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Factors linked to PTSD in Marine veterans of OEF/OIF

Key Findings: In a sample of Marines who had served in support of Operation Enduring Freedom or Operation Iraqi Freedom (OEF/OIF), 17% screened positive for PTSD. Factors that were significantly related to PTSD in a multivariate model were deployment-related stressors, combat exposure, marital status and education.
Study type: Post-deployment self-report survey study
Sample: 1,569 Marines who had been deployed in support of OEF/OIF
Implications: The factor most strongly linked to possible PTSD was deployment-related stressors, which include concerns or problems back home, difficulty communicating with home, long deployments and lack of time off. Given that many of these issues are modifiable, military leaders and policymakers should take further steps to lessen the impact of these stressors among deployed troops.

Booth-Kewley, S., Larson, G.E., Highfill-McRoy, R.M., Garland, C.F. & Gaskin, T.A. (2010). Correlates of posttraumatic stress disorder symptoms in Marines back from war. *Journal of Traumatic Stress, 23* (1), 69-77.

IN THIS EDITION:

The *Combat & Operational Stress Research Quarterly* is a compilation of recent research on combat and operational stress, including 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 potential to guide and inform evidenced-based treatment.

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Mental health status of Iraq/Afghanistan female veterans compared to female veterans of previous wars

Key Findings: Women who served in the Iraq/Afghanistan wars had less severe psychopathology than women who served in the Persian Gulf War, and both groups had less psychopathology and more social support than women who served in the Vietnam War. Women serving in Iraq/Afghanistan also were exposed to less sexual and noncombat nonsexual trauma than women serving in the Persian Gulf. Compared with men serving in the Iraq/Afghanistan wars, women serving in the same wars had fewer interpersonal and economic supports, and had greater exposure to different types of trauma. Women who served in Iraq/Afghanistan had lower rates of PTSD and alcohol abuse/dependence than men who served in the same wars, but were more often diagnosed with other anxiety disorders and depression.
Study type: Retrospective medical record database review
Sample: 1,258 female Iraq/Afghanistan veterans, 607 female Persian Gulf veterans, 171 female Vietnam veterans and 9,998 male Iraq/Afghanistan veterans, all of whom sought treatment from a Veterans Administration outpatient program for PTSD
Implications: Women are generally progressively better off after war now than they have been in past decades, but they still have less social and economic support than male veterans. Women and men who served in Iraq/Afghanistan have different rates of psychological pathology.

Fontana, A., Rosenheck, R. & Desai, R. (2010). Female veterans of Iraq and Afghanistan seeking care from VA specialized PTSD programs: Comparison with male veterans and female war zone veterans of previous eras. *Journal of Women's Health, 19* (4), 751-757.

Morphine use in early trauma care may reduce risk of PTSD

Key Findings: Morphine administration during trauma care was significantly associated with a lower risk of PTSD after serious injury.
Study type: Retrospective medical record database review
Sample: 696 combat-injured U.S. military personnel without serious traumatic brain injury
Implications: The findings, along with results from other studies, suggest that a reduction in perceived pain levels through the use of morphine or other opiate pain relievers during trauma care may lower the rate of subsequent PTSD onset after a serious physical injury.

Holbrook, T.L., Galarneau, M.R., Dye, J.L., Quinn, K. & Dougherty, A.L. (2010). Morphine use after combat injury in Iraq and post-traumatic stress disorder. *New England Journal of Medicine, 362* (2), 110-117.

Prolonged exposure + cognitive restructuring for PTSD treatment: Always a good idea?

Key Findings: Contrary to expectations, greater PTSD severity and more negative trauma-related thoughts predicted poorer outcomes in PTSD patients undergoing treatment combining prolonged exposure and cognitive restructuring, but not in patients undergoing prolonged exposure alone.
Study type: Randomized controlled trial comparing prolonged exposure therapy alone to prolonged exposure plus cognitive restructuring
Sample: 54 female assault survivors with chronic PTSD
Implications: The findings challenge the notion that addressing negative trauma-related thoughts with cognitive restructuring is necessary to reduce PTSD symptoms, and, in fact, adding cognitive restructuring to prolonged exposure may actually be worse than prolonged exposure alone for some patients. This study highlights the need for more research that will enable practitioners to design treatment plans best suited for each individual.

Moser, J.S., Cahill, S.P. & Foa, E.B. (2010). Evidence for poorer outcome in patients with severe negative trauma-related cognitions receiving prolonged exposure plus cognitive restructuring: implications for treatment matching in posttraumatic stress disorder. *The Journal of Nervous and Mental Disease, 198* (1), 72-75.

Multiple deployments hamper military readiness

Key Findings: A standard pre-deployment health assessment of National Guard soldiers set to deploy to Iraq identified significantly fewer mental health problems in this sample than did the self-report survey used for this study. Additionally, soldiers in this sample who have been previously deployed to combat zones are more than three times as likely to screen positive for PTSD and major depression, about twice as likely to screen positive for alcohol dependence and chronic pain, and more than 90% more likely to score below the general population on physical functioning compared to soldiers with no previous deployments.
Study type: Pre-deployment self-report survey study
Sample: 2,543 New Jersey Army National Guard members set to deploy to Iraq in 2008
Implications: Military readiness may be negatively affected by returning medically impaired soldiers to combat. Pre-deployment mental health screening measures currently in place may be inadequate for keeping soldiers with mental health problems from being returned to deployment, potentially resulting in a weaker fighting force and higher rates of pathology and injury in troops after subsequent deployments.

Kline, A., Falca-Dodson, M., Sussner, B., Ciccone, D.S., Chandler, H., Callahan, L., et al. (2010). Effects of repeated deployment to Iraq and Afghanistan on the health of New Jersey Army National Guard troops: implications for military readiness. *American Journal of Public Health, 100* (2), 276-283.

PTSD symptoms and functioning impairment in OIF/OEF National Guard and Reserve veterans

Key Findings: National Guard and Reserve Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) veterans reported impaired functioning due to PTSD symptoms, even if they were below the diagnostic threshold for PTSD. Those who did meet criteria for PTSD showed the most impaired functioning. Also, certain PTSD symptom clusters were associated with functioning and distress: numbing/avoidance symptoms strongly predicted interpersonal and social functioning, and hyperarousal symptoms predicted overall severity and distress.
Study type: Longitudinal study including clinician administered assessments
Sample: 124 OIF/OEF veterans from Rhode Island National Guard and Reserve units
Implications: OIF/OEF veterans can have impaired functioning, even if they do not meet the threshold for PTSD. Also, certain PTSD symptom clusters have different effects on impairment and distress.

Shea, M.T., Vujanovic, A.A., Mansfield, A.K., Sevin, E. & Liu, F. (2010). Posttraumatic stress disorder symptoms and functional impairment among OEF and OIF National Guard and Reserve veterans. *Journal of Traumatic Stress, 23* (1), 100-107.

Teletherapy effective for veterans with anger problems and PTSD

Key Findings: Anger management teletherapy via video-teleconferencing was found to be similar (non-inferior) to in-person group therapy for reducing PTSD-related anger symptoms. Although anger management teletherapy also significantly reduced overall PTSD symptoms compared to baseline, the authors could not conclude that it was non-inferior to in-person therapy for the treatment of PTSD symptoms overall.
Study type: Randomized controlled non-inferiority trial
Sample: 125 male veterans with PTSD and anger difficulties
Implications: Anger management teletherapy is an effective way to treat PTSD-related anger symptoms in veterans living in rural or remote areas and can be an acceptable way to treat PTSD symptoms when no other therapy is available.

Morland, L.A., Greene, C.J., Rosen, C.S., Foy, D., Reilly, P., Shore, J., et al. (in press). Telemedicine for anger management therapy in a rural population of combat veterans with posttraumatic stress disorder: a randomized noninferiority trial. *The Journal of Clinical Psychiatry.*

Killing during deployment increases risk for mental health difficulties and psychosocial problems

Key Findings: Soldiers deployed to OIF (Operation Iraqi Freedom) who reported killing someone or being responsible for killing during their deployment had higher rates of PTSD symptoms, alcohol abuse, anger, and relationship problems.
Study type: Post-deployment screening database review
Sample: 2,797 U.S. soldiers returning from OIF
Implications: Service members may be at an increased risk of psychological problems after a deployment in which they killed or were responsible for killing someone. The shame, stigma and secrecy associated with killing need to be addressed in veterans presenting with these problems.

Maguen, S., Lucenko, B.A., Reger, M.A., Gahm, G.A., Litz, B., Seal, K.H., et al. (2010). The impact of reported direct and indirect killing on mental health symptoms in Iraq War veterans. *Journal of Traumatic Stress, 23* (1), 86-90.

Alcohol misuse linked to specific combat experiences

Key Findings: Twenty-five percent of soldiers deployed to Iraq reported alcohol misuse three to four months post-deployment and 12% reported both alcohol misuse and alcohol-related behavioral problems. Soldiers with higher rates of exposure to the threat of death and injury were more likely to screen positive for alcohol misuse. Exposure to atrocities predicted alcohol misuse with alcohol-related behavioral problems.
Study type: Anonymous self-report post-deployment survey study
Sample: 1,120 U.S. combat infantry soldiers who had been deployed to Iraq
Implications: Combat experiences, including high exposure to atrocities or threat of death or injury, were related to potential alcohol misuse among soldiers deployed to Iraq. Military leaders should closely follow combat veterans for alcohol problems and clinicians should be aware of these associations when treating combat veterans.

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 U.S. soldiers returning from the Iraq war. *Drug and Alcohol Dependence, 108* (1-2), 115-121.

JUST A REMINDER…

All presentations from the Navy and Marine Corps Combat & Operational Stress Conference 2010 (18-20 May in San Diego) are now available on our website: www.nccosc.navy.mil.

Thank you to all attendees. We hope you enjoyed the conference. See you next year!

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Racial/ethnic differences in PTSD risk and treatment-seeking behavior

Key Findings: Lifetime prevalence of PTSD was highest among Blacks (8.7%) and lowest among Asians (4.0%), with Hispanics (7.0%) and Whites (7.4%) falling in between. Whites were more likely than any other group to have experienced any trauma. Among those exposed to trauma, PTSD risk was slightly higher among Blacks and lower among Asians compared with Whites, and all minority groups were less likely to seek treatment for PTSD than Whites.
Study type: Retrospective survey data review
Sample: 34,653 U.S. adult respondents from the general population surveyed by the National Epidemiologic Survey on Alcohol and Related Conditions in 2004-2005
Implications: The racial/ethnic difference in PTSD risk is not well understood but may be partially related to mental health and socioeconomic status. PTSD in minorities is typically untreated, and barriers to mental health care among these individuals, including stigma, must be reduced in order to improve treatment rates.

Roberts, A.L., Gilman, S.E., Breslau, J., Breslau, N. & Koenen, K.C. (in press). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine.*

Psychiatric disorders common among veterans with probable TBI

Key Findings: More than 80% of veterans with positive traumatic brain injury (TBI) screens at Department of Veterans Affairs (VA) facilities had psychiatric diagnoses. Veterans with positive TBI screens were three times more likely to have PTSD, twice as likely to have depression and substance-related disorders, and almost twice as likely to have adjustment and other anxiety disorders. Veterans with confirmed TBI were more likely to have PTSD, adjustment and other anxiety disorders compared with those having positive TBI screens but unconfirmed TBI.
Study type: Retrospective medical record database review
Sample: 13,201 military veterans who were screened for TBI in VA facilities
Implications: The high prevalence of psychiatric disorders among veterans with probable TBI emphasizes the need for mental health assessments for TBI patients and possibly updated clinical best practices for veterans with TBI and psychiatric disorders.

Carlson, K.F., Nelson, D., Orazem, R.J., Nugent, S., Cifu, D.X. & Sayer, N.A. (2010). Psychiatric diagnoses among Iraq and Afghanistan war veterans screened for deployment-related traumatic brain injury. *Journal of Traumatic Stress, 23* (1), 17-24.

Combat deployments increase depression risk

Key Findings: New-onset depression is most common among service members returning from combat deployments in support of the wars in Iraq and Afghanistan, followed by non-deployed service members and non-combat deployed service members. Women also had higher rates of depression than men across all groups.
Study type: Prospective self-report survey study (baseline and follow-up assessments)
Sample: 40,219 Millennium Cohort Study participants (military service members) free of depression at baseline
Implications: Combat deployments increase the risk of new-onset depression in service members. These findings provide support for the hypothesis that depression can develop from the stress associated with combat deployments.

Wells, T. S., LeardMann, C.A., Fortuna, S.O., Smith, B., Smith, T.C., Ryan, M.A., et al. (2010). A Prospective study of depression following combat deployment in support of the wars in Iraq and Afghanistan. *American Journal of Public Health, 100* (1), 90-99.

Most veterans with PTSD not receiving adequate treatment

Key Findings: Approximately two-thirds of veterans with a recent PTSD diagnosis at Department of Veterans Affairs (VA) facilities initiated treatment for PTSD in the form of medication, counseling or both. However, only one-third received minimally adequate treatment for PTSD in the six months after diagnosis. Being diagnosed with PTSD in a VA PTSD specialty

program or mental health clinic led to small but significant benefits in treatment compared with being diagnosed in a VA general medical clinic.
Study type: Retrospective medical record database review
Sample: 20,284 veterans with a PTSD diagnosis treated at VA facilities
Implications: Given the low rate of treatment completion in this veteran population with PTSD, there needs to be a greater effort to increase treatment adherence in these patients, including expansion of specialized PTSD treatment services and other methods to engage and encourage these patients to stay in treatment.

Spoont, M.R., Murdoch, M., Hodges, J. & Nugent, S. (2010). Treatment receipt by veterans after a PTSD diagnosis in PTSD, mental health, or general medical clinics. *Psychiatric Services, 61* (1), 58-63.

Should criterion A2 (experiencing intense fear, helplessness or horror) be necessary for a PTSD diagnosis?

Key Findings: The majority of injured patients who met the B-F criteria for PTSD three months post-injury also met criterion A2, but 23% did not. PTSD patients who were A2-negative experienced either sub-threshold levels of A2, emotional responses other than fear, helplessness or horror, or did not remember their peri-trauma emotional experience.
Study type: Prospective cohort study
Sample: 535 injured hospital patients
Implications: Nearly one-quarter of injured patients who met PTSD criteria B-F did not meet criterion A2. Thus, this requirement for criterion A2 potentially excludes a large number of trauma survivors from the PTSD diagnosis who meet all other symptom criteria. Additionally, criterion A2 does not enhance identification of people who will develop PTSD. These findings do not provide support for keeping criterion A2 as a diagnostic requirement for PTSD.

O'Donnell, M.L., Creamer, M., McFarlane, A.C., Silove, D. & Bryant, R.A. (2010). Should A2 be a diagnostic requirement for posttraumatic stress disorder in DSM-V? *Psychiatry Research, 176* (2-3), 257-260.

Combat deployment increases PTSD symptom severity

Key Findings: Soldiers who deployed to Iraq had higher PTSD symptom severity post-deployment compared to pre-deployment than did non-deployed soldiers compared across the same time span. Symptom increases were more strongly associated with combat severity in active duty soldiers with higher baseline PTSD symptoms.
Study type: Prospective interview and self-report survey study (baseline and follow-up assessments)
Sample: 774 Army soldiers deployed to Iraq and 309 soldiers who did not deploy
Implications: Combat deployments can increase PTSD symptoms in service members deployed to Iraq. More stressful combat deployments can increase PTSD symptom severity.

Vasterling, J.J., Proctor, S.P., Friedman, M.J., Hoge, C.W., Heeren, T., King, L.A., et al. (2010). PTSD symptom increases in Iraq-deployed soldiers: Comparison with nondeployed soldiers and associations with baseline symptoms, deployment experiences, and postdeployment stress. *Journal of Traumatic Stress, 23* (1), 45-51.

Duloxetine effective in reducing symptoms of PTSD and co-morbid MDD

Key Findings: Administered over eight weeks, the dual reuptake inhibitor duloxetine led to a significant improvement in symptoms of both PTSD and major depressive disorder (MDD) in male patients co-morbid with these disorders.
Study type: Open-label trial of duloxetine
Sample: 21 male patients with combat-related PTSD and co-morbid MDD who had not shown improvement from prior treatment
Implications: Duloxetine may be a safe and effective pharmacological treatment for male patients with PTSD and co-morbid MDD, but more studies are needed to compare its effects to placebos and standard PTSD medications.

Walderhaug, E., Kasserman, S., Aikins, D., Vojvoda, D., Nishimura, C. & Neumeister, A. (2010). Effects of duloxetine in treatment-refractory men with posttraumatic stress disorder. *Pharmacopsychiatry, 43* (2), 45-49.

PTSD prevalence estimates vary among OEF/OIF veterans

Key Findings: Most prevalence estimates of PTSD among non-treatment seeking service members previously deployed to Operation Enduring Freedom or Operation Iraqi Freedom (OEF/OIF) range from 5% to 20%, as reported in the literature. Additionally, up to 50% of veterans seeking treatment screen positive for PTSD, although much fewer receive an actual PTSD diagnosis.
Study type: Literature review
Sample: Service members previously deployed to OEF/OIF
Implications: PTSD prevalence estimates among OEF/OIF veterans reported in the literature can vary substantially, depending on factors that include the screening method used, combat exposure of the sample and whether veterans are actively seeking treatment. Policymakers and researchers should consider the screening method and population of any studies estimating PTSD prevalence estimates in order to determine the reliability of the estimate.

Ramchand, R., Schell, T.L., Karney, B.R., Osilla, K.C., Burns, R.M. & Caldarone, L.B. (2010). Disparate prevalence estimates of PTSD among service members who served in Iraq and Afghanistan: possible explanations. *Journal of Traumatic Stress, 23* (1), 59-68.

Interpersonal group therapy effective for treating PTSD

Key Findings: Interpersonal group therapy adapted for PTSD was effective in significantly reducing PTSD symptoms when used as an add-on therapy in patients not responding to medication. Patients also demonstrated a significant decrease in depression and anxiety symptoms, as well as improvements in social adjustment and quality of life.
Study type: Open-label add-on trial of interpersonal group therapy for PTSD
Sample: 40 patients with PTSD who failed to respond to conventional psychopharmacological treatment
Implications: Interpersonal group therapy for PTSD can be an effective therapy to reduce PTSD symptoms, especially in patients who do not respond to medication or are unwilling to participate in exposure therapy. Patients showed considerable improvement in group therapy and treatment adherence was good, suggesting this therapy is an effective treatment choice for PTSD patients.

Campanini, R.F., Schoedl, A.F., Pupo, M.C., Costa, A.C., Krupnick, J.L. & Mello, M.F. (2010). Efficacy of interpersonal therapy-group format adapted to post-traumatic stress disorder: an open-label add-on trial. *Depression and Anxiety, 27* (1), 72-77.

PTSD and other anxiety disorders linked to suicide attempts

Key Findings: More than 70% of individuals who reported making a suicide attempt had an anxiety disorder. The presence of an anxiety disorder, especially panic disorder and PTSD, was significantly associated with having made a suicide attempt, even after accounting for sociodemographic factors and other psychiatric disorders.
Study type: Survey study from the National Epidemiologic Survey on Alcohol and Related Conditions Wave 2
Sample: 34,653 adults from the general U.S. population
Implications: Individuals with anxiety disorders, especially panic disorder and PTSD, are at increased risk for suicide attempts. Clinicians should assess suicide risk and adapt treatment plans for this risk when treating anxiety patients, especially those with PTSD.

Nepon, J., Belik, S.L., Bolton, J. & Sareen, J. (in press). The relationship between anxiety disorders and suicide attempts: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Depression and Anxiety*.

NEW REPORTS AVAILABLE ONLINE

Reports on Sleep and Operational Stress and Cognitive Processing Therapy are now available on the For Providers/Researchers section of our website: www.nccosc.navy.mil.

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TEST YOUR KNOWLEDGE!

According to the summary "Multiple deployments hamper military readiness" (pg. 3), soldiers with previous combat deployments were more likely to screen positive for which of the following:

A. PTSD, substance abuse, sleep disorders, physical impairment

B. PTSD, chronic pain, anxiety, TBI

C. PTSD, major depression, alcohol dependence, chronic pain

D. PTSD, TBI, major depression, sleep disorders

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