

Summary of the Military Mental Health and Traumatic Stress Literature: 2008

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This document is a summary of some of the recent literature in the field of military and posttraumatic mental health. It was written by the Australian Centre for Posttraumatic Mental Health with the support of the Australian Government, Department of Veterans Affairs.

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Key Findings

- The diagnostic criteria for post-traumatic stress disorder (PTSD) continue to be the subject of considerable debate, particularly as discussions commence around possible revisions in DSM–V.
- Screening positive for multiple mental health symptoms is common for veterans of Iraq/Afghanistan.
- Having PTSD has a profound impact on mortality; as a predictor, PTSD is nearly comparable to indicators of disease commonly used in medicine.
- Elevated heart rate, as well as elevated respiration rate, in the immediate post-trauma period predicts subsequent adjustment.
- It is specific combat exposures, rather than deployment itself, that affects the onset of PTSD symptoms.
- Although intelligence and cognitive ability predict adjustment at lower levels of exposure, high levels of combat exposure are likely to exhaust intellectual resources available for coping with stressful life events even among those with higher initial ability.
- Spouses have similar rates of mental health problems to soldiers, but are more likely to seek treatment and are less concerned with the stigma of mental health.
- Deemed the “Healthy Warrior Effect”, a controversial paper reported that all psychiatric conditions except PTSD occurred at a lower rate in combat-deployed personnel than in personnel who were not deployed to a combat zone
- Due to significant differences between Iraq/Afghanistan veterans and those of the Vietnam era, it cannot be assumed that existing PTSD programs designed for Vietnam veterans will suit the younger cohorts. Veterans should participate in program types that match their level of PTSD intensity.

Australian Centre for Posttraumatic Mental Health

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Introduction

This annual summary of the military mental health literature was produced by the Australian Centre for Posttraumatic Mental Health (ACPMH). The aim is to provide a brief summary of key literature pertaining to military mental health, as well as posttraumatic mental health more generally, published during the calendar year of 2008. The aim is not to provide a critical review; rather to draw the reader's attention to a selection of articles that were published during the year that we felt were important contributions. Since we do not provide a critique of the research, we strongly recommend that readers interested in a particular paper obtain a copy of the original and read it for themselves.

Search Strategy and Content Overview

The literature was sourced using standard scientific databases, notably Medline, Web of Science and PsychInfo, with the following search descriptors: veteran* or defense or defence or military AND mental health or psych*. In addition, more general searches were conducted of the traumatic stress literature using descriptors such as PTSD or posttraumatic stress disorder and variants thereof. Those articles are included in this summary where they are considered to inform understanding of military mental health. Most of those selected for inclusion in this annual summary appeared in relatively prestigious journals, although some are included from less established publications when appropriate.

A total of sixty-five articles are included in this year's summary. We have divided the literature into several areas, although allocation to these categories was not always straightforward since papers often spanned more than one area.

Phenomenology, Diagnosis and Assessment

Towards DSM-V

The diagnostic criteria for post-traumatic stress disorder (PTSD) continue to be the subject of considerable debate, particularly as discussions commence around possible revisions in DSM-V (expected in 2011). Building on Spitzer's earlier (Spitzer, First, & Wakefield, 2007) paper, Rose, Spitzer and McHugh (2008) focus on several core issues regarding the PTSD diagnosis in their British Journal of Psychiatry editorial "*Problems with the posttraumatic stress disorder diagnosis and its future in DSM-V*". These issues include the fact that Criterion A events are neither necessary nor sufficient to produce PTSD and the considerable overlap between PTSD symptoms and other disorders. In light of these research and clinical considerations, the authors emphasise the importance of considering the full context of a patient's presentation when

formulating their diagnosis. (Note: those interested in DSM-V can keep track of developments at www.DSM5.org).

The stressor criterion (A) is the subject of much discussion and controversy. Contributing to this debate, Adler, Wright, Bliese, Eckford, & Hoge (2008) make the important point that individuals who are trained to respond to potentially traumatic events may not experience the PTSD A2 criterion of fear, helplessness, or horror and yet may still go on to develop significant PTSD symptoms. They recommend that the A2 criterion be expanded so as not to underestimate the number of individuals trained for high-risk occupations that might nevertheless develop PTSD and benefit from treatment.

Another focus of debate concerning PTSD in DSM-V concerns the idea that PTSD is simply an amalgam of other diagnoses because many of its symptoms can be found in a number of other psychiatric disorders. To examine this issue, Elhai, Grubaugh, Kashdan and Frueh (2008) examined whether removing overlapping anxiety/mood disorder symptoms would result in differences (compared to the original DSM-IV PTSD criteria) in PTSD prevalence rates, diagnostic caseness, comorbidity and mental health-related disability. Using a large (NCS-R) community population sample, they found that removal of overlapping symptoms did not significantly reduce the prevalence rate, suggesting that there is something unique about core PTSD symptoms. The authors conclude that overlapping anxiety and mood disorder symptoms are not responsible for PTSD's prevalence, diagnostic comorbidity, and construct validity.

Mental Health Screening

Mental health screening is a contentious issue in both the general community and the military. This is a result of such issues as uncertainty about the validity or low validity of the available instruments and lack of evidence on the effectiveness of such programs (Rona, 2005). Nevertheless, the process remains common practice and recent research continues to inform the debate.

Predictive Screens: Most screening instruments are designed to identify the presence of current disorder, rather than predicting the development of future disorder. As the interest in early interventions develops, predictive screens play an increasingly important role. Predictive screens recognize that many acute distress responses are transient so providing early intervention to all those with high initial distress is unwarranted. Predictive screens identify who may be at risk so they can be reassessed for intervention at a later point. O'Donnell et al., (2008), developed and validated a screening instrument that aimed to identify adults at high risk for later development of PTSD and/or major depression following traumatic injury. Administered within a few days of the trauma, the instrument is designed to predict mental health adjustment 12 months later. The resulting Posttraumatic Adjustment Scale had a sensitivity of .82 and a specificity of .84 when predicting PTSD and a sensitivity of .72 and a specificity of .75 in predicting posttraumatic depression at one year post-trauma. This 10-item screening index represents a clinically useful instrument that can be used in the first few days following traumatic exposure to identify trauma survivors at risk for the later development of PTSD and/or depression.

Current diagnosis: The Primary Care Posttraumatic Stress Disorder Screen (PC-PTSD) is a brief (4-item) measure designed to screen for a current diagnosis of PTSD. A validation study conducted with a sample of 352 service members showed that

both the PC-PTSD and Posttraumatic Stress Disorder Checklist (PCL) had good diagnostic efficiency (Bliese et al., 2008). For the PCL, the most efficient cutoff values were between 30 and 34, mirroring recommended PCL cutoff values from other studies in primary care settings. These cut-offs, of course, are substantially lower than the cut-off of 50 originally recommended for the detection of PTSD on the PCL. The PC-PTSD had reasonable sensitivity and specificity with either two or three "yes" responses.

Seal et al., (2008) reported on the willingness to disclose on US VA Afghan and Iraq post-deployment mental health screen among veterans referred to VA medical centers. Results indicated that a substantial proportion (69%) of these veterans had met screening criteria for co-occurring mental health problems at post-deployment, suggesting that the VA screens may help overcome a "don't ask, don't tell" climate that surrounds stigmatized mental illness. Similarly, Gahm and Lucenko (2008) studied young veterans presenting to outpatient medical clinics and found that screening positive for multiple mental health symptoms was common, with 60% of the sample screening positive for more than one disorder. The authors stress the importance of provider awareness to the high rates of comorbidity.

Marx et al. (2008) reported on the development of an instrument comprising 12 established risk and protective variables including; early trauma history, exposure to atrocities-abusive violence, self-report postmilitary trauma and structural and functional indicators of social support, to predict combat-related PTSD. The instrument proved to be an accurate and efficient means of detecting PTSD among participants and compared well against other existing self-report measures.

Structured Interviews: Brief structured clinical interviews are a key component of the US DoD post deployment health reassessment program. To standardise the interview process, the Army Medical Research Unit has developed a structured interview guide, designed in response to both clinical requirements and research findings. The guide includes sections on depression, suicidality, post-traumatic stress disorder, anger, relationship problems, alcohol problems, and sleep problems. This paper includes a copy of the interview questions, as well as guidelines and implementation considerations for the use of the structured interview (Wright, Adler, Bliese, & Eckford, 2008).

Epidemiology

Elderly: In one of the few epidemiological studies of PTSD in the elderly, Creamer and Parslow (2008) re-analysed data from a large community sample and found that: a) reported prevalence of lifetime exposure to trauma showed a U-shaped curve, peaking in middle age and declining in older years; b) that the prevalence of PTSD in the elderly was very low; and c) that, while females are at greater risk for PTSD throughout most of the lifespan, after the age of 55 males are more vulnerable than females. Biological and cognitive explanations for these findings are considered.

Nightmares: Phelps, Forbes and Creamer (2008) argued that models of PTSD can readily account for repetitive posttraumatic nightmares (PTNMs) that accurately replay the traumatic event, but not those that are symbolic of the event. On the other hand, theories of dreaming that propose a psychologically adaptive function of dreams can account for both replay and symbolic nightmares that evolve over time, but not those that are stuck in repetition. As yet there is no adequate explanation for the range of dreams reported following trauma, but testable hypotheses are proposed.

The Mental Health Impact of Military Deployment

As part of a NATO Research Panel, 16 nations participated in a needs assessment survey of military leaders who had returned from an operation within the previous two years. Findings from 172 leaders emphasized the lack of training in how to manage operational stress issues for unit members and their families, as well as the need for integrated mental health support across the deployment cycle. In general, most leaders regarded stress-related mental health problems as normal and were supportive of help-seeking (Adler, Cawkill et al., 2008).

Results from the US Millenium Cohort data set suggest much lower rates of PTSD symptoms than some earlier research on US veterans from the Middle East conflict has proposed (Smith, Ryan et al., 2008). After adjustment for baseline characteristics, new onset self reported PTSD symptoms or diagnosis were identified in around 8% of those who deployed and reported combat exposures (compared with earlier reports of up to 20%), and around 2% of those who deployed but did not report combat exposures and non-deployers. Despite being considerably lower than previous estimates, these prospective data indicate a threefold increase in new onset cases among deployed military personnel who reported combat exposures. The findings illustrate the important point that it is specific combat exposures, rather than deployment itself, that affects the onset of symptoms of PTSD.

In a controversial paper, Larson, Highfill-McRoy and Booth-Kewley (2008) compared rates of mental disorders in marines deployed to Iraq in 2001-2005 with two historical and two contemporary military control groups. The authors found that all psychiatric conditions except PTSD occurred at a lower rate in combat-deployed personnel than in personnel who were not deployed to a combat zone, explaining their finding as the "healthy warrior effect". Several authors replied to this paper (Dohrenwend, Sloan, Marx, Kaloupek, & Keane, 2008; G. E. Larson, R. M. Highfill-McRoy, & S. Booth-Kewley, 2008) suggesting that the incidence rates of mental health problems were far lower than those estimated in previous research of troops serving in Iraq and Afghanistan. Alternative methodological approaches may explain the different rates.

Consistent with much previous research on treatment seeking, Felker, Hawkins, Dobie, Gutierrez and McFall (2008) found that women represented a disproportionately high percentage of those presenting for mental health care (27%) in a sample of military personnel who deployed on Operation Iraqi Freedom. Riddle, Sanders, Jones and Webb (2008) conducted a study on military personnel systematically selected from current combat regions participating in a rest and recuperation program in Doha, Qatar. Results support previous reports of higher mental health problems among troops in Iraq as compared with troops in Afghanistan and lower health care-seeking behavior overall.

Fontana and Rosenheck (2008) compared veterans from different deployments presenting for specialist PTSD treatment. Compared with Vietnam era veterans, those from the current Iraq/Afghanistan conflict were more likely to be female, more likely to be single, and more often working. They were also more likely to manifest violent behaviour and less likely to be diagnosed with substance abuse disorders. These differences may have important implications for treatment planning – we cannot simply assume that existing PTSD programs designed for Vietnam veterans will suit the younger cohorts.

Functional Impact of PTSD: Koenen, Stellman, Sommer and Stellman (2008) examined the longitudinal association between PTSD symptoms and multiple domains of life functioning in a community sample of 1,377 American Vietnam veterans. At all levels of combat exposure, persisting severe PTSD symptoms were associated with worse family relationships, more smoking, less life satisfaction, more mental health service use, and more nonspecific health complaints at the 14-year follow-up.

TBI: An important medical concern of the Iraq war is the potential effect of mild traumatic brain injury (MTBI) from blast explosions. Hoge et al. (2008) reported that, of 2525 recently returned soldiers, 5% reported injuries with loss of consciousness, 10% reported injuries with altered mental status, and 17% reported other injuries during deployment. Soldiers with MTBI were significantly more likely to report poor general health, missed workdays, medical visits, and a high number of somatic and postconcussive symptoms than were soldiers with other injuries. Of great significance, however, was the finding that after adjustment for PTSD and depression, MTBI was no longer associated with these adverse health outcomes. This raises important questions about the etiology of these problems and, of course, has important implications for treatment. Brenner et al. (2008), exploring risk factors for psychiatric hospitalization after TBI, found that veterans with drug and alcohol problems are at increased risk for hospitalization. The likelihood of problematic post-TBI drug and alcohol use was significantly greater for those with a pre-injury history.

Alcohol: Excessive alcohol use has been a problem for many defence forces over the years. Jacobson et al., (2008) studied reservists from the Millennium Cohort Study to determine the degree of alcohol misuse among US soldiers after return from war in Iraq and Afghanistan. Reserve personnel who deployed and reported combat exposures were significantly more likely to experience new-onset heavy drinking and alcohol-related problems compared with nondeployed personnel. The youngest members of the cohort were at highest risk for all alcohol-related outcomes. Browne et al., (2008) assessed the occupational factors and deployment experiences associated with heavy drinking in regular UK servicemen deployed to Iraq. Heavy drinkers were more likely to have had problems at home during and following their deployment. Personnel whose role in theatre was outside their training or experience, and who experienced poor in-theatre unit leadership were more likely to be heavy drinkers. Contrary to expectation, those individuals who deployed with their parent unit were also more likely to be heavy drinkers.

Suicide: Using merged VA and National Death Index data, Desai, Rosenheck and Desai (2008) examined changes in suicide rate among three cohorts of VA mental health outpatients. There was an association between greater per capita outpatient mental health expenditure and reduced suicide risk. Outpatients at facilities with larger mental health programs were at greater risk for suicide than were those in smaller programs. The model also showed a protective effect associated with increased spending on inpatient mental health services.

Spouses: Military spouses must contend with unique issues such as a mobile lifestyle, rules and regulations of military life, and frequent family separations including peacekeeping and combat deployments. Two studies published in 2008 attest to the mental health impact of military deployment on spouses. Eaton et al. (2008) found that spouses have similar rates of mental health problems to soldiers, but were more likely to

seek treatment and were less concerned with the stigma of mental health. Renshaw, Rodrigues and Jones (2008) found that spouses of soldiers recently returned from Iraq demonstrated elevated levels of psychological symptoms, particularly when they perceived high symptom levels in their partners.

Children: In a sample of Kuwaiti Gulf War veterans, Al-Turkait and Ohaeri (2008) assessed the association of father's PTSD/combat status and mother's characteristics with child psychosocial outcomes. Although children with both parents having PTSD had significantly higher anxiety/depression scores, the mother's anxiety was the most frequent and important predictor of child outcome variables. The primacy of the mother's influence has implications for interventions with military families.

Physical Health Outcomes of Trauma Exposure and Military Service

There is now a mounting body of evidence to suggest that exposure to traumatic events can result in adverse physical health outcomes. Boscarino (2008) examined mortality among a community-based sample of 4462 male veterans 30 years after military service. At follow-up in 2000, 14% of men who were diagnosed with PTSD at baseline in 1985 were deceased, compared with only 5% without PTSD at baseline. Having PTSD had an impact on mortality nearly comparable to common indicators of disease in medicine, such as erythrocyte sedimentation rate and white blood cell count.

Holman et al., (2008) examined the degree to which acute stress reactions to the 9/11 terrorist attacks predicted cardiovascular outcomes in a national probability sample over the subsequent 3 years. Results indicated that acute stress responses to the 9/11 attacks were associated with a 53% increased incidence of cardiovascular ailments over the 3 subsequent years, even after adjusting for pre-9/11 cardiovascular and mental health status, degree of exposure to the attacks, cardiovascular risk factors, total number of physical health ailments, somatization, and demographics. Individuals reporting high levels of acute stress immediately following the attacks reported an increased incidence of physician-diagnosed hypertension and heart problems over 2 years.

CFS: Ismail et al., (2008) studied the prevalence of chronic fatigue syndrome (CFS) and fibromyalgia in UK military personnel after the Gulf War 1990-1991. Results indicated that disabled Gulf veterans were more likely than similarly disabled Bosnia and Era veterans to meet the criteria for CFS. Rates for other medically unexplained conditions were not significantly increased. This suggests that symptoms consistent with CFS account for a significant part of the symptomatic distress in Gulf veterans.

Predictors of Mental Health Outcome.

Alim et al., (2008) examined psychosocial factors associated with resilience and recovery from psychiatric disorder in a sample of African American adults exposed to a range of severe traumas. The resilient group was characterized by a significantly lower lifetime trauma load. In the final model, purpose in life and mastery emerged as key factors associated with resilience and recovery. Further study is needed to determine the extent to which these factors can be modified through clinical intervention.

In considering risk and protective factors, pre-, peri-, and post-trauma factors all contribute to adjustment. Studying risk factors in UK military personnel, Jakupcak,

Luterek, Hunt, Conybeare and McFall (2008) found that PTSD symptoms were associated with pre-trauma factors (lower rank, unmarried, low education, childhood adversity) and peri-trauma factors (severity of exposure, appraisals of threat and personal capacity). Low morale, poor social support within the unit, and non-receipt of a home-coming brief were associated with greater risk of post-traumatic stress symptoms. These results highlight the importance of factors such as unit morale, leadership, and preparing combatants for their role in theatre which may influence subsequent adjustment.

Acute response is also a predictor of outcome. While heart rate (HR) has already been demonstrated to predict subsequent adjustment, Bryant, Creamer, O'Donnell, Silove and McFarlane (2008) found that not only elevated HR, but also elevated respiration rate, in the immediate post-trauma period predicted subsequent adjustment. These findings are consistent with fear conditioning models.

Stressful Life Events:

In an important contribution to our understanding of the impact of prior trauma, Breslau, Peterson and Schultz (2008) found that prior trauma increases the risk of PTSD after a subsequent trauma only among persons who developed PTSD in response to the initial trauma. The findings suggest that preexisting susceptibility to a pathological response to stressors may account for both the PTSD response to the prior trauma and the subsequent trauma.

Smith, Wingard et al., (2008) examined the relation between prior assault and new-onset PTSD symptoms in a large US military cohort deployed to Iraq and Afghanistan. Adjusting for baseline factors, the odds of new-onset PTSD symptoms was more than 2-fold higher in both women and men who reported assault prior to deployment. These results suggest that prior assault confers increased vulnerability for, rather than resilience against, PTSD symptoms among military personnel (although these findings should be interpreted in the context of the Breslau et al. study above).

Solomon, Zur-Noah, Horesh, Zerach, and Keinan (2008) examined the contribution of prewar life events, war exposure, and postwar life events to psychopathology in 425 Israeli veterans twenty years after the Lebanon War. As well as acute combat stress reaction during the war and PTSD status in 1983, negative childhood life events and postwar negative life events were associated with PTSD in 2002. These findings suggest that stressful life events throughout the life cycle – both before and after deployment – contribute significantly to veterans' mental health status.

Spouses and Extension of Deployment: SteelFisher, Zaslavsky and Blendon (2008) found that, controlling for demographic and deployment characteristics, spouses whose partner's deployment was extended at the last minute fared worse on an array of measures, including mental well-being, household strains, and occupational functioning.

Theory and Mechanisms

Fear extinction: Models of fear conditioning are central to our understanding of PTSD. Fear extinction, which is thought to aid in recovery from a psychologically traumatic event, is hypothesized to be deficient in PTSD. Milad et al., (2008) conducted a fear conditioning and extinction procedure on 14 pairs of monozygotic twins discordant

for combat exposure, in 7 of which the combat-exposed twins had PTSD. Results indicated that the combat veterans with PTSD had larger skin conductance response than their own co-twins, and than the non-PTSD combat veterans and their co-twins. The findings support the hypothesis that extinction of conditioned fear is deficient in PTSD.

Memory: Most theoretical models of PTSD argue that it is the current memory of a negative event, not the event itself, which determines symptoms. Rubin, Berntsen and Bohni (2008) propose that this model is a better way of understanding the disorder than the current event-based (i.e., Criterion A1) etiology of PTSD in the DSM-IV. They suggest that it accounts for important and reliable findings that are often inconsistent with the current diagnostic view. In a related finding, Engelhard, Van den Hout and McNally (2008) studied Dutch soldiers and confirmed previous research on the consistency of traumatic memories. Retrospective accounts of stressors were highly variable over time. Individuals with higher levels of PTSD symptoms and neuroticism, lower levels of extraversion, and fewer prior missions were more prone to increased reporting over time.

Emotional expression: To test the notion that that successful coping with a traumatic event requires expressing one's thoughts and feelings about the experience, Seery, Silver, Holman, Ence and Chu (2008) conducted a web-based study on 2,138 people following the terrorist attacks of September 11, 2001. Contrary to expectations, participants who chose not to express any initial reaction reported better outcomes over time than did those who expressed an initial reaction. Among those who chose to express their immediate reactions, longer responses predicted worse outcomes over time.

Intelligence: Hart et al. (2008) found that World War II prisoners of war (POWs) who developed PTSD had lower IQ than those who did not develop PTSD. Contrary to that finding, Thompson and Gottesman (2008) reported that, for veterans with higher levels of combat exposure, pre-recruitment cognitive abilities had no effect on risk of combat-related PTSD. The authors suggest that high levels of combat exposure are likely to exhaust intellectual resources available for coping with stressful life events even among those with higher initial ability.

Genetic Predisposition: Using the Vietnam Era Twin Registry, Koenen et al., (2008) found that association between major depression (MD) and PTSD is largely explained by common genetic influences. Further research is needed to identify environmental factors that influence the development of MD versus PTSD in the context of common genetic liability.

Orbitoprefrontal cortex (OFC) dysfunction: OFC dysfunction is thought to underpin impulsive aggression, including such behaviour in PTSD. Dileo, Brewer, Hopwood, Anderson and Creamer (2008) explored olfactory identification (OI) ability in veterans with PTSD as a probe of OFC dysfunction. Veterans with PTSD exhibited significant OI deficits (OIDs) compared to controls, despite uncompromised performance on cognitive measures. This study prompts further exploration of the diagnostic utility of OIDs in the assessment of PTSD.

Nicotine Dependence: Using a large community sample from the NCS-R, Babson, Feldner, Sachs-Ericsson, Schmidt, & Zvolensky (2008) found that nicotine

dependence partially mediated the relations between insomnia and both panic disorder (PD) and PTSD. Results suggest that nicotine dependence may be a mechanism that underlies insomnia among those with PD and PTSD.

Treatment

Trauma Focused Psychological Treatment

The two most widely used cognitive behavioural treatments (CBT) for PTSD are exposure and cognitive restructuring (CR). In a comparison of the two with civilian patients diagnosed with acute stress disorder, Bryant et al. (2008) found that exposure produced significantly better outcomes than CR at both post-treatment and follow up. Previous studies have reported that adding CR to exposure therapy does not enhance treatment gains in PTSD. Contrary to that evidence, however, Bryant et al., (2008) found that adding CR to in vivo and imaginal exposure in a sample of 118 civilian trauma survivors with PTSD produced significantly better outcome.

In an attempt to treat PTSD in people with severe mental illness CBT was compared with treatment as usual (TAU) in a randomised control trial (Mueser et al., 2008). CBT clients improved significantly more than did clients in TAU at post-treatment and follow-up, with the strongest effects in clients with severe PTSD. The findings suggest that clients with severe mental illness and PTSD can benefit from CBT, despite severe symptoms, suicidal thinking, psychosis, and vulnerability to hospitalizations.

Delivery of CBT is often hampered by lack of trained clinicians, particularly in poor countries. A study by Neuner (2008) examined whether trained lay counsellors could carry out effective treatment of PTSD in a refugee settlement. Comparing manualised narrative exposure therapy (NET) with more flexible trauma counselling (TC) and a no-treatment monitoring group (MG) with 277 Rwandan and Somalian refugees in Uganda, both active treatment groups were superior to MG but did not differ from each other. Fewer participants (4%) dropped out of NET treatment than TC (21%). Short-term psychotherapy carried out by lay counsellors with limited training can be effective to treat war-related PTSD in a refugee settlement.

Barriers to Care: Britt et al. (2008) examined barriers to care in US college students and US soldiers. Stigma and barriers to care emerged as separate constructs. In the military sample, barriers to care interacted with work overload to predict depression

PTSD Program Models: Forbes, Lewis, Parslow, Hawthorne and Creamer (2008) compared clinical presentations and outcomes across five types of group-based veteran PTSD programs of different intensities and settings. Comparable outcomes were evident across program types, but the authors recommend that veterans participate in program intensity types that match their level of PTSD severity. When such matching is not feasible, moderate-intensity programs appeared to offer the most consistent outcomes. These findings have implications for the planning and purchasing of mental health services for sufferers of PTSD.

Early intervention: O'Donnell, Bryant, Creamer and Carty O'Donnell et al (2008) provide a detailed review of early intervention models following traumatic injury. They propose key features for successful service delivery structures to assist mental

health recovery, which includes screening shortly after a traumatic event, follow-up one month later to see if symptoms persist, then offer psychological therapy to those with clinical levels of impairment.

Mental Health Program Following Terrorism: Following the 2005 London bombings, a novel public health program was instituted to address the mental health needs of survivors. Brewin et al. (2008) describe the rationale for the program and characteristics of those accessing the program. Preliminary outcome data revealed large effect sizes for treatment comparable to those previously obtained in randomized controlled trials. The program succeeded in its aim of generating more referrals of affected individuals than came through normal referral channels.

Decompression: The term decompression is used to describe a psychological concept, which, in military environments, refers to a process that is designed to allow service personnel returning from deployment to adapt to the home environment in a graduated way, with the aim of reducing the potential for maladaptive psychological adjustment. Hughes et al., (2008) review the limited evidence base for the efficacy of decompression following military deployment. The authors recommend that, given the lack of knowledge as to the risks and benefits of decompression and the absence of any definitive evidence that decompression is associated with improved mental health outcomes, the use of decompression should remain a matter for discretion.

Pharmacotherapy: Mohamed and Rosenheck (2008) examined the role of psychotropic pharmacotherapy in the treatment of VA patients diagnosed with PTSD. The authors found that diverse psychotropic medication classes were extensively used in the treatment of PTSD in the VA. While disease-specific use for both PTSD and comorbid disorders was common, substantial use seemed to be unrelated to diagnosis and was targeted at specific symptoms (e.g., insomnia, anxiety, nightmares, and flashbacks) rather than diagnosed illnesses.

Predictors of Treatment Seeking: Adopting a behavioral model of healthcare use, Elahi, Grubaugh, Richardson, Egede and Creamer (2008) examined predisposing (i.e., sociodemographic), enabling (i.e., access resources), and need (i.e., illness) models of healthcare utilization among a national sample of US veterans. Need variables provided an additive effect over predisposing and enabling variables in accounting for medical and mental healthcare use, and accounted for some of the strongest effects. The results demonstrate that need remains an important factor that drives healthcare use among veterans and does not seem to be overshadowed by socioeconomic factors that may create unfair disparities in treatment access. In a related study, Fikretogul, Guay, Pedlar and Brunet (2008) examined the patterns and predictors of mental health service use in active Canadian Force members. Forty-two per cent had used services in the past year with predictors including mental health status, gender, marital status, and military rank. Of military members who failed to use services, only a small percentage acknowledged a need for services. Barriers to care included a lack of trust in military health, administrative, and social services. The authors recommend that military institutions continue public education campaigns to destigmatize mental health problems and make necessary changes in health delivery systems to gain the trust of military members.

Systems-Level Approach to Mental Health in Military Primary Care: Engel et al., (2008) tested the feasibility of collaborative care for PTSD and depression in military

primary care. Named "Re-Engineering Systems of Primary Care for PTSD and Depression in the Military" (RESPECT-Mil), key elements include universal primary care screening for PTSD and depression, brief standardized primary care diagnostic assessment for those who screen positive, and use of a nurse "care facilitator" to ensure continuity of care for those with unmet depression and PTSD treatment needs. According to the authors, RESPECT-Mil, is feasible, safe, and acceptable to military primary care providers and patients, and participating patients frequently showed clinical improvements.

TBI: As TBI becomes an increasingly important issue for the US military, McCrea et al., (2008) provide a position statement summarizing the current issues raised by the occurrence, treatment, and study of TBI in military service members and veterans. The report was approved by key professional bodies, with the goal of providing information of relevance on an important public policy matter. The report covers such topics as definition, guidance on a systematic approach to standardized evaluation, base-line testing, screening, treatment, rehabilitation and recommendations on key research initiatives.

Ethical Issues

Surprisingly little attention is paid to the area of ethics in discussions of posttraumatic mental health. A recent special edition of *Military Psychology*, however, is devoted to the subject of ethics in military mental health settings, with several authors presenting different perspectives on the unique ethical concerns encountered by military psychologists (Kennedy & Moore, 2008; Johnson, 2008; McCauley, Hughes & Liebling-Kalifani, 2008).

In their opening article Kennedy and Moore (2008) discuss the complexities of the multiple relationships experienced by military psychologists, for example, those of health care provider and officer/administrator. The difficulty of balancing the needs of the military, patient needs, and issues of informed consent and confidentiality are also discussed. The authors conclude by providing guidelines to address these dilemmas.

Johnson (2008) presents the top ten ethical challenges for contemporary uniformed psychologists. His article concludes with several distinct recommendations designed to reduce the risk of negative outcomes arising from ethical challenges in the military.

In their literature review on ethical considerations arising from the practice of clinical psychology within the military, McCauley, Hughes and Liebling-Kalifani (2008) identified confidentiality and boundary violations as the two main areas of ethical concern.

Conclusion

Military mental health research in 2008 was characterized by an emphasis on the prevalence of posttraumatic mental health problems in veterans of both Iraq and Afghanistan. Studies in this area stressed the increased rates of comorbidity and the influence of specific combat exposures. With the focus on the Middle East Area of Operations has come an increase in research on both traumatic brain injury and post-deployment treatment. As in previous years, predictors of mental health outcome

remain a focal point. In the civilian area, improvements continue to be made in understanding predictors of outcome, as well as more effective strategies to assist people affected by trauma.

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