Research Update -- May 12, 2022

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The mental health of Vietnam theater veterans—the lasting effects of the war: 2016–2017 Vietnam Era Health Retrospective Observational Study.

Yasmin Cypel, Paula P. Schnurr, Aaron I. Schneiderman, William J. Culpepper, Fatema Z. Akhtar, Sybil W. Morley, Dennis A. Fried, Erick K. Ishii, Victoria J. Davey

Mental health data from the 2016–2017 Vietnam Era Health Retrospective Observational Study (VE-HEROeS) were analyzed by cohort, represented by United States Vietnam theater veterans (VTs) who served in Vietnam, Cambodia, and Laos; nontheater veterans (NTs) without theater service; and age- and sex-matched nonveterans (NVs) without military service. The exposure of interest was Vietnam theater service. Surveys mailed to random samples of veterans (n = 42,393) and nonveterans (n = 6,885) resulted in response rates of 45.0% for veterans (n = 6,735 VTs, Mage = 70.09, SE = 0.04; n = 12,131 NTs) and 67.0% for NVs (n = 4,530). We examined self-report data on four mental health outcomes: probable posttraumatic stress disorder (PTSD), depression, psychological distress, and overall mental health functioning. Weighted adjusted odds ratios (aORs) between each outcome and cohort were estimated, controlling for covariates in four models: cohort plus sociodemographic variables (Model 1), Model 1 plus physical health variables (Model 2), Model 2 plus potentially traumatic events (PTEs; Model 3), and Model 3 plus other military service variables (Model 4). Mental health outcome prevalence was highest for VTs versus other cohorts, with the largest aOR, 2.88, for PTSD, 95% CI [2.46, 3.37], p < .001 (Model 4, VT:NT). Physical health and PTEs contributed most to observed effects; other service variables contributed least to aORs overall. Mental health dysfunction persists among VTs years after the war's end. The present results reaffirm previous findings and highlight the need for continued mental health surveillance in VTs.

How do psychologically based interventions for chronic musculoskeletal pain work? A systematic review and meta-analysis of specific moderators and mediators of treatment.

Murillo, Carlos, Tat-Thang Vo, Stijn Vansteelandt, Lauren E. Harrison, Barbara Cagnie, Iris Coppieters, Marjolein Chys, Inge Timmers, and Mira Meeus

Psychologically based interventions aim to improve pain-related functioning by targeting pain-related fears, cognitions and behaviors. Mediation and moderation analyses permit further examination of the effect of treatment on an outcome. This systematic review and meta-analysis aims to synthetize the evidence of specific mediators and moderators (i.e., treatment targets) of psychologically based treatment effects on pain and disability. A total of 29 mediation and 11 moderation analyses were included. Thirteen mediation studies were included in a meta-analysis, and the rest was narratively synthetized. Reductions in pain-related fear (indirect effect [IE]: −0.07; 95% confidence interval [CI]: −0.11, −0.04) and catastrophizing (IE: -0.07; 95%CI: −0.14, −0.00), as well as increases in self-efficacy (IE: -0.07; 95%CI: −0.11, −0.04), mediated effects of cognitive behavioral therapy on disability but not on pain intensity, when compared to control treatments. Enhancing pain acceptance (IE: -0.17; 95%CI: −0.31, −0.03) and psychological flexibility (IE: -0.30; 95%CI: −0.41, −0.18) mediated acceptance and commitment therapy effects on disability. The narrative synthesis showed conflicting evidence, which did not support a robust moderated effect for any of the examined constructs. Overall, the methodological quality regarding mediation was low, and some key pitfalls are highlighted alongside recommendations to provide a platform for future research.

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Measuring clinician stuck points about trauma-focused cognitive behavior therapy: The TF-CBT Stuck Points Questionnaire.

Zabin S. Patel, Elizabeth Casline, Ashley M. Shaw, Amanda Jensen-Doss, Vanessa Ramirez

Although evidence-based treatments (EBTs) for youth trauma have been developed, trauma-informed EBTs are rarely used in community settings. Clinician concerns about evidence-based trauma treatment may be a barrier to adoption and delivery. However, few instruments to assess clinician beliefs about specific EBTs, such as trauma-focused cognitive behavior therapy (TF-CBT) are available. This study evaluated an instrument of clinician concerns about TF-CBT, the TF-CBT Therapist Stuck Points questionnaire, in a sample of community mental health clinicians training in a year-long TF-CBT community-based learning collaborative. The 26 items in the instruments, which aim to assess clinician views on child trauma treatment and TF-CBT, indicate preliminary psychometric support (i.e., item-total correlations, internal consistency, negative correlations with measures of attitudes towards evidence-based practice). Scores on the TF-CBT Therapist Stuck Points questionnaire revealed that, on average, clinicians expressed concerns about having children talk about their trauma in session, the effectiveness of certain TF-CBT components, and whether to involve caregivers in treatment. Clinician doubts could be targeted during a TF-CBT implementation effort and clinical supervision to facilitate treatment delivery. Implications for assessing TF-CBT specific beliefs during implementation are discussed.

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https://doi.org/10.1002/jts.22844

Using electronic medical record diagnostic codes to identify veterans with posttraumatic stress disorder.

Samantha J. Moshier, Kelly Harper, Terence M. Keane, Brian P. Marx

Researchers studying posttraumatic stress disorder (PTSD) often use diagnostic codes within electronic medical records (EMRs) to identify individuals with the disorder. This study evaluated the performance of algorithms for defining PTSD based on International

Classification of Diseases (ICD) code use within EMR data. We used data from a registry of U.S. veterans for whom both structured interview data and Veterans Health Administration EMR data were available. Using interview-diagnosed PTSD as the reference criterion, we calculated diagnostic accuracy statistics for algorithms that required the presence of at least one and up to seven encounters in which a PTSD diagnosis was present in EMR data within any clinical source, mental health clinic, or specialty PTSD clinic. We evaluated algorithm accuracy in the total sample (N = 1,343; 64.1% with PTSD), within a subsample constrained to lower PTSD prevalence (n = 712; 32.3% with PTSD), and as a function of demographic characteristics. Algorithm accuracy was influenced by PTSD prevalence. Results indicated that higher thresholds for the operationalization of PTSD may be justified among samples in which PTSD prevalence is lower. Requiring three PTSD diagnoses from a mental health clinic or four diagnoses from any clinical source may be a suitable minimum standard for identifying individuals with PTSD in EMRs; however, accuracy may be optimized by requiring additional diagnoses. The performance of many algorithms differed as a function of educational attainment and age, suggesting that samples of individuals with PTSD developed based on EMR ICD codes may skew toward including older, less-educated veterans.

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Posttraumatic stress disorder–related anhedonia as a predictor of psychosocial functional impairment among United States veterans.

Casey L. May, Blair E. Wisco, Victor A. Fox, Brian P. Marx, Terence M. Keane

Prior research suggests that anhedonia symptoms related to posttraumatic stress disorder (PTSD; i.e., diminished interest, detachment from others, and difficulty experiencing positive emotions) are consistently associated with a higher degree of impairment in psychosocial functioning beyond that associated with other PTSD symptoms. Unfortunately, much of this research has used cross-sectional study designs; relied upon outdated DSM diagnostic criteria; and failed to control for potentially confounding variables, such as the presence of co-occurring depression. This study used data from Waves 2 and 4 (n = 1,649) of the Veterans' After-Discharge

Longitudinal Registry (Project VALOR), a longitudinal dataset of U.S. Army and Marine veterans. As measured using the Inventory of Psychosocial Functioning, Wave 4 psychosocial functioning was regressed on seven PTSD symptom factors at Wave 2 (i.e., intrusions, avoidance, negative affect, anhedonia, externalizing behaviors, anxious arousal, and dysphoric arousal) and potential Wave 2 confounds. The Anhedonia factor, β = .123, most strongly predicted later psychosocial functional impairment beyond the impact of other PTSD symptom factors, βs = −.076–.046. Clinical implications of these findings are also discussed.

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Compounding Effects of Traumatic Brain Injury, Military Status, and Other Factors on Pittsburgh Sleep Quality Index: A Meta-analysis.

Babu Henry Samuel, I., Breneman, C. B., Chun, T., Hamedi, A., Murphy, R., & Barrett, J. P.

Introduction:
Traumatic brain injury (TBI) or concussion is a known risk factor for multiple adverse health outcomes, including disturbed sleep. Although prior studies show adverse effects of TBI on sleep quality, its compounding effect with other factors on sleep is unknown. This meta-analysis aimed to quantify the effects of TBI on subjective sleep quality in the context of military status and other demographic factors.

Materials and methods:
A programmatic search of PubMed database from inception to June 2020 was conducted to identify studies that compared subjective sleep quality measured using Pittsburgh Sleep Quality Index (PSQI) in individuals with TBI relative to a control group. The meta-analysis included group-wise standard mean difference (SMD) and 95% CI. Pooled means and SDs were obtained for TBI and non-TBI groups with and without military service, and meta-regression was conducted to test for group effects. Exploratory analysis was performed to test for the effect of TBI, non-head injury, military status, sex, and age on sleep quality across studies.

Results:
Twenty-six articles were included, resulting in a combined total of 5,366 individuals (2,387 TBI and 2,979 controls). Overall, individuals with TBI self-reported poorer sleep quality compared to controls (SMD = 0.63, 95% CI: 0.45 to 0.80). Subgroup analysis revealed differences in the overall effect of TBI on PSQI, with a large effect observed in the civilian subgroup (SMD: 0.80, 95% CI: 0.57 to 1.03) and a medium effect in the civilian subgroup with orthopedic injuries (SMD: 0.40, 95% CI: 0.13 to 0.65) and military/veteran subgroup (SMD: 0.43, 95% CI: 0.14 to 0.71). Exploratory analysis revealed that age and history of military service significantly impacted global PSQI scores.

Conclusions:
Poor sleep quality in TBI cohorts may be due to the influence of multiple factors. Military/veteran samples had poorer sleep quality compared to civilians even in the absence of TBI, possibly reflecting unique stressors associated with prior military experiences and the sequelae of these stressors or other physical and/or psychological traumas that combine to heightened vulnerability. These findings suggest that military service members and veterans with TBI are particularly at a higher risk of poor sleep and its associated adverse health outcomes. Additional research is needed to identify potential exposures that may further heighten vulnerability toward poorer sleep quality in those with TBI across both civilian and military/veteran populations.

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Sociodemographic and clinical correlates of cannabis dependence among Israeli combat veterans.

Asper, A., Feingold, D., Binenfeld, E., & Pshitizky, H.

Journal of Substance Abuse Treatment
2022 Apr 29; 108786

Introduction:
Cannabis is one of the most widely used addictive substances globally. Its use increases the risk for various physical and psychological problems and some cannabis users may develop cannabis dependence. Researchers have explored risk factors for transition to cannabis dependence. Military veterans, and in particular, combat veterans, have an elevated risk for cannabis dependence and several emotional disorders. To

date, the field lacks knowledge regarding possible risk factors for the development of cannabis dependence among combat military veterans.

Method:
The current study examined sociodemographic and clinical variables associated with cannabis dependence among combat military veterans using SPSS software.

Results:
Results indicate that participants who screened positive for cannabis dependence had reported using a significantly higher dosage of cannabis (in grams) per week and scored significantly higher in the moral injury "other" subscale and in the moral injury "betrayal" subscale compared to those who did not screen positive for cannabis dependence. In addition, after controlling for confounding factors, depression, but not PTSD, was significantly associated with cannabis dependence (AOR = 1.98, CI = 1.05-3.72, $p < .05$. and AOR = 1.19, 95% CI = 0.56-2.54, p = n.s., respectively).

Conclusion:
This study sheds light on the correlates of cannabis dependence among combat veterans that should be further studied in future research.

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Examining the Relationship between Discrimination and Prescription Drug Misuse: Findings from a National Survey of Black Americans.

Nicholson, H. L., Jr, Wheeler, P. B., Smith, N. C., & Alawode, O. A.

Background:
Research shows that substance use may be a way individuals cope with psychosocial stressors. Less is known about whether discrimination contributes to prescription drug misuse.

Methods:
Using a national sample of Black Americans, we examined whether two psychosocial

stressors (i.e., everyday and lifetime major discrimination) were associated with lifetime prescription drug misuse (i.e., opioids, tranquilizers, sedatives, or stimulants).

Results:
Our logistic regression models separately examining the influence of everyday and major discrimination controlling for relevant demographic, health, and other drug use variables showed that only everyday discrimination was associated with higher odds of prescription drug misuse. In the model simultaneously considering both types of discrimination, only unit increases in everyday discrimination were associated with higher odds of prescription drug misuse.

Conclusions:
Encounters with everyday discrimination may be an important psychosocial stressor linked to prescription drug misuse in Black adults and possibly other racial-ethnic minorities. Intervention strategies aiming to reduce prescription drug misuse should consider developing ways to curb the negative health-related consequences of discriminatory experiences. Strategies to combat discrimination-related prescription drug misuse and limitations of this study are discussed.

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Post-traumatic stress disorder: clinical and translational neuroscience from cells to circuits.

Ressler, K. J., Berretta, S., Bolshakov, V. Y., Rosso, I. M., Meloni, E. G., Rauch, S. L., & Carlezon, W. A., Jr

Nature Reviews Neurology
2022 May; 18(5): 273-288

Post-traumatic stress disorder (PTSD) is a maladaptive and debilitating psychiatric disorder, characterized by re-experiencing, avoidance, negative emotions and thoughts, and hyperarousal in the months and years following exposure to severe trauma. PTSD has a prevalence of approximately 6-8% in the general population, although this can increase to 25% among groups who have experienced severe psychological trauma, such as combat veterans, refugees and victims of assault. The risk of developing PTSD in the aftermath of severe trauma is determined by multiple factors, including genetics - at least 30-40% of the risk of PTSD is heritable - and past history, for example, prior

adult and childhood trauma. Many of the primary symptoms of PTSD, including hyperarousal and sleep dysregulation, are increasingly understood through translational neuroscience. In addition, a large amount of evidence suggests that PTSD can be viewed, at least in part, as a disorder that involves dysregulation of normal fear processes. The neural circuitry underlying fear and threat-related behaviour and learning in mammals, including the amygdala-hippocampus-medial prefrontal cortex circuit, is among the most well-understood in behavioural neuroscience. Furthermore, the study of threat-responding and its underlying circuitry has led to rapid progress in understanding learning and memory processes. By combining molecular-genetic approaches with a translational, mechanistic knowledge of fear circuitry, transformational advances in the conceptual framework, diagnosis and treatment of PTSD are possible. In this Review, we describe the clinical features and current treatments for PTSD, examine the neurobiology of symptom domains, highlight genomic advances and discuss translational approaches to understanding mechanisms and identifying new treatments and interventions for this devastating syndrome.

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https://doi.org/10.1093/milmed/usab205

Investigation of the Relationship Between Frequency of Blast Exposure, mTBI History, and Post-traumatic Stress Symptoms.

Military Medicine
May 3; 187(5-6): e702-e710

Introduction:
Post-traumatic stress disorder (PTSD) and mild traumatic brain injury (mTBI) are common conditions among military personnel that frequently co-occur. This study investigated relationships between self-reported blast exposure, mTBI history, and current post-traumatic stress (PTS) symptoms in a population of active duty service members (n = 202) from the Intensive Outpatient Program at the National Intrepid Center of Excellence.

Materials and methods:
Participants were divided into four mTBI groups (0, 1, 2, and 3+) and four blast exposure groups (0-10, 11-100, 101-1,000, and 1,000+). Self-reported lifetime mTBI and blast history were obtained via the Ohio State University TBI Identification Method. PTSS severity was obtained via the PTSD Checklist-Civilian version (PCL-C). Several

secondary measures of depression, anxiety, chronic mTBI symptoms, and sleep were also assessed.

Results:
The total PCL-C scores differed significantly between mTBI groups, with significant differences detected between the 0/1 mTBI groups and the 3+ mTBI groups. Similar group differences were noted across the three PCL-C subgroup scores (avoidance, re-experiencing, and hyperarousal); however, when comparing the proportion of group participants meeting DSM-IV criteria for each symptom cluster, significant differences between mTBI groups were only noted for avoidance (P = .002). No group differences were noted in PTS symptom severity or distribution between blast groups.

Conclusions:
This study demonstrates an association between lifetime mTBI history and PTS symptom severity and distribution but failed to identify the significant group in self-reported symptoms between the blast exposure groups. Results suggest that additional research is needed to understand the neurobiological mechanism behind these associations and the need for the development of precise assessment tools that are able to more accurately quantify significant lifetime sub-concussive and blast exposures experienced by service members in training and combat operations.

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https://doi.org/10.1093/milmed/usab034

Predictors of Symptom Increase in Subsyndromal PTSD Among Previously Deployed Military Personnel.

Highfill-McRoy, R. M., Levine, J. A., Larson, G. E., Norman, S. B., Schmied, E. A., & Thomsen, C. J.

Military Medicine
May 3; 187(5-6): e711-e717

Introduction:
Subsyndromal PTSD (sub-PTSD) is associated with functional impairment and increased risk for full PTSD. This study examined factors associated with progression from sub-PTSD to full PTSD symptomatology among previously deployed military veterans.

Materials and methods:
Data were drawn from a longitudinal survey of Navy and Marine Corps personnel leaving military service between 2007 and 2010 administered immediately before separation (baseline) and ~1 year later (follow-up). Survey measures assessed PTSD symptoms at both times; the baseline survey also assessed potential predictors of symptom change over time. Logistic regression models were used to identify predictors of progression from sub-PTSD to full PTSD status.

Results:
Compared to those with no or few PTSD symptoms at baseline, individuals with sub-PTSD were almost three times more likely to exhibit full PTSD symptomatology at follow-up. Risk factors for symptom increase among those with sub-PTSD included moderate or high levels of combat exposure and utilization of fewer positive coping behaviors. Use of prescribed psychotropic medication was protective against symptom increase.

Conclusion:
This study identified several predictors of symptom increase in military veterans with sub-PTSD. Interventions targeting modifiable risk factors for symptom escalation, including behavioral and pharmacological treatments, may reduce rates of new-onset PTSD in this population.

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"Brothers in Arms": Secondary Traumatization and Sibling Relationship Quality Among Siblings of Combat Veterans.

Zerach, G., & Milevsky, A.

The aversive impact of exposure to combat and posttraumatic stress disorder (PTSD) on family members has been examined mainly among veterans' partners and offspring. No study has examined secondary traumatization in veterans' siblings and the role of relationship quality in these links. The present study aimed to assess secondary PTSD symptoms (PTSS) and general distress among siblings of combat veterans, and the role of sibling relationship quality in the association between veterans' exposure to combat

and PTSS and sibling secondary PTSS. A sample of 106 adult dyads of Israeli combat veterans and their closest in age siblings responded to self-report questionnaires in a cross-sectional study design. The rates of sibling secondary PTSS and general distress were relatively low. However, veterans' exposure to combat and PTSS were positively related to siblings' secondary PTSS. Importantly, veterans' PTSS mediated the association between veterans' exposure to combat and siblings' secondary PTSS, only among sibling dyads with high levels of warmth and low levels of conflict in their relationship. Furthermore, the inclusion of siblings general distress contributed to heightened sibling secondary PTSS, but only the warmth dimension moderated the link between veterans' PTSS and siblings' secondary PTSS. Findings suggest that veterans' PTSS is implicated in their siblings' secondary PTSS. Veterans' PTSS might also serve as a possible mechanism for the links between exposure to combat and siblings' secondary PTSS. Moreover, relationship quality with a sibling veteran might take a toll in the form of siblings' secondary PTSS following veteran military service.

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Psychological well-being and alcohol misuse among community-based veterans: results from the Veterans' Health Study.

Adams, R. E., Boscarino, J. A., Hoffman, S. N., Urosevich, T. G., Kirchner, H. L., Boscarino, J. J., Dugan, R. J., Withey, C. A., & Figley, C. R.

Background:
Maladaptive drinking is an increasing concern among military policy makers and healthcare providers. The goal of this study was to assess how social and psychological factors relate to alcohol problems among post-deployed US veterans and how problematic drinking is associated with well-being.

Methods:
Data were collected via a telephone survey from a random sample of veterans receiving their healthcare from a large non-VA hospital system in central Pennsylvania (N = 1730). Interviewers inquired about participants' current alcohol consumption, using the CAGE and AUDIT-C scales, and health-related outcomes (general psychological distress, major depression, and self-reported health status). Analyses included

demographic, military and nonmilitary stressful events, use of alcohol or drugs to cope post-deployment, use of psychiatric services, and personality characteristics as independent variables. Our sample was 95% male, 96% White, and had a mean age of 59 years old (SD = 12 years).

Results:
Analyses included demographic, military and nonmilitary stressful events, use of alcohol or drugs to cope post-deployment, use of psychiatric services, and personality characteristics as independent variables. Our sample was 95% male, 96% White, and had a mean age of 59 years old (SD = 12 years). Analyses for our drinking measures show that those who used drugs or alcohol to cope post-deployment were more likely to be problematic drinkers, while positive personality characteristics such as agreeableness and conscientiousness were related to fewer drinking problems. Multivariate logistic regressions for our well-being measures found that alcohol misuse was not related to distress or depression, but that a positive score on the AUDIT-C was associated with a lower likelihood of poor self-rated health. Using alcohol or drugs to cope was related to higher distress.

Discussion:
We conclude that service providers might consider using post-deployment AUDIT-C and the drugs and alcohol coping questions when screening for possible alcohol and mental health problems among veterans.

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Validation of the adapted response to stressful experiences scale.

Elizabeth A. ProsekORCID Icon, Warren N. Ponder & Azadeh Ahmadi

There is evidence to suggest that resilience may be a protective factor to moderate the experience of mental health symptoms among military personnel. The present study analyzed the validity and reliability of a full-scale and adapted measure of resilience from a sample of 470 U.S. military service Veterans receiving clinical services from a civilian nonprofit agency. Results of an exploratory factor analysis, a two-factor confirmatory factor analysis, and a single-factor confirmatory factor analysis indicated

that while the Response to Stressful Experiences Scale (RSES) indicated a fair model fit for the sample, the brief measure of resilience (RSES-4) demonstrated a better factor structure (RMR = .017, GFI = .995, CFI = .994, TLI = .981, RMSEA = .057), criterion and concurrent validity, and acceptable internal consistency.

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The effect of intimate partner violence on treatment response in an intensive outpatient program for suicide-bereaved military widows.

Allyson M. Blackburn, Bingyu Xu, Lauren Gibson, Edward C. Wright & Bonnie Y. Ohye

Suicide-bereaved military widows can struggle with posttraumatic stress disorder (PTSD) and prolonged grief. Intimate partner violence survivors (IPV) are particularly at risk. We examined whether IPV impacts outcomes in a two-week intensive outpatient program for N = 50 suicide-bereaved military widows. Mixed-model regressions were employed to examine the effects of IPV, time, and their interaction on symptoms. Thirty-four percent experienced IPV perpetrated by their deceased veteran. Symptoms improved at post-treatment (ps < .001), one-month (ps < .01), and three-month follow-up (ps< .001). There was no significant effect of IPV or significant interaction (ps > .05), indicating that IPV survivors also benefitted from treatment.

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Sexual and physical revictimization in U.S. military veterans.

Arielle A. J. Scoglio, Beth E. Molnar, Alisa K. Lincoln, John Griffith, Crystal Park, Shane W. Kraus

The present study examined revictimization, defined as sexual or physical assault in adulthood that followed a history of childhood maltreatment. We aimed to identify factors associated with revictimization over time in a group of U.S. military veterans deployed following the September 11, 2001, terrorist attacks (9/11). As revictimization is

associated with multiple negative mental health outcomes in the literature, identifying risk and protective factors can aid in the prevention of revictimization and associated poor health outcomes among veterans. In this sample, the proportion of adult revictimization was 2.7% for men, 95% CI [2.0, 3.6] and 22.9% for women, 95% CI [20.5, 25.8]. Using multilevel logistic models, we found that women, $\beta = 2.2$, $p < .001$; Navy veterans, $\beta = 1.5$, $p < .001$; and participants who reported posttraumatic stress symptoms, $\beta = 0.2$, $p = .028$, were at significantly higher risk of revictimization across time compared to nonrevictimized counterparts. Social support while in the military was protective, $\beta = -0.1$, $p < .001$, against revictimization. In addition, childhood abuse experiences combined with characteristics such as female gender were related to an increased risk of revictimization during and following military service. The findings highlight opportunities for intervention and areas of strength within this population; social connection garnered during military service may serve as a protective factor against revictimization. Future research is needed to examine the role of social support in possibly lowering veterans' risk of revictimization over time, particularly for post-9/11 veterans struggling with transitioning from military to civilian life.

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Conflict resolution workshops for service members and families: The potentials of Alternatives to Violence Project (AVP) to address military domestic violence.

TJ Hodges, DS Nicolas, S Sharma, BA Moore

Although the violence of war is well-known, members of the United States military also struggle with domestic violence, including intimate partner violence and child abuse and neglect. The prevalence of domestic violence is not necessarily higher in the military than in the general population. However, military domestic violence does occur under institutional and cultural conditions quite different from civilian life. Further, service members are at elevated risk for health dysfunctions that can contribute to violence. The current review delineates how domestic violence in the military may be reduced by Alternatives to Violence Project, a widely used, community-based training program in conflict resolution. Specifically, we suggest Alternatives to Violence Project facilitates

space to learn interpersonal skills and engage in creative discussions about the stresses and cultural norms that contribute to domestic violence in the military. As Alternatives to Violence Project and similar training does not change the stressors of military life, nor has extensive research documented its impact on violence, additional work is needed. This manuscript represents a first step toward situating conflict resolution in a framework for military domestic violence reduction, showing the potentials and limitations of Alternatives to Violence Project and making recommendations for future research and interventions.

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The nosographic structure of posttraumatic stress symptoms across trauma types: An exploratory network analysis approach.

Filipa Ferreira, Deisy Gysi, Daniel Castro, Tiago Bento Ferreira

The nosographic structure of posttraumatic stress disorder (PTSD) remains unclear, and attempts to determine its symptomatic organization have been unsatisfactory. Several explanations have been suggested, and the impact of trauma type is receiving increasing attention. As little is known about the differential impact trauma type in the nosographic structure of PTSD, we explored the nosology of PTSD and the effect of trauma type on its symptomatic organization. We reanalyzed five cross-sectional psychopathological networks involving different trauma types, encompassing a broad range of traumatic events in veterans, war-related trauma in veterans, sexual abuse, terrorist attacks, and various traumatic events in refugees. The weighted topological overlap was used to estimate the networks and attribute weights to their links. Coexpression differential network analysis was used to identify the common and specific network structures of the connections across different trauma types and to determine the importance of symptoms across the networks. We found a set of symptoms with more common connections with other symptoms, suggesting that these might constitute the prototypical nosographic structure of PTSD. We also found a set of symptoms that had a high number of specific connections with other symptoms; these connections varied according to trauma type. The importance of symptoms across the common and specific networks was ascertained. The present findings offer new insights

into the symptomatic organization of PTSD and support previous research on the impact of trauma type on the nosology of this disorder.

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Prescriptions of Psychotropic Medications by Providers Treating Children of Military Service Members.

Alexandria Kucera, MSC, USN, Tracey Koehlmoos, PhD, MHA, Lindsay Grunwald, MS, Amanda Banaag, MPH, Natasha A Schvey, PhD, Jeffrey Quinlan, MC, USN, Marian Tanofsky-Kraff, PhD

Introduction
There are approximately 1.5 million U.S. military-dependent children. However, little is known about mental health referrals for these youths. This study sought to examine the type of mental health treatment referrals made by primary care providers for child military-dependent beneficiaries receiving care in the direct (within Military Treatment Facilities) and private care (civilian-fee-for service facilities) sectors of the Military Health System.

Materials and Methods
A between-subjects, cross-sectional study was performed on children aged 5–18 years old in fiscal years 2011–2015 and enrolled in TRICARE Prime. Study analyses examined specialty ("talk therapy") mental health care and psychotropic medication referrals from TRICARE Prime (the Defense Health Agency-managed health care program) providers for beneficiary children diagnosed with attention-, mood-, anxiety-, or behavior-related disorders in direct versus private sector care.

Results
Of 1,533,630 children enrolled in TRICARE Prime (50.03% female), 8.6% (n = 131,393) were diagnosed with a psychological disorder during FY 2011–2015. Most were attention-related (5.2%, n = 79,770), followed by mood (1.7%, n = 25,314), anxiety (1.1%, n = 16,155), and conduct-related diagnoses (0.7%, n = 10,154). Adjusting for age, sex, and sponsor rank, children within direct care diagnosed with attention-related disorders were 1.7 times more likely to receive a prescription for psychotropic

medication than those in private sector care, odds ratio (OR) = 1.72, 95% confidence interval (CI): [1.66, 1.77]. Children diagnosed with mood-related disorders in direct care were 2.1 times more likely to receive a prescription for psychotropic medication than those in private sector care, OR = 2.08, 95% CI: [1.96, 2.21]. Across disorders, children who received private sector care were more likely to have a referral specialty mental health ("talk therapy") follow-up (ps < 0.0001).

Conclusions
For attention- and mood-related disorders, but not anxiety- or conduct-related disorders, direct care providers were more likely than private sector care providers to prescribe psychotropic medications. Inconsistencies of provider referrals within and outside of the Military Health System should be elucidated to determine the impact on outcomes.

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Global Disability Trajectories Over the First Decade Following Combat Concussion.

Mac Donald, Christine L. PhD; Barber, Jason MS; Johnson, Ann; Patterson, Jana; Temkin, Nancy PhD

Objective:
To examine global disability trajectories in US military with and without traumatic brain injury (TBI) over the first decade following deployment to identify risk profiles for better intervention stratification, hopefully reducing long-term cost.

Setting:
Patients and participants were enrolled in combat or directly following medical evacuation at the time of injury and followed up every 6 months for 10 years.

Participants:
There are 4 main groups (n = 475), 2 primary and 2 exploratory: (1) combat-deployed controls without a history of blast exposure "non-blast- control" (n = 143), (2) concussive blast TBI "'blast-TBI" (n = 236) (primary), (3) combat-deployed controls with a history of

blast exposure "blast-control" (n = 54), and (4) patients sustaining a combat concussion not from blast "non-blast-TBI" (n = 42) (exploratory).

Design:
Prospective, observational, longitudinal study.

Main Measures:
Combat concussion, blast exposure, and subsequent head injury exposure over the first decade post-deployment. Global disability measured by the Glasgow Outcome Scale Extended (GOSE).

Results:
Latent class growth analysis identified 4 main trajectories of global outcome, with service members sustaining combat concussion 37 to 49 times more likely to be in the worse disability trajectories than non-blast-controls (blast-TBI: odds ratio [OR] = 49.33; CI, 19.77-123.11; P < .001; non-blast-TBI: OR = 37.50; CI, 10.01-140.50; P < .001). Even blast-exposed-controls were 5 times more likely to be in these worse disability categories compared with non-blast-controls (OR = 5.00; CI, 1.59-15.99; P = .007). Adjustment for demographic factors and subsequent head injury exposure did not substantially alter these odds ratios.

Conclusions:
Very high odds of poor long-term outcome trajectory were identified for those who sustained a concussion in combat, were younger at the time of injury, had lower education, and enlisted in the Army above the risk of deployment alone. These findings help identify a risk profile that could be used to target early intervention and screen for poor long-term outcome to aid in reducing the high public health cost and enhance the long-term quality of life for these service members following deployment.

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Women Veterans' Perspectives on Suicide Prevention in Reproductive Health Care Settings: An Acceptable, Desired, Unmet Opportunity.

CA Hoffmire, LA Brenner, J Katon, LA Gaeddert, CN Miller, AL Schneider, LL Monteith

Women's Health Issues
Available online 8 March 2022

Background

Women veterans of reproductive age experience a suicide rate more than double their civilian peers. Developing effective suicide prevention strategies for women veterans requires identifying settings frequented by women veterans where acceptable prevention initiatives can be implemented. Reproductive healthcare (RHC) settings may provide such an opportunity.

Methods

We conducted semi-structured interviews with 21 cisgender women veterans of reproductive age using RHC services provided or paid for by the Department of Veterans Affairs (VA) to understand their beliefs, attitudes, and preferences regarding suicide risk assessment and prevention within these settings. Interview analysis was inductive and used a thematic analysis framework.

Results

Four major themes emerged from the interviews: 1) positive patient-provider relationships in RHC settings are important; 2) some women veterans prefer women providers for RHC and suicide risk screening; 3) women veterans' experiences with VA suicide risk screening and assessment vary; and 4) suicide risk screening and prevention in RHC settings is a desired and acceptable, yet unmet opportunity.

Conclusions

Findings from this novel study suggest that VA RHC settings may present a viable milieu for implementing upstream, gender-sensitive, veteran-centric suicide prevention strategies. Future research is needed with VA RHC providers to determine their needs for successfully implementing such strategies.

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Improved resilience following digital cognitive behavioral therapy for insomnia protects against insomnia and depression one year later.

Cheng, P., Kalmbach, D., Hsieh, H., Castelan, A., Sagong, C., & Drake, C.

Background

While the negative consequences of insomnia are well-documented, a strengths-based understanding of how sleep can increase health promotion is still emerging and much-needed. Correlational evidence has connected sleep and insomnia to resilience; however, this relationship has not yet been experimentally tested. This study examined resilience as a mediator of treatment outcomes in a randomized clinical trial with insomnia patients.

Methods

Participants were randomized to either digital cognitive behavioral therapy for insomnia (dCBT-I; n = 358) or sleep education control (n = 300), and assessed at pre-treatment, post-treatment, and 1-year follow-up. A structural equation modeling framework was utilized to test resilience as a mediator of insomnia and depression. Risk for insomnia and depression was also tested in the model, operationalized as a latent factor with sleep reactivity, stress, and rumination as indicators (aligned with the 3-P model). Sensitivity analyses tested the impact of change in resilience on the insomnia relapse and incident depression at 1-year follow-up.

Results

dCBT-I resulted in greater improvements in resilience compared to the sleep education control. Furthermore, improved resilience following dCBT-I lowered latent risk, which was further associated with reduced insomnia and depression at 1-year follow-up. Sensitivity analyses indicated that each point improvement in resilience following treatment reduced the odds of insomnia relapse and incident depression 1 year later by 76% and 65%, respectively.

Conclusions

Improved resilience is likely a contributing mechanism to treatment gains following insomnia therapy, which may then reduce longer-term risk for insomnia relapse and depression.

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The relationship between capacity and utilization of nonpharmacologic therapies in the US Military Health System.

Rendelle Bolton, Grant Ritter, Krista Highland & Mary Jo Larson

Background
Nonpharmacologic therapies (NPTs) are recommended as first-line treatments for pain, however the impact of expanding professional capacity to deliver these therapies on use has not been extensively studied. We sought to examine whether an effort by the US Military Health System (MHS) to improve access to NPTs by expanding professional capacity increased NPT utilization in a cohort at higher risk for pain – Army soldiers returning from deployment.

Methods
Our study involved secondary analysis of MHS workforce data derived from the Defense Medical Human Resources System Internet (DMHRSi), and healthcare utilization data obtained from two ambulatory record systems of the Military Health System (MHS) for a sample of 863,855 Army soldiers previously deployed to Iraq or Afghanistan over a 10-year period (2008–2017). We measured clinical provider capacity in three occupational groups responsible for pain management at 130 military treatment facilities (MTFs): physical therapy, chiropractic, and behavioral health, measured annually as full-time equivalence per 100,000 patients served at each MTF. Utilization in both direct and purchased care settings was measured as annual mean NPT users per 1000 sample members and mean encounters per NPT user. Generalized estimating equation models estimated the associations of facility-level occupational capacity measures and facility-level utilization NPT measures.

Results
In 2008, nearly all MTFs had some physical therapist and behavioral health provider capacity, but less than half had any chiropractor capacity. The largest increase in capacity from 2008 to 2017 was for chiropractors (89%) followed by behavioral health providers (77%) and physical therapists (37%). Models indicated that increased capacity of physical therapists and chiropractors were associated with significantly increased utilization of six out of seven NPTs. Acupuncture initiation was associated with capacity increases in each occupation. Increased professional capacity in MTFs was associated with limited but positive effects on NPT utilization in purchased care.

Conclusions
Increasing occupational capacity in three professions responsible for delivering NPTs at MTFs were associated with growing utilization of seven NPTs in this Army sample. Despite increasing capacity in MTFs, some positive associations between MTF capacity and purchased care utilization suggest an unmet need for NPTs. Future research should

examine if these changes lead to greater receipt of guideline-concordant pain management.

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Postdeployment Alcohol Use and Risk Associated With Deployment Experiences, Combat Exposure, and Postdeployment Negative Emotions Among Army National Guard Soldiers.

James Griffith , Ph.D.

Objective:
A continued health concern of the U.S. military has been unhealthy alcohol use by its service members, in particular among several subpopulations—the deployed, the combat-exposed, and the reserve component. This study provides prevalence estimates of post-deployment alcohol use among recently deployed Army National Guard (ARNG) personnel and compares the rates with those of soldiers in previously published studies. We also examine deployment experiences and combat events associated with postdeployment alcohol use and the role of negative emotions in this relationship.

Method:
Study data were cross-sectional, retrospective soldier responses to an ongoing survey of health and well-being, called the Reintegration Unit Risk Inventory. The study sample consisted of recently returned Operation Iraqi Freedom ARNG soldiers (N = 4,567 in 50 companies), many of whom had participated in combat. Soldiers' alcohol use was compared with that of a sample of ARNG soldiers serving in their traditional part-time military service role who had responded to the Unit Risk Inventory, as well as with alcohol use reported in the research literature for deployed military personnel. Relationships among deployment and combat experiences, negative emotions, and postdeployment alcohol use were examined using multiple regression and mediation analyses.

Results:
Combat events were associated with unhealthy alcohol use during postdeployment. In

addition, postdeployment negative emotions mediated this relationship.

Conclusions:
Findings have implications for understanding the trauma-alcohol use relationship and for prevention of unhealthy alcohol use among military personnel.

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Links of Interest

Reducing the stigma and encouraging mental health care in the military
https://health.mil/news/articles/2021/05/18/reducing-the-stigma-and-encouraging-mental-health-care-in-the-military

Mental Health Awareness Month: Learn What Your Fellow Veterans Know
https://www.maketheconnection.net/mhm

Don't do college alone, go as part of a "posse" of 10 Veterans
https://blogs.va.gov/VAntage/102862/college_posse/

The Unseen Trauma of America's Drone Pilots (podcast)
https://www.nytimes.com/2022/05/09/podcasts/the-daily/drones-airstrikes-military-ptsd.html

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Resource of the Week: Recommended Standards for Delivering High-Quality Care to Veterans with Invisible Wounds

New, from the Rand Corporation:

> Traumatic brain injuries and psychological health problems such as posttraumatic stress disorder, depression, and substance use, often referred to as invisible wounds, are common among U.S. military veterans who served in the era after September 11, 2001. Although there are effective treatments for these conditions, it has been challenging to identify places that provide such care, as there has not been a shared definition of what makes care high quality. In a previous study, high-quality care for invisible wounds was defined as care that is veteran-centered, accessible, and evidence-based and that includes outcome monitoring. Identifying standards to operationalize this definition is essential for improving

access to high-quality, effective care. In this report, the authors recommend ten standards for the delivery of high-quality care for invisible wounds and provide considerations for implementing and disseminating these standards. Adoption of these standards of care would allow veterans, veteran-serving organizations, and payers to identify high-quality care providers and distinguish between good and poor care. The standards also provide a road map for providers that fall short of the benchmark and might need to invest in training and other resources to improve quality and demonstrate their ability to provide the best possible care for veterans living with invisible wounds.
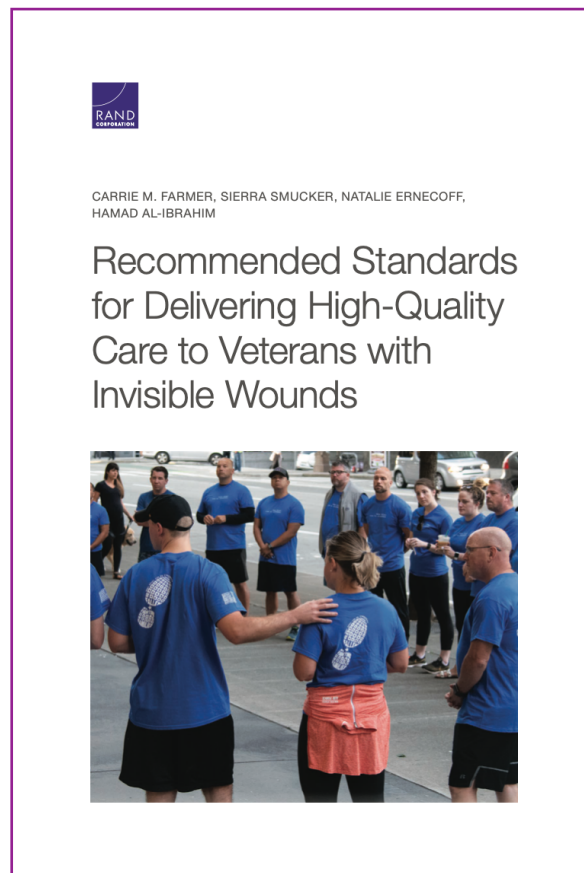
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