

COMBAT & OPERATIONAL STRESS RESEARCH QUARTERLY

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High rates of co-occurrence of MDD and PTSD in a meta-analytic sample

Key Findings: In a meta-analysis, 52% of individuals with current PTSD had co-occurring major depressive disorder (MDD). MDD co-occurrence was more common among military samples compared to civilian samples, and participants with interpersonal trauma experiences had significantly higher co-occurrence rates compared to natural disaster survivors. U.S. nationality, gender and the type of referral (treatment, compensation or research) were not related to MDD co-occurrence rates.

Study type: Meta-analysis

Sample: 6,670 participants using 57 studies published between 1997-2012 on co-occurrence of PTSD with MDD (3,279 with PTSD only and 3,391 with PTSD and MDD)

Implications: The high prevalence of PTSD/MDD comorbidity highlights the importance of routinely assessing for MDD in individuals with PTSD. There are sub-populations with PTSD that may be particularly susceptible to the development of MDD, including service members and those with interpersonal traumas. Further research is warranted to gain a better understanding of the relationship between the two disorders to facilitate more targeted treatments.

Rytwinski, N.K., Scur, M.D., Feeny, N.C., & Youngstrom, E.A. (2013). The co-occurrence of major depressive disorder among individuals with

posttraumatic stress disorder: a meta-analysis. Journal of Traumatic Stress, 26(3), 299-309. doi: 10.1002/jts.21814

Predictors of new-onset mental health diagnoses among combat-deployed Marines

Key Findings: Among a sample of Marines previously deployed to OEF or OIF, 18% were diagnosed with a new-onset psychiatric disorder. When various predictors were analyzed together in a model, the strongest predictors of any new psychiatric disorder were female gender, mild TBI (mTBI) symptoms and dissatisfaction with leadership. Marines who were in the top 25% of satisfaction with leadership were about half as likely to seek treatment for a psychiatric disorder compared to those in the bottom 25% of leadership satisfaction.

Study type: Longitudinal study with self-report measures and data from medical and deployment records

Sample: 1,113 U.S. Marines who had deployed to Iraq or Afghanistan

Implications: Similar to previous results, this study provides further evidence that female gender, mTBI symptoms and combat exposure act as predictors of psychiatric disorders

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among combat-deployed military personnel. Considering that leadership satisfaction was significantly and negatively associated with seeking treatment for a psychiatric disorder, the military should improve efforts to strengthen leadership and to support personnel. Such efforts may lead to greater organizational commitment, as well as improved psychological health.

Booth-Kewley, S., Schmied, E.A., Highfill-McRoy, R.M., Larson, G.E., Garland, C.F., & Ziajko, L.A. (2013). Predictors of psychiatric disorders in combat veterans. *BMC Psychiatry*, 13(130), 1-11. doi: 10.1186/1471-244X-13-130

OEF/OIF soldiers with a history of adverse childhood experiences are more likely to misuse alcohol post-deployment

Key Findings: Almost one-third of OEF/OIF soldiers recently returned from combat screened positive for alcohol misuse, whereas about 13% of the sample met criteria for alcohol misuse with risky behaviors. While alcohol misuse in this population has previously been attributed to combat exposure and mental health issues, the current study found that exposure to adverse childhood experiences (ACEs) was independently related to increased alcohol misuse as an adult. Specifically, recently deployed soldiers who had been exposed to problem drinking, mental illness or sexual abuse during childhood reported higher current levels of alcohol misuse. Childhood exposure to alcoholism or sexual abuse was specifically associated with increased risk for alcohol misuse with risky behaviors in adulthood.

Study Type: Cross-sectional study with self-report assessments

Sample: 7,849 OEF/OIF soldiers within three months post-deployment

Implications: Contrary to previous beliefs, results suggest that the effect of ACEs on the misuse of alcohol is independent of combat exposure and mental health issues. Alcohol treatment providers should routinely assess for history of ACEs, which may play an important role in the patient's alcohol misuse and risky behaviors. Results indicate the importance of treating individuals with a history of ACEs in order to reduce their risk of developing an alcohol problem.

Clarke-Walper, K., Riviere, L.A., & Wilk, J.E. (2013). Alcohol misuse, alcohol-related risky behaviors, and childhood adversity among soldiers who returned from Iraq or Afghanistan. *Addictive Behaviors*. Advance online publication. doi: 10.1016/j.addbeh.2013.05.001

Veterans with current PTSD show smaller hippocampal volume than those without PTSD

Key Findings: Hippocampal volume was assessed in four groups of veterans: (those with current PTSD; those previously exposed to trauma with no current or lifetime PTSD diagnosis; those with remitted PTSD; and the non-exposed control group. Results showed that hippocampal volume was smaller in veterans with current PTSD compared to those without current PTSD. No significant hippocampal volume differences were found between the group with remitted PTSD and the non-exposed control group, or between the remitted PTSD group and the criterion A-exposed group with no history of PTSD. In addition, it was found that those with current chronic PTSD had smaller anterior cingulate, insula and corpus callosum volumes when compared to those without current PTSD.

Study Type: Cross-sectional study using magnetic resonance imaging and clinician report measures

Sample: 191 veterans (83% were Persian Gulf War veterans, and the remaining were OEF/OIF, Vietnam, Beirut, Bosnia or multiple conflict veterans). Thirty-nine met current CAPS criteria for PTSD; 43 had experienced a criterion A event, yet no current or lifetime PTSD diagnosis; 34 had a lifetime history of PTSD, but no current PTSD; 75 reported no exposure to a traumatic event.

Implications: Considering that participants with remitted PTSD showed no hippocampal volume differences from those with no history of PTSD, yet those with current PTSD did show smaller volume, it is possible that smaller hippocampal volume impairs one's ability to respond to treatment and recover. Alternatively, these findings may suggest that recovery from PTSD results in restoration of hippocampal volume.

Chao, L., Weiner, M., & Neylan, T. (2013). Regional cerebral volumes in veterans with current versus remitted posttraumatic stress disorder. *Psychiatry Research: Neuroimaging*, 213(3), 193-201. doi: 10.1016/j.psychres.2013.03.002

Cognitive Processing Therapy and Prolonged Exposure both significantly reduce PTSD symptoms in veterans

Key Findings: Cognitive Processing Therapy (CPT) and Prolonged Exposure (PE) both reduced veterans' posttraumatic checklist (PCL) scores significantly, with a large effect size. However, PE reduced PCL scores significantly more than did CPT. PE showed a higher drop-out rate than CPT (44.4%

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versus 32.2%). However, after controlling for age, ethnicity, treatment modality (group or individual), and OEF/OIF/OND status, only age (under 30) was related to increased treatment dropout. Furthermore, the mean age of veterans receiving CPT in this study was significantly higher (57.1) than that of veterans receiving PE (38.2).

Study Type: Retrospective chart review of self-report and clinician-rating measures

Sample: Medical charts of 517 veterans treated at a specialty clinic for military-related PTSD

Implications: Among a sample of veterans being treated for PTSD at a military specialty clinic, PE may be more effective in reducing PCL scores compared to CPT. Results also suggest that younger veterans (under 30) are more likely to drop out of PTSD treatment compared to veterans over 50. Future research should include randomized-controlled trials that account for participants use of psychotropic medications, which was not controlled in the current study.

Jeffreys, M.D., Reinfeld, C., Nair, P.V., Garcia, H.A., Mata-Galan, E., & Rentz, T.O. (2013). Evaluating treatment of posttraumatic stress disorder with cognitive processing therapy and prolonged exposure therapy in a VHA specialty clinic. Journal of Anxiety Disorders. Advance online publication. doi: 10.1016/j.janxdis.2013.04.010

Paroxetine decreases anxiety and mood symptoms in OEF/OIF veterans with sub-threshold PTSD

Key Findings: Among a group of veterans meeting criteria for sub-threshold PTSD, those receiving paroxetine treatment did not show significantly different PTSD symptom changes on the Clinician-Administered PTSD Scale (CAPS) from those receiving placebo treatment. Hospital Anxiety and Depression Scale scores, however, decreased almost 30% more in the paroxetine group compared to that of the placebo group.

Study Type: Pilot randomized, placebo-controlled, double-blind, 12-week trial with paroxetine using self-report and clinician-rating measures

Sample: 12 OEF/OIF veterans ages 18 to 55 meeting criteria for sub-threshold PTSD (e.g., meeting criterion A, plus at least one symptom in each cluster category, but not meeting full criteria on the CAPS)

Implications: Paroxetine may be useful in decreasing anxiety and depression in OEF/OIF veterans with sub-threshold PTSD. Further, early intervention for PTSD (e.g., treating symptoms that are still sub-threshold), may reduce co-occur-

ring anxiety and mood symptoms. Results should be replicated in a larger sample.

Naylor, J.C., Dolber, T.R., Strauss, J.L., Kilts, J.D., Strauman, T.J. et al. (2013). A pilot randomized controlled trial with paroxetine for subthreshold PTSD in Operation Enduring Freedom/Operation Iraqi Freedom era veterans. Psychiatry Research, 206(2-3), 318-320. doi: 10.1016/j.psychres.2012.11.008

Veterans with symptoms of depression or PTSD are more likely to misuse alcohol than those without mental health symptoms

Key Findings: Overall, 37.3% of OEF/OIF veterans with combat injury screened positive for alcohol misuse. Veterans with PTSD symptoms and veterans with depressive symptoms were significantly more likely to misuse alcohol compared to those without PTSD or depressive symptoms, even after controlling for age, rank, mental health diagnosis before injury and combat exposure. Veterans with dual disorders (e.g., mental health symptoms and alcohol misuse) showed a significantly higher mean number of overall symptoms compared to those with only a mental health diagnosis. The most commonly reported symptoms included feeling tired after sleeping, memory problems, irritability and tinnitus.

Study type: Retrospective review of clinical records with self-report measures

Sample: 812 male OEF/OIF veterans with combat injury

Implications: Veterans with depressive or PTSD symptoms are more likely than those without such symptoms to report alcohol misuse. These findings emphasize the importance of early detection and treatment of depression and PTSD symptoms in order to avoid the complications of alcohol misuse. Future research is needed to examine long-term outcomes in veterans with depression, PTSD and alcohol misuse in order to inform clinical practices.

Heltemes, K.J., Clouser, M.C., MacGregor, A.J., Norman, S.B., & Galarneau, M.R. (2013). Co-occurring mental health and alcohol misuse: dual disorder symptoms in combat injured veterans. Addictive Behaviors. Advance online publication. doi: 10.1016/j.addbeh.2013.06.001

Psychiatric disorders, especially PTSD, increase the risk of sexual dysfunction in OEF/OIF veterans, even after controlling for use of psychotropic medications

Key Findings: Among OEF/OIF veterans, psychiatric

diagnosis was associated with sexual dysfunction. The magnitude of the relationship between a PTSD diagnosis and sexual dysfunction was even greater than that of having a general psychiatric disorder and sexual dysfunction. Veterans with psychiatric diagnoses, especially those with PTSD, showed a higher risk of sexual dysfunction even after controlling for the effect of psychiatric medications.

Study type: Retrospective cohort study

Sample: Retrospective data from 405,275 male Iraq and Afghanistan veterans identified by the national OEF/OIF Roster as U.S. VA healthcare recipients between October 7, 2001, and September 30, 2009, who also participated in a two-year follow-up assessment

Implications: The results of this study implicate the importance of assessing sexual functioning with PTSD patients and addressing this issue in therapy if necessary. Future prospective research is needed at the individual level using well-validated measures.

Breyer, B.N., Cohen, B.E., Bertenthal, D., Rosen, R.C., Neylan, T.C., & Seal, K.H. (2013). Sexual dysfunction in male Iraq and Afghanistan war veterans: association with posttraumatic stress disorder and other combat-related mental health disorders: a population-based cohort study. International Society for Sexual Medicine. Advance online publication. doi: 10.1111/jsm.12201

Frequency of all types of insomnia increase as incidents of reported TBI increase

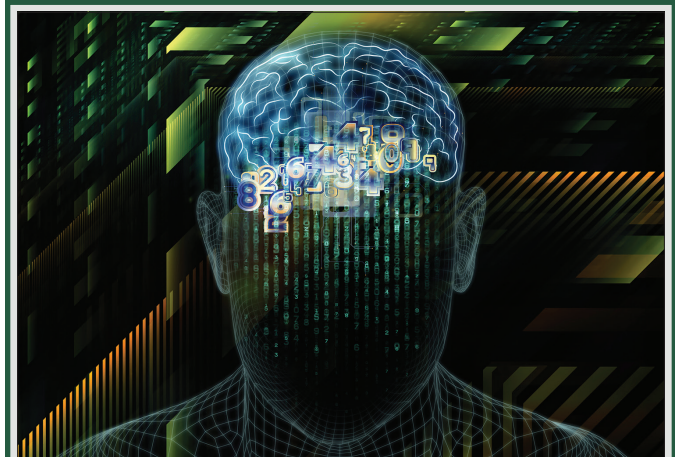
Key Findings: Three groups of patients were identified: those with zero incidents of traumatic brain injury (TBI); those with one incident of TBI, and those with multiple incidents of TBI. The more lifetime incidents of TBI reported by patients, the more frequently they experienced insomnia. The multiple TBI group experienced significantly more severe insomnia than the zero TBI group, yet not significantly more severe than that of the single TBI group. Furthermore, onset insomnia was more common than maintenance insomnia and early morning awakening among those with only one TBI, while all three types of insomnia occurred with equal frequency among individuals with multiple TBIs.

Study type: Cross-sectional study with self-report and clinician-rating measures

Sample: 150 male military patients presenting at a TBI clinic within a combat support hospital located in Iraq

Implications: While frequency of insomnia increases as incidents of TBI increase, severity of insomnia seems to be related to the presence or absence of TBI. For example, patients re-

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Sleep disturbances characteristic of PTSD have been found to decrease psychological resilience, as well as impair responses to PTSD treatments

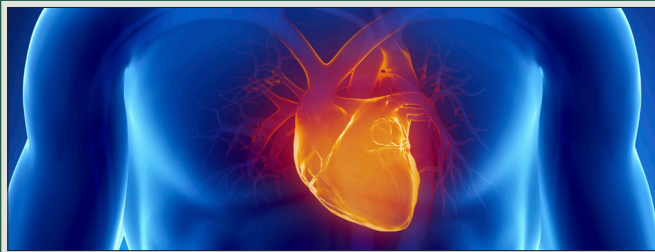
Key Findings: Some research shows that REM sleep disturbances are related to decreases in psychological resilience. In addition, poor sleep and post-trauma nightmares have been found to predict development of both PTSD and other psychiatric disorders. Decreases in insomnia and nightmares have been linked to decreases in daytime PTSD, anxiety and depression symptoms (after sleep-focused treatment). Prazosin and imagery rehearsal therapies are the evidence-based treatments suggested for nightmare-related insomnia. Much research displays the importance of REM sleep for learning and memory and emotional processing, while lack of REM sleep has been associated with deficiencies in these areas.

Study type: Review article

Sample: Multiple studies conducted on the link between sleep, PTSD, depression and anxiety

Implications: While it is evident that disturbed sleep is related to poor psychiatric functioning, and improved sleep quality is related to remission of daytime psychiatric symptoms, the exact mechanisms linking sleep to such psychiatric disorders as PTSD are still unknown. Regular sleep assessments should be conducted in populations that are at high risk for trauma, such as military service members. Finally, education is recommended for both providers and patients regarding the influence of sleep on PTSD and on the efficacy of psychiatric treatment.

Germain, A. (2013). Sleep disturbances as the hallmark of PTSD: where are we now? American Journal of Psychiatry, 170(4), 372-382. doi: 10.1176/appi.ajp.2012.12040432



Biological, behavioral and psychosocial risk factors are proposed as links between cardiovascular diseases and PTSD

Key Findings: Not only is PTSD related to the development of cardiovascular disease (CVD) and resulting mortality, but CVD events are also related to the development of PTSD. Three categories of risk factors present in people with PTSD have been proposed to link PTSD and CVD, including biological risk factors, such as dysregulation of hypothalamic-pituitary-adrenal axis, decreased heart rate variability, dysfunction of autonomic nervous system and inflammation; behavioral risk factors, such as substance use, obesity, decreased physical activity, non-compliance with medications and sleep difficulties; and psychosocial risk factors, such as co-occurring psychological disorders and disturbance of social functioning. Some factors associated with development of PTSD following acute cardiovascular events include younger age, female gender, low socio-economic status and ethnic minority status. One in eight acute cardiovascular syndrome patients develop PTSD. In addition, 18% who experienced mild to moderate stroke developed clinically significant symptoms of PTSD.

Study type: Review article

Sample: Review of various studies focused on individuals with PTSD and related cardiovascular disturbance

Implications: PTSD symptoms should be assessed in primary care settings due to its association with CVD. While several interventions have been shown to reduce risk of CVD, more research is needed to identify programs focused on PTSD and CVD prevention and treatment. Programs integrating tobacco cessation with mental healthcare have successfully reduced PTSD-related risk factors for CVD. Future research is also needed to identify non-traditional risk factors of CVD-related PTSD.

Edmondson, D., & Cohen, B.E. (2013). Posttraumatic stress disorder and cardiovascular disease. Progress in Cardiovascular Diseases, 55(6), 548-556. doi: 10.1016/j.pcad.2013.03.004

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porting any history of TBI experienced more severe symptoms of insomnia, while those reporting no history of TBI experienced significantly less severe insomnia symptoms. Considering the relationship found between incidents of TBI and frequency and severity of insomnia, future research should focus on the efficacy of early cognitive-behavioral interventions for insomnia in treating service members with TBI.

Bryan, C.J. (2013). Repetitive traumatic brain injury (or concussion) increases severity of sleep disturbance among deployed military personnel. Sleep, 36(6), 941-946. doi: 10.5665/sleep.2730

Partner support may lower PTSD symptoms through service members disclosure of deployment experience

Key Findings: U.S. Air Force service members who reported being in a long-term committed relationship were assessed six to nine months post-deployment using self-report measures. Results showed that overall social support, particularly intimate partner support, were significantly related to lesser severity of PTSD symptoms. The level of disclosure of deployment- and combat-related experiences by service members to their intimate partners partially mediated the relationship between partner support and PTSD symptom severity. The level of disclosure of deployment or combat experiences was also inversely related to levels of relationship distress.

Study type: Cross-sectional study with self-report measures

Sample: 76 U.S. Air Force service members in long-term committed relationships who deployed to Iraq for a year-long, high-risk mission

Implications: Results suggest that a long-term, committed relationship with high levels of partner support may act as a safe environment in which service members can disclose deployment and combat experiences. The disclosure of such experiences was shown to reduce PTSD symptoms in the current study. Couples-focused PTSD treatments may be helpful in strengthening communication skills, understanding how deployment has affected both partners, and creating a safe environment for deployment/combat-related disclosures to occur.

Balderrama-Durbin, C., Snyder, D.K., Cigrang, J., Talcott, G.W., Tatum, J., Baker, M.,...Smith Slep, A.M. (2013). Combat disclosure in intimate relationships: mediating the impact of partner support on posttraumatic stress. Journal of Family Psychology, 27(4), 560-8. doi: 10.1037/a0033412

Evaluation of Master Resilience Training effectiveness among Army National Guard soldiers and civilians

Key Findings: Master Resilience Training (MRT) involves a brief presentation followed by several experiential activities, including group discussion, role-playing and application exercises, all aimed at increasing resilience and soldier fitness. After completion of MRT, 92% or more of Army National Guard and civilian participants perceived the training to be helpful in enhancing coping skills in stressful situations. Further, 97% or more believed they could use the skills in their subsequent military or civilian jobs or at home. Training on improving mental flexibility for effective problem solving was rated as most helpful, while building character strength was rated as the least helpful of the training modules. Following training, participants reported improvements in self-awareness, strength of character, optimism, mental agility and connection with others. Participants who rated themselves higher on these factors reported less worries and anxiety. However, regression results were inconclusive regarding whether changes in these resilience factors after MRT were effective in buffering stressful events and therefore reducing worries and anxiety.

Study type: Cross-sectional study using a web-based self-report survey

Sample: 441 resilience-trained Army National Guard soldiers and civilians

Implications: The results suggest that although the resilience factors taught in MRT (connection, optimism, mental agility, self-awareness, self-regulation and character strength) may protect against worry and anxiety, the improvements in the areas from one week of MRT training may not be enough to buffer the detrimental effects of stressful events. The authors suggest that while MRT improves one's overall level of resilience, the cognitive-reframing skills taught in this training may not necessarily be applicable to atrocities witnessed by military service members, but more applicable to milder life stressors. Future longitudinal research with validated questionnaires is warranted in order to further examine the utility of one-week MRT training.

Griffith, J. & West, C. (2013). Master resilience training and its relationship to individual well-being and stress buffering among Army National Guard soldiers. Journal of Behavioral Health Services & Research, 40(2), 140-155. doi: 10.1007/s11414-013-9320-8

Exercise linked to lower suicide risk among veterans with PTSD

Key Findings: Exercise had a direct negative association with

suicide risk among veterans in an inpatient PTSD program. Furthermore, exercise had an indirect association with suicide risk through its relationships with depressive symptoms and sleep quality. Higher levels of exercise were linked to lower levels of depression and better sleep quality, which in turn were associated with less suicide risk. PTSD symptoms did not mediate the association between exercise and suicide risk.

Study type: Cross-sectional study with self-report measures administered at treatment intake

Sample: 346 military veterans in a VA inpatient rehabilitation program for PTSD

Implications: This study is the first to establish a relationship (both direct and mediated) between higher levels of exercise and reduced risk for suicide. However, considering that exercise in this study was measured by a one-month recall prior to hospitalization, it is possible that those with increased depression, PTSD and suicidality were simply less motivated to exercise during that time period. Further prospective research is needed to examine the effect of exercise interventions on PTSD and other symptoms of mental illness. Exercise has been widely shown to improve mental and physical health status. Therefore, exercise interventions could be incorporated into suicide treatment by mental health providers and could also be routinely recommended in primary care since many people who die by suicide have visited their primary care physician in the month prior.

Davidson, C.L., Babson, K.A., Bonn-Miller, M.O., Souter, T., & Vannoy, S. (2013). The impact of exercise on suicide risk: examining pathways through depression, PTSD, and sleep in an inpatient sample of veterans. Suicide and Life-Threatening Behavior, 43(3), 279-89. doi: 10.1111/sltb.12014

Predictors of VA healthcare utilization among sexual minority veterans

Key Findings: Lifetime utilization of VA healthcare services by a sample of gay, lesbian and bisexual (GLB) veterans was 45.5%, while past-year utilization was 28.7% – rates that are comparable to or higher than the overall veteran community. However, approximately one-quarter of participants reported avoiding using at least one VA service due to concerns about stigmatization. Lifetime VA healthcare utilization was predicted by positive screen for both PTSD and depression, service-related conditions, and history of at least one interpersonal trauma during military service related to being GLB. Past-year VA healthcare utilization was predicted by female gender, service-related conditions, positive screen for both PTSD and depression, lower physical functioning, a history

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of military interpersonal trauma related to GLB status, and no history of stressful experiences related to military investigation or punishment of GLB status.

Study type: Cross-sectional study with self-report measures

Sample: 356 gay, lesbian and bisexual veterans recruited from the community

Implications: Findings suggest that GLB veterans use VA healthcare services at about the same rate as other veterans, but still report avoidance of some services due to concerns about stigmatization regarding their GLB status. GLB veterans who experienced investigation or punishment by the military due to their GLB status were less likely to use VA services, possibly due to lack of trust in the military as a result of the stressful experience. VA providers and administrators should be aware of these findings and improve efforts to provide culturally competent care for GLB individuals.

Simpson, T.L., Balsam, K.F., Cochran, B.N., Lehavot, K., & Gold, S.D. (2013). Veterans Administration Healthcare Utilization Among Sexual Minority Veterans. Psychological Services, 10(2), 223-32. doi: 10.1037/a0031281

Prolonged exposure effective in reducing PTSD symptoms regardless of TBI status

Key Findings: Two separate datasets were analyzed in the current study, both of which included veterans with or without TBI. However, one sample received PE treatment for PTSD, while the other received either PE or present-centered therapy. Analysis of these two datasets indicated that history of TBI did not affect PE treatment outcomes. PE was highly effective at reducing PTSD symptoms regardless of whether the participant had a TBI.

Study type: Treatment review using clinical data

Sample: Sample 1: 51 veterans with (n = 11) or without (n = 40) TBI who received PE treatment for PTSD; Sample 2: 22 veterans with (n = 8) or without (n = 14) TBI who received either PE or present-centered therapy

Implications: Despite some apprehension by clinicians to offer PE to patients with TBI, findings from this study suggest that PE is effective at reducing PTSD symptoms in patients with and without TBI. Providers should continue to offer PE to veterans with PTSD (with or without a history of TBI), and expect good clinical outcomes and reduction of PTSD symptoms.

Sripada, R.K., Rauch, S.A., Tuerk, P.W., Smith, E., Defever, A.M., Mayer, R.A., Messina, M., & Venners, M. (2013). Mild traumatic brain injury and treatment response in prolonged exposure for PTSD. Journal of Traumatic Stress, 26(3), 369-75. doi: 10.1002/jts.21813

Unethical battlefield conduct is more related to aggression and witnessing atrocities than it is to PTSD

Key Findings: While PTSD is often named as the culprit for unethical battlefield conduct, no research has directly examined the relationship. The current study found that 30% of soldiers reported having cursed at or insulted non-combatants, 12% reported unnecessarily damaging private property, and 5% reported unnecessarily kicking or hitting a non-combatant during deployment. Combat experiences, aggression and PTSD were all related to unethical battlefield conduct. However, aggression was found to completely explain the relationship between PTSD and unethical conduct. Factors most associated with unethical conduct were aggression, time spent outside “the wire,” and certain combat experiences, such as witnessing atrocities, in which soldiers were unable to intervene.

Study type: Secondary cross-sectional analysis of data from the OIF Mental Health Advisory Team (MHAT-V) survey conducted by the U.S. Army in 2007 with self-report measures

Sample: 2,095 soldiers who were anonymously surveyed while deployed in Iraq in 2007

Implications: Results suggest that unethical battlefield conduct is not necessarily due to PTSD, but more related to certain combat experiences and aggression. Previous research had shown that witnessing atrocities (the most strongly associated variable with unethical battlefield conduct in this study) was also associated with alcohol misuse and a higher propensity toward risk-taking behaviors. Results suggest the need for more training in battlefield ethics, as well as skills training focused on coping with high levels of anger, aggression and the feelings of helplessness that arise from witnessing an atrocity with no ability to intervene.

Wilk, J.E., Bliese, P.D., Thomas, J.L., Wood, M.D., McGurk, D. et al. (2013). Unethical battlefield conduct reported by soldiers serving in the Iraq war. The Journal of Nervous and Mental Disease, 201(4), 259-265. doi: 10.1097/NMD.0b013e318288d302

Cognitive-behavioral group treatment decreases angry and aggressive driving-related behaviors in a military population

Key Findings: Following completion of cognitive-behavioral group treatment for driving-related anger and aggression, 88.9% of participants experienced significant decreases in aggressive driving behavior, while 66.7% experienced significant decreases in driving-related anger.

Study type: Treatment study with self-report measures

Sample: Nine VA patients with self-reported risky and aggressive driving problems, yet no active substance dependence, psychosis, suicidality or homicidality

Implications: Results suggest that cognitive-behavioral group treatment focused on driving-related anger and aggression may decrease rates of motor vehicle-related injuries and deaths in the military population. Findings should be replicated with a larger sample size and a control group. In addition, data should be collected to assess the long-term effects of such treatment.

Strom, T., Leskela, J., Possis, E., Thuras, P., Leuty, M.E., et al. (2013). Cognitive-behavioral group treatment for driving-related anger, aggression, and risky driving in combat veterans: a pilot study. Journal of Traumatic Stress, 26(3), 405-408. doi: 10.1002/jts.21808

Veterans with PTSD have lower levels of salivary cortisol than those without PTSD

Key Findings: Veterans with PTSD had significantly lower levels of cortisol at three time points (upon waking, 30 minutes after waking and at bed time) compared to controls without PTSD. However, the cortisol awakening response (CAR) (30 minutes after waking minus immediate waking cortisol level) showed no significant differences between groups. No differences were found between groups on demographic variables, smoking status, body mass index, use of medications, sleep duration, waking time, time participant was awake before bedtime data collection, season of data collection or time during which veterans served. Differences were found, however, between groups on combat exposure, PTSD symptoms, depression symptoms, measures of stress and traumatic events, with the PTSD group scoring significantly higher than controls on those variables. The four-factor avoidance symptom cluster as conceptualized by the diagnostic criteria for PTSD in DSM-5 was related to cortisol level, while the other DSM-5 symptom clusters were not.

Study type: Cross-sectional study with salivary cortisol samples, clinician-rating and self-report measures

Sample: 51 combat veterans with PTSD and 20 without PTSD

Implications: Despite the findings of previous research, results of the current study suggest that salivary cortisol is lower in individuals with PTSD compared to those without PTSD. More research is needed to examine the relationships between DSM-5 PTSD symptom clusters and cortisol levels, which may help to tie biological correlates of PTSD to behavioral

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Mental healthcare utilization in the U.S. Army

Key Findings: In a survey representative of more than 500,000 active-duty Army soldiers, 21% reported using mental health services in the past year (including receiving counseling or therapy from a general medical doctor or mental health professional, or being prescribed medication for depression, anxiety or sleep), while 48% reported using two or more services. Female and enlisted soldiers were more likely than male and non-enlisted soldiers to use a greater number of mental health services. Service members with greater functional impairment were 7.8 times more likely to use mental health services, 4.4 times more likely to use more services and 3.2 times more likely to see a mental health specialist (rather than a general medical doctor), and to be prescribed psychiatric medication.

Study type: Cross-sectional study using anonymous self-report data from the 2008 U.S. Department of Defense Survey of Health Related Behaviors

Sample: 10,400 active-duty Army soldiers

Implications: The utilization of mental health services in the U.S. Army is comparable to that of the U.S. general population. However, the rate of receiving services from a mental health professional rather than another type of health professional was 50% higher in the Army. This difference may be due to easy accessibility of services without any added cost to the service member. In order to provide veterans with optimal access to mental healthcare services, future longitudinal research is recommended by the authors to determine the course of mental health utilization and its relationship with demographic factors and functional impairment.

McKibben, J.B., Fullerton, C.S., Gray, C.L., Kessler, R.C., Stein, M.B., & Ursano, R.J. (2013). Mental health service utilization in the U.S. Army. Psychiatric Services, 64(4), 347-353. doi: 10.1176/appi.ps.000602012



MMPI-2-RF scale useful in detecting over-reported PTSD symptoms

Key Findings: Analysis of the over-reporting validity scales of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) revealed that scales on this assessment were able to differentiate veterans with PTSD from veterans who were asked to fabricate or exaggerate PTSD symptoms, with large effect sizes. These scales were also capable of differentiating between veterans with PTSD and mental health professionals who were asked to fabricate or exaggerate PTSD symptoms.

Study type: Cross-sectional analysis of symptom over-reporting validity scales

Sample: 83 male compensation-seeking veterans assigned to either answer honestly (n = 54) or fabricate or exaggerate PTSD symptoms (n = 29) on the MMPI-2-RF, and 30 mental health professionals assigned to fabricate or exaggerate PTSD symptoms on the assessment

Implications: Results show that inclusion of the MMPI-2-RF in military disability examinations may help distinguish veterans who are truly experiencing symptoms of PTSD from those who are feigning, even if the feigning veterans have been educated about the common presentation of PTSD symptoms. The addition of the MMPI-2-RF to disability examinations may help reserve resources for those veterans most in need.

Goodwin, B.E., Sellbom, M., & Arbisi, P.A. (2013). Posttraumatic stress disorder in veterans: the utility of the MMPI-2-RF validity scales in detecting overreported symptoms. Psychological Assessment, 25(3), 671-678. doi: 10.1037/a0032214

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symptoms. In addition, prospective research is warranted to examine the effect(s) of pre-trauma cortisol levels on the development of PTSD.

Wabbeb, H. & Oken, B.S. (2013). Salivary cortisol lower in posttraumatic stress disorder. Journal of Traumatic Stress, 26(2), 241-248. doi: 10.1002/jts.21798

Physically Fit Soldiers are at Decreased Risk of Mental Health Disorders in First Year of Service

Key Findings: Active-duty soldiers meeting weight and body fat standards for gender, height and age were considered to be weight qualified (WQ), while those exceeding these standards were considered to have excessive body fat (EBF). Among the WQ soldiers, those who failed a five-minute step test (measuring physical fitness), had 36% higher incidence of mental disorder diagnosis in the first year of service, with personality disorders and anxiety disorders the most common diagnoses. Among participants who passed the step test (from both the WQ and EBF groups), being overweight (as measured by BMI) was not significantly related to a diagnosis of a mental disorder in their first year of service. Socio-demographic factors, such as being female and a smoker, increased risk of a mental disorder diagnosis, while having at least a bachelor's degree decreased one's risk.

Study Type: Prospective cohort study

Sample: 11,369 U.S. Army active-duty members, entering service for the first time between February 2005 and September 2006 (10,216 WQ participants and 1,153 EBF participants)

Implications: Results suggest that inclusion of a five-minute pre-enlistment step test in the military medical examination process may identify service members who are at risk for developing a psychiatric disorder within their first year of duty. Research is needed within a civilian population to determine if results are similar to the current findings. If so, exercise interventions may prove to be helpful in reducing the risk of developing a psychiatric disorder.

Gubata, M.E., Urban, N., Cowan, D.N., and Niebuhr, D.W. (2013). A prospective study of physical fitness, obesity, and the subsequent risk of mental disorders among healthy young adults in army training. Journal of Psychosomatic Research, 75(1), 43-48. doi: 10.1016/j.jpsychores.2013.04.003

Co-morbid PTSD and TBI associated with more intense symptoms than PTSD alone

Key Findings: OEF/OIF veterans with both PTSD and TBI had significantly higher total PTSD scores on the Clinician-Administered PTSD Scale than veterans with PTSD only. The higher total PTSD scores in the PTSD with TBI group were attributable to higher symptom intensity ratings rather than to the TBI co-morbidity itself. Specifically, patients with PTSD and TBI endorsed more severe flashbacks and psychological distress, reported more severe inability to recall important aspects of the trauma, showed more exaggerated startle responses, more difficulty concentrating and more severe hypervigilance. In addition, service members with PTSD and TBI experienced higher anxiety and more functional impairment (difficulty with work and daily activities) when compared to the PTSD-only group.

Study type: Cross-sectional study with clinician-rating and self-report measures

Sample: 96 OEF/OIF veterans with PTSD (40 PTSD and TBI, 56 PTSD only)

Implications: The authors suggest that the higher PTSD symptoms found in the PTSD and TBI group may be due to injury to the areas of the brain that help inhibit fear responses and process cognitive information (the result of TBI). Future research to investigate this hypothesis is warranted, with a larger sample and standardized measures for diagnosing TBI. PTSD severity, and not TBI, was responsible for greater anxiety and functional impairment in the PTSD and TBI group, suggesting that evidence-based treatments for PTSD may be effective in reducing symptoms in this population.

Ragsdale, K.A., Neer, S.M., Beidel, D.C., Frueh, B.C., & Stout, J.W. (2013). Posttraumatic stress disorder in OEF/OIF veterans with and without traumatic brain injury. *Journal of Anxiety Disorders, 27*(4), 420-426. doi: 10.1016/j.janxdis.2013.04.003

CBT for insomnia with imagery rehearsal therapy improves sleep among veterans with PTSD

Key Findings: A group of combat veterans with PTSD received four individual sessions of Cognitive Behavioral Therapy-Insomnia (CBT-I) plus optional Imagery Rehearsal Therapy (IRT; re-scripting nightmares to make dreams less distressing). Participants receiving CBT-I plus optional IRT showed significant improvements in overall sleep quality (including subjectively reported increases in sleep efficiency, decreases in sleep difficulty and greater functional beliefs about sleep) when compared to the waitlist control group.

Objective sleep measurements using actigraphy also showed significant improvements in sleep efficiency and wake time after sleep onset from baseline to post-treatment. Symptoms in the CBT-I group improved from moderately severe insomnia to near sub-threshold level following treatment. The control group, however, remained in the moderately severe insomnia level. With treatment, veterans also showed decreases in overall distress, depression, PTSD symptoms and nightmares, while the control group significantly increased in PTSD symptoms, with no other significant changes.

Study type: Randomized-controlled trial using self-report assessments and actigraphy (treatment group only)

Sample: 40 OEF/OIF veterans with PTSD randomized to one of two conditions: 20 veterans receiving four sessions of CBT-I for six weeks plus optional adjunctive IRT for those experiencing nightmares; and 20 wait-list control participants

Implications: CBT-I with adjunctive IRT was effective in reducing insomnia severity and improving sleep quality with large effect sizes among combat veterans. The treatment is brief and may be incorporated into standard PTSD treatment for veterans with sleep problems and PTSD. The importance of sleep in predicting PTSD also suggests that CBT-I may prevent PTSD in vulnerable veterans with sleep difficulties. However, more research is needed to confirm this hypothesis.

Margolies, S.O., Rybarczyk, B., Vrana, S.R., Leszczyszyn, D.J., & Lynch, J. (2013). Efficacy of a cognitive-behavioral treatment for insomnia and nightmares in Afghanistan and Iraq veterans with PTSD. *Journal of Clinical Psychology, 69*(10), 1026-1042. doi: 10.1002/jclp.2197

TEST YOUR KNOWLEDGE

According to the summary “Predictors of new-onset mental health diagnoses among combat-deployed Marines,” what were the strongest predictors of new psychiatric disorders?

- A. Pre-existing depression and anxiety
- B. Low pain tolerance
- C. Symptoms of mTBI, dissatisfaction with leadership and female gender
- D. Male gender and high levels of trauma exposure

Answer: C

QUARTERLY HIGHLIGHT

Analysis of suicides/suicide attempts among U.S. military personnel

Key Findings: Analysis of suicides and suicide attempts among U.S. military personnel between 2008 and 2010 revealed that service members who committed suicide were primarily male, Caucasian, under age 25, junior enlisted and on active duty. Firearms were the most common suicide method (61%), and most who died by this method used a personal firearm (non-military issued). Approximately one-third of individuals completing or attempting suicide had a history of a failed relationship within the past 30 days. Job loss or job instability (22%), and civil (13%) or military (18%) legal problems were also reported for a substantial proportion of suicide decedents. Thirty-nine percent of those completing suicide and 60% of those attempting it had a history of outpatient behavioral healthcare. Furthermore, more than one-half of these individuals had visited their behavioral healthcare provider within the past 30 days. Diagnosed anxiety disorders (including PTSD) were only reported in 15% of those completing suicide, while mood disorders (including depression) were only reported in 21% of those completing suicide. More than one-half of those completing suicide (53%) and those attempting suicide (55%) had no history of OEF or OIF deployment.

Study type: Retrospective review of Department of Defense Suicide Event Report Program (DoDSER) data from 2008 to 2010

Sample: 816 suicides and 1,514 suicide attempts by U.S. military personnel

Implications: The demographics of military suicides (young Caucasian men) closely mirror that of suicides in the civilian population. Firearms are more commonly used in military compared to civilian suicides, which may be due to the higher proportion of men in the military and the fact that firearms are more frequently used in suicides by men in general. Another potential contributing factor is the training and famil-

The Combat & Operational Stress Research Quarterly is a compilation of recent research that includes relevant findings on the etiology, course and treatment of Posttraumatic Stress Disorder (PTSD). The intent of this publication is to facilitate translational research by providing busy clinicians with up-to-date findings, with the potential to guide and inform evidence-based treatment.

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ilarity with firearms among military personnel. Failed relationships and difficulties with employment or legal situations may be a source of significant stress contributing to suicide among some service members. However, further research is needed to determine whether those risk factors are more common among those who have committed suicide. Treatment for mental health conditions was relatively common among those who committed or attempted suicide. Furthermore, many had recently visited a behavioral health provider or, more commonly, any healthcare provider, in the month prior to the suicide or the attempt. Healthcare providers should take note of this finding and be more acutely aware of risk for self-harm among their patients. Finally, many previous studies have focused on the combat-deployed population and its risk for mental health problems and suicide. However, data show that suicides in the military are actually more common among those who have never been deployed to combat zones. Further research is needed to better elucidate causes of and risk factors for military suicide to improve military suicide prevention programs and identify at-risk military personnel.

Bush, N.E., Reger, M.A., Luxton, D.D., Skopp, N.A., Kinn, J., Smolenski, D., & Gabm, G.A. (2013). Suicides and suicide attempts in the U.S. Military, 2008-2010. Suicide and Life-Threatening Behavior, 43(3), 262-273. doi: 10.1111/sltb.12012

REVIEWS TO PERUSE

Koucky, E.M., Dickstein, B.D., & Chard, K.M. (2013). Cognitive behavioral treatments for post-traumatic stress disorder: empirical foundation and new directions. *CNS Spectrums, 18*(2), 73-81. doi: 10.1017/S1092852912000995

Bosco, M.A., Gallinati, J.I.L., & Clark, M.E. (2013). Conceptualizing and treating co-morbid chronic pain and PTSD. *Pain Research and Treatment, 2013*(2013), 1-10. doi: 10.1155/2013/174728

Carlson, B.E., Stromwall, L.K., & Lietz, C.A. (2013). Mental health issues in recently returning women veterans: Implications for practice. *Social Work, 58*(2), 105-113.