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## **Research Update -- January 24, 2019**

### **What's Here:**

- PTSD Research Quarterly (RQ): Inflammation and PTSD
- Preconception Health Risk Factors in Women with and without a History of Military Service.
- Randomized clinical trial pilot study of prolonged exposure versus present centred affect regulation therapy for PTSD and anger problems with male military combat veterans.
- What drives the relationship between combat and alcohol problems in soldiers? The roles of perception and marriage.
- Suicide attempts among activated soldiers in the U.S. Army reserve components.
- A Review of the Relationship Between Emotional Learning and Memory, Sleep, and PTSD.
- Links of Interest
- Resource of the Week: Military and Civilian Pay Levels, Trends, and Recruit Quality (RAND)

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[https://www.ptsd.va.gov/publications/rq\\_docs/V29N4.pdf](https://www.ptsd.va.gov/publications/rq_docs/V29N4.pdf)

## **PTSD Research Quarterly (RQ): Inflammation and PTSD**

Thomas C. Neylan, MD and Aoife O'Donovan, PhD

Vol. 29(4), 2018

National Center for PTSD

Veterans with posttraumatic stress disorder (PTSD) suffer from a high burden of diseases typically associated with aging including cardiovascular disease, autoimmune disorders, and dementia. A large literature demonstrates that PTSD is associated with a pro-inflammatory activation of the immune system, which may contribute to accelerated aging. The current state of the science suggests that there is a bidirectional causal relationship between PTSD and inflammation, which has implications for the development of clinically useful biomarkers and novel treatments.

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<https://www.ncbi.nlm.nih.gov/pubmed/30314907>

Womens Health Issues. 2018 Nov - Dec;28(6):539-545. doi: 10.1016/j.whi.2018.08.002. Epub 2018 Oct 9

## **Preconception Health Risk Factors in Women with and without a History of Military Service.**

McCabe JE, Katon JG, Ma E, Fortney JC, Grote NK, Zephyrin LC, Callegari LS

### **INTRODUCTION:**

Given the increasing number of women service members and veterans of childbearing age, it is important to understand the preconception risks in this potentially vulnerable population. This study compared the prevalence of modifiable preconception risk factors among women with and without a history of service.

### **METHODS:**

Analyses included data from the 2013 and 2014 Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System. Preconception risk factors included health behaviors, chronic conditions, and mental health among women of childbearing age. Multivariate logistic regressions were used to compare the adjusted

prevalence of each outcome among women with and without a history of service. Interaction terms assessed variation by age and history of service.

#### RESULTS:

Compared with women without a history of service, women with a history of service reported higher prevalence of insufficient sleep (49.6% vs. 36.3%;  $p < .001$ ) and diagnosed depression (26.5% vs. 21.6%;  $p < .01$ ). Women with a history of service were overall less likely to have obesity (19.8% vs. 26.5%;  $p < .001$ ). Age-stratified results suggested that, compared with women without a history of service, women with a history of service were more likely to smoke in the 25 to 34 age group and reported comparable levels of obesity in the 35 to 44 age group.

#### CONCLUSIONS:

Women with a history of service demonstrated a preconception health profile that differs from women without a history of service. It is critical that providers are aware of their patients' military status and potential associated risks.

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<https://www.ncbi.nlm.nih.gov/pubmed/29687524>

Clin Psychol Psychother. 2018 Sep;25(5):641-649. doi: 10.1002/cpp.2194. Epub 2018 Apr 23

#### **Randomized clinical trial pilot study of prolonged exposure versus present centred affect regulation therapy for PTSD and anger problems with male military combat veterans.**

Ford JD, Grasso DJ, Greene CA, Slivinsky M, DeViva JC

A randomized controlled trial pilot study ([www.ClinicalTrials.org](http://www.ClinicalTrials.org); NCT01228539) with  $N = 31$  U.S. male military recent combat veterans with PTSD and severe anger problems was conducted comparing 10-session individual therapy versions of Trauma Affect Regulation: Guide for Education and Therapy (TARGET) versus prolonged exposure (PE). TARGET had fewer drop-outs than PE (i.e., 29% vs. 64%). At post-test, improvements were found for both interventions in increased emotion regulation and hope, and reduced PTSD symptoms, hostility, experiential avoidance, and mental health problems. At a four-month follow-up, comparable proportions (approximately

40%) of recipients in each therapy maintained clinically significant gains. Self-rated expectancy of therapeutic outcome and working alliance was comparable for both PE and TARGET early in therapy, at mid-treatment, and at the end of treatment. While preliminary, these results suggest that TARGET may be a viable therapeutic option for male military veterans with PTSD and anger problems. © 2018 John Wiley & Sons, Ltd.

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<https://www.ncbi.nlm.nih.gov/pubmed/29282479>

Soc Psychiatry Psychiatr Epidemiol. 2018 Apr;53(4):413-420. doi: 10.1007/s00127-017-1477-7. Epub 2017 Dec 27

### **What drives the relationship between combat and alcohol problems in soldiers? The roles of perception and marriage.**

Vest BM, Homish DL, Hoopsick RA, Homish GG

#### **BACKGROUND:**

While the relationship between combat exposure and alcohol problems is well-established, the role of perceptions of trauma is less understood. The goal of this study was to explore associations between National Guard (NG) and reserve soldiers' perceptions of combat experiences as traumatic and alcohol problems, and to examine marital satisfaction as a possible protective factor.

#### **METHODS:**

The Operation: SAFETY study recruited US Army Reserve and NG soldiers and their partners to complete a questionnaire covering many physical and mental health, military service, and substance use topics. Negative binomial regression models examined the impact of perceived trauma of combat experiences on alcohol problems (N = 198). The potential role of marital satisfaction as a resiliency factor was also examined.

#### **RESULTS:**

The perception of combat experiences as traumatic was associated with increased risk of alcohol problems (risk ratio [RR] = 1.06, 95% confidence interval [CI] 1.01, 1.12; p = 0.024). Combat exposure itself showed no relationship. Marital satisfaction had a significant interaction with perceived combat trauma on alcohol problems (RR = 0.90, 95% CI 0.81, 0.99, p = 0.046), such that soldiers who perceived combat exposure as moderately-highly traumatic were less likely to have alcohol problems when they rated their marital satisfaction highly.

## CONCLUSIONS:

Our results demonstrate that the perception of combat experiences as traumatic may be a greater contributor to adverse outcomes, such as alcohol problems, than mere combat exposure. They also demonstrate the importance of marital satisfaction as a resiliency factor, particularly at the highest levels of trauma.

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<https://bmcp psychiatry.biomedcentral.com/articles/10.1186/s12888-018-1978-2>

## **Suicide attempts among activated soldiers in the U.S. Army reserve components.**

James A. Naifeh, Robert J. Ursano, Ronald C. Kessler, Oscar I. Gonzalez, Carol S. Fullerton, Holly B. Herberman Mash, Charlotte A. Riggs-Donovan, Tsz Hin Hinz Ng, Gary H. Wynn, Hieu M. Dinh, Tzu-Cheg Kao, Nancy A. Sampson and Murray B. Stein

BMC Psychiatry

2019 19:31

<https://doi.org/10.1186/s12888-018-1978-2>

### Background

Although the majority of active duty U.S. Army soldiers are full-time personnel in the Active Component (AC), a substantial minority of soldiers on active duty are in the Reserve Components (RCs). These “citizen-soldiers” (Army National Guard and Army Reserve) represent a force available for rapid activation in times of national need. RC soldiers experience many of the same stressors as AC soldiers as well as stressors that are unique to their intermittent service. Despite the important role of RC soldiers, the vast majority of military mental health research focuses on AC soldiers. One important goal of the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS) is to address this gap. Here we examine predictors of suicide attempts among activated RC soldiers.

### Methods

This longitudinal, retrospective cohort study used individual-level person-month records from Army and Department of Defense administrative data systems to examine socio-demographic, service-related, and mental health predictors of medically documented suicide attempts among activated RC soldiers during 2004–2009. Data from all 1103 activated RC suicide attempters and an equal-probability sample of 69,867 control person-months were analyzed using a discrete-time survival framework.

## Results

Enlisted soldiers comprised 84.3% of activated RC soldiers and accounted for 95.7% of all activated RC suicide attempts (overall rate = 108/100,000 person-years, more than four times the rate among officers). Multivariable predictors of enlisted RC suicide attempts included being female, entering Army service at age  $\geq 25$ , current age  $< 30$ , non-Hispanic white, less than high school education, currently married, having 1–2 years of service, being previously deployed (vs. currently deployed), and history of mental health diagnosis (particularly when documented in the previous month). Predictors among RC officers (overall rate = 26/100,000 person-years) included being female and receiving a mental health diagnosis in the previous month. Discrete-time hazard models showed suicide attempt risk among enlisted soldiers was inversely associated with time in service.

## Conclusions

Risk factors for suicide attempt in the RCs were similar to those previously observed in the AC, highlighting the importance of research and prevention focused on RC enlisted soldiers in the early phases of Army service and those with a recent mental health diagnosis.

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<https://link.springer.com/article/10.1007/s11920-019-0987-2>

## **A Review of the Relationship Between Emotional Learning and Memory, Sleep, and PTSD.**

Peter J. Colvonen, Laura D. Straus, Dean Acheson, Philip Gehrman

Current Psychiatry Reports

January 2019, 21:2

<https://doi.org/10.1007/s11920-019-0987-2>

### Purpose of Review

The emotional memory and learning model of PTSD posits maladaptive fear conditioning, extinction learning, extinction recall, and safety learning as central mechanisms to PTSD. There is increasingly convincing support that sleep disturbance plays a mechanistic role in these processes. The current review consolidates the evidence on the relationships between emotional memory and learning, disturbed sleep, and PTSD acquisition, maintenance, and treatment.

## Recent Findings

While disrupted sleep prior to trauma predicts PTSD onset, maladaptive fear acquisition does not seem to be the mechanism through which PTSD is acquired. Rather, poor extinction learning/recall and safety learning seem to better account for who maintains acute stress responses from trauma versus who naturally recovers; there is convincing evidence that this process is, at least in part, mediated by REM fragmentation. Individuals with PTSD had higher “fear load” during extinction, worse extinction learning, poorer extinction recall, and worse safety learning. Evidence suggests that these processes are also mediated by fragmented REM. Finally, PTSD treatments that require extinction and safety learning may also be affected by REM fragmentation.

## Summary

Addressing fragmented sleep or sleep architecture could be used to increase emotional memory and learning processes and thus ameliorate responses to trauma exposure, reduce PTSD severity, and improve treatment. Future studies should examine relationships between emotional memory and learning and disturbed sleep in clinical PTSD patients.

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## Links of Interest

ICE held US-born Marine veteran with PTSD for possible deportation, ACLU says  
<https://www.marinecorpstimes.com/news/your-marine-corps/2019/01/17/ice-held-us-born-marine-veteran-with-ptsd-for-possible-deportation-aclu-says/>

Navy Changes Policy on Psychotropic Medications and Aviation  
<https://www.pdhealth.mil/news/blog/navy-changes-policy-psychotropic-medications-and-aviation>

Supreme Court lets military go ahead with transgender restrictions  
<https://www.militarytimes.com/news/your-military/2019/01/22/supreme-courts-lets-military-go-ahead-with-transgender-restrictions/>

Pentagon: No changes to policy on transgender troops, for now  
<https://www.militarytimes.com/news/your-military/2019/01/22/dod-no-changes-to-transgender-policy-for-now/>

Transgender adults who serve in the military feel less depressed  
<https://www.futurity.org/transgender-veterans-1414542/>

Civilian Life 101: Here's what you need to know before you take off that uniform  
<https://rebootcamp.militarytimes.com/transition-tips/transition/2019/01/22/civilian-life-101-heres-what-you-need-to-know-before-you-take-off-that-uniform/>

Women in the military draft, or dump the system altogether? New report looks at radical options  
<https://www.militarytimes.com/news/pentagon-congress/2019/01/23/commission-eyes-adding-women-to-the-military-draft-or-dumping-the-system-altogether/>

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**Resource of the Week: [Military and Civilian Pay Levels, Trends, and Recruit Quality](#)**

New, from the RAND Corporation:

In the all-volunteer military, pay is one of the most important policy tools for recruiting and retaining personnel. Military pay must be high enough to attract and retain the personnel needed to meet manning requirements, and one measure of pay adequacy is how it compares to the pay of civilians with similar characteristics.

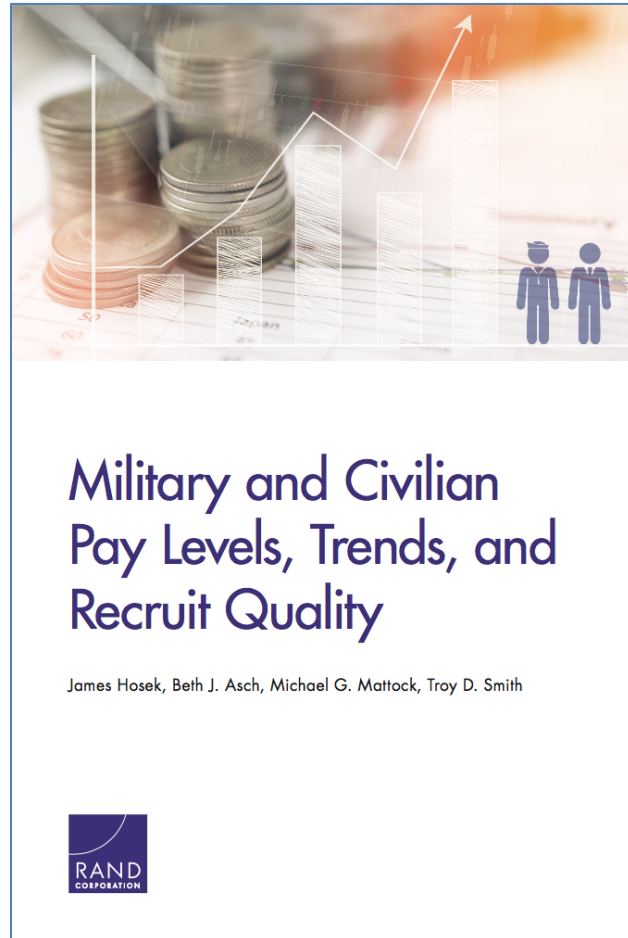
In 2002, the Ninth Quadrennial Review of Military Compensation recommended that regular military compensation (RMC) for enlisted personnel be at around the 70th percentile of the earnings of civilian workers with some college and, for officers, at around the 70th percentile of earnings of civilians with four or more years of college.

RAND researchers found RMC for enlisted members and officers in 2016 to be at the 84th and 77th percentiles, respectively, averaged over all education levels. RMC was at the 87th percentile for enlisted members with some college and at the 85th for those with associate's degrees. For officers, RMC was at the 86th percentile for those with bachelor's degrees and around the 70th for those with master's degrees or higher. Controlling for the change in education levels among service members, the researchers also found the same overall percentiles for 2009.

RMC has risen faster than civilian pay since 1999. The researchers found that, as this occurred, three military services (but not the Army) increased the quality



of their recruits. The authors recommend further research into services' recruit-quality requirements and question whether broad increases in pay are cost-effective for increasing quality.



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