than 30 units a week) was associated with being single (unmarried, separated or divorced), younger soldiers, deployment to Bosnia and linked to poorer subjective physical and mental health (Iversen *et al.*, 2007). Furthermore, a study of 1,559 Royal Navy personnel showed that 92% scored as hazardous drinkers on the AUDIT-C questionnaire, 40% met criteria for heavy drinking and 15% were problem drinkers (Henderson *et al.*, 2009). Excessive alcohol consumption in this Royal Navy population was significantly higher than in age-matched civilian samples.

A recent study by Fear *et al.* (2010) of 9990 UK service personnel found that 13% reported alcohol misuse. For regular soldiers deployment to Iraq or Afghanistan was significantly associated with the report of alcohol misuse on return from theatre. Amongst those deployed, alcohol misuse was greatest in those who had undertaken a combat role; that is at greatest risk of being killed or wounded. In view of the predominance of young men in the military, that members of the UK armed forces have high levels of alcohol misuse is perhaps unsurprising. However, when these differences were taken into account, the levels of misuse were substantially higher than in those reported within the general population. The US military, despite having different attitudes towards alcohol use, report similar associations of alcohol misuse with deployment and

deployment-related experiences (Jacobson *et al.*, 2008; Wilk *et al.*, 2010).

## Conclusions

Within the military, alcohol is often claimed to have a positive effect: assisting in group bonding during training, providing confidence during battle and helping over-wrought soldiers sleep in the immediate aftermath of combat (Holmes, 2003, pp. 244–245). Having studied aircrew in Bomber Command, a group subjected to high attrition rates, Lord Moran observed that alcohol raised their morale, bringing ‘them closer together, welding them into one family’ (Wilson, 1945, p. 110). However, these propositions were based on the assumption that service personnel drank responsibly within safe limits. Experience over the last 200 years has shown that the problem of heavy drinking is not new. Senior medical officers were increasingly concerned during the first half of the nineteenth century and in 1830 the spirit issue to British soldiers was withdrawn. In 1825 the Royal Navy halved the rum ration (then half a pint of 50–50 rum-and-water), halving it again in 1850. A decade later, the banding together of teetotallers on H.M.S. *Reindeer* led to the formation of the Royal Naval Temperance Society (Harrison, 1971). Similarly, regimental associations were set up to encourage abstinence and these ultimately united to form the Royal Army Temperance Association. The wide availability of alcohol and a progressive fall in its price saw membership of this body fall after World War Two and the organization was disbanded in 1958.

In the past, western military culture tolerated, and may even have encouraged, excessive alcohol consumption (Dunbar-Miller, 1984). For the US Army between 1907 and 1917, 1.6% of hospital admissions were for alcohol problems (Glass, 1966, p. 9), a finding that influenced the decision not to routinely issue spirits to US servicemen during World War One. Soviet troops in World War Two engaged in brutal combat against German forces sought out spirits in order to become intoxicated. ‘When our soldiers find alcohol’, an officer reported in 1945, ‘they take leave of their senses...If we hadn’t had drunkenness like this we would have beaten the Germans two years ago’ (Merridale, 2005, p. 235). In part, the association related to the age of soldiers, young without attachments and facing the prospect of death, there was little reason to moderate their drinking. Whilst there are no studies to suggest that alcohol consumption was a problem for UK forces during World War Two, this was simply because the subject was ignored by the medical profession.

In recent years, the short-term effects of alcohol on function have been addressed by tight restrictions in theatre. However, the longer-term consequences

of social and corporate drinking are more difficult to assess and regulate. The difficulty of striking an appropriate balance between responsible and harmful drinking goes to the root of military culture. Heavy drinking is more prevalent in the British Army and Royal Navy than in the Royal Air Force (Fear *et al.*, 2007), implying an association with high levels of teamwork and an organizational tradition of drinking as a means of relaxing and debriefing.

Of necessity, the armed forces recruit risk-taking individuals. It would be impossible to conduct a military campaign without service personnel who are willing to risk death or injury. It may be that some of the characteristics that make a successful combat soldier also put them at risk of alcohol misuse. Sub-groups within the armed forces are particularly predisposed to heavy drinking. In particular those who are young, single and who have been involved in traumatic incidents. Because drinking has been used by UK armed forces as an agent to assist cohesion and informal operational debriefing, it requires a powerful cultural shift to modify ingrained habits and traditions. Public health campaigns are notoriously difficult to conduct, presenting the military with a serious dilemma. How do they address an association established over hundreds of years across many national groups? Possibly models borrowed from charities established to tackle substance abuse could be relevant. Talks and groups held by service personnel and veterans who have recovered from alcoholism may have greater impact than presentations by healthcare professionals. Alcohol has played such a significant part in service culture for so long that any intervention will take the form of a war of attrition.

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## References

- Astley Cooper, J.W. (1915). The rum ration. *British Medical Journal*, 1, 270–271.
- Austerman, W.R. (2010). Aguardiente at the Alamo: Alcohol abuse and the Texas War for Independence, 1835–36. *United States Army Medical Department Journal*, April–June, 72–80.
- Barrett, T.M. (1943). Chronic alcoholism in veterans. *Quarterly Journal of Studies on Alcohol*, 4, 68–78.
- Berlien, I.C. (1944). Alcohol and the soldier. *Quarterly Journal of Studies on Alcohol*, 5, 405–412.
- BMJ* (1915). The suppression of vodka. *British Medical Journal*, 1, 171–172.
- BMJ* (1916). Soldiers and alcoholism. *British Medical Journal*, 1, 182.
- Bray, R., Marsden, M. & Peterson, M. (1991). Standardized comparisons of the use of alcohol, drugs, and cigarettes among military personnel and civilians. *American Journal of Public Health*, 81, 865–869.
- Brill, N.Q. (1966). Hospitalization and disposition. In A.J. Glass & R.J. Bernucci (Eds), *Neuropsychiatry in World War Two, Volume One, Zone of Interior* (pp. 195–253). Washington, DC: Office of the Surgeon General.
- Browne, T., Iversen, A., Hull, L., Workman, L., Barker, C., Horn, O., ...Fear, N.T. (2008). How do experiences in Iraq affect alcohol use among male UK armed forces personnel? *Occupational & Environmental Medicine*, 65, 628–633.
- Coulter, J.L.S. (1956). *The Royal Naval Medical Service Volume II Operations*. London: HMSO.
- Davenport-Hines, R. (2001). *The Pursuit of Oblivion: A Social History of Drugs*. London: Orion Books.
- Dunbar-Miller, R.A. (1984). Alcohol and the fighting man, an historical review. *Journal of the Royal Army Medical Corps*, 130, 117–121.
- Fear, N.T., Iversen, A., Meltzer, H., Workman, L., Hull, L., Greenberg, N., ...Wessely, S. (2007). Patterns of drinking in the UK armed forces. *Addiction*, 102, 1749–1759.
- Fear, N.T., Jones, M., Murphy, D., Hull, L., Iversen, A.C., Coker, B., ...Wessely, S. (2010). What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK armed forces? A cohort study. *Lancet*, 375, 1783–1797.
- Franklin Mellor, W. (1972). *Casualties and Medical Statistics*, pp. 26–51. London: HMSO.
- Glass, A.J. (1966). Army psychiatry before World War Two. In A.J. Glass & R.J. Bernucci (Eds), *Neuropsychiatry in World War Two, Volume One Zone of Interior* (pp. 3–23). Washington, DC: Office of the Surgeon General.
- Grinker, R.R., Willerman, B., Bradley, A.D. & Fastovsky, A. (1946). A study of psychological predisposition to the development of operational fatigue. *American Journal of Orthopsychiatry*, 16, 191–214.
- Harrison, B. (1971). *Drink and the Victorians: The Temperance Question in England 1815–1872*. London: Faber.
- Harrison, F.M. (1944). The alcohol problem in the Navy. *Quarterly Journal of Studies on Alcohol*, 5, 413–425.
- Henderson, A., Langston, V. & Greenberg, N. (2009). Alcohol misuse in the Royal Navy. *Occupational Medicine*, 59, 25–31.
- Holmes, R. (2003). *Acts of War: The Behaviour of Men in Battle*. London: Cassell.
- Hooper, R., Rona, R.J., Jones, M., Fear, N.T., Hull, L. & Wessely, S. (2008). Cigarette and alcohol use in the UK armed forces, and their association with combat exposures: A prospective study. *Addictive Behaviors*, 33, 1067–1071.
- Horsley, V. (1915). On the alleged responsibility of the medical profession for the reintroduction of the rum ration into the British army. *British Medical Journal*, 1, 203–206.
- Hotopf, M., Hull, L., Fear, N.T., Browne, T., Horn, O., Iversen, A., ...Wessely, S. (2006). The health of UK military personnel who deployed to the 2003 Iraq war: A cohort study. *Lancet*, 367, 1731–1741.
- Huffman, R.E. (1970). Which soldiers break down? A survey of 610 psychiatric patients in Vietnam. *Bulletin of the Menninger Clinic*, 34, 343–351.
- Iversen, A., Waterdrinker, A., Fear, N.T., Greenberg, N., Barker, C., Hotopf, M., ...Wessely, S. (2007). Factors associated with heavy alcohol consumption in the UK armed forces: Data from a health survey of Gulf, Bosnia, and era veterans. *Military Medicine*, 172, 956–961.
- Ikin J.F., Sim, M.R., Creamer, M.C., Forbes, A.B., McKenzie, D.P., Kelsall, H.L., ...Schwarz, H. (2004). War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War. *British Journal of Psychiatry*, 185, 116–126.
- Jacobson, I.G., Ryan, M.A.K., Hooper, T.I., Smith, T.C., Amoroso, P.J., Boyko, E.J., ...Bell, N.S. (2008). Alcohol use and alcohol related problems before and after military combat deployment. *Journal of the American Medical Association*, 300, 663–675.
- James, G.W.B. (1945). Psychiatric lessons from active service. *Lancet*, 2, 801–805.

- James, G.W.B. (1955). Narrative, resume, comments and conclusions concerning the Middle East Force from September 1940 to July 1943 (Unpublished report).
- Jones, E. & Greenberg, N. (2006). Royal Naval Psychiatry: Organisation, methods and outcomes 1900–1945. *Mariner's Mirror*, 92, 190–203.
- Jones, E. & Wessely, S. (2007). A paradigm shift in the conceptualization of psychological trauma in the twentieth century. *Journal of Anxiety Disorders*, 21, 164–175.
- Jones, F.D. (1995). Psychiatric lessons of war. In F.D. Jones, L.R. Sparacino, V.L. Wilcox, J.M. Rothberg & J.M. Stokes (Eds), *War Psychiatry* (pp. 1–33). Washington DC: Office of the Surgeon General.
- Kuzmarov, J. (2007). The myth of the 'addicted army': Drug use in Vietnam in historical perspective. *War and Society*, 26, 121–141.
- Lancet* (1917). The supply of wine to the French soldier. *Lancet*, 1, 167.
- Lisansky, E.S. (1960). The aetiology of alcoholism: The role of psychological predisposition. *Quarterly Journal of Studies on Alcohol*, 21, 314–343.
- MacKeith, S.A. (1945). Presentation to Northern Command, York, 3 March 1945 (Unpublished report).
- Marwick, A. (1973). *The Deluge, British Society and the First World War*. London: Macmillan.
- Mercier, C.A. (1915). The rum ration. *British Medical Journal*, 1, 489–490.
- Merridale, C. (2005). *Ivan's war. The Red Army 1939–45*, London: Faber.
- Parkes, A.E. (1875). *On the Issue of a Spirit Ration During the Ashanti Campaign of 1874*. London: Churchill.
- Polich, J.M. (1981). Epidemiology of alcohol abuse in military and civilian populations. *American Journal of Public Health*, 71, 1125–1132.
- Schuckit, M.A., Kraft, H.S., Hurtado, S.L., Tschinkel, S.A., Minagawa, R. & Shaffer, R.A. (2001). A measure of the intensity of response to alcohol in a military population. *American Journal of Drug & Alcohol Abuse*, 27, 749–757.
- Southborough (1922). *Report of the War Office Committee of Enquiry into 'Shell-shock'*. London: HMSO.
- Stanley, P. (2003) Army Temperance Association. In J.S. Blocker, I.R. Tyrrell & D.M. Fahey (Eds), *Alcohol and Temperance in Modern History*, (pp. 55–56). Santa Barbara: ABC-CLIO.
- Watanabe, H.K., Harig, P.T., Rock, N.L. & Koshes, R.J. (1994). Alcohol and drug abuse and dependence. In F.D. Jones, L.R. Sparacino, V.L. Wilcox & J.M. Rothberg (Eds), *Military Psychiatry: Preparing in Peace for War* (pp. 61–89). Washington DC: Office of the Surgeon General.
- West, L.J. & Swegan, W.H. (1956). An approach to alcoholism in military service. *American Journal of Psychiatry*, 112, 1004–1009.
- Wilk, J.E., Bliese, P.D., Kim, P.Y., Thomas, J.L., McGurk, D. & Hoge, C.W. (2010). Relationship of combat experiences to alcohol misuse among US soldiers returning from the Iraq war. *Drug & Alcohol Dependency*, 108, 115–121.
- Wilson, C.M. (Lord Moran) (1945). *The Anatomy of Courage*. London: Constable.