A Note from MILMED COE.

Multiple times a year the United Kingdom’s Defence Medical Library Services produces a document listing the English language scientific literature related to Military Medical Services. The Surgeon General of GBR has agreed to provide this list via the MILMED COE’s web site. In addition to providing this outstanding resource the DefMed Library Service has been authorized to provide copies of articles to any non-GBR NATO medical staff as long as acquiring the article is at no cost.

To request an article e-mail Jenny Lewis, Secondary Care Librarian at jenny.lewis186@mod.uk. As already stated, the DefMed Library Service will not be able to provide all articles to non-GBR members, only those that incur no cost for accessing.

For NATO Medical we would like to express our deepest gratitude for this powerful tool for the continued improvement of the health outcomes to our service members.
Introduction

The DefMed Bulletin service offers a selection of new literature that has been discovered during the period on the cover of this Bulletin. It includes any literature in the English language that might be of interest, as well as some foreign language articles, and covers topics that might be of interest to anyone working in the field of military clinical practice.

Articles are gathered together in broad subject groupings and are currently organised alphabetically by grouping.

Each entry is marked with a unique accession number (e.g. 2016-98 0001) for ease of retrieval and this number should be used when requesting material from the Burnett Library. If any articles are required, readers are asked to complete an article request form and e-mail this to the Burnett Library at the e-mail address below.

Please see the article of the month, as featured as the ‘editor’s choice’ in the October 2016 edition of JRAMC - Died of wounds: a mortality review, 2016-98 0085.

If any articles are required, readers are asked to complete an article request form and e-mail this to the Burnett Library at the e-mail address below.

I would particularly like to thank Paul Dowling (Burnett Library), for his contribution to this edition.

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ADDITIVE DISORDERS

2016-99 0001

Alcohol Misuse and Co-Occurring Mental Disorders Among New Soldiers in the U.S. Army

Source
Alcoholism, Clinical and Experimental Research 2016

Author(s)
Stein, M.B., Campbell-Sills, L., et al.

Abstract
Background: Problem drinking that predates enlistment into military service may contribute to the overall burden of alcohol misuse in the Armed Forces; however, evidence bearing on this issue is limited. This study examines prevalence and correlates of alcohol misuse among new U.S. Army soldiers.

Methods: Cross-sectional survey data were collected from soldiers reporting for basic combat training. The survey retrospectively assessed lifetime alcohol consumption and substance abuse/dependence, enabling estimation of the prevalence of lifetime binge drinking and heavy drinking in a sample of 30,583 soldiers and of probable alcohol use disorder (AUD) among 26,754 soldiers with no/minimal lifetime use of other drugs. Co-occurrence of mental disorders and other adverse outcomes with binge drinking, heavy drinking, and AUD was examined. Discrete-time survival analysis, with person-year the unit of analysis and a logistic link function, was used to estimate associations of AUD with subsequent onset of mental disorders and vice versa.

Results: Weighted prevalence of lifetime binge drinking was 27.2% (SE = 0.4) among males and 18.9% (SE = 0.7) among females; respective estimates for heavy drinking were 13.9% (SE = 0.3) and 9.4% (SE = 0.4). Among soldiers with no/minimal drug use, 9.5% (SE = 0.2) of males and 7.2% (SE = 0.5) of females had lifetime AUD. Relative to no alcohol misuse, binge drinking, heavy drinking, and AUD were associated with increased odds of all mental disorders and other adverse outcomes under consideration (adjusted odds ratios AORs] = 1.5 to 4.6; ps < 0.001). Prior mental disorders and suicidal ideation were associated with onset of AUD (AORs = 2.3 to 2.8; ps < 0.001), and prior AUD was associated with onset of mental disorders and suicidal ideation (AORs = 2.0 to 3.2, ps < 0.005). Conclusions: Strong bidirectional associations between alcohol misuse and mental disorders were observed in a cohort of soldiers beginning Army service. Conjoint recognition of alcohol misuse and mental disorders upon enlistment may provide opportunities for risk mitigation early in a soldier’s career.
Cigarette smoking and sociodemographic, military, and health characteristics of operation enduring freedom and operation iraqi freedom veterans: 2009-2011 national health study for a new generation of US veterans.

Source
Public Health Reports 2016 131 (5) 714-727

Author(s)
Cypel Y.S., HamlettBerry K., et al.

Abstract
Objective: We examined the sociodemographic, military, and health characteristics of current cigarette smokers, former smokers, and nonsmokers among Operation Enduring Freedom (OEF) / Operation Iraqi Freedom (OIF) veterans and estimated smoking prevalence to better understand cigarette use in this population. Methods: We analyzed data from the US Department of Veterans Affairs (VA) 2009-2011 National Health Study for a New Generation of US Veterans. On the basis of a stratified random sample of 60 000 OEF/OIF veterans, we sought responses to a 72-item questionnaire via mail, telephone, or Internet. Cigarette smoking status was based on self-reported cigarette use in the past year. We used multinomial logistic regression to evaluate associations between smoking status and sociodemographic, military, and health characteristics. Results: Among 19 911 veterans who provided information on cigarette smoking, 5581 were current smokers (weighted percentage: 32.5%, 95% confidence interval [CI]: 31.7-33.2). Current smokers were more likely than nonsmokers or former smokers to be younger, to have less education or income, to be separated/divorced or never married/single, and to have served on active duty or in the army. Comparing current smokers and nonsmokers, some significant associations from adjusted analyses included the following: having a Mental Component Summary score (a measure of overall mental health) above the mean of the US population relative to below the mean (adjusted odds ratio [aOR] = 0.81, 95% CI: 0.73-0.90); having physically diagnosed depression (aOR = 1.52, 95% CI: 1.33-1.74), respiratory conditions (aOR = 1.16, 95% CI: 1.04-1.30), or repeated seizures/blackouts/convulsions (aOR = 1.80, 95% CI: 1.22-2.67); heavy alcohol use vs never use (aOR = 5.49, 95% CI: 4.57-6.59); a poor vs excellent perception of overall health (aOR = 3.79, 95% CI: 2.60-5.52); and being deployed vs nondeployed (aOR = 0.87, 95% CI: 0.78-0.96). Using health care services from the VA protected against current smoking. Conclusion: Mental and physical health, substance use, and military service characteristics shape cigarette-smoking patterns in OEF/OIF veterans.
**2016-99 0003**

**Demographic and Psychosocial Predictors of Early Attrition for Drug Use in U.S. Marines.**

**Source**
Military Medicine 2016 181 (11) e1540-e1545

**Author(s)**
White, M.R., and Christopher, J.P.

**Abstract**
Objective: The objective of this study was to determine demographic and psychosocial predictors of early attrition for drug use in a cohort of U.S. Marines and the resulting lost person-days. Method: The study included data from 35,193 male Marines who completed a life history questionnaire during their first week of basic training. Associations between demographic and psychosocial variables with subsequent discharge for drug use were analyzed using logistic regression. Results: The strongest predictors of early attrition because of drug use were being a smoker, African American race, moving around often as a child, not having a high school diploma, joining the military to leave problems behind, and having a prior arrest record. The results also indicate that approximately 3.1 million person-days were lost in this cohort because of early discharge for drug abuse. Conclusions: Despite effective policies that prohibit drug use, these findings suggest that a significant loss in manpower and training costs still occurs because of early attrition for drug use. Postenlistment interventions for those recruits at higher risk for drug abuse may help to reduce this attrition.

**2016-99 0004**

**Do alcohol misuse, service utilisation, and demographic characteristics differ between UK veterans and members of the general public attending an NHS general hospital?**

**Source**

**Author(s)**
Murphy D., Palmer E., et al.

**Abstract**
The aim of this paper was to provide insights into alcohol misuse within UK veterans to inform as to whether their presentations differ from the general public. This was done by exploring differences in the severity of alcohol misuse between UK veterans and the general public admitted to a general NHS hospital over an 18 month period using retrospective data. All patients admitted to the hospital were screened for alcohol misuse. Those deemed as experiencing problems were
referred for specialist nurse-led support. A total of 2331 individuals were referred for this supported and administered with a standardised assessment that included measures of the severity of alcohol difficulties (AUDIT), dependency levels (LDQ), and assessed for the presence of withdrawal symptoms (CIWA-Ar). In addition, information was collected on service utilisation, referral category (medical or mental health), other substance misuse, and demographic characteristics. No differences were found between the severity of reported alcohol difficulties between veterans and non-veterans. Evidence was found to suggest that veterans were more likely to be referred for support with alcohol difficulties at an older age and to be admitted to hospital for longer periods of time. This could have considerable cost implications for the NHS. It was more common for veterans to present at hospital with physical health difficulties prior to being referred for support for alcohol.

2016-99 0005

Eating Behaviors: Prevalence, Psychiatric Comorbidity, and Associations With Body Mass Index Among Male and Female Iraq and Afghanistan Veterans.

Source
Military Medicine 2016 181 (11) e1650-e1656

Author(s)
Slane,J.D., and Levine,M.D.

Abstract
Objective: There is a dearth of research examining eating behaviors, such as binge eating, among male and female veterans. The present study evaluated the prevalence of self-reported eating problems as well as associations with body mass index and psychiatric disorders among male and female Iraq and Afghanistan veterans. Methods: Participants were 298 male and 364 female veterans (M = 33.3 ± 10.6 years old) from the Women Veterans Cohort Study, a study of male and female veterans enrolled for Veterans Affairs care in New England or Indiana. Veterans self-reported on emotion- and stress-related eating, eating disorder diagnoses, and disordered eating behaviors. Diagnoses of post-traumatic stress disorder, major depressive disorder, and alcohol abuse were obtained from administrative records. Results: Female veterans reported higher rates of eating problems than did their male counterparts. Women and men who engage in disordered eating had higher rates of post-traumatic stress disorder and major depressive disorder, and women who engage in disordered eating had greater rates of alcohol abuse than did female veterans without eating disordered behaviors. Conclusions: Disordered eating may be a significant issue among Iraq and Afghanistan veterans, and veterans with eating
problems are more likely to have comorbid mental health conditions that further increase their health risks.

2016-99 0006

Factors Associated With Accepting Assistance for Smoking Cessation Among Military Veterans

Source

Author(s)
Myers, M.G., Chen, T., et al.

Abstract
Introduction: Cigarette smoking remains a significant health risk for Veterans. Increased understanding of factors that influence the tobacco cessation referral process within Veterans Affairs medical facilities is useful for enhancing utilization of smoking cessation treatment. The present study examined the association of demographic and health variables with whether smokers accepted referral for medication and/or tobacco cessation clinic.; Methods: Electronic medical record data (2011-2013) were obtained for a sample of US military Veterans who accepted cessation assistance from their health care provider. Demographic and diagnostic variables were examined to identify predictors of the types of assistance accepted (medication only, clinic referral only, or both).; Results: The sample includes 2941 Veterans, 10.3% female, 19.9% African American, 10.7% Hispanic, and 57.9% non-Hispanic white. Veterans averaged of 50.69 years of age (SD = 14.01), 31.5% had a substance use disorder diagnosis and 54.1% had a psychiatric diagnosis. Demographic and diagnostic information was compared across types of assistance accepted. Significant differences were found between those who accepted medications only and those who accepted either clinic referral or both medication and clinic referral. Veterans in the latter two categories were younger and more likely to have a psychiatric diagnosis than those accepting medication only. Women Veterans were significantly more likely than men to accept clinic referral plus medication. However, in contrast to men, almost none of the variables examined were associated with the type of assistance accepted by women.; Conclusion: These findings indicate significant gender differences in influences on accepting assistance for smoking cessation among Veterans.; Implications: Existing research identifies factors associated with unassisted quitting. However, little is known regarding the referral process, which is critical in connecting smokers with treatment. The present work is unique in employing electronic medical record data to examine factors associated with accepting different types of smoking cessation treatment.
referrals. This study represents an initial effort to elucidate the smoking cessation treatment referral process. These findings highlight the need to examine sex specific influences on smoking cessation treatment utilization and the importance of focusing on smokers with psychiatric disorders.

2016-99 0007

Hardiness, avoidance coping, and alcohol consumption in war veterans: A moderated-mediation study.

Source
Stress and Health: Journal of the International Society for the Investigation of Stress. 2016,

Author(s)
Bartone, P.T., Johnsen, B.H., et al.

Abstract
Military personnel often engage in excessive alcohol use after returning from deployments. Thus far, research has paid scant attention to personality factors that may increase or diminish the risk for increased alcohol consumption in this population. The present study explores how psychological hardiness, avoidance coping, and stress exposure may interact to influence alcohol consumption patterns in soldiers following deployment. U.S. Army National Guard soldiers (N = 357) were surveyed shortly after returning from combat operations in Afghanistan. Conditional process analysis was used to test for mediation and moderation effects. Mediation effects were further tested in a replication sample of Norwegian Army soldiers (N = 230) deployed to Kosovo. Findings show that hardiness is a significant (negative) predictor of increased alcohol use and that this relation is mediated by avoidance coping. Further, this effect was moderated by combat stress exposure in the U.S. sample, such that the mediation is stronger for those with greater exposure (moderated-mediation). Avoidance coping also mediated the effects of hardiness on alcohol consumption in the Norwegian sample. These findings suggest that avoidance coping and hardiness may be fruitful areas for interventions aimed at reducing risky drinking in high-stress groups like the military.

See also

Impact of alcohol use disorder comorbidity on defensive reactivity to errors in veterans with posttraumatic stress disorder. Under Post Traumatic Stress Disorder.

A systematic review of the relationship between psychological disorders or substance use and self-reported cognitive failures. Under Psychology.
Ultrasound Guided Transversus Abdominis Plane Block Versus Wound Infiltration with Local Anesthetic Agent in Abdominal Surgeries.

Source
Pakistan Armed Forces Medical Journal 2016 66 (5) 747-751

Author(s)
Amjad,Q.U.A., and Sharif,A.,

Abstract
Objective: To compare the pain relief and frequency of analgesia requirement in post abdominal surgeries using ultrasound guided transverses abdominis plane (TAP) block with that of wound infiltration with local anesthetic agent. Study Design: Randomized control trial. Place and Duration of Study: This randomized control trial study was conducted at Anesthesia Department of Combined Military Hospital, Rawalpindi, after getting permission from hospital ethical committee from 28th Feb, 2015 to 31st Aug 2015. Material and Methods: The total number of patients included in the study were 100 with American Society of Anaesthesiologists (ASA) status I/II scheduled for elective abdominal surgeries. They were included in the study after written informed consent. The patients in group I received TAP block with 20 ml of 0.25% bupivacaine while those in group II had wound infiltration at the end of surgery with 20 ml of 0.25% bupivacaine. After induction of general anesthesia, ultrasound guided transversus abdominis plane block was performed with Kontron Agile ultrasound system using linear transducer (8-12 Hz) 15 minutes prior to the surgical incision. A Stimuplex nerve stimulator needle 22G, 50mm was used by in-plane technique to deposit local anesthetic agent. In post anesthesia care unit (PACU), visual analogue scale (VAS) from 0 to 10, and requirement of analgesia at 0, 2, 4, and 6 hours respectively was used to assess the pain. Results: Both groups were comparable in regard to demographic data. Peak pain scores were measured using VAS with higher scores indicating worst outcome. The peak pain scores in group I patients were lower as compared to the patients in group II (p-value <0.05). The time to first analgesia was longer 8.92 ± 1.509 in group I as compared to 5.1 ± 1.971 in group II (p-value=0.05). The frequency of analgesia requirement in post-operative period was also more in group II.30% patients in group II required analgesia in first two hours as compare to 0% in group I while in the sixth hour 64% of the patients in group II required analgesia as compared to 8% in group II. Conclusion: The comparable short term post-operative pain relief was provided
by both ultrasound guided TAP block and local wound infiltration, but the TAP Block showed better and long lasting effects.

2016-99 0009

Non-medical use of prescription opioids is associated with heroin initiation among US veterans: a prospective cohort study

Source
Addiction 2016 111 (11) 2021-2031

Author(s)

Abstract
Aims To estimate the influence of non-medical use of prescription opioids (NMUPO) on heroin initiation among US veterans receiving medical care.
Design Using a multivariable Cox regression model, we analyzed data from a prospective, multi-site, observational study of HIV-infected and an age/race/site-matched control group of HIV-uninfected veterans in care in the United States. Approximately annual behavioral assessments were conducted and contained self-reported measures of NMUPO and heroin use.
Setting Veterans Health Administration (VHA) infectious disease and primary care clinics in Atlanta, Baltimore, New York, Houston, Los Angeles, Pittsburgh and Washington, DC.
Participants A total of 3396 HIV-infected and uninfected patients enrolled into the Veterans Aging Cohort Study who reported no life-time NMUPO or heroin use, had no opioid use disorder diagnoses at baseline and who were followed between 2002 and 2012.
Measurements The primary outcome measure was self-reported incident heroin use and the primary exposure of interest was new-onset NMUPO. Our final model was adjusted for socio-demographics, pain interference, prior diagnoses of post-traumatic stress disorder and/or depression and self-reported other substance use.
Findings Using a multivariable Cox regression model, we found that non-medical use of prescription opioids NMUPO was associated positively and independently with heroin initiation [adjusted hazard ratio (AHR) = 5.43, 95% confidence interval (CI) = 4.01, 7.35].
Conclusions New-onset non-medical use of prescription opioids (NMUPO) is a strong risk factor for heroin initiation among HIV-infected and uninfected veterans in the United States who reported no previous history of NMUPO or illicit opioid use.
Exertional Rhabdomyolysis: Epidemiology, Diagnosis, Treatment, and Prevention.

Source
Journal of Special Operations Medicine 2016 16 (3) 65-71

Author(s)
Knapik, J.J., and O'Connor, F.G.,

Abstract
Exertional rhabdomyolysis (ER) is a medical condition whereby damage to skeletal muscle is induced by excessive physical activity in otherwise healthy individuals. The individual performs so much activity that he/she presumably depletes local muscle energy stores and muscle cells are unable to maintain cellular integrity, resulting in cell damage and the release of cellular contents, with resultant secondary complications. In the military services, the incidence of ER appeared to increase in the period 2004 to 2015. Risk factors for ER include male sex, younger age, a prior heat injury, lower educational level, lower chronic physical activity, and activity in the warmer months of the year. Acute kidney injury is the most serious potential complication of ER and is thought to be due to a disproportionate amount of free myoglobin that causes renal vasoconstriction, nephrotoxic effects, and renal tubular obstructions. Patients typically present with a history of heavy and unaccustomed exercise with muscle pain, swelling, weakness, and decreased range of motion, largely localized to the muscle groups that were involved in the activity. Diagnostic criteria include the requisite clinical presentation with a serum creatine kinase level at least 5 times higher than the upper limit of normal and/or a urine dipstick positive for blood (due to the presence of myoglobin) but lacking red blood cells under microscopic urinalysis. Core treatment is largely supportive with aggressive fluid hydration. Although the great majority of individuals return to activity without consequence, patients should initially be stratified into high and low risk for recurrence, and those at high risk provided additional evaluation. Risk of ER in normal healthy individuals can be reduced by emphasizing graded, individual preconditioning before beginning a more strenuous exercise regimen after recommended work/rest and hydration schedules in hot weather, and discussing supplements and medications with knowledgeable medical personnel.
Patterns of Stress Related Injuries of Lower Limbs in Military Setup on Skeletal Scintigraphy.

Source
Pakistan Armed Forces Medical Journal 2016 66 (5) 742-746

Author(s)
Jamal, A., and Ali, M.K.,

Abstract
Objective: To determine patterns of stress related injuries of lower limbs in military (training) setup on skeletal scintigraphy and frequencies. Study Design: Cross sectional descriptive study. Place and Duration of Study: Nuclear Medical Centre, Armed Forces Institute of Pathology (AFIP) Rawalpindi from Jul 2004 to Dec 2012. Materials and Methods: Total 297 positive cases of military cadets/recruits on 3-phase skeletal scintigraphy were included in study whereas negative cases were excluded. 99mTc-MDP (20mCi) was injected intravenously followed immediately by angioscintigraphic, blood pool imaging and delayed imaging after 2 hours. Acquisition was done on Siemens E-Cam® and Scintronix® Gamma Cameras. Radiotracer uptake in localized focal pattern was labeled as stress fracture, in linear pattern along the periosteum as sub-periosteal reaction or periostitis, linear uptake in poster medial distal tibial aspects as medial tibial stress syndrome or shin splints and up take at insertion sites of major lower limb muscles as activity induced enthesopathy, respectively. Results: Stress fractures constituted 80.13% cases with bilateral middle third tibiae as the commonest site. Shin splints were present in 21.88% of cases and sub-periosteal reactive changes in 14.47% of the patients. Activity induced enthesopathy was present in 4.20% of patients with bilateral quadriceps femoris enthesopathy being more prevalent. Conclusion: Most common overuse injuries are stress fractures followed by shin splints, sub-periosteal reactive changes and activity induced enthesopathy. Middle third of tibia is commonest site prone to stress fractures and overall right lower limb is frequently involved as compared to left in all stress induced injuries.
Confirmatory Factor Analysis of a Measure of Comprehensive Airman Fitness.

Source
Military Behavioral Health 2016 4 (4) 409-419
Author(s)
Bowen, Gary. L.; Jenson, Todd. M.

Abstract
The U.S. Air Force has committed significant resources to implementing policies and programs consistent with the Department of Defense's concept of total force fitness. A 12-item measure of Comprehensive Airman Fitness was proposed and empirically examined, using component measures of mental fitness, physical fitness, social fitness, and spiritual fitness from the Support and Resiliency Inventory. Results confirm that the components of airman fitness can be conceptualized as pieces of a total fitness construct and that the measure is invariant across subgroups. Implications for policy and practice are discussed, and an agenda for future research is presented.

Considerations on the Training of Aeronautical Personnel in Human Factors.

Source
Aeronautical Medicine and Psychology Revue 2016 1
Author(s)
Trandafir, D., and Hrițcu, R.

Abstract
This article aims to outline the results obtained in a study conducted by Răzvan Hrițcu for his graduation thesis of „Henri Coandă” Air Force Academy, pilots.4 Objective. This study aims to determine the extent to which aviation personnel perceive the importance of training in human factor, due to the fact that professional performance is directly influenced by the physical and mental demands. Method. The study is based on opinion survey specific for each investigated personnel category (pilots, air traffic controllers and technical staff). Results. Due to the specific method used, which does not allow broad statistical analysis, investigation results are presented and analyzed item by item. This type of analysis include the frequency of responses per item and per category of aviation personnel. Conclusions. The conclusion of the study is that, for all three categories of personnel investigated, human factor
has a great influence on the professional performance but regarding the psychological preparation, 67% of respondents believe that it is not important, while 33% say it is necessary. The results lead to several measures that are recommended to reduce negative environmental influences on the human factor performances in aviation.

2016-99 0014

G-Induced Visual Symptoms in a Military Helicopter Pilot.

Source
Military Medicine 2016 181 (11) e1696-e1699

Author(s)
McMahon, T.W., and Newman, D.G.,

Abstract
Introduction: Military helicopters are increasingly agile and capable of producing significant G forces experienced in the longitudinal (z) axis of the body in a head-to-foot direction (+Gz). Dehydration and fatigue can adversely affect a pilot's +Gz tolerance, leading to +Gz-induced symptomatology occurring at lower +Gz levels than expected. The potential for adverse consequences of +Gz exposure to affect flight safety in military helicopter operations needs to be recognized. This case report describes a helicopter pilot who experienced +Gz-induced visual impairment during low-level flight. Case study: The incident occurred during a tropical training exercise, with an ambient temperature of around 35°C (95°F). As a result of the operational tempo and the environmental conditions, aircrew were generally fatigued and dehydrated. During a low-level steep turn, a Blackhawk pilot experienced significant visual deterioration. The +Gz level was estimated at +2.5 Gz. After completing the turn, the pilot's vision returned to normal, and the flight concluded without further incident. Discussion: This case highlights the potential dangers of +Gz exposure in tactical helicopters. Although the +Gz level was moderate, the pilot's +Gz tolerance was reduced by the combined effects of dehydration and fatigue. The dangers of such +Gz-induced visual impairment during low-level flight are clear. More awareness of +Gz physiology and +Gz tolerance-reducing factors in helicopter operations is needed.
2016-99 0015

The Health and Well-Being of Military Drone Operators and Intelligence Analysts: A Systematic Review.

Source
Military Psychology 2016
Author(s)
Armour, C. and Ross, J.

Abstract
The aim of this study was to systematically review the existing research on the health and well-being of military drone operators and intelligence analysts in order to provide an overview of research and identify gaps in this area. Six literature databases and 2 databases containing unclassified military reports were searched for relevant papers produced between January 1996 and May 2016. The search criteria were broad to allow for the identification of all relevant studies on the topic. Fifteen studies met the inclusion criteria; all of which were conducted in the U.S. with the U.S. Air Force personnel. The main sources of occupational stress reported by participants across the studies were operational. The rates of mental health diagnoses, including PTSD, were low, but levels of psychological distress were higher in drone and intelligence operators than in comparison groups. Fatigue emerged as a significant concern. It is important that future studies examine a variety of mental and physical health outcomes. The health and well-being of drone operators and intelligence analysts should be studied not just in the U.S., but also in other countries that are using drones for military purposes.

2016-99 0016

Hiatal Hernia as the Cause of G-Induced Abdominal Pain.

Source
Military Medicine 2016 181 (11) e1700-e1701
Author(s)
Hughey, S.B., and Mattingly, L.H.,

Abstract
Sliding hiatal hernias are common and affect approximately 10% to 80% of the general population. The condition typically presents with reflux-type symptoms and is diagnosed either with imaging or endoscopy. In this case, the hernia presented as G-induced abdominal pain. The patient was an F-18 pilot who experienced worsening epigastric abdominal pain proportionate to the amount of accelerative force experienced. The pain would occur at approximately 3 Gs and increase beyond that. The patient was asymptomatic at rest and denied
any dysphagia or reflux symptoms. The only other symptom was the occurrence of a similar pain with diaphragmatic spasm, i.e., “hiccup.” The patient underwent multiple imaging modalities and procedures and was eventually found to have a sliding hiatal hernia. He underwent a Nissen fundoplication to repair it. Approximately 3 months postoperatively, the patient was able to withstand significant acceleration without pain. He has no lasting sequelae from the hernia or surgery and continues to fly.

2016-99 0017

Pectoralis Major Injury During Basic Airborne Training.

Source
Journal of Special Operations Medicine 2016 16 (3) 11-15
Author(s)
McIntire, S., and Boujie, L.,

Abstract
Injuries involving rupture of the pectoralis major are relatively rare. When they do occur, it is mostly frequently in a young, athletic man. The most common cause is weight lifting that results in eccentric muscle contraction (muscle contraction against an overbearing force, leading to muscle lengthening)-specifically, the bench press. Other mechanisms for this injury include forceful abduction and external rotation of the arm. Injury can occur anywhere along the pectoralis major from its medial origin on the sternum and clavicle to its lateral tendinous insertion on the humerus. At the time of injury, patients may report feeling a tearing sensation or hearing a pop, with immediate onset of pain. Physical examination findings can include a deformed appearance of the chest, ecchymosis of the chest and upper arm, pain and weakness with arm adduction and internal rotation, or noticeable asymmetry of the anterior axilla with arm abduction. Magnetic resonance imaging is the imaging study of choice to aid diagnosis. In a young and active population, such as the Special Operations community, appropriate and timely diagnosis is important because surgical intervention often is recommended. This report presents the case of an active-duty Servicemember who sustained a pectoralis major injury while exiting an aircraft during the Basic Airborne Course.
Pressure effects on the nose by an in-flight oxygen mask during simulated flight conditions

Source
Journal of the Royal Army Medical Corps 2016 162 pp445-449

Author(s)
J Rieneke C Schreinemakers, C Boer, P C G M van Amerongen and M Kon

Abstract
Background Dutch F-16 fighter pilots experience oxygen mask inflicted nasal trauma, including discomfort, pain, skin abrasions, bruises and bone remodelling. Pressure and shear forces on the nose might contribute to causing these adverse effects. In this study, it was evaluated how flight conditions affected the exerted pressure, and whether shear forces were present.

Methods
The pressure exerted by the oxygen mask was measured in 20 volunteers by placing pressure sensors on the nose and chin underneath the mask. In the human centrifuge, the effects on the exerted pressure during different flight conditions were evaluated (+3G, +6G, +9G, protocolised head movements, mounted visor or night vision goggles, NVG). The runs were recorded to evaluate if the mask's position changed during the run, which would confirm the presence of shear forces.

Results
Head movements increased the median pressure on the nose by 50 mm Hg and on the chin by 37 mm Hg. NVG, a visor and accelerative forces also increased the median pressure on the nose. Pressure drops on the nose were also observed, during mounted NVG (~63 mm Hg). The recordings showed the mask slid downwards, especially during the acceleration phase of the centrifuge run, signifying the presence of shear forces.

Conclusions
The exerted pressure by the oxygen mask changes during different flight conditions. Exposure to changing pressures and to shear forces probably contributes to mask-inflicted nasal trauma.
See also

**Lower Extremity Compartment Syndrome From Prolonged Limb Compression and Immobilization During an Airborne Operation.** Under Orthopaedics.

**Personality Traits and Coping Strategies.** Under Psychology.

**Physical fitness characteristics of active duty US Air Force members with HIV infection.** Under Infectious and Communicable Diseases.

Caffeic acid, morin hydrate and quercetin partially attenuate sulfur mustard-induced cell death by inhibiting the lipoxygenase pathway

Source
Molecular Medicine Reports 2016 14 (5) 4454-4460

Author(s)
Kim,S., Jeong,K., et al.

Abstract
Sulfur mustard (SM) is an alkylating agent, which has been used as in chemical warfare in a number of conflicts. As the generation of reactive oxygen species (ROS), and adducts in DNA and proteins have been suggested as the mechanism underlying SM-induced cytotoxicity, the present study screened several antioxidant candidates, including tannic acid, deferoxamine mesylate, trolox, vitamin C, ellagic acid and caffeic acid (CA) to assess their potential as therapeutic agents for SM-induced cell death. Among several antioxidants, CA partially alleviated SM-induced cell death in a dose-dependent manner. Although CA treatment decreased the phosphorylation of p38 mitogen-activated protein (MAP) kinase and p53, p38 MAP kinase inhibition by SB203580 did not affect SM-induced cell death. As CA has also been reported as a 15-lipoxygenase (15-LOX) inhibitor, the role of 15-LOX in SM-induced cytotoxicity was also examined. Similar to the results observed with CA, treatment with PD146176, a specific 15-LOX inhibitor, decreased SM-induced cytotoxicity, accompanied by decreases in the production of tumor necrosis factor-α and 15-hydroxyeicosatetraenoic acid. Furthermore, the present study investigated the protective effects of two natural 15-LOX inhibitors, morin hydrate and quercetin, in SM-induced cytotoxicity. As expected, these inhibitors had similar protective effects against SM-induced cytotoxicity. These antioxidants also reduced the generation of ROS and nitrate/nitrite. Therefore, the results of the present study indicated that the natural products, CA, quercetin and morin hydrate, offer potential as adjuvant therapeutic agents for SM-induced toxicity, not only by reducing inflammation mediated by the p38 and LOX signaling pathways, but also by decreasing the generation of ROS and nitrate/nitrite.
**Pathophysiology of sepsis-induced myocardial dysfunction.**

**Source**
Military Medical Research 2016

**Author(s)**
Lv,X., and Wang,H.,

**Abstract**
Sepsis-induced myocardial dysfunction is a common complication in septic patients and is associated with increased mortality. In the clinical setting, it was once believed that myocardial dysfunction was not a major pathological process in the septic patients, at least in part, due to the unavailability of suitable clinical markers to assess intrinsic myocardial function during sepsis. Although sepsis-induced myocardial dysfunction has been studied in clinical and basic research for more than 30 years, its pathophysiology is not completely understood, and no specific therapies for this disorder exist. The purpose of this review is to summarize our current knowledge of sepsis-induced myocardial dysfunction with a special focus on pathogenesis and clinical characteristics.

**Predictors of short- and long-term mortality in hospitalized veterans with elevated troponin.**

**Source**
Journal of Hospital Medicine 2016 11 (11) 773-777

**Author(s)**
Winchester D.E., Burke L., et al.

**Abstract**
BACKGROUND: Cardiac troponin elevation is associated with mortality. We compared the mortality risk related to elevated troponin from acute coronary syndrome (ACS) and non-ACS causes in a hospitalized elderly veteran population. METHODS AND RESULTS: As part of a quality initiative at our Veterans Affairs hospital, all patients with elevated troponin were evaluated by a cardiologist to determine if ACS was present and to recommend management. We selected a sample (n = 761) of consecutive patients studied between February 2006 and February 2007 and examined all-cause mortality over extended follow-up. Nearly all were men (99.1%), and about half had coronary disease (n = 385, 50.5%) and diabetes (n = 339, 44.4%). ACS patients had lower mortality that non-ACS...
patients. Mortality began to diverge at 30 days; at 1 year it was 42.0% versus 29.0% (odds ratio [OR]: 0.56, 95% confidence interval [CI]: 0.41-0.78) and at 6 years 77.7% versus 58.7% (OR: 0.41, 95% CI: 0.30-0.56). Cox regression models for mortality at multiple time points yielded several independent factors associated with mortality; however, the distribution of the factors was not sufficient to explain the observed difference in mortality. CONCLUSIONS: In this elderly, male veteran population, mortality related to an elevated troponin was higher at 1 and 6 years for non-ACS patients compared with ACS patients. Factors independently associated with a higher mortality risk were predominantly markers of general systemic illness, but did not elucidate the reasons why troponin elevation secondary to non-ACS causes carries this higher risk. A better understanding of these cardiac troponin elevations and implications for future mortality requires additional investigation.

2016-99 0022

Prevalence of cardiovascular disease (CVD) risk factors.

Source
Medical Journal Armed Forces India 2016 72 (4) 315-319

Author(s)
Nangia,R., and Singh,H.,

Abstract
Background Various studies conducted across the country have shown a high prevalence of known risk factors of cardiovascular disease (CVD) (like mean body mass index (BMI), systolic BP and raised cholesterol levels) but no exhaustive data is available pertaining to armed forces personnel. This study was conducted to assess the prevalence of raised BMI, blood pressure, cholesterol and blood sugar among serving armed forces personnel ≥35 yrs of age. Methods The study was carried out between Jan 2013–Jun 2013. The study included all individuals ≥35 yrs of age deployed/posted in specific districts of northern part of the country (N = 5143) instead of a limited sample size. Results In this study, obesity was observed in 3.42% (95% CI: 2.96%–3.95%), raised BP in 14.07% (95% CI: 13.15%–15.05%) and raised blood sugar levels in 1.71% (95% CI: 1.39%–2.10%). Additionally, 67.72% (95% CI: 66.43%–68.99%) were pre-obese and 82.65% (95% CI: 81.60%–83.67%) were pre-hypertensives. Conclusion Lower prevalence of hypertension, hyperglycemia and dyslipidemia was observed in armed forces personnel in comparison to country specific data. However, high prevalence of pre-obese and pre-hypertension suggests a need for concerted efforts towards preventive activities in this field.
Psychiatric history, post-discharge distress, and personality characteristics among incident female cases of takotsubo cardiomyopathy: A case-control study.

Source
Heart and Lung: Journal of Acute and Critical Care 2016 45 (6) 503-509
Author(s)
Salmoirago-Blotcher E., Rosman L., et al.

Abstract
Background The role of psychological factors in the onset of takotsubo cardiomyopathy (TC) is still controversial. Associations with previous psychiatric conditions are registry-based; associations with personality characteristics and psychological sequelae of TC have been largely unexplored. This case-control study sought to study pre-admission psychiatric morbidity, personality traits, and post-discharge distress in incident cases of TC. Methods TC cases (Mayo clinic criteria) and acute myocardial infarction (MI) controls were recruited among women admitted to two Emergency Departments in New England. Healthy controls (HC) were recruited from a volunteers’ registry. Preadmission psychiatric history (DSM-IV-TR) was abstracted from the medical record. PTSD symptoms (Impact of Events Scale); distress (Hospital Anxiety and Depression Scale); perceived stress (PS scale) and personality traits (optimism; hostility, type D personality) were collected via phone interview one month after discharge. Results From March 2013 through October 2015, 107 participants (45 TC, 32 MI and 30 HC) were enrolled. The prevalence of preadmission anxiety disorders was 24.4% in TC, 9.4% in MI, and 0 in HC (p = 0.007) while that of mood disorders was similar across groups. TC had higher psychological distress, perceived stress, and PTSD symptoms post-discharge vs. MI and HC. In adjusted models, PTSD symptoms remained higher in TC vs. MI (b = 0.55, p < 0.05) and vs. HC (b = 0.92, p < 0.01). Optimism and hostility scores were similar across groups, while type D (social inhibition) scores were higher in TC and MI vs. HC. Conclusions Preadmission anxiety, but not depression, was associated with the occurrence of TC. High distress and PTSD symptoms post-discharge indicate that TC women may be at risk for poor psychological adjustment.
Blaptica dubia as sentinels for exposure to chemical warfare agents - a pilot study

Source
Toxicology Letters 2016 262 ( ) 12-16

Author(s)
Worek,F., Seeger,T., et al.

Abstract
The increased interest of terrorist groups in toxic chemicals and chemical warfare agents presents a continuing threat to our societies. Early warning and detection is a key component for effective countermeasures against such deadly agents. Presently available and near term solutions have a number of major drawbacks, e.g. lack of automated, remote warning and detection of primarily low volatile chemical warfare agents. An alternative approach is the use of animals as sentinels for exposure to toxic chemicals. To overcome disadvantages of vertebrates the present pilot study was initiated to investigate the suitability of South American cockroaches (Blaptica dubia) as warning system for exposure to chemical warfare nerve and blister agents. Initial in vitro experiments with nerve agents showed an increasing inhibitory potency in the order tabun - cyclosarin - sarin - soman - VX of cockroach cholinesterase. Exposure of cockroaches to chemical warfare agents resulted in clearly visible and reproducible reactions, the onset being dependent on the agent and dose. With nerve agents the onset was related to the volatility of the agents. The blister agent lewisite induced signs largely comparable to those of nerve agents while sulfur mustard exposed animals exhibited a different sequence of events. In conclusion, this first pilot study indicates that Blaptica dubia could serve as a warning system to exposure of chemical warfare agents. A cockroach-based system will not detect or identify a particular chemical warfare agent but could trigger further actions, e.g. specific detection and increased protective status. By designing appropriate boxes with (IR) motion sensors and remote control (IR) camera automated off-site warning systems could be realized.
2016-99 0025

U.S. Department of Defense Multiple-Parameter Biodosimetry Network

Source
Radiation Protection Dosimetry 2016

Author(s)

Abstract
The U.S. Department of Defense (USDOD) service members are at risk of exposure to ionizing radiation due to radiation accidents, terrorist attacks and national defense activities. The use of biodosimetry is a standard of care for the triage and treatment of radiation injuries. Resources and procedures need to be established to implement a multiple-parameter biodosimetry system coupled with expert medical guidance to provide an integrated radiation diagnostic system to meet USDOD requirements. Current USDOD biodosimetry capabilities were identified and recommendations to fill the identified gaps are provided. A USDOD Multi-parametric Biodosimetry Network, based on the expertise that resides at the Armed Forces Radiobiology Research Institute and the Naval Dosimetry Center, was designed. This network based on the use of multiple biodosimetry modalities would provide diagnostic and triage capabilities needed to meet USDOD requirements. These are not available with sufficient capacity elsewhere but could be needed urgently after a major radiological/nuclear event.

See also

Deployment of the 1st Area Medical Laboratory in a Split-Based Configuration During the Largest Ebola Outbreak in History. Under Infectious and Communicable Diseases.
COMPLIMENTARY MEDICINE

2016-99 0026

China's growing contribution to military Chinese medicine (2005-2014): a ten-year literature survey

Source
Journal of Integrative Medicine 2016 14 (6) 480-484

Author(s)
Gan,Z., Yang,G., et al.

Abstract
Objective: In China, people have relied on traditional Chinese medicine (TCM) for thousands of years to keep healthy and treat diseases. TCM also plays an important role in military health services and now forms a new discipline called military Chinese medicine (MCM). However, the type, quality and focus of research articles about MCM have not been reported. The present study was performed to analyze the growing trends of MCM and investigate China's contribution to military health services.; Methods: China's MCM publications were retrieved from the PubMed database, as well as China National Knowledge Infrastructure, Wanfang Data and Chongqing VIP database from 2005 to 2014.; Results: The study found that the number of published articles increased markedly from 2005 to 2014. Basic research studies comprised a small percentage of the literature. Among these studies, military training injury and special military environmental medicine were the most common research subjects in MCM. Military hospitals were the main institutions generating MCM literature.; Conclusion: The quality of MCM research is generally low, as indicated by the proportion of publications in core journals. Studies on MCM still lack high-quality publications and international cooperation.
CRITICAL CARE

See also

The handheld blood lactate analyser versus the blood gas based analyser for measurement of serum lactate and its prognostic significance in severe sepsis. Under Haematology.

Incidence, risk factors, and mortality associated with acute respiratory distress syndrome in combat casualty care. Under Respiratory & Pulmonary Diseases.
Prevalence and treatment of necrotizing ulcerative gingivitis (NUG) in the British Armed Forces: a case-control study

Source
Clinical Oral Investigations 2016 ( )
Author(s)
Dufty,J., Gkranias,N., et al.

Abstract
Objectives: Necrotizing ulcerative gingivitis (NUG) has been seen in military populations throughout history. This study aims to determine the prevalence, treatment modality and risk factors associated with NUG in the British Armed Forces.;
Materials and Methods: A whole population dataset of the British Armed Forces was searched to determine cases of NUG during the period 1 January to 31 December 2012. Individual case records were identified, and a case-control study undertaken with data gathered and analysed against a randomised control group, matched for age, sex and service.;
Results: A prevalence rate for NUG of 0.11 % was determined against the whole military population. The majority of cases received (alone or in combination) the following: oral hygiene instruction (66.5 %), antibiotics (64.4 %) and a mouthwash (58.1 %). Of the cases, 48.7 % received debridement. Analgesics were only prescribed in 8.4 % of the cases, and smoking cessation advice was only given in 10.7 % of the cases. Analysis of risk factors against the control group showed an increase in odds ratios for diagnosis of NUG of 3.4 (95 % CI 2.0-5.7) for current smokers and 7.3 (95 % CI 1.9-28.0) for individuals with an overall Basic Periodontal Examination (BPE) score of 3.;
Conclusions: Whilst NUG is a rare disease, it is evident from this study that it still occurs within the British Armed Forces. A strong association was shown between NUG and current smokers and those cases with an overall BPE score of 3.;
Clinical Relevance: This study provides prevalence data for NUG in the British Armed Forces and description of its treatment and associated risk factors. Oral hygiene and smoking must be addressed in patients with NUG and prescribing protocols should be carefully followed.
Rehabilitation of completely edentulous mandibular arch using immediately loaded transmucosal single-piece implants and overdenture.

Source
Medical Journal Armed Forces India 2016 72 (4)
Author(s)
Kumar,D., and Legha,V.S.,.

Abstract
Restoration of completely lost dentition using dentures is a well-known treatment entity since many centuries. With the increased life expectancy, this rehabilitation should have long-lasting treatment predictability. Conventional tissue-supported prosthesis requires frequent recall visits due to continued residual ridge resorption. The use of natural tooth- or root-supported overdentures has promised better prognosis due to enhanced stability and retention, and reduced ridge resorption. However, availability of periodontally sound abutment in strategic positions for successful rehabilitation is always a challenge.

Retrospective analysis of the prevalence and incidence of caries in the distal surface of mandibular second molars in British military personnel

Source
Author(s)
Pepper,T., Grimshaw,P., et al.

Abstract
Mandibular third molars are commonly removed because of distal caries in the adjacent tooth. To find out the prevalence of distal caries in mandibular second molars we retrospectively studied the primary care dental records of 720 British military personnel (653 men and 67 women) from various centres. These records are standardised and personnel are required to attend for inspection regularly. Those who had been under 20 years of age at enlistment, who had served for at least five years, and had five recorded dental inspections, were included. The median (IQR) period from the first to last inspection was 15 (9.7 - 19.2) years, and inspections were a median (IQR) of 14.1 (12.8 - 15.8) months apart. A total of 59/1414 (4.2%) mandibular second molars developed caries in their distal surfaces. This was 4% higher when they were associated with
a partially-erupted mandibular third molar than when associated with one that was fully erupted or absent (29/414 (7%) compared with 30/1000 (3%); p=0.001). Carious lesions developed in the distal aspect of 22/133 mandibular second molars (16.5%) that were adjacent to a mesioangularly impacted third molar. Of these, 19/22 were successfully restored. Four mesioangularly impacted mandibular third molars would have to be extracted to prevent one case of distal caries in a second molar (number needed to treat=3.25). Second molars that are associated with a partially-erupted mesioangular mandibular third molar have a higher risk of caries, and this can be reduced by removal of the third molar. However, distal caries in second molars seems to be a treatable and slowly-developing phenomenon and we recommend that the merits and risks of the prophylactic removal of third molars should be discussed with the patient, who should have long-term clinical and radiographic checks if the tooth is retained.
Safety and performance benefits of arginine supplements for military personnel: a systematic review

Source
Nutrition Reviews 2016 74 (11) 708-721

Author(s)
Brooks,J.R., Oketch-Rabah,H., et al.

Abstract
Context: Dietary supplements are widely used by military personnel and civilians for promotion of health.; Objective: The objective of this evidence-based review was to examine whether supplementation with l-arginine, in combination with caffeine and/or creatine, is safe and whether it enhances athletic performance or improves recovery from exhaustion for military personnel.; Data Sources: Information from clinical trials and adverse event reports were collected from 17 databases and 5 adverse event report portals.; Study Selection: Studies and reports were included if they evaluated the safety and the putative outcomes of enhanced performance or improved recovery from exhaustion associated with the intake of arginine alone or in combination with caffeine and/or creatine in healthy adults aged 19 to 50 years.; Data Extraction: Information related to population, intervention, comparator, and outcomes was abstracted. Of the 2687 articles screened, 62 articles meeting the inclusion criteria were analyzed. Strength of evidence was assessed in terms of risk of bias, consistency, directness, and precision.; Results: Most studies had few participants and suggested risk of bias that could negatively affect the results. l-Arginine supplementation provided little enhancement of athletic performance or improvements in recovery. Short-term supplementation with arginine may result in adverse gastrointestinal and cardiovascular effects. No information about the effects of arginine on the performance of military personnel was available.; Conclusions: The available information does not support the use of l-arginine, either alone or in combination with caffeine, creatine, or both, to enhance athletic performance or improve recovery from exhaustion. Given the information gaps, an evidence-based review to assess the safety or effectiveness of multi-ingredient dietary supplements was not feasible, and therefore the development of a computational model-based approach to predict the safety of multi-ingredient dietary supplements is recommended.
Two Days of Calorie Deprivation Induced by Underfeeding and Aerobic Exercise Degrades Mood and Lowers Interstitial Glucose but Does Not Impair Cognitive Function in Young Adults

Source
The Journal of Nutrition 2016
Author(s)

Abstract
Background: In studies assessing the effects of acute undernutrition on cognitive function, volunteers are sedentary and findings are equivocal, even though glucose concentrations fall substantially. However, military personnel and endurance athletes often are underfed when physical demands, and consequently energy expenditure, are substantial.

Objective: The objective of this study was to determine whether 2 d of near-total calorie deprivation combined with aerobic exercise degraded cognitive performance and mood.

Methods: A double-blind, placebo-controlled, crossover design was used. Twenty-three volunteers 17 men (mean ± SD age: 20.5 ± 0.7 y) and 6 women (mean ± SD age: 23.3 ± 1.4 y); ± SD body mass index (in kg/m(2)): 25 ± 3] participated for 68 h, including a 51-h inpatient phase in a calorie-deprived or fully fed state during which behavioral testing was conducted and interstitial glucose was monitored continuously. Mood and cognitive performance, including psychomotor and visual vigilance, visual match-to-sample, repeated acquisition (motor learning), N-back (working memory), and grammatical reasoning, were repeatedly assessed. During each condition, individual daily energy intake and expenditure were controlled. During calorie deprivation, volunteers consumed 266 ± 61 kcal/d; during full feeding, they consumed 3935 ± 769 kcal/d. Participants engaged in identical exercise sessions for 4 h/d at 40-65% of peak volume of oxygen uptake attained.

Results: Calorie deprivation did not affect any aspect of cognitive performance, but produced robust effects on mood measured by the Profile of Mood States, including increased tension (P < 0.001), fatigue (P < 0.001), and total mood disturbance (from -0.80 ± 5.1 to 20.1 ± 6.1; P < 0.001), and decreased vigor (P = 0.002), as indicated by treatment × trial (time) effects on ANOVA. Interstitial glucose concentrations were lower during calorie deprivation than in the fully fed condition (P = 0.002, treatment × trial interaction) and declined to 61 mg/dL by the end of the treatment condition.

Conclusion: In healthy young men and women, 2 d of severe calorie deprivation in combination with substantial aerobic exercise adversely affects multiple aspects...
of mood, but not cognition, in spite of substantial reductions in interstitial glucose concentrations.
Construction and Grouping of a Chinese People's Armed Police Forces Provincial-Level Mobile Rescue Hospital System

Source
Disaster Medicine and Public Health Preparedness 2016 pp1-5

Author(s)
Yu,B., Yang,Z., et al.

Abstract
In recent years, with the increasingly frequent variety of large-scale disasters that have happened in China, the Chinese People’s Armed Police Forces (PAP) has undertaken increasingly frequent and diversified tasks, which has led to greater requirements for the construction of emergency medical rescue equipment. Therefore, as determined by the characteristics of the PAP's tasks and based on the construction of special boxes and frame tent equipment, a new PAP mobile rescue hospital system was successfully developed, and all PAP provincial-level medical rescue teams have been equipped with this system. In the present article, we describe this mobile rescue hospital system, which is mainly composed of professional emergency vehicles, frame-type tents, and advanced medical equipment. The system has the following characteristics: significant integration, a fast response, flexibility, and practicability. The mobile rescue system is generally used as the army's own health service support system and to provide certain emergency medical rescue services to disaster-stricken people. The successful construction and further application of this system have significance in terms of accelerating the response of rescue teams and the emergency treatment ability of the PAP's provincial-level emergency medical rescue teams. (Disaster Med Public Health Preparedness. 2016;page 1 of 5).;

Conceptualizing the well-being of helpers living and working in war-like conditions: A mixed-method approach

Source
International Social Work 2016 59 (6) 938-952

Author(s)
University of Milano-Bicocca, Italy; McGill University, Canada
Abstract

The aim of this study was to add to current understanding of the constituents of well-being amongst Palestinian helpers working in war-like conditions. Using a purposive sampling design, 23 semi-structured in-depth interviews were conducted with health professionals in two Palestinian cities. Quantitative Textual Analysis was carried out, adopting content-pattern analysis via cluster methods. Two ‘macro’ dimensions emerged: specifically, a first dimension termed personal well-being and a second termed political well-being. Our investigation into the complex construct of quality of life illustrates that contextually based evidence does indeed help to identify bunched structures containing local cultural values defining well-being.

2016-99 0034

Experiences in disaster-related mental health relief work: An exploratory model for the interprofessional training of psychological relief workers

Source
Journal of Interprofessional Care 2016 1-8

Author(s)

Abstract
The purpose of this study was to begin to generate an exploratory model of the disaster-related mental health education process associated with the training experiences of psychological relief workers active during the Sichuan earthquake in China. The data consisted of semi-structured interviews with 20 psychological relief workers from four different professions (social workers, psychiatric nurses, psychiatrists, and counsellors) regarding their experiences in training and ideas for improvement. The model explains the need to use a people-centred community interprofessional education approach, which focuses on role-modelling of the trainer, caring for relief workers, paying attention to the needs of the trainee, and building systematic interprofessional education strategies. The proposed model identifies areas for the comprehensive training of relief workers and aims to address the importance of people-centred mental health service provisions, ensure intentional and strategic training of relief workers using interprofessional concepts and strategies, and use culturally attuned and community-informed strategies in mental health training practices.
Abstract

Background: The International Preparedness & Response to Emergencies & Disasters (IPRED) conferences are conducted bi-annually in order to share insights and lessons learned from diverse crises. The aim of the article is to bring the IPRED conferences into better professional attention and to share the main insights that were presented in IPRED IV, which was held in January 2016. Main body: The major lessons learned included: Planning, regional/global collaboration and public–private cooperation should be implemented in developing novel technologies. International humanitarian action necessitates coordination between diverse actors concerning all potential threats. Leadership/coordination and decision-making capacities of emergency response leaders should be enhanced to ensure quality of care. Ethics in disaster management: Triage decisions must not discriminate against terrorists, even when attackers and victims are treated simultaneously. Resilience management: Establishing family and community networks increases resilience of individuals and society. Training programs & exercises must be evaluated considering cost–benefits. Human resources: Teams of experts should be transformed into expert teams. Communication: A common disaster-management language needs to be established. Social media is useful due to bi-directional communication. Civil–military cooperation should be established to facilitate a coordinated response including common terminologies and exercises. Animal sheltering: First responders and pet owners are jeopardized if animals are not included in emergency planning. Re-unification of animals with their owners should be included in response models. Conclusions: IPRED conferences provide a platform for sharing insights and lessons learned from diverse emergencies and disasters. The conferences offer a unique opportunity to share knowledge aimed at improving emergency preparedness, networking between various parties, and substantiates the knowledge and experience of all professionals who take part in the proceedings.
2016-99 0036

Mass casualty events and health organisation: terrorist attack in Nice.

Source
Lancet 2016 388 (10058) 2272-2281

Author(s)
Carles,M., and Levraut,J.,.

Abstract
After the terrorist attack in Paris,1 France was hit again by terrorism in the city of Nice on the French Riviera on July 14, 2016. At 2233 h, a 19 tonne cargo truck crashed into crowds gathered along the waterfront to celebrate Bastille Day. This assault wounded more than 400 people and killed 86 pedestrians over a distance of about 1.1 miles. The deadly route of the truck began in front of the Lenval Children's Hospital (LCH). Here, we briefly report the planning and operation of the medical response.

2016-99 0037

The Military Medical Response to the 1906 San Francisco Earthquake and Fire.

Source
Military Medicine 2016 181 (11) 1399-1400

Author(s)
Snyder,T.L.,.

Abstract
The magnitude 7.8 earthquake1 and resulting fires that struck San Francisco on April 18, 1906, represent to us the prototypical natural disaster: extensive property destruction, complete disruption of civil services, a surge of human death and injury, and an instant sea of refugees needing support for months or years.

2016-99 0038

Readiness of hospital nurses for disaster responses in Taiwan: A cross-sectional study

Source
Nurse Education Today 2016 47 37-42

Author(s)
Tzeng,W., Feng,H., et al.

Abstract
Background: Because patients in disaster areas require the most critical care, mobilising hospital nurses has become a pivotal strategy. Given the importance of disaster nursing training programmes, understanding how well prepared hospital nurses are to provide disaster care is vital.

Objectives: This paper analyses the perceived readiness of hospital nurses for a disaster response and the factors influencing their report for work outside the hospital environment.

Design: A cross-sectional research design was used.

Settings: This study was conducted at a military hospital in Taiwan.

Participants: A sample of 311 registered nurses participated in this study.

Methods: Data were collected on readiness for disaster responses using a 40-item researcher-designed, self-administered questionnaire found to have satisfactory reliability and validity. The questionnaire has four domains: personal preparation (16 items), self-protection (11 items), emergency response (6 items), and clinical management (7 items). Data were analysed using descriptive statistics, independent t-tests and generalised linear models.

Results: The majority of hospital nurses demonstrated poor readiness for disaster responses. Scores on the four domains were most associated with nurses’ disaster-related training, experience in disaster response and emergency/intensive care experience.

Conclusions: Our results indicate that disaster-related training should be included in undergraduate programmes and continuing education courses to help hospital nurses recognise and improve their own readiness for disaster responses outside the hospital environment. Future research is needed to improve hospital nurses’ disaster-response readiness in Taiwan and other countries.

2016-99 0039

Toward a US Army Pacific (USARPAC) rapid deployment medical component in support of Human Assistance/Disaster Relief (HA/DR) operations: challenges with “Going in Light”. – Ctrl + Click to follow link

Source
Disaster and Military Medicine 2016

Author(s)
Johnson, R.J.,

Abstract
Background: This article reports the exploratory development and study efforts regarding the viability of a novel “going-in light” or “Going Light” medical component in support of US Army Pacific (USARPAC) Humanitarian Assistance/Disaster
Relief (HA/DR) missions, namely, a BLU-MED® incremental modular equipment package along with a Rapid Deployment Medical Team (RDMT). The study was conducted to uncover a way for the U.S. Army to: (1) better medically support the greater U.S. military Pacific Command, (2) prepare the Army for Pacific HA/DR contingencies, and (3) imprint a swift presence and positive contribution to Pacific HA/DR operations. Methods: The findings were derived from an intensive quasi-Military Decision Making Planning (MDMP) process, specifically, the Oracle Delphi. This process was used to: (1) review a needs assessment on the profile of disasters in general and the Pacific in particular and (2) critically examine the viability and issues surrounding a Pacific HA/DR medical response of going in light and incrementally. Results: The Pacific area of operations contains 9 of 15 countries most at risk for disasters in the most disaster-prone region of the world. So, it is not a matter of whether a major, potentially large-scale lethal disaster will occur but rather when. Solid empirical research has shown that by every outcome measured Joint Forces (Army, Navy, Air Force, and Marines) medical HA/DR operations have been inordinately successful and cost-effective when they employed U.S. Army medical assets inland near disasters' kinetic impact and combined sister services' logistical support and expertise. In this regard, USARPAC has the potential to go in light and successfully fill a vital HA/DR medical response gap with the RDMT and a BLU-MED®. However, initially going in fast and light and expanding and contracting as the situation dictates comes with subsequent challenges as briefly described herein that must be addressed. Conclusions: The challenges to going in light are not insurmountable “show stoppers.” They can be identified and addressed through planning and preparation. Hopefully, the acquisition rapid response light components will equip commanders with more effective options with which to conduct Pacific HA/DR operations and be a focal point for effective joint operations.

See also

Disaster Mental Health and Positive Psychology: An Afterward to the Special Issue. Under Psychology.

Introducing an antibiotic stewardship program in a humanitarian surgical hospital. Under Pharmacology and Toxicology.
Evaluation of Models of Pneumatic Tourniquet in Simulated Out-of-Hospital Use.

Source
Journal of Special Operations Medicine 2016 16 (3) 21-29
Author(s)
Kragh,J.F., and Aden,J.K.,.

Abstract
BACKGROUND: Pneumatic field tourniquets have been recommended for Military medics to stop bleeding from limb wounds, but no comparison of commercially available pneumatic models of tourniquet has been reported. The purpose of this study is to provide laboratory data on the differential performance of models of pneumatic tourniquets to inform decision-making of potential field assessment by military users. METHODS: Models included the Emergency and Military Tourniquet (EMT), Tactical Pneumatic Tourniquet 2-inch (TPT2), and Tactical Pneumatic Tourniquet 3-inch (TPT3). One user tested the three tourniquet models 30 times each on a manikin to collect data on effectiveness (yes-no bleeding control), pulse cessation, time to stop bleeding, total time of application, after time (after bleeding was stopped), pressure applied, blood loss volume, composite outcome (whether all individual outcomes were good or not), and pump count of the bulb used to inflate the tourniquet. RESULTS: Neither tourniquet effectiveness nor pulse cessation (ρ = 1; likelihood ratio, 0 for both) differed among tourniquet models: all three models had 100% (30 of 30 tests) for both outcomes. The EMT had the best or tied for best performance in time to stop bleeding, total time, after time, pressure blood loss, composite outcome, and pump count. CONCLUSION: Each of the three models of pneumatic field tourniquet was 100% effective in stopping simulated bleeding. Among the three models, the EMT showed the best or tied for best performance in time to stop bleeding, blood loss, and composite outcomes. All models are suitable for future field assessment among military users.

Evaluation of Two Junctional Tourniquets Used on the Battlefield: Combat Ready Clamp® versus SAM® Junctional Tourniquet.

Source
Journal of Special Operations Medicine 2016 16 (3) 41-46
Author(s)
Meusnier,J.G., and Dewar,C.,.
Abstract

BACKGROUND: Junctional hemorrhage (i.e., between the trunk and limbs) are too proximal for a tourniquet and difficult to compress. These hemorrhages are responsible for 20% of preventable deaths by bleeding on the battlefield. The majority of these involve the groin area. Devices allowing a proximal compression for arterial axes have been recently developed.

OBJECTIVE: The purpose of this study was to compare the use of two junctional-tourniquet models, the Combat Ready Clamp (CRoC®) and the SAM® Junctional Tourniquet (SJT), in simulated out-of-hospital trauma care when tourniquets were ineffective to stop the arterial flow.

METHODS: During our clinical study, 84 healthy volunteers wearing battle dress performed a physical exercise to come approximate the operational context. The volunteers were randomly divided into two groups according to the device (the CRoC or SJT) used as supplement to a tourniquet self-applied to the root of the thigh. The primary study end point was the complete interruption of popliteal arterial flow, measured with Doppler auscultation. Time to effectiveness and subjective questionnaire data to evaluate the devices' application were also collected.

RESULTS: Junctional device effectiveness was almost 90% for both the CRoC and the SJT, and did not differ between them, either used with a tourniquet ($\rho = .36$) or alone ($\rho = .71$). The time to effectiveness of the SJT was significantly shorter than that of the CRoC ($\rho = .029$). CONCLUSION: The SJT and the CRoC were equally effective. The SJT was faster to apply and preferred by the users. Our study provides objective evidence to the French Tactical Casualty Care Committee for improving junctional hemorrhage treatment.

2016-99 0042

Forward medevac during Serval and Barkhane operations in Sahel: A registry study

**Source**

Injury 2016

**Author(s)**

Carfantan,C., Goudard,Y., et al.

**Abstract**

Introduction: The French army has been deployed in Mali since January 2013 with the Serval Operation and since July 2014 in the Sahel-Saharan Strip (SSS) with the Barkhane Operation where the distances (up to 1100km) can be very long. French Military Medical Service deploys an inclusive chain from the point of injury (POI) to hospital in France. A patient evacuation coordination cell (PECC) has been deployed since February 2013 to organise forward medical evacuation (MEDEVAC) in the area between the POI and three forward surgical units. The
The purpose of this work was to study the medical evacuation length and duration between the call for Medevac location accidents and forward surgical units (role 2) throughout the five million square kilometers French joint operation area.

Materials and Methods: Our retrospective study concerns the French patients evacuated by MEDEVAC from February 2013 to July 2016. The PECC register was analysed for patients' characteristics, NATO categorisation of gravity (Alpha, Bravo or Charlie who must be respectively at hospital facility within 90 min, 4 h or 24 h), medical motive for MEDEVAC and the timeline of each MEDEVAC (from operational commander request to entrance in role 2).

Results: A total of 1273 French military were evacuated from February 2013 to July 2016; 533 forward MEDEVAC were analysed. 12.4% were Alpha, 28.1% Bravo, 59.5% Charlie. War-related injury represented 18.2% of MEDEVAC. The median time for Alpha category MEDEVAC patients was 145 min 100-251, for Bravo category patients 205 min 125-273 and 310 min 156-669 for Charlie. The median distance from the point of injury to role 2 was 126 km 90-285 for Alpha patients, 290 km 120-455 km for Bravo and 290 km 105-455 for Charlie.

Conclusions: Patient evacuation in such a large area is a logistic and human challenge. Despite this, Bravo and Charlie patients were evacuated in NATO recommended time frame. However, due to distance, Alpha patients time frame was longer than this recommended by NATO organisation. That's where French doctrine with forward medical teams embedded in the platoons is relevant to mitigate this distance and time frame challenge.

2016-99 0043

The success of battlefield surgical airway insertion in severely injured military patients: a UK perspective – Ctrl + click to follow link

Source
Journal of the Royal Army Medical Corps 2016 162 pp460-464

Author(s)
Tony Kyle, S le Clerc, A Thomas, I Greaves, V Whittaker and J E Smith

Abstract
Background The insertion of a surgical airway in the presence of severe airway compromise is an uncommon occurrence in everyday civilian practice. In conflict, the requirement for insertion of a surgical airway is more common. Recent military operations in Afghanistan resulted in large numbers of severely injured patients, and a significant proportion required definitive airway management through the insertion of a surgical airway.

Objective To examine the procedural success and survival rate to discharge from a military hospital over an 8-year period.
Methods A retrospective database and chart review was conducted, using the UK Joint Theatre Trauma Registry and the Central Health Records Library. Patients who underwent surgical airway insertion by UK medical personnel from 2006 to 2014 were included. Procedural success, demographics, Injury Severity Score, practitioner experience and patient survival data were collected. Descriptive statistics were used for data comparison, and statistical significance was defined as p<0.05. Results 86 patients met the inclusion criterion and were included in the final analysis. The mean patient age was 25 years, (SD 5), with a median ISS of 62.5 (IQR 42). 79 (92%) of all surgical airways were successfully inserted. 7 (8%) were either inserted incorrectly or failed to perform adequately. 80 (93%) of these procedures were performed either by combat medical technicians or General Duties Medical Officers (GDMOs) at the point of wounding or Role 1. 6 (7%) were performed by the Medical Emergency Response Team. 21 (24%) patients survived to hospital discharge. Discussion Surgical airways can be successfully performed in the most hostile of environments with high success rates by combat medical technicians and GDMOs. These results compare favourably with US military data published from the same conflict.

2016-99 0044

**Tactical damage control resuscitation in austere military environments** – Ctrl + click to follow link

**Source**
Journal of the Royal Army Medical Corps 2016 162 pp419-427

**Author(s)**
Yann, D., et al,

**Abstract**
Background Despite the early uses of tourniquets and haemostatic dressings, blood loss still accounts for the vast majority of preventable deaths on the battlefield. Over the last few years, progress has been made in the management of such injuries, especially with the use of damage control resuscitation concepts. The early application of these procedures, on the field, may constitute the best opportunity to improve survival from combat injury during remote operations. Data sources Currently available literature relating to trauma-induced coagulopathy treatment and far-forward transfusion was identified by searches of electronic databases. The level of evidence and methodology of the research were reviewed for each article. The appropriateness for field utilisation of each
medication was then discussed to take into account the characteristics of remote military operations.

Conclusions In tactical situations, in association with haemostatic procedures (tourniquet, suture, etc), tranexamic acid should be the first medication used according to the current guidelines. The use of fibrinogen concentrate should also be considered for patients in haemorrhagic shock, especially if point-of-care (POC) testing of haemostasis or shock severity is available. If POC evaluation is not available, it seems reasonable to still administer this treatment after clinical assessment, particularly if the evacuation is delayed. In this situation, lyophilised plasma may also be given as a resuscitation fluid while respecting permissive hypotension.

Whole blood transfusion in the field deserves special attention. In addition to the aforementioned treatments, if the field care is prolonged, whole blood transfusion must be considered if it does not delay the evacuation.

2016-99 0045

Transfusion support by a UK Role 1 medical team: a 2-year experience from Afghanistan – Ctrl + click to follow link

Source
Journal of the Royal Army Medical Corps 2016 162 pp440-444

Author(s)
Niall Aye Maung, H Doughty, S MacDonald and P Parker

Abstract
Introduction This paper describes the clinical governance, training, equipment and infrastructure developed to enable a UK Role 1 medical team to deliver forward transfusion in Southern Afghanistan. The aim was to explore the utility and feasibility of forward blood transfusion by a Role 1 medical team in an austere military environment.

Methods An audit of prospectively collected transfusion regulatory and cold chain data using standard-issue equipment and governance systems. TempIT tags were read before and after each mission to record blood storage temperature. Two years’ data were analysed to review the use of blood products, cold chain compliance and equipment issues.

Results Over 24 months, blood products were carried on over 1000 mission hours. Two clinical cases required transfusion and were successfully resuscitated. The team was able to correctly transport, store and deploy red cells and plasma on missions using standard Ministry of Defence (MOD) issue equipment. There were seven cold chain failures, all of which were addressed locally. Current cold chain and diagnostic equipment would require further optimisation for use at Role 1.

Conclusions An isolated Role 1 medical team can safely deliver blood transfusion on vehicle, helicopter or foot patrols. The transport and storage of blood created a large logistical burden.
for a relatively small clinical output. However, with further developments, this capability may have utility in contingency operations especially for isolated teams.

2016-99 0046

Validation of an Assessment Tool for Field Endotracheal Intubation.

Source
Military Medicine 2016 181 (11) e1484-e1490

Author(s)
Hart, D., and Clinton, J.,

Abstract
Objectives: Endotracheal intubation (ETI) is an important skill for all emergency providers; our ability to train and assess our learners is integral to providing optimal patient care. The primary aim of this study was to assess the inter-rater reliability (IRR) and discriminant validity of a novel field ETI assessment tool using a checklist-derived performance score (PS) and critical failure (CF) rate. Methods: Forty-three participants (18 paramedic students, 11 paramedics, and 14 emergency physicians [EPs]) performed ETI during a simulated trauma scenario on a pseudo-ventilated cadaver. Each participant was assessed by two experienced raters. IRR was calculated using the intraclass correlation coefficient. Regarding discriminant validity, a Kruskal–Wallis test was used to analyze PSs and a χ² test was used for CFs. Mean global rating scale (GRS) scores were compared using an analysis of variance. Results: The ETI assessment tool had excellent IRR, with an intraclass correlation coefficient of 0.94. There was a significant difference in PSs, CFs, and GRSs (p < 0.05) between cohorts. Conclusion: The novel field ETI assessment tool has excellent reliability among trained raters and discriminates between experienced ETI providers (EPs) and less experienced ETI performers using PSs, CFs, and GRSs on a fresh cadaveric model.

Source
Military Medicine 2016 181 (11) e1600-e1607

Author(s)
Taylor, M.K., and Hernández, L.M.,

Abstract
The cortisol awakening response (CAR) holds promise as a clinically important marker of health status. However, CAR research is routinely challenged by its innate complexity, sensitivity to confounds, and methodological inconsistencies. In this unprecedented characterization of CAR in elite military men (N = 58), we established summary parameters, evaluated sampling stability across two consecutive days, and explored the effect of subject compliance. Average salivary cortisol concentrations increased nearly 60% within 30 minutes of waking, followed by a swift recovery to waking values at 60 minutes. Approximately one in six were classified as negative responders (i.e., <0% change from waking to 30-minute postawakening). Three summary parameters of magnitude, as well as three summary parameters of pattern, were computed. Consistent with our hypothesis, summary parameters of magnitude displayed superior stability compared with summary parameters of pattern in the total sample. As expected, compliance with target sampling times was relatively good; average deviations of self-reported morning sampling times in relation to actigraph-derived wake times across both days were within ±5 minutes, and nearly two-thirds of the sample was classified as CAR compliant across both days. Although compliance had equivocal effects on some measures of magnitude, it substantially improved the stability of summary parameters of pattern. The first of its kind, this study established the foundation for a program of CAR research in a profoundly resilient yet chronically stressed population. Building from this, our forthcoming research will evaluate demographic, biobehavioral, and clinical determinants of CAR in this unique population.
2016-99 0048

Cortisol, heart rate, and blood pressure as early markers of PTSD risk: A systematic review and meta-analysis.

Source
Clinical Psychology Review 2016 49 79-91
Author(s)
Morris,M.C., Hellman,N., et al.

Abstract
Individuals with posttraumatic stress disorder (PTSD) typically exhibit altered hypothalamic-pituitary-adrenal (HPA) function and sympathetic nervous system (SNS) activity. The goals of this study were to determine whether HPA and SNS alterations in the immediate aftermath of trauma predict subsequent PTSD symptom development and whether inconsistencies observed between studies can be explained by key demographic and methodological factors. This work informs secondary prevention of PTSD by identifying subgroups of trauma survivors at risk for PTSD. This meta-analysis (26 studies, N = 5186 individuals) revealed that higher heart rate measured soon after trauma exposure was associated with higher PTSD symptoms subsequently (r = 0.13). Neither cortisol (r = -0.07) nor blood pressure (diastolic: r = -0.01; systolic: r = 0.02) were associated with PTSD symptoms which may be influenced by methodological limitations. Associations between risk markers (heart rate, cortisol, systolic blood pressure) and PTSD symptoms were in the positive direction for younger samples and negative direction for older samples. These findings extend developmental traumatology models of PTSD by revealing an age-related shift in the presentation of early risk markers. More work will be needed to identify risk markers and pathways to PTSD while addressing methodological limitations in order to shape and target preventive interventions.

2016-99 0049

Differential Impact of Homelessness on Glycemic Control in Veterans with Type 2 Diabetes Mellitus.

Source
Journal of General Internal Medicine 2016 31 (11) 1331-1337
Author(s)

Abstract
BACKGROUND: Veterans with evidence of homelessness have high rates of mental health and substance abuse disorders, but chronic medical conditions such as diabetes are also prevalent. OBJECTIVE: We aimed to determine the impact of homelessness on glycemic control in patients with
type 2 diabetes mellitus. DESIGN: Longitudinal analysis of a retrospective cohort. SUBJECTS: A national cohort of 1,263,906 Veterans with type 2 diabetes. Subjects with evidence of homelessness were identified using a combination of diagnostic and administrative codes. MAIN MEASURES: Odds for poor glycemic control using hemoglobin A1C (HbA1C) cutoff values of 8 % and 9 %. Homeless defined as a score based on the number of indicator variables for homelessness within a veterans chart. KEY RESULTS: Veterans with evidence of homelessness had a significantly greater annual mean HbA1C > 8 (32.6 % vs. 20.43 %) and HbA1C > 9 (21.4 % vs. 9.9 %), tended to be younger (58 vs. 67 years), were more likely to be non-Hispanic black (39.1 %), divorced (43 %) or never married (34 %), to be urban dwelling (88.8 %), and to have comorbid substance abuse (46.7 %), depression (42.3 %), psychoses (39.7 %), liver disease (18.8 %), and fluid/electrolyte disorders (20.4 %), relative to non-homeless veterans (all p < 0.0001). Homelessness was modeled as an ordinal variable that scored the number of times a homelessness indicator was found in the Veterans medical record. We observed a significant interaction between homelessness and race/ethnicity on the odds of poor glycemic control. Homelessness, across all racial-ethnic groups, was associated with increased odds of uncontrolled diabetes at a cut-point of 8 % and 9 % for hemoglobin A1C ; however, the magnitude of the association was greater in non-Hispanic whites [8 %, OR 1.55 (1.47;1.63)] and Hispanics [8 %, OR 2.11 (1.78;2.51)] than in non-Hispanic blacks [8 %, OR 1.22 (1.15;1.28)]. CONCLUSIONS: Homelessness is a significant risk factor for uncontrolled diabetes in Veterans, especially among non-Hispanic white and Hispanic patients. While efforts to engage homeless patients in primary care services have had some success in recent years, these data suggest that broader efforts targeting management of diabetes and other chronic medical conditions remain warranted.

2016-99 0050

Interstitial glucose concentrations and hypoglycemia during 2 days of caloric deficit and sustained exercise: a double-blind, placebo-controlled trial

Source
Journal of Applied Physiology 2016 121 (5) 1208-1216

Author(s)

Abstract
Military personnel and some athlete populations endure short-term energy deficits from reduced energy intake and/or increased energy expenditure (EE) that may degrade physical and cognitive performance due to severe hypoglycemia (<3.1
mmol/l). The extent to which energy deficits alter normoglycemia (3.9-7.8 mmol/l) in healthy individuals is not known, since prior studies measured glucose infrequently, not continuously. The purpose of this study was to characterize the glycemic response to acute, severe energy deficit compared with fully fed control condition, using continuous glucose monitoring (CGM). For 2 days during a double-blind, placebo-controlled, crossover study, 23 volunteers (17 men/6 women; age: 21.3 ± 3.0 yr; body mass index: 25 ± 3 kg/m) increased habitual daily EE 2,300 ± 450 kcal/day means ± SD) by 1,647 ± 345 kcal/day through prescribed exercise (~3 h/day; 40-65% peak O2 consumption), and consumed diets designed to maintain energy balance (FED) or induce 93% energy deficit (DEF). Interstitial glucose concentrations were measured continuously by CGM (Medtronic Minimed). Interstitial glucose concentrations were 1.0 ± 0.9 mmol/l lower during DEF vs. FED (P < 0.0001). The percentage of time spent in mild (3.1-3.8 mmol/l) hypoglycemia was higher during DEF compared with FED mean difference = 20.5%; 95% confidence interval (CI): 13.1%, 27.9%; P = 0.04], while time spent in severe (<3.1 mmol/l) hypoglycemia was not different between interventions (mean difference = 4.6%; 95% CI: -0.6%, 9.8%; P = 0.10).

Three of 23 participants spontaneously reported symptoms (e.g., nausea) potentially related to hypoglycemia during DEF, and an additional participant reported symptoms during both interventions. These findings suggest that severe hypoglycemia rarely occurs in healthy individuals enduring severe, short-term energy deficit secondary to heavy exercise and inadequate energy intake.

2016-99 0051

Stress, glucocorticoids and memory: implications for treating fear-related disorders.

Source
Nature Reviews Neuroscience 2016 24 No 2016

Author(s)
de Quervain D., Schwabe L., et al.

Abstract
Glucocorticoid stress hormones are crucially involved in modulating mnemonic processing of emotionally arousing experiences. They enhance the consolidation of new memories, including those that extinguish older memories, but impair the retrieval of information stored in long-term memory. As strong aversive memories lie at the core of several fear-related disorders, including post-traumatic stress disorder and phobias, the memory-modulating properties of glucocorticoids have recently become of considerable translational interest. Clinical trials have provided the first evidence that glucocorticoid-based pharmacotherapies aimed at attenuating...
aversive memories might be helpful in the treatment of fear-related disorders. Here, we review important advances in the understanding of how glucocorticoids mediate stress effects on memory processes, and discuss the translational potential of these new conceptual insights.
The impact of military activities on the concentration of mercury in soils of military training grounds and marine sediments

Source
Environmental Science and Pollution Research International 2016 23 (22) 23103-23113

Author(s)
Gębka, K., Beldowski, J., et al.

Abstract
Military activities have been conducted on land and at sea. Both during conflicts and in peace time, some regions served as a military training ground which included firing positions and bunkers. Mercury fulminate has been used in ammunition primers and detonators. Certain amount of ammunition was dumped into the Baltic Sea after the Second World War. Because of corroded containers, mercury can be released into the marine environment. The soil and sediment samples were taken from military training grounds, southern Baltic in 2014 and 2015. The concentration of mercury was determined by AMA-254 analyzer. Hg concentration was higher in the places of military activities, as compared to other areas. Ten times increased concentration of Hg was determined in soil sample collected in area of active gun range compared to the reference station. The significant higher concentration of mercury was detected in stations where chemical warfare agents were found.
Epidemiology

2016-99 0053

All-Cause Mortality Among US Veterans of the Persian Gulf War: 13-Year Follow-up

Source
Public Health Reports 2016 131 (6) 822-830

Author(s)

Abstract Objective: We determined cause-specific mortality prevalence and risks of Gulf War deployed and nondeployed veterans to determine if deployed veterans were at greater risk than nondeployed veterans for death overall or because of certain diseases or conditions up to 13 years after conflict subsided. Methods: Follow-up began when the veteran left the Gulf War theater or May 1, 1991, and ended on the date of death or December 31, 2004. We studied 621,901 veterans who served in the 1990-1991 Persian Gulf War and 746,247 veterans who served but were not deployed during the Gulf War. We used Cox proportional hazard models to calculate rate ratios adjusted for age at entry to follow-up, length of follow-up, race, sex, branch of service, and military unit. We compared the mortality of (1) Gulf War veterans with non–Gulf War veterans and (2) Gulf War army veterans potentially exposed to nerve agents at Khamisiyah in March 1991 with those not exposed. We compared standardized mortality ratios of deployed and nondeployed Gulf War veterans with the US population. Results: Male Gulf War veterans had a lower risk of mortality than male non–Gulf War veterans (adjusted rate ratio [aRR] = 0.97; 95% confidence interval [CI], 0.95-0.99), and female Gulf War veterans had a higher risk of mortality than female non–Gulf War veterans (aRR = 1.15; 95% CI, 1.03-1.28). Khamisiyah-exposed Gulf War army veterans had >3 times the risk of mortality from cirrhosis of the liver than nonexposed army Gulf War veterans (aRR = 3.73; 95% CI, 1.64-8.48). Compared with the US population, female Gulf War veterans had a 60% higher risk of suicide and male Gulf War veterans had a lower risk of suicide (standardized mortality ratio = 0.84; 95% CI, 0.80-0.88). Conclusion: The vital status and mortality risk of Gulf War and non–Gulf War veterans should continue to be investigated.
Demographic, Military, and Health Characteristics of VA Health Care Users and Nonusers Who Served in or During Operation Enduring Freedom or Operation Iraqi Freedom, 2009-2011

Source
Public Health Reports 2016 131 (6) 839-843

Author(s)
Dursa,E.K., Barth,S.K., et al.

Abstract
An estimated 60% of all Operation Enduring Freedom / Operation Iraqi Freedom (OEF/OIF) veterans who have left the military had used the US Department of Veterans Affairs (VA) for health care services as of March 31, 2015. What is not known, however, are the differences in demographic, military, and health characteristics between OEF/OIF veterans who use the VA for health care and OEF/OIF veterans who do not. We used data from the 2009-2011 National Health Study for a New Generation of US Veterans to explore these differences. We found that VA health care users were more likely than non-VA health care users to be non-Hispanic black, to be unmarried, to have served on active duty and in the army, to have been deployed to OEF/OIF, and to have an annual income less than $35,000. The prevalence of 21 chronic medical conditions was higher among VA health care users than among non-VA health care users. OEF/OIF veterans using the VA for health care differ from nonusers with respect to demographic, military, and health characteristics. These data may be useful for developing programs and policies to address observed health disparities and achieve maximum benefit for the VA beneficiary population.
FITNESS LEVELS & PHYSICAL PERFORMANCE

2016-99 0055

The Benefits of High-Intensity Functional Training Fitness Programs for Military Personnel

Source
Military Medicine 2016 181 (11) e1508-e1514

Author(s)
Haddock, C.K., Poston, W.S.C., et al.

Abstract
Introduction: High intensity functional training (HIFT) programs are designed to address multiple fitness domains, potentially providing improved physical and mental readiness in a changing operational environment. Programs consistent with HIFT principals such as CrossFit, SEALFIT and the US Marine Corps' High Intensity Tactical Training (HITT) are increasingly popular among military personnel. The goal of HIFT programs is to produce high levels of cardiorespiratory fitness, endurance and strength that exceed those achieved by following current physical activity recommendations.; Materials and Methods: Given the investment in and popularity of HIFT in the military, it is important to consider the potential impact of this approach to fitness training for the health of military personnel and their risk of training injury. In a previous report in this journal, we addressed the question of whether HIFT was associated with higher injury rates compared to other exercise programs. We argued that concerns about the injury potential of HIFT exercise programs were not supported by the scientific literature to date, although additional research was needed to directly compare injury rates in approaches such as CrossFit to traditional military fitness programs. In this article we will review the scientific data on the practical, health and fitness benefits of HIFT exercise programs for military populations.; Results: Practical benefits to HIFT exercise programs include shorter training times and volumes, exercises which simulate combat tasks, lower equipment costs, reduced potential for boredom and adaptation as a result of constant variation, less injury potential compared to high volume endurance training, and scalability to all fitness levels and rehabilitation needs. For instance, HIFT training volumes are typically between 25% to nearly 80% less than traditional military fitness programs without reductions in fitness outcomes. HIFT program also provide an impressive range of health benefits such as the promotion of metabolic conditioning and muscular strength, less systemic inflammation or oxidative damage compared to sustained aerobic activity, and promoting general physical preparedness (GPP) for the unpredictable physical demands of combat.; Conclusion: Given the unique benefits of HIFT, we recommend that these programs become the standard for
military physical training. Despite the promise of HIFT fitness programs, questions remain about implementing these programs in the military context. For instance, no large scale randomized trials comparing traditional military physical training with HIFT programs on both health and injury outcomes have been conducted. Such a trial could identify key elements from both types of programs which should be incorporated in future approaches to military fitness training. Also, research regarding the optimal ways of implementing HIFT to maximize both GPP and combat oriented physical skills is lacking. It is likely that an approach to HIFT training which promotes GPP for all personnel along with specialized elements selected on the basis of individual occupation demands would be maximally disseminable in the military.

2016-99 0056

Core Temperature in Service Members With and Without Traumatic Amputations During a Prolonged Endurance Event

Source
Military Medicine 2016 181 61-65

Author(s)

Abstract
Introduction: Service members with traumatic amputations may be at an increased risk of elevated core body temperature, since their ability to dissipate heat may decrease with the reduction in body surface area (BSA) after injury. Elevated core temperature can impair physical performance during combat operations potentially putting the service members and their teams at risk. The purpose of this study was to compare core temperature between individuals with and without amputations during a prolonged endurance event.; Materials and Methods: Twenty healthy male military service members (10 with amputations, 10 without) participated in the Bataan Memorial Death March 26.2-mile event on March 27, 2011. Data collected include BSA, body mass index, body composition, body weight before and after the event, core temperature during the event, and postevent hydration status. Body composition was measured by dual-energy X-ray absorptiometry. Body weight was measured by digital scale. Core temperature was measured by ingestible sensor. Hydration was measured by urine specific gravity. The Walter Reed Army Medical Center Institutional Review Board approved this study and participants provided written informed consent.; Results: Three participants’ data were not included in the analyses. No significant differences in core temperature were found between participants in both groups, and no correlation was found between core temperature and either
BSA or hydration status. There was no significant difference in maximal core temperature between the groups (p = 0.27). Nearly all participants (8 control, 6 amputation) reached 38.3°C, the threshold for increased risk of heat exhaustion. No subjects reached 40.0°C, the threshold for increased risk of heat stroke. Time spent above the 38.3°C threshold was not significantly different between groups, but varied widely by participant in relation to the duration of the event. Participants without amputations finished the event faster than participants with amputations (7.9 ± 1.4 vs. 9.6 ± 0.96, p < 0.01), possibly indicating that participants with amputations self-selected a slower pace to attenuate increased core temperature.

Conclusion: Until conclusive evidence is accumulated, it is prudent for military leaders, trainers, and military service members to closely monitor this population during physical activity to prevent heat injuries.

2016-99 0057

The effects of a transcontinental flight on markers of coagulation and fibrinolysis in healthy men after vigorous physical activity

Source
Chronobiology International 2016 1-14

Author(s)

Abstract
Purpose: Athletes and military service members are known to undergo strenuous exercise and sometimes have to take long haul flights soon afterwards; however, its combined effect on many physiological functions is relatively unknown. Therefore, we examined the combined effects of a full-body muscle-damaging workout and transcontinental flight on coagulation and fibrinolysis in healthy, resistance trained men. We also determined the efficacy of a full-body compression garment in limiting their coagulation responses.

Materials and Methods:
Nineteen healthy, resistance trained men flew from Connecticut (CT) to California (CA), performed a full-body muscle-damaging workout and then flew back to CT. Ten participants wore full-body compression garments (FCG) for the duration of both flights and during all other portions of the study except during workouts and blood draws, when they wore loose clothing. Nine controls wore loose clothing (CON) throughout the study. Blood samples were collected at 16 h and 3 h before the initial flight from CT, immediately after landing in CA, immediately before and immediately after the full-body workout in CA, immediately after landing in CT, and at 29 h after landing in CT. Plasma markers of coagulation included activated partial thromboplastin time (aPTT), prothrombin fragment 1+2 (PTF 1+2) and thrombin ant-thrombin (TAT).
Markers of the fibrinolytic system included the tissue plasminogen activator (tPA), plasminogen activator inhibitor-1 (PAI-1) and D-Dimer.; Results: Both FCG and CON groups exhibited a faster aPTT after the full-body workout compared to all other time points. Thrombin generation markers, TAT and PTF 1+2, increased significantly after the full-body workout and immediately after landing in CT. Additionally, tPA increased after the full-body workout, while PAI-1 increased before the flight to CA, after the full-body workout, and just after landing in CT. The D-Dimer significantly increased after the full-body workout and at 29 h post-flight in both groups. Between groups, aPTT was significantly faster and TAT elevated with the CON group at 29 h post-flight. Also, PAI-1 demonstrated higher concentrations immediately after landing in CT for the CON group.; Conclusion: A full-body muscle-damaging workout in conjunction with a trans-continental flight activated the coagulation and fibrinolytic systems. Additionally, wearing a full-body compression garment may limit coagulation following a workout through the recovery period.

2016-99 0058

Excess Stress Fractures, Musculoskeletal Injuries, and Health Care Utilization Among Unfit and Overweight Female Army Trainees

Source

Author(s)

Abstract
Background: Musculoskeletal injuries are prevalent among military trainees and certain occupations. Fitness and body mass index (BMI) have been associated with musculoskeletal conditions, including stress fractures.; Hypothesis: The incidence of, and excess health care utilization for, stress fracture and non-stress fracture overuse musculoskeletal injuries during the first 6 months of service is higher among unfit female recruits. Those who exceeded body fat limits are at a greater risk of incident stress fractures, injuries, or health care utilization compared with weight-qualified recruits.; Study Design: Cohort study; Level of evidence, 3.; Methods: All applicants to the United States Army were required to take a preaccession fitness test during the study period (February 2005-September 2006). The test included a 5-minute step test scored as pass or fail. BMI was recorded at application. There were 2 distinct comparisons made in this study: (1) between weight-qualified physically fit and unfit women and (2) between weight-qualified physically fit women and those who exceeded body fat limits. We compared the incidence of, and excess health care utilization for, musculoskeletal injuries, including
stress fractures and physical therapy visits, during the first 183 days of military service.; Results: Among the weight-qualified women, unfit participants had a higher non-stress fracture injury incidence and related excess health care utilization rate compared with fit women, with rate ratios of 1.32 (95% CI, 1.14-1.53) and 1.18 (95% CI, 1.10-1.27), respectively. Among fit women, compared with the weight-qualified participants, those exceeding body fat limits had higher rate ratios for non-stress fracture injury incidence and related excess health care utilization of 1.27 (95% CI, 1.07-1.50) and 1.20 (95% CI, 1.11-1.31), respectively. Weight-qualified women who were unfit had a higher incidence of stress fractures and related excess health care utilization compared with fit women, with rate ratios of 1.62 (95% CI, 1.19-2.21) and 1.22 (95% CI, 1.10-1.36), respectively. Among fit women exceeding body fat limits, the stress fracture incidence and related excess health care utilization rate ratios were 0.79 (95% CI, 0.49-1.28) and 1.44 (95% CI, 1.20-1.72), respectively, compared with those who were weight qualified.; Conclusion: The results indicate a significantly increased risk of musculoskeletal injuries, including stress fractures, among unfit recruits and an increased risk of non-stress fracture musculoskeletal injuries among recruits who exceeded body fat limits. Once injured, female recruits who were weight qualified but unfit and those who were fit but exceeded body fat limits had increased health care utilization. These findings may have implications for military accession and training policies as downsizing of military services will make it more important than ever to optimize the health and performance of individual service members.

2016-99 0059

Explaining Performance on Military Tasks in the Canadian Armed Forces: The Importance of Morphological and Physical Fitness Characteristics.

Source
Military Medicine 2016 181 (11) e1623-e1629

Author(s)
Tingelstad,H.C., and Theoret,D.,

Abstract
Several occupations apply physical fitness tests to assess occupational physical performance to confirm that their employees meet minimum physical employment standards. Knowledge about factors affecting performance on these physical fitness tests could provide valuable information concerning mode of training. The main purpose of this study was to determine which morphological and/or physiological characteristics could explain overall performance outcome on six complex military tasks used to measure Canadian Armed Forces (CAF) members' occupational fitness. Measures of
morphology (height, weight, and body composition) and physical fitness (grip strength, shuttle run time, and plank time etc.), together with performance on six common military tasks were recorded from female (n = 127) and male (n = 294) CAF members. Results showed large differences in both morphology and physical fitness between top and bottom performers in both the male and female group. Despite large differences in morphology, multiple linear regression analyses showed that measures of upper body strength and aerobic capacity could explain a large part of the performance variability in both the male and female group. This study showed that total performance on the CAF military physical fitness test is dependent on physical fitness rather than morphology.

2016-99 0060

The Interrelationship of Common Clinical Movement Screens: Establishing Population-Specific Norms in a Large Cohort of Military Applicants

Source
Journal of Athletic Training 2016
Author(s)
de la Motte, S., J., Gribbin, T. C., et al.

Abstract
Context: Musculoskeletal injuries (MSK-Is) are a leading cause of missed duty time and morbidity in the military. Modifiable risk factors for MSK-Is, such as inadequate core stability, poor movement patterns, and dynamic balance deficits, have not been identified in military applicants on entering service.

Objective: To establish normative functional movement data using a series of screens in military applicants entering basic training and explore relationships among several movement tests.

Design: Cross-sectional study.

Setting: Military Entrance Processing Station.

Patients or Other Participants: A total of 1714 (1434 male, 280 female) military applicants entering the US Army (n = 546), Navy (n = 414), Air Force (n = 229), or Marine Corps (n = 525).

Intervention(s): We conducted the Functional Movement Screen (FMS), Y-Balance Test (YBT), overhead squat (OHS), and Landing Error Scoring System (LESS). Movements were assessed using the scoring convention for each screen.

Main Outcome Measure(s): The FMS, YBT, OHS, and LESS scores and associations among the movement screens as well as clinical meaningfulness.

Results: A total of 1037 of the 1714 enrolled applicants were screened on the day they left for basic training. Normative means for this population were established: FMS = 14.7 ± 1.8, YBT anterior reach difference = 3.1 ± 3.0 cm, mean YBT composite differences = 8.0 ± 6.8 cm, mean YBT composite percentage = 90.9% ± 8.3%, OHS errors = 5.0 ± 2.8, and LESS
score = 5.7 ± 2.1. Backward regression results revealed that the YBT composite percentage was related to the FMS and OHS scores in males and to the FMS, OHS, and LESS results in females. However, clinical meaningfulness was limited to the YBT composite percentage, OHS errors, and LESS score in both males and females.; Conclusions: Sex-normative values for the FMS, YBT, OHS, and LESS screens were established for US military applicants, and some overlapped in the assessments. Overall, males performed better on the OHS and LESS and achieved a greater YBT composite percentage than females. The regression results revealed movement screen performance relationships that varied by sex and clinical meaningfulness. In future studies, we will determine if performance on any of the screens is associated with MSK-Is in basic trainees.

2016-99 0061

Isokinetic strength of fully operational U.S. Navy Seals with a previous history of shoulder and knee injury

Source
Isokinetics & Exercise Science 2016 24 (4) 349-356

Author(s)
Sell,T.C., Clark,N.C., et al.

Abstract
BACKGROUND: Unintentional musculoskeletal injury has a significant impact on military personnel which is amplified in U.S. Navy Sea, Air, and Land Operators who participate in year round physical and tactical training. Full recovery from injury including restoration of strength is necessary for safe participation in training and performance of missions. Inadequate recovery may predispose the Operator to risk of future injury. OBJECTIVE: The purpose of this study was to examine isokinetic knee and shoulder strength of previously injured Operators who had returned to full duty. METHODS: Two previously injured cohorts, a knee injury group (n = 46) and a shoulder injury group (n = 55), were created from a larger group of Operators (n = 305) who had undergone strength testing. A comparison cohort was also created from each injury group (knee injury control group (n = 77) and shoulder injury control group (n = 121). All participants underwent isokinetic strength testing of their group assigned joint. This included knee flexion/extension strength testing for the knee group and shoulder internal/external rotation strength testing for the shoulder group. Side-to-side comparisons were made within each injury group and to the control group (injured extremity to strongest extremity of the control group). Individual counts within the injured Operators with strength deficits greater than 10% in their injured extremity were also
performed. RESULTS: No significant side-to-side or between group differences were observed for the knee injury group. No significant side-to-side or between group differences were observed except for shoulder external rotation strength which was significantly different between groups \( p = 0.003 \). Side-to-side strength deficits greater than 10% were observed in 20 to 25% of the injured Operators. CONCLUSION: The group comparisons demonstrate the effectiveness of the military group’s rehabilitation and performance training programs, but continued vigilance and tracking of injured individuals are necessary to insure full recovery and return to duty as a small number of each injured cohort did have strength deficits bilaterally.

2016-99 0062

The Relationship Between Mastery Orientation and Maximal Oxygen Uptake Among Military Cadets: The Mediating Role of Intrinsic Motivation.

Source
Military Behavioral Health 2016 4 (4) 398-408

Author(s)
Buch,R., and Dysvik,A.,

Abstract
Drawing upon achievement goal theory (AGT) and self-determination theory (SDT), a longitudinal study was conducted among 248 military cadets across a two-year time span. The results showed that mastery orientation at Time 1 was positively associated with intrinsic motivation at Time 2 after controlling for intrinsic motivation at Time 1. Furthermore, intrinsic motivation assessed at Time 2 was positively associated with maximal oxygen uptake (VO2 max) at Time 3 after controlling for VO2 max at Time 2. This suggests that military cadets who strive to improve their personal performance (i.e., mastery-oriented individuals) are more likely to exhibit an increase in their level of VO2 max and that this increase can be attributed to increased intrinsic motivation.

2016-99 0063

Review of the Digital Application Babies on the Homefront.

Source
Military Behavioral Health 2016 4 (4) 420-423

Author(s)
Peterson,H.L., and Jacob,M.,

Abstract
The U.S. Air Force has committed significant resources to implementing policies and programs consistent with the
Department of Defense's concept of total force fitness. A 12-item measure of Comprehensive Airman Fitness was proposed and empirically examined, using component measures of mental fitness, physical fitness, social fitness, and spiritual fitness from the Support and Resiliency Inventory. Results confirm that the components of airman fitness can be conceptualized as pieces of a total fitness construct and that the measure is invariant across subgroups. Implications for policy and practice are discussed, and an agenda for future research is presented.

2016-99 0064

The search for the best infantry boot. – Ctrl + Click to follow link.

Source
Disaster and Military Medicine 2016
Author(s)
Milgrom,C., and Sorkin,A.,

Abstract
Background: The combat role of the twenty-first century infantry soldier has changed and accordingly their boots should evolve to meet these new needs and maximize soldier performance. Objective: To evaluate injuries and durability of the hot weather infantry boots (HWIB) in elite infantry training and assess the initial performance of newly designed Israeli infantry boots (NDIB). Methods: In Phase 1, the durability of the HWIB during elite infantry training was evaluated at weeks 10, 19 and 64 in a cohort of 67 recruits. At each exam recruits removed their boots which were assessed for wear and integrity and photographed. The number of times recruits changed their boots was recorded. In Phase 2, foot injuries were assessed in a cohort of 73 elite infantry recruits wearing HWIB. In Phase 3, 65 infantry recruits were issued the NDIB. Recruits feet were measured for width and shoe size using the Brannock device and then followed for problems associated with their boots. Foot lesions were document by photographs.

Results: Phase 1: The mean longevity of HWIB in training was 5.2 ± 0.2 (SE) months, (95 % CI 4.83–5.61). Phase 2: 38 % of the elite infantry recruits wearing HWIB had at least one complaint and 31 (42 %) were found to have boot related injuries in a total of 56 injured areas. Phase 3: The mean predicted boot size (42.8 ± 1.7) based on Brannock measurements, was less than the size of the NDIB actually worn, 43.1 ± 1.6. Only 34.8 % of the feet were width D (the standard shoe width). At 9 day follow up, 55 of the 65 recruits who wore NDIB reported at least one problem with them (85 %, p < 0.0001, compared to HWIB). By 3 weeks, all but five recruits had returned to wearing the HWIB. Of the recruits wearing NDIB, 47 (72 %) were found to have had at least one boot related injury with a total number of 180 injured foot areas.
Conclusions: The HWIB was well tolerated by the elite infantry recruits and associated with significantly less foot injuries than the NDIB. The longevity of the HWIB in demanding elite infantry training was five months. Trial registration: NCT02810002 retrospectively registered June 22, 2016.

2016-99 0065

Soldier Health Habits and the Metabolically Optimized Brain.

Source
Military Medicine 2016 181 (11) e1499-e1507

Author(s)
Friedl, K.E., and Breivik, T.J.,

Abstract
Human performance enhancement was the subject of a NATO workshop that considered the direct benefits of individual soldier health and fitness habits to brain health and performance. Some of the important health and fitness include physical activity and purposeful exercise, nutritional intake, sleep and rest behaviors, psychological outlook and mindfulness, and other physiologically based systemic challenges such as thermal exposure. These influences were considered in an integrated framework with insights contributed by each of five participating NATO member countries using representative research to highlight relevant interrelationships. Key conclusions are that (1) understanding the neurobiological bases and consequences of personal health behaviors is a priority for soldier performance research, and this also involves long-term brain health consequences to veterans and (2) health and fitness habits have been underappreciated as reliably effective performance enhancers and these should be preferred targets in the development of scientifically based recommendations for soldier brain health and performance.

See Also

Confirmatory Factor Analysis of a Measure of Comprehensive Airman Fitness. Under Aviation and Space Medicine.

Heavy Loads and Lifting are Risk Factors for Musculoskeletal Injuries in Deployed Female Soldiers. Under Orthopaedics.

Physical fitness characteristics of active duty US Air Force members with HIV infection. Under Infectious and Communicable Diseases.
Quality of Life in United States Veterans With Combat-Related Ostomies From Iraq and Afghanistan

Source
Military Medicine 2016 181 (11) e1569-e1574

Author(s)

Abstract
Objective: Assess the impact of ostomy formation on quality of life for U.S. Service Members.; Methods: U.S. personnel sustaining colorectal trauma from 2003 to 2011 were identified using the Department of Defense Trauma Registry. A cross-sectional observational study was conducted utilizing prospective interviews with standard survey instruments. Primary outcome measures were the Stoma Quality of Life Scale and Veterans RAND 36 scores and subjective responses. Patients with colorectal trauma not requiring ostomy served as controls.; Results: Of 177 available patients, 90 (50.8%) male veterans consented to participate (55 ostomy, 35 control). No significant differences were observed between ostomy and control groups for Injury Severity Score (25.6 ± 9.9 vs. 22.9 ± 11.8, p = 0.26) or mechanism of injury (blast: 55 vs. 52%, p = 0.75); nonostomates had fewer anorectal injuries (3.2 vs. 47.9%, p < 0.01). Median follow-up was 6.7 years. Veterans RAND-36 Physical and Mental Component Scores were similar between groups. About 45.8% of ostomates were willing-to-trade a median of 10 years (interquartile range = 5-15) of their remaining life for gastrointestinal continuity. At last follow-up, 95.9% of respondents’ combat-related ostomies were reversed with a median duration of 6 (range = 3-19) months diverted.; Conclusions: Ostomy creation in a combat environment remains safe and does not have a quantifiable impact on long-term quality of life.

See also

Hiatal Hernia as the Cause of G-Induced Abdominal Pain.
Under Aviation and Space Medicine.
The handheld blood lactate analyser versus the blood gas based analyser for measurement of serum lactate and its prognostic significance in severe sepsis.

Source
Medical Journal Armed Forces India 2016 72 (4) 325-331

Author(s)
Singh,S., and Bhardawaj,A.,

Abstract
Background This study was done to compare the accuracy of the Lactate Pro LT 1710 (Arkray Inc., Kyoto, Japan) with the Combiline Plus (Eschweiler GmbH & Co. KG Holzkoppelweg, Kiel, Germany), and also, to analyze the prognostic significance of serum lactates and Simplified Acute Physiology Score 3 (SAPS 3) in patients of severe sepsis. Methods 106 patients of severe sepsis admitted to the ICU were screened. The serum lactate from an arterial sample analyzed in both the machines was recorded at admission and at 48 h. These patients were then followed up to the 28th day for mortality. Results The Lactate Pro LT 1710 handheld point of care lactate meter provides consistent results comparable to the Eschweiler Combiline blood gas analyser. Serum lactate concentration was significantly higher in nonsurvivors at the time of admission (3.30 ± 1.26) and at 48 h (4.34 ± 1.73). Lactate clearance at 48 h appears to be a better predictor of mortality than the lactate levels at 0 h and 48 h. The mean SAPS 3 at admission amongst survivors was significantly less as compared to nonsurvivors. The SAPS 3 had improved to 47.44 (±11.79) in survivors at 48 h, while in nonsurvivors it had worsened to 81.98 (±12.32) (p = 0.00); thus, a worsening SAPS 3 at 48 h had a poorer prognosis. Conclusions The Lactate Pro LT 1710 provides similar results to the Combiline Eschweiler blood gas analyser and is a cheaper alternative. It would prove to be a boon in peripheral hospitals in the aggressive management of critically ill patients.
2016-99 0068

Low prevalence of anaemia among the wives of serving personnel in a military station: A community-based study.

Source
Medical Journal Armed Forces India 2016 72 (4) 356-361

Author(s)
Dudeja,P., and Tewari,R.,

Abstract
Background Various studies in India have reported the prevalence of anaemia to be more than 50% among women of the reproductive age group. A community-based study was done to find out the prevalence of anaemia in non-pregnant, non-lactating wives of serving soldiers in a military station.

Methods It was a cross-sectional study. The sample size was 600. Venous blood was collected for haemoglobin and ferritin levels. Analysis was done by SPSS 20.

Results The mean age at marriage was 19.8 years (SD + 2.76). The average age at first childbirth was 20.88 years. Major symptoms reported were weakness (24.34%), giddiness (23.47%), fatigue (20.17%) and heavy bleeding (3.13%). Prevalence of anaemia in our study was 13.9%, which is much below the national prevalence. Prevalence of iron-deficient status was reported in 153 (26%) individuals. Out of these, 81 subjects were non-anaemic (Hb > 12d/dL) but were iron deficient (ferritin <15 μg/L). Sixty out of these 81 subjects reported presence of fatigue and 36 had weakness. Statistically significant associated observations of anaemia were low Body Mass Index, irregular menstrual pattern, shortened menstrual cycle and increased duration of bleeding (p < 0.05). Low ferritin levels were significantly associated with low BMI, not using Oral Contraceptive Pills and bleeding for more than 3 days during menstrual cycle (p < 0.05). Conclusion The scenario of low prevalence of anaemia in women under the cover of the Armed Forces Medical Services represents an ‘island of excellence’.

2016-99 0069

Use of an extended INR follow-up interval for Veteran patients in an anticoagulation clinic.

Source
Journal of Thrombosis and Thrombolysis 2016 ( ) 1-8

Author(s)

Abstract
A prospective, single-arm study of 50 participants evaluated an extended INR follow-up interval to determine the implementation feasibility and safety of an extended interval in
Veterans on a stable dose of warfarin. A protocol was designed to allow for a rigorous, yet pragmatic evaluation of a 12-week INR follow-up interval. Feasibility was determined by study enrollment, retention, and participant achievement rates for the extended INR interval. Safety was determined by bleeding and thromboembolism rates. Participants were monitored for 6 months. Despite the long-term stability of participants prior to enrollment, only 56% achieved a 12-week follow-up interval and only 34% of enrolled participants maintained a 12-week interval. Sixteen percent of participants were never eligible for an extension of their INR follow-up interval despite meeting initial enrollment criteria. There were two major bleeding events and one participant who experienced a thromboembolic event. Implementation of an extended interval of INR follow-up appears feasible as participant enrollment goals were met and pharmacists were able to follow the study protocol. However, a lower than expected proportion of participants were able to achieve and maintain an extended INR follow-up interval. Future evaluations are needed to confirm the safety of an extended INR interval.

2016-99 0070

Transfusion: -80degreeC frozen blood products are safe and effective in military casualty care.

Source

Author(s)

Abstract
Introduction: The Netherlands Armed Forces use -80degreeC frozen red blood cells (RBCs), plasma and platelets combined with regular liquid stored RBCs, for the treatment of (military) casualties in Medical Treatment Facilities abroad. Our objective was to assess and compare the use of -80degreeC frozen blood products in combination with the different transfusion protocols and their effect on the outcome of trauma casualties. Materials and Methods: Hemovigilance and combat casualties data from Afghanistan 2006-2010 for 272 (military) trauma casualties with or without massive transfusions (MT: >6 RBC/24hr, N = 82 and non-MT: 1-5 RBC/24hr, N = 190) were analyzed retrospectively. In November 2007, a massive transfusion protocol (MTP; 4:3:1 RBC:Plasma:Platelets) for ATLS class III/IV hemorrhage was introduced in military theatre. Blood product use, injury severity and mortality were assessed pre- and post-introduction of the MTP. Data were compared to civilian and military trauma studies to assess effectiveness of the frozen blood products and MTP. Results: No ABO incompatible blood products were transfused and only
1 mild transfusion reaction was observed with 3,060 transfused products. In hospital mortality decreased post-MTP for MT patients from 44% to 14% (P = 0.005) and for non-MT patients from 12.7% to 5.9% (P = 0.139). Average 24-hour RBC, plasma and platelet ratios were comparable and accompanying 24-hour mortality rates were low compared to studies that used similar numbers of liquid stored (and on site donated) blood products. Conclusion: This report describes for the first time that the combination of -80degreeC frozen platelets, plasma and red cells is safe and at least as effective as standard blood products in the treatment of (military) trauma casualties. Frozen blood can save the lives of casualties of armed conflict without the need for in-theatre blood collection. These results may also contribute to solutions for logistic problems in civilian blood supply in remote areas. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

See also

**Early prevention of trauma-related infection/sepsis.** Under Trauma Medicine.

**Pathophysiology of sepsis-induced myocardial dysfunction.** Under Cardiology.
Military Interprofessional Health Care Teams: How USU is Working to Harness the Power of Collaboration.

Source
Military Medicine 2016 181 (11) 1404-1406

Author(s)
D'Angelo, M.R., and Saperstein, A.K.,

Abstract
Despite efforts to increase patient safety, hundreds of thousands of lives are lost each year to preventable health care errors. The Institute of Medicine and other organizations have recommended that facilitating effective interprofessional health care team work can help address this problem. While the concept of interprofessional health care teams is known, understanding and organizing effective team performance have proven to be elusive goals. Although considerable research has been conducted in the civilian sector, scholars have yet to extend research to the military context. Indeed, delivering the highest caliber of health care to our service men and women is vitally important. This commentary describes a new initiative as the Uniformed Services University of the Health Sciences aimed at researching the characteristics of successful military interprofessional teams and why those characteristics are important. It also describes the interprofessional education initiative that Uniformed Services University is launching to help optimize U.S. military health care.
Evaluation of the clinical characteristics and economic burden of United States veteran patients diagnosed with the hepatitis C virus.

Source

Abstract
Objectives: To assess the clinical characteristics and economic burden of patients diagnosed with the hepatitis C virus (HCV) in the US veteran population. Methods: Patients diagnosed with HCV (International Classification of Diseases, Ninth Revision, Clinical Modification code: 070.41, 070.44, 070.51, 070.54, and V02.62.) were selected from the Veterans Health Administration (VHA) database (October 1, 2010-September 30, 2014). The first observed diagnosis date was defined as the index date. Continuous medical and pharmacy benefits were required for 12 months pre- and post-index date. The top ten most common comorbidities were calculated for the 12-month baseline period. The 10 most commonly prescribed medications for 60 days post-index date were calculated. Health care resource utilization (inpatient, outpatient, and pharmacy), and costs (inpatient, outpatient, pharmacy, and total costs) were assessed for the 12-month follow-up period. Descriptive statistics were calculated as means +/- standard deviation (SD) and percentages to measure treatment, cost, and utilization distribution in the sample. Results: A total of 95,937 veterans were diagnosed with HCV during the study period. Among the most common baseline comorbidities, hypertension was the only condition comprising more than 20% of patients. Patients were diagnosed with other comorbid disorders including diabetes (11.99%), depressive disorder (10.32%), post-traumatic stress disorder (10.00%), and lumbago (9.31%). The most commonly prescribed medications were omeprazole (17.50%), lisinopril (16.60%), amlodipine besylate (12.05%), aspirin (10.91%), and gabapentin (9.86%). The percentage of inpatient stays (25.17%), outpatient visits (99.88%), and pharmacy visits (93.86%) were also calculated. HCV patients incurred $11,860 (SD= $43,927) in inpatient, $13,547 (SD= $19,023) in outpatient, and $3,002 (SD= $11,391) in pharmacy costs. Total expenditures were observed to be $28,409 (SD= $54,516). Conclusions: HCV treatment is complicated by the presence of comorbidities, hypertension in
particular. HCV was associated with high inpatient and outpatient visit utilization, resulting in a high cost burden.
As Sister on an Hospital Ship

Source
Canadian Nurse 2016 112 (8) 12-13

Abstract
We present a first-hand account from 1918 of life on board a hospital ship. The author offers sometimes amusing (by today’s standards) practical advice on how to prepare, what to expect and how to cope, while delivering harsh assessments of the skills of the ship’s orderlies. The very real dangers of these sea journeys get little mention.

'Don't worry about me': The world war ii experience of adeline simonson, nurse anesthetist with the 95th evacuation hospital.

Source
AANA Journal 2016 84 (5) 309-315

Abstract
Lieutenant Adeline Simonson, a young nurse from McGregor, Minnesota, was one of more than 2,000 nurse anesthetists who served in WWII. Like the 59,000 other nurses who joined the Army Nurse Corps (ANC) between 1941 and 1945, they worked in physically exhausting and often hazardous conditions. Until recently, their vital contribution to the Allied war effort has attracted little scholarly or popular interest. Neither the Veteran’s Administration nor historical societies kept any records, and the nurses rarely spoke about their service. A handful of recent studies has finally begun to shed light on the history of the ANC, yet their discussion of nurse anesthetists is surprisingly scant. This article aims to fill a gap in our knowledge by throwing light on the ordeal of one nurse anesthetist attached to the 95th Evacuation Hospital. Drawing on unpublished correspondence and diaries, we recreate the story of Adeline Simonson and examine its lessons for combat nursing. The frontline setting fostered an unprecedented level of collaboration between nurse anesthetists and physician anesthetists. Under the guidance of Captain Marshall Bauer, the 95th Evac's sole anesthesiologist, Simonson not only
acquired new techniques such as the administration of spinal anesthesia, but also helped train other nurses. Most important, while under fire the medical officers learned to overcome varying levels of ability and experience and to work together as a unit.

**2016-99 0075**

**History of internal fixation (part 1): early developments with wires and plates before World War II.**

**Source**
International Orthopaedics 2016 ( ) 1-11

**Author(s)**
Hernigou P. and Pariat,J.

**Abstract**
Though the date at which an orthopaedic implant was first used cannot be ascertained with any certainty, the fixation of bone fracture using an iron wire was reported for the first time in a French manuscript in 1775. The first techniques of operative fracture treatment were developed at the end of the 18th and in the beginning of the 19th centuries. The use of cerclage wires to fix fractures was the most frequent fixation at this time. The French Berenger-Feraud (1832-1900) had written the first book on internal fixation. However internal fixation of fractures could not become a practical method before Lister had ensured the safety of open reduction and internal fixation in the treatment of fractures. Lister is not only the father of asepsis; he also used metal wires to fix even closed fractures. The first internal fixation by means of a plate and screws was described by Carl Hansmann in 1858 in Hamburg. Nevertheless, Arbuthnot Lane (1892) and Albin Lambotte (1905) are considered to be the founders of this method, which was further developed by Sherman in the first part of the 20th century.

**2016-99 0076**

**Post-war research on post-traumatic stress disorder. Part I. Research before 1989.**

**Source**
Psychiatria Polska 2016 50 (5) 935-944

**Author(s)**
Rutkowski K. and Dembinska,E.

**Abstract**
The paper presents the post-war history of post-traumatic research conducted at the Department of Psychiatry of the Jagiellonian University and the analysis of the main research approaches and selected publications. The time after World War II passed in Poland in two directions: coping with the
finished war trauma and simultaneously the experience of communist persecution trauma. First scientific publications appeared in the fifties and were focused on the research of former concentration camps prisoners (KZ-Syndrome). Between 1962 and 1989 a special edition of Przeglad Lekarski, which concentrated entirely on war trauma research, was published. The journal was nominated for the Peace Nobel Prize twice. The research team from the Department of Psychiatry headed by Professor Antoni Kepinski made a very extensive description of KZ-Syndrome issues. The paper summarizes the most important contemporary research findings on psychopathology of KZ-Syndrome (Szymusik), reaction dynamics (Teutsch), after camp adjustment (Orwid), paroxysmal hypermnnesia (Poltawska), somatic changes (Gatarski, Witusik). The result of the study was the basis for the development of a methodology and a new look at the classification of the consequences of post-traumatic stress disorder, as well as the development of ethical attitudes towards patients.

2016-99 0077


Source
Psychiatria Polska 2016 50 (5) 945-958

Author(s)
Rutkowski K. and Dembinska, E.

Abstract
The paper illustrates the research on post-traumatic disorders conducted in Krakow at the Department of Psychotherapy and the Department of Psychiatry of the Jagiellonian University Medical College after 1989. The political changes that occurred in Poland after 1989 allowed the research to be extended with new groups of survivors. Having conducted the research of the former concentration camp prisoners, the study started to be carried out in the two research teams: 1) the former prisoners of the Stalinist period, Siberian deportees, war veterans and others were examined at the former Social Pathology Institute of the Department of Psychiatry, Jagiellonian University Medical College and the work is continued at the Department of Psychotherapy, Jagiellonian University Medical College; 2) at the Child and Adolescent Psychiatric Clinic the research of the Holocaust survivors and their families has been carried on by the same team up to the present day. The paper outlines the historical background of persecution, its course and a typical impact it had on health of each of the group of survivors. All individuals suffer from widely understood post-traumatic disorders (F43.1 and F62.0). However, differences in the profile of symptoms can be noted. The manner in which the research
was organised and its modifications are also presented. The aim of this paper is to familiarise the Reader with the presented concepts and contextualise them in a political and historical dimensions, and in the continuity of the previous research on KZ-Syndrome and war neuroses.

2016-99 0078

PTSD prevalence among Polish World War II survivors.

Source
Psychiatria Polska 2016 50 (5) 923-934

Author(s)
LisTurlejska M., Luszczynska A., et al.

Abstract
Aim. Over the past decade research has been published in several Western European countries on the prevalence of PTSD among World War II survivors, mostly civilians. Prevalence rates ranged from 1.9% to 10.8%. The aim of the study was to measure the frequency of PTSD occurrence among Polish WWII survivors. Method. Data from 96 persons: 59 women and 37 men, aged 70-96 were analyzed. All participants were born before 1945. They completed Polish adaptations of: Posttraumatic Diagnostic Scale (PDS), Impact of Events Scale (IES), Beck's Depression Inventory (BDI) and WWII trauma related questionnaire. Results. Prevalence rate of potential PTSD was 32.3% Mean values of both number and severity of symptoms of PTSD were significantly higher for respondents with at least one war related trauma comparing to the participants who did not relate any such trauma. Conclusions. Comparing to other studies on WWII related PTSD the prevalence rate of possible PTSD was very high. Looking for possible explanation of such results seems to be an important challenge.

2016-99 0079

Remembering Pearl Harbor at 75 Years

Source
American Journal of Nursing 2016 116 (12) 54-55

Author(s)
Liehr,P. and Sopcheck,J.

Abstract
On December 7, 1941, the Sunday-morning quiet of the U.S. naval base in Pearl Harbor, Hawaii, was shattered by dive-bombing Japanese fighter planes. The planes came in two waves-and when it was all over, more than 2,400 were killed and more than 1,100 were injured. Nurses were stationed at U.S. Naval Hospital Pearl Harbor, Tripler General Hospital (now Tripler Army Medical Center), Hickam Field Hospital,
Schofield Barracks Station Hospital, and aboard the USS Solace, and witnessed the devastation. But they also did what nurses do in emergencies—they responded and provided care to those in need. Here are the stories of a few of those nurses.

2016-99 0080

Western University (No. 10 Canadian Stationary Hospital and No. 14 Canadian General Hospital): a study of medical volunteerism in the First World War

Source
Canadian Journal of Surgery. Journal Canadien De Chirurgie
2016 59 (6) 13716-13716

Author(s)
Istl, A.C. and McAlister, V.C.

Abstract
Summary: The Canadian government depended on chaotic civilian volunteerism to staff a huge medical commitment during the First World War. Offers from Canadian universities to raise, staff and equip hospitals for deployment, initially rejected, were incrementally accepted as casualties mounted. When its offer was accepted in 1916, Western University Hospital quickly adopted military decorum and equipped itself using Canadian Red Cross Commission guidelines. Staff of the No. 10 Canadian Stationary Hospital and the No. 14 Canadian General Hospital retained excellent morale throughout the war despite heavy medical demand, poor conditions, aerial bombardment and external medical politics. The overwhelming majority of volunteers were Canadian-born and educated. The story of the hospital's commanding officer, Edwin Seaborn, is examined to understand the background upon which the urge to volunteer in the First World War was based. Although many Western volunteers came from British stock, they promoted Canadian independence. A classical education and a broad range of interests outside of medicine, including biology, history and native Canadian culture, were features that Seaborn shared with other leaders in Canadian medicine, such as William Osler, who also volunteered quickly in the First World War.;
Clinical indicators associated with HIV acquisition in the United States Air Force

Source
AIDS Care 2016 1-5
Author(s)

Abstract
Mandatory HIV screening of United States Air Force (USAF) personnel every two years effectively identifies incident cases, however testing frequency limits the ability to detect early HIV infection. Identifying clinical indicators of HIV in the USAF population is necessary to develop a supplemental provider-based targeted testing strategy. We conducted a matched case-control study of male active duty USAF personnel with a new HIV diagnosis (n = 452) between 1996 and 2011 matched to five randomly selected controls (n = 2176). The relationship between clinical diagnoses, determined by ICD-9 codes, and HIV infection was assessed using conditional logistic regression. In unadjusted analyses of ICD-9 codes ever and within the last two years before HIV diagnosis, the conditional odds of HIV infection were greater in those with clinical signs and symptoms of HIV (cOR 5.05, 95% CI 4.00-6.39), mental health diagnoses (cOR 2.61, 95% CI 1.86-3.67), and STI diagnoses (cOR 2.33, 95% CI 1.50-3.60). Compared to those with ≤10 medical encounters in the two years prior to HIV diagnosis, individuals with 11-35 medical encounters (cOR 2.19, 95% CI 1.73-2.79) and >35 medical encounters (cOR 4.15, 95% CI 2.69-6.39) had a higher odds of HIV acquisition. In multivariate analyses, clinical signs and symptoms of HIV within the last two years of HIV diagnosis (cOR 4.10, 95% CI 3.22-5.22) and ever having a mental health diagnosis (cOR 1.97, 95% CI 1.44-2.70) remained significant (p < .01). Clinical encounters, particularly those featuring clinical signs and symptoms of HIV or a history of mental health complaints, provide an opportunity for targeted testing as a supplement to mandated testing at two-year intervals. Provider education to increase HIV testing in persons at risk would enhance early HIV diagnosis and potentially reduce forward transmission in the USAF population.
Deployment of the 1st Area Medical Laboratory in a Split-Based Configuration During the Largest Ebola Outbreak in History

Source
Military Medicine 2016 181 (11) e1675-e1684

Author(s)

Abstract
Background: The U.S. Army 1(st) Area Medical Laboratory (1(st) AML) is currently the only deployable medical CBRNE (Chemical, Biological, Radiological, Nuclear, and Explosives) laboratory in the Army's Forces Command. In support of the United States Agency for International Development Ebola response, the U.S. military initiated Operation United Assistance (OUA), and deployed approximately 2,500 service members to support the Government of Liberia's Ebola control efforts. Due to its unique molecular diagnostic and expeditionary capabilities, the 1(st) AML was ordered to deploy in October of 2014 in support of OUA via establishment of Ebola testing laboratories. To meet the unique mission requirements of OUA, the unit was re-organized to operate in a split-based configuration and sustain four separate Ebola testing laboratories.

Methods: This article is a review of the 1(st) AML's OUA participation in a split-based configuration. Topics highlighted include pre-deployment planning/training, operational/logistical considerations in fielding/withdrawing laboratories, laboratory testing results, disease and non-battle injuries, and lessons learned.

Findings: Fielding the 1(st) AML in a split-based configuration required careful pre-deployment planning, additional training, optimal use of personnel, and the acquisition of additional laboratory equipment. Challenges in establishing and sustaining remote laboratories in Liberia included: difficulties in transportation of equipment due to poor road infrastructure, heavy equipment unloading, and equipment damage during transit. Between November 26, 2014 and February 18, 2015 the four 1(st) AML labs successfully tested blood samples from patients and oral swabs collected by burial teams in rural Liberia. The most significant equipment malfunction during laboratory operations was generators powering the labs, with the same problem impacting headquarters. Generator failures delayed laboratory operations/result reporting, and put temperature sensitive reagents at risk. None of the 22 1(st) AML soldiers (at remote labs or headquarters) had an Ebola exposure, none were
infected with malaria or other tropical diseases, and none required evacuation from the time deployed to remote sites. The primary medical condition encountered was acute gastroenteritis, and within the first week of arrival to Liberia, 19 (86%) soldiers were affected.; Discussion/impact/recommendations: With proper planning and training, the 1(st) AML can successfully conduct split-based operations in an outbreak setting, and this capability can be utilized in future operations. The performance of the 1(st) AML during the current Ebola outbreak highlights the value of this asset, and the need to continue its evolution to support U.S. military operations.

2016-99 0083

Detection of Diarrhea Etiology Among U.S. Military Personnel During Exercise Balikatan 2014, Philippines, Using TaqMan Array Cards

Source
Military Medicine 2016 181 (11) e1669-e1674

Author(s)
Lertsethtakarn,P., Nakjarung,K., et al.

Abstract
Background: Military personnel are vulnerable to diarrhea. Diarrheal disease is common when deployed for operations or exercise in developing countries. Although diarrheal disease is transient, cumulative time lost and medical asset can have a significant impact on military operations. Currently, diagnostics of diarrheal etiology typically relies on a mixture of conventional bacteriology, enzyme-linked immunosorbent assay, and polymerase chain reaction (PCR)-based methods including real-time PCR. These methods, however, can be time and labor intensive, although the identification of diarrheal etiology needs to be informative and rapid for treatment and prevention. Real-time PCR has been increasingly used to identify pathogens. Real-time PCR panels of common diarrheal pathogens have been developed, but several diarrheal pathogens are not included in the panel. An expanded and customizable panel to detect diarrhea etiology has been developed employing TaqMan Array Card (TAC) technology. TAC performs 384 real-time PCR reactions simultaneously. As currently configured for diarrheal disease by the University of Virginia, a maximum of 8 samples can be tested simultaneously with approximately 48 target pathogens per sample including bacteria, fungi, helminths, protozoan parasites, and viruses. TAC diarrheal disease panels have been successfully applied to detect pathogens in acute diarrheal stool samples from young children in several international multicenter diarrhea studies.; Methods: In this study, TAC was applied to stool samples collected under an
approved human use protocol from military personnel with acute diarrhea participating in the annual joint military exercise, Balikatan, between the Republic of the Philippines and the United States in 2014. Several established pathogen-specific real-time PCR detection assays were also performed in parallel for comparative purposes.; Findings: TAC was applied to 7 stool samples. Campylobacter spp. was the most common diarrheal disease pathogen detected. Results from TAC matched 5 out of 6 pathogen specific real-time PCR assays. TAC required a total of 5-6 hours to complete all the procedures from nucleic acid extraction and data analysis, whereas a minimum of 18 hours and 4 hours are required for conventional bacteriology and enzyme-linked immunosorbent assay, respectively, per pathogen.; Discussion: With TAC, pathogen load can be estimated from the amount of nucleic acid present for each pathogen, which can be analyzed further to better determine pathogen attribution and to compare pathogen load between case and control samples. Unfortunately, such correlative analysis was not possible because of the limited sample size available in this study. A larger sample size is needed for further evaluation of TAC on a specific population set, including military personnel. Regardless, TAC was found to be a useful and functional diagnostic platform that is less time-consuming, easy to use with high reproducibility, and costs less per sample compared to the current typically employed methods. The successful application of TAC in acute diarrhea stool samples from a US military population in the Philippines demonstrates its versatility as a potential candidate for a next-generation diagnostics platform.

2016-99 0084

Do alcohol-based hand rubs reduce the incidence of acute diarrhea during military deployments? A prospective randomized trial

Source
Travel Medicine and Infectious Disease 2016

Author(s)
Succo,T., De Laval,F., et al.

Abstract
Background: Acute diarrhea remains a public health concern in armed forces deployed in tropical areas where access to water and soap is limited. This study aims to assess the effectiveness of alcohol-based hand rubs (ABHR) on incidence of diarrhea in poor hygiene conditions.; Method: A prospective randomized trial was conducted between November 2014 and January 2015 among French military troops deployed in Africa to compare a group of soldiers receiving usual hand hygiene recommendations (control group), to a group of soldiers who
received ABHR in addition to usual hand hygiene recommendations (intervention group). Data on diarrhea and hygiene behaviors were collected using self-questionnaires. The incidence rate of diarrhea episodes in groups was compared.; Results: Participation rate was 59% (236/400). The proportion of individuals who used ABHR was 97% in the intervention group and 62% in the control group. The overall incidence rate of diarrheal episodes was observed to be in the region of 60 per 100 persons-month without any significant difference between groups after adjustment on confounding factors (p = 0.93). Handwashing with soap was used on average 4 times a day in the control group and twice a day in the intervention group (p = 0.93). It was the only significant protective factor for diarrhea (p < 10(-3)).; Conclusion: Our results support that supplying soap and good quality water should be a priority on the field.

2016-99 0085

Identification of HIV infection-related DNA methylation sites and advanced epigenetic aging in HIV+, treatment-naïve U.S. veterans

Source

Author(s)

Abstract
Objective: HIV-positive individuals are at higher risk than healthy persons for aging-related diseases, including myocardial infarction and non-AIDS defining cancers. Recent evidence suggests that HIV infection may modulate changes in the host cell epigenome, and these changes represent a potential mechanism through which HIV infection accelerates aging. We assessed the difference in DNAm age, an aging marker involving multiple age-related CpG sites, among antiretroviral treatment (ART) naïve HIV-positive and HIV-negative individuals in a cohort of veterans from the Veterans Aging Cohort Study (VACS).; Design: Peripheral blood samples were collected from 19 ART-naïve, HIV-positive and 19 HIV-negative male participants, matched by age and race. Blood samples were collected from HIV-positive participants 7-11 years after ART initiation.; Methods: We compared DNAm age between HIV-positive and HIV-negative groups at baseline and between HIV-positive patients at baseline and follow-up. We also performed an epigenome-wide analysis to identify CpG methylation sites associated with HIV infection.; Results: DNA methylation age in HIV-positive individuals is, on average, 11.2 years higher than HIV- subjects at baseline, and 2 of 10 HIV-positive individuals showed an increase in DNAm age after ART initiation. Epigenome-wide association studies showed an
association of HIV infection with one site, in gene VPS37B, which approached statistical significance in our cohort (p=3.30×10, Bonferroni-corrected threshold=1.22×10) and was replicated in a second, larger cohort. Conclusion: Antiretroviral treatment-naïve HIV-positive individuals are significantly older compared to HIV-negative individuals in the VACS cohort. Longitudinal changes in DNAm age are highly variable across individuals after initiation of antiretroviral therapy.

2016-99 0086

Physical fitness characteristics of active duty US Air Force members with HIV infection

Source
Medicine 2016 95 (44) e5227-e5227

Author(s)
De,A., Xu,X., et al.

Abstract
Human immunodeficiency virus (HIV) infection is associated with reduced muscle mass and adverse metabolic effects. We evaluated the impact of HIV infection on longitudinal exercise performance in US Air Force (USAF) members with HIV infection. USAF members perform standardized fitness assessments every 6 to 12 months with a composite score comprised of abdominal circumference, push-ups, sit-ups, and 1.5-mile run. Fitness tests between 2004 and 2014 for male USAF members with HIV infection (n=172) were compared with male HIV-negative controls (~10 per case; n=1636) matched by age and rank category at service entry. Fitness tests for cases (n=1821) were divided into 2 groups, before (pre-HIV) and after (post-HIV) diagnosis, and compared with control fitness assessments (n=30,443) by paired t tests. Random-effects regression analyses were also performed to compare fitness components. Mean composite scores for cases were higher post-HIV (87.06±9.10) compared with pre-HIV (84.92±8.36; P=0.004) and did not differ from respective controls. Compared with pre-HIV, mean push-up (51.50±9.67 vs 50.35±11.18; P=0.018) and sit-up (51.66±7.81 vs 50.57±9.19; P<0.001) counts improved post-HIV, whereas run times were similar (11:53±1:42 vs 11:51±2:05; P=0.056). Regression analyses demonstrated that cases had significantly lower predicted abdominal circumference and push-up counts over time compared with controls, regardless of pre-HIV or post-HIV status (P<0.05 for all). Although functional limitations may occur in the setting of HIV infection, vigorous exercise performance can be both preserved and improved in HIV-infected individuals at a level comparable with HIV-uninfected persons.
Repeat infection with Neisseria gonorrhoeae among active duty U.S. Army personnel: a population-based case-series study

Source

Author(s)

Abstract
Little information is known on the rate of repeat gonorrhoea infection among U.S. military personnel. We analyzed all gonorrhoea cases reported to the Defense Medical Surveillance System during 2006-2012 to determine the rate of repeat infection. During the seven-year study period, 17,602 active duty U.S. Army personnel with a first incident gonorrhoea infection were reported. Among the 4987 women with a first gonorrhoea infection, 14.4% had at least one repeat infection. Among the 12,615 men with a first gonorrhoea infection, 13.7% had at least one repeat infection. Overall, the rate of repeat gonorrhoea infection was 44.5 and 48.9 per 1000 person-years for women and men, respectively. Service members aged 17-19 years (hazard ratio HR) for women = 1.51; HR for men = 1.71), African-American personnel (HR for women = 1.26; HR for men = 2.17), junior enlisted personnel (HR for women = 2.64; HR for men = 1.37), and those with one year or less of service (HR for women = 1.23; HR for men = 1.37) were at higher risk of repeat infection. The findings from this study highlight the need to develop targeted prevention initiatives including education, counseling, and retesting to prevent gonorrhoea reinfections among U.S. Army personnel.

Routine chlorhexidine gluconate use onboard navy surface vessels to reduce infection: A cluster randomized controlled trial

Source
American Journal of Infection Control 2016 44 (12) 1535-1538

Author(s)

Abstract
Background Hand disinfection with chlorhexidine gluconate (CHG) is commonly used for preventing the spread of infection in medical institutions and the community, but studies on its use in military settings have been inconclusive. We examined the effects of CHG on morbidity in Israeli Navy ships. Methods
This was a controlled, cluster randomized study that took place at a major naval base in Israel. Ships were randomly selected into the study (347 sailors) and primary control (350 sailors) groups. Additional nonintervention control groups included other sailors serving on the base (n = 360) and logistics and support personnel (n = 859). CHG disinfection devices were installed on all ships in the study group, alongside soap and water. Morbidity was analyzed using a computerized patient record, subjective self-report questionnaires, and a sample of hand cultures. Compliance with hand hygiene was analyzed using a self-report hygiene attitudes questionnaire at the beginning of the trial and after 3 months. The study took place between May and September 2014. Results No significant differences were found between the groups in terms of sick days or light-duty days or in the number of acute gastrointestinal or respiratory cases. Sailors were found to have more skin infections than controls, but this was not significantly reduced by CHG. Hand cultures demonstrated that continuous use of CHG did not cause a reduction in colonization. There were no statistically significant differences in self-reported hygiene practices. Conclusions CHG did not demonstrate any medical benefit over the use of soap and water onboard Israeli Navy ships.

See also


Tuberculosis Screening and Control in the US Military in War and Peace. Under Public Health.
Meeting the healthcare needs of transgender people within the armed forces: putting UK military policy into practice

Source
Journal of Clinical Nursing 2016 25 (23) 3743-3749

Author(s)

Abstract
Aims and objectives
To explain how the healthcare needs of transgender personnel are met within the United Kingdom Armed Forces.

Background
It may be that when transgender people disclose their gender preference that they are at increased risk of social exclusion. The United Kingdom Armed Forces has an inclusive organisational policy for the recruitment and management of transgender personnel.

Design
This is a position paper about how the healthcare needs of transgender military personnel are met by the United Kingdom Armed Forces.

Methods
United Kingdom Armed Forces policy was placed into context by reviewing current research, discussing medical terminology and describing the policy. This was followed by an account of how UK AF policy is applied in practice.

Discussion
Where armed forces had an inclusive policy for the management of transgender personnel, there seemed to be little cause for secrecy and zero tolerance of discrimination when compared to nations where this was not the case. Medical terminology has changed to reflect a more inclusive, less stigmatising use of language. The United Kingdom Armed Forces policy has been described as progressive and inclusive. The application of this policy in practice may be dependent upon strong leadership and training. The wider United Kingdom Armed Forces seems capable of adopting a pragmatic and flexible approach to meeting the healthcare needs of transgender personnel.

Conclusion
The United Kingdom Armed Forces value diversity within their workforce and have a progressive, inclusive policy for the recruitment and management of transgender personnel.

Relevance to Clinical Practice
When supporting a transgender military person, healthcare professionals, civilian organisations and military line managers should consider referring to United Kingdom Armed Forces.
policy as early as possible. Other military and uniformed services may wish to examine the United Kingdom Armed Forces exemplar in order to consider the applicability within their own organisational setting.

See also

Mental health of transgender veterans of the Iraq and Afghanistan conflicts who experienced military sexual trauma. Under Sexual Trauma.
Military Medicine Interest Groups in U.S. Medical Schools.

Source
Military Medicine 2016 181 (11) e1449-e1454
Author(s)
Guenther,T.M., and Coker,T.J.,

Abstract
Medical student interest groups are organizations that help expose students to different medical specialties and fields of medicine while in medical school. Military medicine interest groups (MMIGs) are a particular type of interest group that spreads information about military medicine, fosters mentorship, and camaraderie between students and military faculty, and increases the opportunities for leadership while in medical school. Surveys were sent to all U.S. medical schools to determine how many schools had an MMIG. If a medical school had a group, a second survey was sent to the student leader to determine more information about how their group operated (such as type of participants, funding sources, activities, faculty involvement, military health care provider involvement, etc.). Fifty-six percent of U.S. medical schools who responded were found to have an MMIG and most participants were students in the Health Professions Scholarship Program. Information about military medicine was found to be the biggest impact of having a group at a medical school and student leaders expressed they wished to have more military health care provider involvement. The results of this study could help start MMIGs at other medical schools, as well as give ideas to current MMIGs on how other groups operate.

Perspective of the Graduating Medical Student: The Ideal Curriculum for the Fourth Year of Undergraduate Medical Education.

Source
Military Medicine 2016 181 (11) e1455-e1463
Author(s)
Andrews,M.A., and Paolino,N.D.,

Abstract
Objective: To explore medical students' perspective regarding the fourth year of medical school and common educational activities thereof. Methods: The authors surveyed students graduating in 2012 with a military service obligation about the
importance of common fourth-year activities, the proportion of the fourth year devoted to these activities, and important considerations for the fourth-year curriculum. The authors calculated mean importance scores for educational activities and mean proportions of the fourth year that should be devoted to certain activities. Two reviewers independently coded free-text answers to identify and calculate frequencies for common themes. Results: The response rate was 40% (376/942). Participants rated activities related to improving clinical skills and securing the residency of their choice as more than activities such as learning business skills, conducting research, and studying basic sciences. Participants indicated that electives and direct patient care should comprise the majority of the fourth year and frequently mentioned improving specialty-specific clinical skills, pursuing personal medical interests, and taking time to relax as important fourth-year themes. Conclusions: Students value activities related to securing and succeeding in their chosen residency and the opportunity to pursue electives and take vacation. Faculty should consider the student perspective when reforming curricula.

2016-99 0092

Supporting medics' and corpsmen's move into professional nursing

Source
Nurse Education Today 2016 47 10-14
Author(s)

Abstract
• Service members/veterans express frustration with barriers to accessing nursing education.
• Recognition of military education and training is perceived as “too good to be true”.
• Unemployment is an acute problem for all post-9/11 military veterans.
• Medics/corpsmen bring significant knowledge and skills to the healthcare workforce.
Transitioning Former Military Medics to Civilian Health Care Jobs: A Novel Pilot Program to Integrate Medics Into Ambulatory Care Teams for High-Risk Patients

Source
Military Medicine 2016 181 (11) e1464-e1469

Author(s)
Watts,B., Lawrence,R.H., et al.

Abstract
Despite their medical training, record of military service, and the unmet needs within the health care sector, numerous challenges face veterans who seek to leverage their health care skills for employment after leaving the military. Creative solutions are necessary to successfully leverage these skills into jobs for returning medics that also meet the needs of health care systems. To achieve this goal, we created a novel ambulatory care health technician position on the basis of existing literature and modeled after a program which incorporates former military medics in emergency departments. Through a quality improvement approach, a position description, interview process, training program with clinical competencies, and team integration plan were developed and implemented. To date, two medics have been hired, successfully trained on relevant skill sets, and are currently caring for medical outpatients (under the supervision of licensed clinical personnel) as crucial interdisciplinary team members. Taken together, a multifaceted approach is required to effectively harness military medics' skills and experiences to meet identified health delivery needs.

See also

Preventing violent extremism: the role of doctors.

Source
Lancet 2016 388 (10057) 2219-2221

Author(s)
Middleton, J...

Abstract
Confidentiality and trust are at the heart of the relationship between doctor and patient. Yet, a new Open Society Justice Initiative report, Eroding Trust: the UK’s Prevent Counter-Extremism Strategy in Health and Education, published on Oct 19, 2016, shows that this relationship, and its confidentiality and trust, are under threat, particularly for doctors working in parts of the UK with substantial Muslim populations.
MENTAL HEALTH

2016-99 0095

2 CE Test Hours: Veteran Women: Mental Health-Related Consequences of Military Service

Source
The American Journal of Nursing 2016 116 (11) 40-41
Author(s)
Contrada, E.

Abstract
To provide information on relevant research about the mental health efforts of deployment among military women.

2016-99 0096

An exploratory study of the mental toughness psychological skills profile psychometrics, and the mediating effect of social support sources on mental toughness and suicidal ideation among military police

Source
Journal of Police and Criminal Psychology; Dec 2016; vol. 31 (no. 4); p. 295-303
Author(s)
Smith, Hilary A.; Wolfe-Clark, Andrea L.; Bryan, Craig J.

Abstract: Research suggests that social support and mental toughness (i.e., the ability to effectively cope with stress despite adversity and/or failure) may be associated with decreased suicide risk, although methods for measuring mental toughness remain largely undeveloped. The relationship remains largely unknown. In response to this research gap, the psychometric properties of the Mental Toughness Psychological Skills Profile (MTPSP; Asken 2005), and its association with suicide ideation, were evaluated in a sample of active duty U.S. Air Force Security Forces personnel, a subpopulation especially vulnerable to suicide risk. 273 participants from two Air Force bases completed self-report scales including the MTPSP. Results indicated that the MTPSP is comprised of five subscales: Negative Mindset, Positive Mindset, Confidence, Achievement, and Health Behaviors. All five MTPSP factors were independently correlated with general distress, somatic anxiety, positive affect, presence of meaning in life, search for meaning in life, positive self-bias, social support sources, and suicide ideation. The Confidence factor was the only factor that had a significant association with suicide ideation when all five factors were considered.
simultaneously ($\beta = -0.18$, $p = .016$), but was fully mediated by social support ($\beta = -0.17$, $p = .033$). Self-confidence may be associated with reduced suicide risk because those individuals tend to report higher social support.

2016-99 0097

An Intervention With Meaning: Perceptions of Safety Planning Among Veteran Health Administration Providers.

Source

Author(s)

Abstract
Background: The Veterans Health Administration (VHA) health-care system utilizes a multilevel suicide prevention intervention that features the use of standardized safety plans with veterans considered to be at high risk for suicide. Aims: Little is known about clinician perceptions on the value of safety planning with veterans at high risk for suicide. Method: Audio-recorded interviews with 29 VHA behavioral health treatment providers in a southeastern city were transcribed and analyzed using qualitative methodology. Results: Clinical providers consider safety planning feasible, acceptable, and valuable to veterans at high risk for suicide owing to the collaborative and interactive nature of the intervention. Providers identified the types of veterans who easily engaged in safety planning and those who may experience more difficulty with the process. Conclusion: Additional research with VHA providers in other locations and with veteran consumers is needed.

2016-99 0098

Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis.

Source
Lancet 2016 388 (10057) 2272-2281

Author(s)
West,C.P., and Dyrbye,L.N.,

Abstract
Background Physician burnout has reached epidemic levels, as documented in national studies of both physicians in training and practising physicians. The consequences are negative effects on patient care, professionalism, physicians’ own care and safety, and the viability of health-care systems. A more complete understanding than at present of the quality and outcomes of the literature on approaches to prevent and
reduce burnout is necessary. Methods In this systematic review and meta-analysis, we searched MEDLINE, Embase, PsycINFO, Scopus, Web of Science, and the Education Resources Information Center from inception to Jan 15, 2016, for studies of interventions to prevent and reduce physician burnout, including single-arm pre-post comparison studies. We required studies to provide physician-specific burnout data using burnout measures with validity support from commonly accepted sources of evidence. We excluded studies of medical students and non-physician health-care providers. We considered potential eligibility of the abstracts and extracted data from eligible studies using a standardised form. Outcomes were changes in overall burnout, emotional exhaustion score (and high emotional exhaustion), and depersonalisation score (and high depersonalisation). We used random-effects models to calculate pooled mean difference estimates for changes in each outcome. Findings We identified 2617 articles, of which 15 randomised trials including 716 physicians and 37 cohort studies including 2914 physicians met inclusion criteria. Overall burnout decreased from 54% to 44% (difference 10% [95% CI 5–14]; p<0·0001; I²=15%; 14 studies), emotional exhaustion score decreased from 23·82 points to 21·17 points (2·65 points [1·67–3·64]; p<0·0001; I²=82%; 40 studies), and depersonalisation score decreased from 9·05 to 8·41 (0·64 points [0·15–1·14]; p=0·01; I²=58%; 36 studies). High emotional exhaustion decreased from 38% to 24% (14% [11–18]; p<0·0001; I²=0%; 21 studies) and high depersonalisation decreased from 38% to 34% (4% [0–8]; p=0·04; I²=0%; 16 studies). Interpretation The literature indicates that both individual-focused and structural or organisational strategies can result in clinically meaningful reductions in burnout among physicians. Further research is needed to establish which interventions are most effective in specific populations, as well as how individual and organisational solutions might be combined to deliver even greater improvements in physician wellbeing than those achieved with individual solutions.

2016-99 0099

CE: Veteran Women: Mental Health-Related Consequences of Military Service

Source
The American Journal of Nursing 2016 116 (11) 32-39

Author(s)
Ganzer, C.A.

Abstract
The last two decades have seen increasing numbers of women entering all branches of the U.S. armed forces. Now that women in the military are no longer prohibited from holding direct combat positions, they are often exposed to traumatic...
events that place them at higher risk for mental health conditions. Nurses working within the Veterans Affairs (VA) system and those working in non-VA settings are likely to encounter female veterans. It's essential for all nurses to be knowledgeable about the mental health issues commonly seen in this population, and to understand the importance of screening, not only for mental health issues but also for physical conditions that may be related to service. Numerous studies have focused on the mental health effects of deployment among military men, but very few have been conducted among military women. To learn more, the literature was searched for relevant articles published between January 2005 and December 2015. The research supports the contention that both active-duty and veteran women are at increased risk for postdeployment mental health problems, including posttraumatic stress disorder, military sexual trauma, and suicide. This article discusses the relevant research; identifies gaps in the literature; and addresses the nursing practice implications, including screening.

2016-99 0100

The Combined Effect of Sleep Duration and Quality on Mental Health Among Republic of Korea Armed Forces.

Source
Military Medicine 2016 181 (11) e1581-e1589

Author(s)
Kim,T.K., and Lee,H.,

Abstract
Sleep problems in the Republic of Korea Armed Forces have increased. This study analyzed the mental health impact of sleep duration and quality on personnel of the Republic of Korea Armed Forces. Data from the 2014 Military Health Survey were used. Degree of sleep duration and quality were measured by this self-reported questionnaire. Analysis of variance was carried out to compare Kessler Psychological Distress Scale 10 (K10) scores. Multiple logistic regression analysis identified associations between sleep duration, quality, and K10 scores. Among the personnel studied, 2.5% reported severe sleep difficulties. The average sleep duration was 6.83 ± 1.12 hours. Short sleep duration and sleep difficulty were associated with poorer K10 scores. Higher K10 scores among individuals with short sleep duration and low sleep quality were identified in the isolated military area group, the over 53 working hours/week group, and the enlisted soldier group. The factors listed were not by themselves associated with poorer mental health scores. Rather, specific workplaces and specific rank groups were more prone to poorer mental health. These results provide helpful information to minimize the negative psychological effects of sleep factors and to promote a sleep
problem prevention and management policy.

2016-99 0101

*European military mental health research: benefits of collaboration* – Ctrl + Click to follow link

**Source**
Journal of the Royal Army Medical Corps 2016 ( )

**Author(s)**

**Abstract**
Despite joint participation in international military operations, few collaborative military mental health research projects have been undertaken by European countries. From a common perspective of military mental health researchers from Germany and the UK, the lack of shared research might be related not only to the use of different languages but also the different ways in which the two militaries provide mental health and medical support to operations and differences in military institutions. One area that is suitable for military health research collaboration within UK and German forces is mental health and well-being among military personnel. This could include the study of resilience factors, the prevention of mental disorder, mental health awareness, stigma reduction and the treatment of mental disorder. Military mental health research topics, interests and the studies that have been conducted to date in the UK and Germany have considerable overlap and commonality of purpose. To undertake the investigation of the long-term consequences of operational deployment, the specific burdens placed on military families and to further the understanding of the role of factors such as biomarkers for use in military mental health research, it seems advisable to forge international research alliances across European nations, which would allow for researchers to draw transcultural and generalisable conclusions from their work. Such an enterprise is probably worthwhile given the shared research interests of Germany and the UK and the common perspectives on military mental health in particular.

2016-99 0102

*Exploring Reliability and Validity of the Deployment Risk and Resilience Inventory-2 Among a Nonclinical Sample of Discharged Soldiers Following Mandatory Military Service*

**Source**
Journal of Traumatic Stress 2016

**Author(s)**
Maoz, H., Goldwin, Y., et al.

Abstract
The Deployment Risk and Resilience Inventory (DRRI) is a widely used questionnaire assessing deployment-related risk and resilience factors among war veterans. Its successor, the DRRI-2, has only been validated and used among veterans deployed for overseas military missions, but because many countries still enforce compulsory military service, validating it among nonclinical samples of healthy discharged soldiers following mandatory service is also a necessity. In the current study, a sample of 101 discharged Israeli soldiers (39 males, 62 females; mean time since discharge 13.92, SD = 9.09 years) completed the DRRI-2. There were 52 participants who completed the questionnaire at a second time point (mean time between assessments 19.02, SD = 6.21 days). Both physical and mental health status were examined, as well as symptomatology of depression, anxiety, and posttraumatic stress disorder. Cronbach’s αs for all latent variables in the inventory ranged from .47 to .95. The DRRI-2 risk factors were negatively associated with psychological functioning, whereas resilience factors were positively associated with better self-reported mental health. Test-retest reliability coefficients were generally high (Pearson correlations were .61 to .94, all p values < .01). Our study provides evidence for the reliability and validity of the DRRI-2 in assessing salient deployment experiences among a nonclinical sample following mandatory military service.

2016-99 0103

Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis.

Source
Lancet 2016 388 (10057) 2272-2281

Author(s)
West, C.P., and Dyrbye, L.N.,

Abstract
Background Physician burnout has reached epidemic levels, as documented in national studies of both physicians in training and practising physicians. The consequences are negative effects on patient care, professionalism, physicians’ own care and safety, and the viability of health-care systems. A more complete understanding than at present of the quality and outcomes of the literature on approaches to prevent and reduce burnout is necessary. Methods In this systematic review and meta-analysis, we searched MEDLINE, Embase, PsycINFO, Scopus, Web of Science, and the Education Resources Information Center from inception to Jan 15, 2016,
for studies of interventions to prevent and reduce physician burnout, including single-arm pre-post comparison studies. We required studies to provide physician-specific burnout data using burnout measures with validity support from commonly accepted sources of evidence. We excluded studies of medical students and non-physician health-care providers. We considered potential eligibility of the abstracts and extracted data from eligible studies using a standardised form. Outcomes were changes in overall burnout, emotional exhaustion score (and high emotional exhaustion), and depersonalisation score (and high depersonalisation). We used random-effects models to calculate pooled mean difference estimates for changes in each outcome. Findings We identified 2617 articles, of which 15 randomised trials including 716 physicians and 37 cohort studies including 2914 physicians met inclusion criteria. Overall burnout decreased from 54% to 44% (difference 10% [95% CI 5–14]; p<0·0001; I²=15%; 14 studies), emotional exhaustion score decreased from 23·82 points to 21·17 points (2·65 points [1·67–3·64]; p<0·0001; I²=82%; 40 studies), and depersonalisation score decreased from 9·05 to 8·41 (0·64 points [0·15–1·14]; p=0·01; I²=58%; 36 studies). High emotional exhaustion decreased from 38% to 24% (14% [11–18]; p<0·0001; I²=0%; 21 studies) and high depersonalisation decreased from 38% to 34% (4% [0–8]; p=0·04; I²=0%; 16 studies). Interpretation The literature indicates that both individual-focused and structural or organisational strategies can result in clinically meaningful reductions in burnout among physicians. Further research is needed to establish which interventions are most effective in specific populations, as well as how individual and organisational solutions might be combined to deliver even greater improvements in physician wellbeing than those achieved with individual solutions.

2016-99 0104

Mental health services use intentions among Canadian military recruits.

Source
Military Psychology 2016 28 (6) 498-505

Author(s)
Lee,J.E.C., and Fikretoglu,D.,

Abstract
Identifying the factors associated with mental health services use (MHSU) is an important step in developing strategies to improve services access and delivery. The aims of the present study were to (a) identify personality and individual difference characteristics associated with MHSU intentions within the framework of the Theory of Planned Behavior (TPB) and (b) explore complex relationships that might exist between these characteristics and determinants of MHSU intentions identified
in TPB, including attitudes, subjective norms, and perceived behavioral control. Data for 244 Canadian Armed Forces recruits who completed a MHSU questionnaire following mental health training were linked to personality data collected earlier. Multivariate analyses showed that the relationship between agreeableness and MHSU intentions was mediated by instrumental attitudes and subjective norms. The relationship between hardiness and MHSU intentions was mediated by subjective norms and self-efficacy. Findings suggest it may be worthwhile to consider mental health education initiatives to improve MHSU.

2016-99 0105

The Predictive Effects of Work Environment on Stigma Toward and Practical Concerns for Seeking Mental Health Services.

Source
Military Medicine 2016 181 (11) e1546-e1552

Author(s)

Abstract
The purpose of this exploratory study was to investigate factors in the work environment of the U.S. military that influence barriers toward seeking help from mental health. In particular, this study investigated the effects of gender, pay grade, satisfaction of work, coworkers, leaders, and perceived hostility in the workplace on practical concerns for and stigma toward seeking help from mental health services. A sample of 22,792 was drawn from the 2012 Workplace and Gender Relations Survey. The results revealed the crucial roles of work environments for stigma toward seeking help from mental health services. Being female or an officer are significant predictors for greater stigma toward and practical concerns that impede seeking help from mental health professionals in comparison to being male or an enlisted officer. Furthermore, higher workplace hostility, lower satisfaction toward leaders, coworkers, and one's work were all significant predictors for greater stigma toward and practical concerns for seeking help. This study revealed the vital roles of work environments in the military that influence stigma toward and practical concerns for seeking help from mental health professionals. Some implications and recommendations for prevention and intervention for underutilization of mental health services are discussed.
Psychometrics of behavioral health screening scales in military contexts.

Source
Military Psychology 2016 28 (6) 448-467

Author(s)
Paniagua,F.A., and Black,S.A.,

Abstract
A major task for military and civilian mental health practitioners is to screen United States service members/military personnel for an array of mental health problems (e.g., depression, alcohol abuse, suicidal ideation, posttraumatic stress disorder [PTSD]) before further assessment leading to diagnosis of mental disorders. During the assessment of such mental health problems, screening scales should be not only reliable and valid, but also have clinical utility in the military context. Busy clinicians may not have enough time to determine which screening scales meet minimal psychometric standards and proven clinical utility with predeployment or postdeployment soldiers on active duty. A sample of screening scales was identified during a thorough review of the peer-reviewed psychometric literature, textbooks on psychometrics, and the American Psychological Association PsycINFO database. Selection criteria (e.g., acceptable psychometric properties, previously used in the military context) resulted in the identification of 7 core (first-order description) screening scales recommended in the assessment of mental health problems within the military context. Core scales were organized across 4 clinical domains: general mental health functioning (e.g., Behavior and Symptom Identification Scale [BASIS]), self-harm and risk-taking behaviors (e.g., Suicide Intent Scale [SIS]), assessment of PTSD (e.g., PTSD Checklist [PCL]) and Anger Reactions (e.g., Dimension of Anger Reaction Scale [DAR]), and assessment of substance abuse/dependence (e.g., Alcohol Use Disorders Identification Test -AUDIT). For each core scale, alternative scales were also selected using similar selection criteria. Implications of the study findings for the practice of military and civilian psychologists in the Department of Defense (DoD) are discussed.
**2016-99 0107**

Quasi-experimental evaluation of the impact of a cognitive behavioral pretreatment intervention for veterans seeking psychotherapy

**Source**
Psychotherapy 2016 53 (4) 424-432

**Author(s)**
Lusk,R., Lyubkin,M., et al.

**Abstract**
Pretreatment interventions have documented efficacy for reducing initial therapy refusal and early therapy departure. However, these interventions have not been well-studied in diagnostically diverse patient populations or within Veterans Affairs (VA) health care settings. We designed a manualized 4-session group cognitive-behavioral therapy-based pretreatment intervention (PTI) for a diagnostically diverse population of Veterans referred for psychotherapy in a general mental health clinic (MHC) in a large VA hospital. Retrospective record review was used to collect patient data over a period of 6 months after their completion of the PTI. A sample of 50 Veterans who were referred for care at the MHC prior to the implementation of the PTI was used for comparison (NoPTI). Two hundred sixty-six Veterans participated in the PTI. Veterans who participated in the PTI were equally as likely to attend at least one psychotherapy session as NoPTI Veterans, but had more individual and group therapy sessions during the 6-month therapy tracking period. PTI participants were also less likely to have a psychiatric hospitalization during the 6-month therapy tracking period. Study findings suggest that PTIs are a good fit to a VA general mental health setting and effective in bolstering therapy attendance. Limitations and future directions are discussed.

**2016-99 0108**

Resilience, Stress, Presenteeism and Ability to Work in Military of the Army

**Source**
Journal of Nursing UFPE / Revista De Enfermagem UFPE 2016 10 (12) 4701-4704

**Author(s)**
Umann,J. and Lautert,L.
Abstract
Objective: to verify the relationship between resilience, stress, presenteeism and the ability to work in the Army as a military.
Method: cross-sectional and analytical research to be conducted with the military population (250) operating in a corporation in the state of Rio Grande do Sul (RS). The research protocol consists of four self-report instruments that will be submitted for validation by the exploratory and confirmatory factor analysis. It will be applied to multivariate analysis using the technique of structural equation modeling to understand the relationships between the variables, and see if the hypothesized model will be confirmed in the studied population. The ethical aspects of Resolution CNS n. 466/12 (CAAE No 57814616.5.0000.5347) will be respected. Expected results: the military institutions can benefit from the consolidation of theoretical and empirical basis in this area, these may reduce the deleterious effects of adverse situations to which they are exposed and to provide grants for the creation of interventions to promote resilience in this context.

2016-99 0109

Social support and mental health outcomes among U.S. Army Special Operations personnel.

Source
Military Psychology 2016 28 (6) 361-375

Author(s)
Russell,D.W. and Benedek,D.M.

Abstract
Mental health disorders continue to plague service members and veterans; thus, new approaches are required to help address such outcomes. The identification of risk and resilience factors for these disorders in specific populations can better inform both treatment and prevention strategies. This study focuses on a unique population of U.S. Army Special Operations personnel to assess how specific avenues of social support and personal morale are related to mental health outcomes. The results indicate that, whereas personal morale and friend support reduce the relationship between combat experiences and posttraumatic stress disorder (PTSD), strong unit support exacerbates the negative effects of combat experiences in relation to PTSD. The study thus shows that although informal social support can lessen postdeployment mental health concerns, military populations with strong internal bonds may be at greater risk of PTSD because the support that they receive from fellow service members may heighten the traumatic impact of combat experiences.
2016-99 0110

Traumatic Stress during Population-wide Exposure to Trauma in Israel: Gender as a Moderator of the Effects of Marital Status and Social Support

Source
Stress & Health: Journal of the International Society for the Investigation of Stress 2016 32 (5) 636-640

Author(s)
Israel-Cohen, Y. and Kaplan, O.

Abstract
The ‘tend-and-befriend’ approach (Taylor et al., 2000) posits that in times of stress, women in particular may tend to their loved ones and seek out social support as a coping mechanism. Two corollaries of this model are that when confronted with a situation of extreme stress, marriage may be more of a protective factor for men, as central beneficiaries of their wives ‘tending’ or nurturing response, and social support from a wider network may be more of a protective factor for women, as part of women’s ‘befriending’ response to stress. Using a sample of 508 Israelis (M = 47 years; 48% women) under the real condition of a population under missile attacks, we investigated the latter two corollaries of the tend-and-befriend model, hypothesizing that marriage would buffer against symptoms of traumatic stress for men in particular and that social support would buffer against symptoms of traumatic stress for women in particular. Our findings revealed gender differences affirming both hypotheses and offering interpretive evidence in support of the tend-and-befriend model based on a gender-informed field study of responses to traumatic stress in real time.

See also

Disaster Mental Health and Positive Psychology: An Afterward to the Special Issue. Under Psychology.

Facilitating mental health screening of war-torn populations using mobile applications. Under Technology & Research

Interplay between service era, PTSD symptom expression, and treatment completion among veterans. Under Post Traumatic Stress Disorder.

Isolating effects of moral injury and low post-deployment support within the U.S. military. Under Psychiatry.

Mental health of transgender veterans of the Iraq and Afghanistan conflicts who experienced military sexual trauma. Under Sexual Trauma.

Responding to Trauma at Sea: A Case Study in Psychological First Aid, Unique Occupational Stressors, and Resiliency Self-Care. Under Mental Health.

Veteran Women: Mental Health--Related Consequences of Military Service. Under Veteran’s Health.
MICROBIOLOGY AND IMMUNOLOGY

2016-99 0111

A Fatal Case of Invasive Infection Caused By W135 Neisseria meningitidis in a Vaccinated French Soldier.

Source
Military Medicine 2016 181 (11) e1702-e1705

Author(s)
Duron,S., and Martinaud,C.,..

Abstract
We report on the case of fatal "purpura fulminans" caused by Neisseria meningitidis W135 that occurred in a young French soldier vaccinated a few months earlier with the tetravalent conjugate vaccine ACYW135. Biological investigations revealed adequate titers of postvaccination antibodies against serogroups A, C, and W135 and led to the post-mortem diagnosis of a complete C7 complement deficiency. Late complement component deficiency is a well-known risk factor of meningococcal diseases, but usually exposes to recurrent mild infections, whereas severe invasive meningococcal diseases are more likely to occur among properdin-deficient patients. Awareness of the potentially life-threatening nature of late complement component deficiency should lead to improved diagnosis among young people, especially when past medical history reveals recurrent mild infections.

2016-99 0112

Immunological and infectious risk factors for lung cancer in US veterans with HIV: a longitudinal cohort study

Source
The Lancet.HIV 2016

Author(s)
Sigel,K., Wisnivesky,J., et al.

Abstract
Background: HIV infection is independently associated with risk of lung cancer, but few data exist for the relation between longitudinal measurements of immune function and lung-cancer risk in people living with HIV.; Methods: We followed up participants with HIV from the Veterans Aging Cohort Study for a minimum of 3 years between Jan 1, 1998, and Dec 31, 2012, and used cancer registry data to identify incident cases of lung cancer. The index date for each patient was the later of the date HIV care began or Jan 1, 1998. We excluded patients with less than 3 years' follow-up, prevalent diagnoses of lung cancer, or incomplete laboratory data. We used Cox regression models to investigate the relation between different time-
updated lagged and cumulative exposures (CD4 cell count, CD8 cell count, CD4/CD8 ratio, HIV RNA, and bacterial pneumonia) and risk of lung cancer. Models were adjusted for age, race or ethnicity, smoking, hepatitis C virus infection, alcohol use disorders, drug use disorders, and history of chronic obstructive pulmonary disease and occupational lung disease.; Findings: We identified 277 cases of incident lung cancer in 21,666 participants with HIV. In separate models for each time-updated 12 month lagged, 24 month simple moving average cumulative exposure, increased risk of lung cancer was associated with low CD4 cell count (p trend=0.001), low CD4/CD8 ratio (p trend=0.0001), high HIV RNA concentration (p=0.004), and more cumulative bacterial pneumonia episodes (12 month lag only: p trend=0.0004). In a mutually adjusted model including these factors, CD4/CD8 ratio and cumulative bacterial pneumonia episodes remained significant (p trends 0.003 and 0.004, respectively).; Interpretation: In our large HIV cohort in the antiretroviral therapy era, we found evidence that dysfunctional immune activation and chronic inflammation contribute to the development of lung cancer in the setting of HIV infection. These findings could be used to target lung-cancer prevention measures to high-risk groups.

2016-99 0113

Safety evaluation of adenovirus type 4 and type 7 vaccine live, oral in military recruits.

Source
Vaccine 2016 34 (38) 4558-4564

Author(s)
Choudhry A., Mathena J., et al.

Abstract
Before the widespread adoption of vaccination, adenovirus type 4 and type 7 were long associated with respiratory illnesses among military recruits. When supplies were depleted and vaccination was suspended in 1999 for approximately a decade, respiratory illnesses due to adenovirus infections resurfaced. In March 2011, a new live, oral adenovirus vaccine was licensed by the US Food and Drug Administration and was first universally administered to military recruits in October 2011, leading to rapid, dramatic elimination of the disease within a few months. As part of licensure, a postmarketing study (Sentinel Surveillance Plan) was performed to detect potential safety signals within 42 days after immunization of military recruits. This study retrospectively evaluated possible adverse events related to vaccination using data from the Armed Forces Health Surveillance Branch Defense Medical Surveillance System (DMSS) database. Among 100,000 recruits who received the adenovirus vaccine, no statistically significant greater risk of prespecified medical events was
observed within 42 days after vaccination when compared with a historical cohort of 100,000 unvaccinated recruits. In an initial statistical analysis of International Classification of Disease, 9th Revision, Clinical Modification codes, a statistically significant higher risk for 19 other (not prespecified) medical events occurring in 5 or more recruits was observed among vaccinated compared with unvaccinated groups. After case record data abstraction for attribution and validation, two events (psoriasis [21 vs 7 cases] and serum reactions [12 vs 4 cases]) occurred more frequently in the vaccinated cohort. A causal relation of these rare events with adenovirus vaccination could not be established given confounding factors in the DMSS, such as coadministration of other vaccines and incomplete or inaccurate medical information, for some recruits. Prospective surveillance assessing these uncommon, but potentially relevant, immune-related symptoms may be beneficial in defining potential causal association with adenovirus vaccination.
Depression, anxiety, and stress in partners of Australian combat veterans and military personnel: A comparison with Australian population norms.

Source
Peerj 2016 2016 (8)

Author(s)
MacDonell G.V., Bhullar N., et al.

Abstract
Partners of Australian combat veterans are at an increased risk of experiencing mental health problems. The present study provides a comparative analysis of the mental health of partners of veterans with that of the Australian normative data. To compare different types of groups of partners, the study samples comprised: (a) partners of Australian combat veterans (Sample 1: n=282, age M =60.79, SD=5.05), (b) a sub-sample of partners of Australian combat veterans from the previous sample (Sample 2: n=50; M =60.06, SD=4.80), (c) partners of Special Air Services Regiment (SASR) personnel (Sample 3: n=40, age M =34.39 SD=7.01), and (d) partners of current serving military (non-SASR) personnel (Sample 4: n=38, age M =32.37, SD=6.20). Respondents completed measures assessing their reported levels of depression, anxiety, and stress. Samples 1 and 2 comprised partners of Australian military veterans who reported significantly greater symptoms of depression, anxiety, and stress than the comparative population norms. The sample of SASR personnel partners (Sample 3) reported significantly lower levels of depression and anxiety, whereas the sample with non-SASR personnel partners (Sample 4) reported a significantly greater stress symptomatology than the comparative norms. Number of deployments was found to be associated with depression, anxiety, and stress in partners of non-SASR veterans (Sample 4). Lessons and protective factors can be learnt from groups within the current military as to what may assist partners and families to maintain a better level of psychosocial health.
Experiences of Military Spouses of Veterans With Combat-Related Posttraumatic Stress Disorder

Source
Journal of Nursing Scholarship 2016 48 (6) 543-551

Author(s)
Yambo, T.W., Johnson, M.E., et al.

Abstract
Purpose To explore the experiences of military spouses living with veterans with combat-related posttraumatic stress disorder (PTSD). Design Husserlian phenomenology was chosen as the theoretical framework because it allowed a deeper understanding of the unfolding of the spouses’ daily experience. Methods A purposive sample of 14 spouses living with veterans with symptoms of PTSD participated in unstructured interviews. Data were analyzed using a modification of the Colaizzi phenomenological method. Findings Spouses recognized that the veteran was no longer the same person, with life becoming one of living with the unpredictability of PTSD. The spouses bore the burden to maintain normalcy in the family and eventually created a new life. Conclusions Military spouses endure psychological stress and strain, while living with a veteran with PTSD. There is a need for more programs to support the resilience of military spouses. Clinical Relevance Life for military spouses of veterans with PTSD is ever-changing and unpredictable. Practitioners need to be aware of the stress that spouses experience and develop programs and interventions that bolster the resilience of military families.

Exploring the impact of parental post-traumatic stress disorder on military family children: A review of the literature

Source
Nurse Education Today 2016 47 29-36

Author(s)
King, N. and Smith, A.

Abstract
Objectives: The number of UK service personnel who have a diagnosis of PTSD is unclear, but there has been a recent increase in referrals to services for PTSD symptomology. It is imperative to understand the impact this may have on the children of affected service families. This review of literature aimed to explore and provide insight into the experiences of services children whose parent has a diagnosis of PTSD.
The Impact of Parental Operational Stress Injury on Child Mental Health and Well-Being: A Scoping Review.

Source
Military Behavioral Health 2016 4 (4) 334-344

Author(s)
Cramm,H., and Tam-Seto,L.,.

Abstract
Recognizing the impact of parental mental health on child development, the purpose of this scoping review was to identify and synthesize the research literature describing the impact of parental operational stress injury (OSI) on children and youth from military and veteran families. Arksey and O'Malley’s 2005 guidelines for conducting scoping reviews were followed. A total of 18 separate databases were searched, in addition to three university-based discovery platforms. From this search, 506 potential sources were identified; 64 proceeded to full data extraction and analysis. This study identified two significant themes in the current literature. First, there are multiple ways in which parental OSIs can impact children and youth. Families need to renegotiate parenting roles and responsibilities, experience changes in spousal relationships that can cascade into parenting, and face shifting family dynamics. In addition, children and youth can experience secondary traumatization, be at risk for child maltreatment, and manifest general impacts on their mental health and development. Second, responding to the impacts through collaboration and innovation. Future directions include informing research with the voices of all members of the family. Knowledge translation strategies are necessary for collaboration across all areas to support this population.

Indirect exposure to captivity details is not related to posttraumatic stress symptoms among the spouses and offspring of former prisoners of war.

Source
Journal of Traumatic Stress 2016 ( )

Author(s)
Zerach,G. and Solomon,Z.

Abstract
Indirect exposure to the aversive details of the primary victim’s traumatic event(s) has been introduced in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) as a new event criterion (Criterion A4). However, this new criterion has been
criticized for its significant emphasis on the exposure to trauma “details” or trauma narrative. This study assessed the associations between reported exposure to details about captivity and posttraumatic stress symptoms (PTSS) among 2 groups of family members of former prisoners of war (ex-POWs): spouses (n = 115) and adult offspring (n = 78). Results show that in both groups exposure to details regarding captivity was not significantly related to the severity of total PTSS and specifically, high levels of exposure to captivity details were related to lower avoidance symptoms among ex-POWs’ spouses. Among offspring, exposure to paternal behaviors stemming from the fathers’ posttraumatic stress disorder was related to PTSS, above and beyond negative life events, quality of relationship with the father, and exposure to captivity details (R2 = .34). These results suggest that behavioral displays of the fathers’ posttraumatic symptoms, rather than the recounting of trauma-related details, is related to PTSS among ex-POWs’ offspring.

2016-99 0119

Pathways of Risk and Resilience: Impact of a Family Resilience Program on Active-Duty Military Parents

Source
Family Process 2016 55 (4) 633-646

Author(s)

Abstract
Over the past decade, studies into the impact of wartime deployment and related adversities on service members and their families have offered empirical support for systemic models of family functioning and a more nuanced understanding of the mechanisms by which stress and trauma reverberate across family and partner relationships. They have also advanced our understanding of the ways in which families may contribute to the resilience of children and parents contending with the stressors of serial deployments and parental physical and psychological injuries. This study is the latest in a series designed to further clarify the systemic functioning of military families and to explicate the role of resilient family processes in reducing symptoms of distress and poor adaptation among family members. Drawing upon the implementation of the Families Overcoming Under Stress (FOCUS) Family Resilience Program at 14 active-duty military installations across the United States, structural equation modeling was conducted with data from 434 marine and navy active-duty families who participated in the FOCUS program. The goal was to better understand the ways in which parental distress reverberates across military family systems and, through longitudinal path analytic modeling, determine the pathways of program impact on parental distress. The findings
indicated significant cross-influence of distress between the military and civilian parents within families, families with more distressed military parents were more likely to sustain participation in the program, and reductions in distress among both military and civilian parents were significantly mediated by improvements in resilient family processes. These results are consistent with family systemic and resilient models that support preventive interventions designed to enhance family resilient processes as an important part of comprehensive services for distressed military families.

2016-99 0120

Resilience and Knowledge of PTSD Symptoms in Military Spouses.

Source
Traumatology 2016

Author(s)

Abstract
The spouse of a military service member is in a special position to understand the behaviors of a service member better than anyone. These individuals live with the military members and are able to detect changes in behavior and increased stress reactions. Yet, there is limited published research focusing on spouses' levels of awareness of posttraumatic stress disorder (PTSD) and PTSD symptoms. This study was conducted to explore 2 areas of interest. The research team first wanted to determine if military spouses with knowledge of PTSD signs and symptoms demonstrated a higher level of resilience, and second, if military spouses with more access to helpful resources, for those experiencing symptoms of PTSD, demonstrated a higher level of resilience. A total of 127 spouses completed an online survey to assess the level of resilience possessed by military spouses in relation to their knowledge of PTSD symptoms and their access to resources. Resilience was measured by using the 10-item Connor-Davidson Resilience Scale (CD-RISC). Results showed that as the knowledge of PTSD symptoms and access to helpful resources increased, the ability to be resilient is increased by over 1.5 times. The study collects information from this important, hard to reach population and offers to fill a knowledge gap on this topic.
Spousal Communication During Military Deployments

Source
Journal of Family Issues 2016 37 (16) 2309-2332

Author(s)
Carter, S.P. and Renshaw, K.D.
George Mason University, Fairfax, VA, USA

Abstract
Abstract Military deployments are stressful for service members and partners. Communication is an important factor in trying to maintain a relationship during these separations. This article presents a brief overview of communication in long-distance relationships.


Source
Military Behavioral Health 2016 4 (4) 364-372

Author(s)
McCarthy, R.J., and Miron, L.R.,

Abstract
The current study examined temporal variations in child maltreatment within a U.S. Air Force database. Relative to comparison days, child maltreatment rates generally decreased on weekends, Thanksgiving, and the first days of a month, whereas rates of specific maltreatment types differed on some holidays: Physical abuse decreased on New Year's Eve and Memorial Day; neglect decreased on Christmas Eve, Christmas Day, and Independence Day; and emotional abuse decreased on Memorial Day and increased on Super Bowl Sunday. Future research should explore the factors responsible for these patterns of child maltreatment to inform policies aimed at reducing child maltreatment.

See also

An Environmental Scan of Programs and Services for Families of Veterans With Operational Stress Injuries. Under Post Traumatic Stress Disorder.

Randomized controlled trial of a brief Internet-based intervention for families of Veterans with posttraumatic stress disorder. Under Post Traumatic Stress Disorder.


VA Residential Treatment Providers’ Use of Two Evidence-Based Psychotherapies for PTSD: Global Endorsement Versus Specific Components. Under Post Traumatic Stress Disorder.

Strength at Home Couples program to prevent military partner violence: A randomized controlled trial. Under Psychology.
Danish Gulf War Veterans Revisited: No Evidence of Increased Sickness Absence or Reduced Labor Market Outcome After Deployment to the Persian Gulf.

Source
Military Medicine 2016 181 (11) e1644-e1649

Author(s)
Nissen, L.R., and Stoltenberg, C.,

Abstract
Objective: To examine the assumption that postdeployment incidence of sickness and other absence from work are higher among Gulf War Veterans compared with nonveterans.

Methods: A prospective registry study including a cohort of 721 Danish Gulf War Veterans and a control cohort of 3,629 nonveterans selected from the general Danish population. Outcome measures were up to 23 years postdeployment incidence of (1) long-term sickness absence and (2) long-term all types of absence from work. Long term with regard to sickness and other absence was defined as exceeding 8 weeks. The association between outcomes and information on deployment history was studied using time-to-event analysis. The index date was the return date from the last deployment to the Gulf. The follow-up period was the time from index date until April 27, 2014. Results: As the main finding, no difference was found between veterans and nonveterans in the incidence rate of long-term sickness absence. After an initial short period (3 months) with elevated incidence rate of long-term absence from work among veterans, there was no difference between the cohorts. Conclusion: Among Danish Gulf War Veterans, no postdeployment increased risk of long-term sickness absence or long-term absence from work was found as compared with nonveterans.

The department of veterans affairs million veteran program: An update.

Source

Author(s)
O’Leary T., Muralidhar S., et al.
Abstract
Introduction: Veterans of military service are at increased risk for a number of conditions, such as post-traumatic stress disorder (PTSD) and Gulf War Illness, as well as for the diseases generally associated with aging. For some of these conditions, such as PTSD, a genetic predisposition has been clearly established without identification of specific markers. Improved understanding of these conditions requires large study populations for which genomic analyses, lifestyle information, and genomic information are available for analysis. The VA Million Veteran Program is an effort to address this compelling need. Methods: Potential participants are Veterans enrolled in Veterans Health Administration healthcare, who are invited to participate through mailed invitations or are “walk ins” to a recruitment site. Veterans who agree to participate provide a blood specimen for genomic analysis, consent to link genomic results with their electronic health record, and complete baseline and lifestyle questionnaires; they also consent to share their data with US academic and government organizations, and agree to re-contact for potential additional information and/or studies. Results of these genomic analyses, obtained for research purposes only, are not provided to participants. Results: As of June 1, 2016, 482,991 Veterans had enrolled in the MVP; enrollment was occurring at 52 sites, enrolling ~430 participants per day; 297,713 (62%) had returned baseline questionnaires, and 236,297 (49%) had returned lifestyle questionnaires. The 10 most highly represented self-reported conditions among participants were hypertension, hyperlipidemia, gastrointestinal reflux, tinnitus, hearing loss, depression, diabetes, cataracts, sleep apnea and arthritis. All branches of military service are represented in the population, although fewer than 15% of enrollees are less than 50 years of age, and fewer than 10% of enrollees served exclusively before 1950. Eight ongoing genome-wide association studies are addressing schizophrenia and bipolar disorder, PTSD, Gulf War Illness, cardiovascular disease, renal disease, metabolic disorders including diabetes, substance abuse, and age-related macular degeneration. Conclusions: It is possible to enroll a large cohort of military Veterans for genomic research, without providing individual return of results to obtain their participation. Younger Veterans, who generally have less engagement with the health care system, are less likely to enroll than older Veterans with more healthcare system engagement. Modest adherence with completion of baseline and lifestyle questionnaires limits self-report data on disease prevalence, but access to the electronic health record provides ample data for genome-disease correlation studies.
Establishing a Predictable Military Global Health Engagement Funding Authority: Supporting Theater Security Cooperation Objectives and Generating Military Medical Readiness.

Source
Military Medicine 2016 181 (11) 1397-1398

Author(s)
Licina,D., and Cogswell,B.,

Abstract
U.S. Army Medical transformation incorporates an innovative approach to employing military medical capability in support of Combatant Commands (COCOMs) achievement of National Military Objectives. Within the Indo-Asia-Pacific region, the U.S. Army Regional Health Command—Pacific (RHC-P) leverages 10 direct reporting units including Tripler Army Medical Center, Public Health Command—Pacific, and 18th Medical Command (Deployment Support) to conduct health engagements in support of the regional Theater Security Cooperation (TSC) program.

A template for building global partnerships: The Joining Forces conference goes across the Atlantic from the US to the UK

Source
Nurse Education Today 2016 47 ( ) 99-100

Author(s)
Visovsky,C. and Beedy,D.M.

Abstract
Joining Forces is a comprehensive national initiative within the United States to mobilize all sectors of society to give service members and their families the opportunities and support they have earned. This national initiative begun in April 2012 was led by First Lady Michelle Obama and Dr. Jill Biden. The Joining Forces initiative is charged with enhancing the well-being and psychological health of the military family by providing mental health care services, integrating community-based services to reduce homelessness, substance abuse for veterans and military families. This manuscript addresses how one university with its global partners joined together to host an innovative conference addressing the research, education, and practice needs of healthcare professionals caring for military, veterans, and their families.
See also


Occupational health concerns: An analysis of physical activity of submariners.

Source
Medical Journal Armed Forces India 2016 72 (4)
Author(s)
Nasser,A. and Bhutani,S.,

Abstract
Background Submarine crew have low physical activity by virtue of their professional requirements. Lack of space and inadequacy of regeneration capabilities render physical activity almost impossible during deployments. However, sufficient data for physical activity levels and trends are required to measure the magnitude of inactivity. Methods Data was collected from 362 personnel belonging to six submarines and one submarine base using Global Physical Activity Questionnaire. Four study groups were defined: Base, Refit, Operational/ Harbour and Operational/Sea. Results Overall, 30.11% of the crew had insufficient physical activity (4.04% in Base, 5.75% in Refit, 15% in Ops/Harbour and 91.67% in Ops/Sea groups). Of the total physical activity, 48.7% was contributed by activity at work, 18.71% by travel related activity and 32.62% by recreational physical activity. Base group recorded the highest recreational activity of 1468.28 Minutes- per-Week. Recreational activity contributed 43.22% to total physical activity for this group. Mean total physical activity was highest for ≥45 years and lowest for ≤24 years. ≥45 years old also recorded the highest recreational activity. Conclusion The greatest cause for concern comes from the crew in operational submarines and the younger crew. Physical activity profile of the crew when at sea cannot be changed and greater research is required to assess the long-term health effects of physical inactivity in this group. However, what can be modified are the work schedules for refit submarines and operational submarines when in harbour. Targeted interventions and strategies are required to establish sustainable behaviour patterns with regards to physical activity in these groups.
**2016-99 0128**

**Responding to Trauma at Sea: A Case Study in Psychological First Aid, Unique Occupational Stressors, and Resiliency Self-Care**

**Source**
Military Medicine 2016 181 (11) e1692-e1695

**Author(s)**

**Abstract**
The U.S. Navy deploys Special Psychiatric Rapid Intervention Teams (SPRINT) to sites of military disasters to assist survivors and the command. SPRINT functions primarily as a consultant to help commands effectively respond to the mental health needs of their service members following a traumatic event. Utilizing the principles of psychological first aid, the overall goal of SPRINT is to mitigate long-term mental health dysfunction and facilitate recovery at both the individual and unit level. We present a case study of a SPRINT mission to a deployed U.S. Navy ship in response to a cluster of suicides and subsequent concerns about the well-being of the remaining crew. Throughout this mission, important themes emerged, such as the impact of accumulated operational stressors and the subsequent development of mental health stigma. Also, this case study demonstrates the potential effectiveness of introducing resiliency self-care meditation training to remote environments that lack ready access to mental health resources. From here, SPRINT can provide a model for immediate disaster mental health response that has potential relevancy beyond the military.

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**2016-99 0129**

**Thrombotic Microangiopathy Syndrome in a Basic Underwater Demolition/SEAL Student.**

**Source**
Journal of Special Operations Medicine 2016 16 (3) 16-19

**Author(s)**
Croom,D., and Tracy,H.,

**Abstract**
Thrombotic microangiopathy (TMA) syndromes represent a spectrum of illnesses that share common clinical and pathologic features of microangiopathic hemolytic anemia, thrombocytopenia, and organ injury from pathologic small-vessel thrombosis. At least nine primary TMA syndromes have been described and classified based on common probable etiologies, diagnostic criteria, and treatments. The most recognized of the TMA syndromes include thrombotic
thrombocytopenic purpura (TTP) and hemolytic-uremic syndrome (HUS). Advanced laboratory techniques are required to distinguish between these syndromes; however, all patients should initially be treated with plasma exchange for presumed ADAMTS13 deficiency-mediated TMA. The authors present a case of a TMA syndrome in a Navy SEAL (Sea, Air, Land) candidate.

See also


Routine chlorhexidine gluconate use onboard navy surface vessels to reduce infection: A cluster randomized controlled trial. Under Infectious and Communicable Diseases.

Source
American Journal of Nephrology 2016 14-21

Author(s)
Gale R.C., Kehoe D., et al.

Abstract
Background and Objectives: Preemptive placement of permanent dialysis access is recommended in order to reduce the morbidity associated with central venous catheters. We assessed the effect of a dialysis access coordinator on preemptive access placement in veterans who are at high risk for end-stage renal disease (ESRD). Design, Setting, Participants, and Measurements: Pre-post evaluation of a dialysis access coordinator in the nephrology clinics of the Veterans Affairs Palo Alto. The access coordinator streamlined access referrals, prioritized surgical waiting lists and addressed patient barriers. We compared the frequency of preemptive access referral, surgery, and use for dialysis during the intervention period, July 1, 2013 to May 31, 2016, to a pre-intervention period, January 1, 2011 to December 31, 2013, among all patients with a predicted 1-year risk for ESRD >20%. Results: There were 156 patients in the historical cohort and 131 in the intervention cohort. The mean age was 69.9 +/- 11.6 years and the mean estimated glomerular filtration rate was 14.5 +/- 5.7 ml/min/1.73 m2. The intervention was associated with an 11.8% increase in access referral (p value = 0.03), and a 9.4% increase in completed access surgery (p value = 0.05). Increases in permanent access at the start of dialysis (15.2%), and functional permanent access at the start of dialysis (12.4%) did not reach statistical significance. Among patients who received access surgery, there was no significant difference in the prevalence of unused access. Conclusions: Implementation of an access coordinator was associated with a modest increase in preemptive access placement among patients who are at high risk for ESRD without increasing the prevalence of unused access.
2016-99 0131

Chronic Traumatic Encephalopathy-Like Abnormalities in a Routine Neuropathology Service

Source
Journal of Neuropathology and Experimental Neurology 2016

Author(s)
Noy,S., Krawitz,S., et al.

Abstract
Chronic traumatic encephalopathy (CTE) has been described mainly in professional athletes and military personnel and is characterized by deposition of hyperphosphorylated tau at the depths of cortical sulci and around blood vessels. To assess CTE-like changes in a routine neuropathology service, we prospectively examined 111 brains (age 18-60 years). The presence of tau-immunoreactive deposits was staged using guidelines described by others and was correlated with the medical history. 72/111 cases were negative for CTE-like changes; 34/111 were CTE stage 40 years old. CTE-like changes were not identified at sites of contusion. Among a separate group studied retrospectively, we identified 4 cases that met full criteria for CTE. We conclude that CTE-like findings are not confined to professional athletes; the risk factors of head injury and substance abuse are similar in the routine population. However, the significance of very small hyperphosphorylated tau deposits remains to be determined. In addition, the absence of typical CTE-like deposits near contusion sites keeps open the question of pathogenesis.

2016-99 0132

Military service and the risk of amyotrophic lateral sclerosis: A meta analysis.

Source

Author(s)
Tai H., Cui L.Y., et al.

Abstract
Background: Although a few studies have been conducted to assess possible excess risk of amyotrophic lateral sclerosis (ALS) in Gulf War veterans (1), little attention has been directed toward such risk amongst overall veterans as compared to non-veterans, and the data are still not
conclusive. Recently, several new studies on this topic have been completed. Objectives: To explore the relationship between the risk of amyotrophic lateral sclerosis (ALS) and exposure to military service. Methods: We conducted a search of articles relevant to military service and the risk of ALS that used human subjects and were published in English through 20 May 2016, using Ovid Medline and Embase databases. Studies investigating the risk of ALS for Gulf war veterans were excluded. Quality of the cohort and case-control studies was assessed according to the Newcastle-Ottawa Scale (NOS) (2). Analysis of data and publication bias were performed with Review Manager 5.3. Results: A total of 12 case-control studies and three cohort studies were included in the meta-analysis. The NOS scores of all studies were > 6. The risk of ALS was significantly increased in military personnel compared to non-military personnel (pooled OR=1.28, 95%CI: 1.15-1.42, by fixed-effects model), with a moderate study heterogeneity (p=0.04, I²=43%) due to some studies with lower quality. Sensitivity and publication bias analysis suggested the result was reliable. Subgroup data revealed a positive relationship between military service and ALS risk in males, but not in females. Only two case-control studies were conducted in Japan, compared to 13 studies conducted in Europe/USA. Conclusions: The present meta-analysis supports a positive association between overall military service and the risk of ALS. Given that military personnel are more likely to be exposed to smoking, alcohol consumption, physical trauma and other toxicants that may also influence the risk of developing ALS (1), additional high quality studies with confounding factors adjusted are needed to further confirm the association between military related factors and risk of ALS, especially by gender and for specific geographic regions such as Asia.

2016-99 0133

Preliminary follow-up study of military pilots with asymptomatic cerebral infarction.

Source
Medical Journal of Chinese People’s Liberation Army 2016 41 (9) 779-782

Author(s)
ZHANG,X., and SHI,J.,

Abstract
Objective To observe pilots with asymptomatic cerebral infarction (ACI) for their short-term prognosis. Methods Twenty-two pilots who were diagnosed having ACI by magnetic resonance imaging were enrolled in this study. When they returned to the hospital for regular reexamination, the number of ACI foci, the incidents of acute cerebrovascular disease and grounding of aircraft for any reasons were recorded. According
to whether the ACI lesions increased, the patients were divided into two groups. The risk factors for cerebral vascular disease were compared between the two groups. Results All the patients were followed for 6-42 months (mean 14.18±8.55 months), and 6(18.18%) patients were found to have increase of lesions. No neurological deficit was seen in the two groups, although 3 flight crews were grounded for non-ACI reason. Age and flight time showed statistically significant differences between the lesions increased group and no lesion increased group. Conclusions The number of ACI foci of some pilots may increase, which is affected by age and flight time. Further investigations on the long-term prognosis and the impacts on flight are needed.

See also

Capitalizing on Military Nurse Skills for Second-Career Leadership and Staff Development Roles

Source
Journal of Continuing Education in Nursing 2016 47 (11) 503-510

Author(s)

Abstract
Nursing continues to face professional workforce and diversity shortage problems. This article advocates for examining an untapped resource—the consideration of applicants for nursing leadership and educational positions in civilian health care organizations. This untapped resource is highly qualified, already retired (or going to be separated) military nurse officers (MNOs) who possess extensive health care knowledge, as well as distinctive ethnicity and gender composition. Clinical educators, as part of the organizational leadership, can play an important role in assisting the MNO civilian position assimilation because they come from a structured and unique cultural environment. Several innovative preparatory strategies are proposed to highlight the organization's support and commitment regarding preselection, recruiting, hiring, and mentoring, including the use of a specific navigational mentor to achieve the necessary acquired cultural assimilation for the MNO's success, satisfaction, and retention.
Twenty-three-year long-term health outcome after the war in Vukovar.

Source
Acta Clinica Croatica 2016 55 (1) 58-62
Author(s)
Habek D., Dujakovic T., et al.

Abstract
Results of the first research of this kind on the 23-year long-term outcome in children born during the war in Vukovar are presented. This retrospective clinical study surveyed the potential 23-year long-term consequences and morbidity of children born between May 1, 1991 and November 19, 1991, during the siege and occupation of Vukovar. Data were obtained from women having delivered their babies in that period and from delivery protocols of the Department of Gynecology and Obstetrics, Vukovar County Hospital. According to the survey and the data collected, there were 9 (3.98%) preterm deliveries, 60 (81%) of the total of 77 subjects were breastfed, 14 (19%) were not breastfed, while three babies died in the postpartum period. However, the breastfeeding period was evidently shorter, as only 10 women breastfed for a period longer than 6 months, while the mean length of the breastfeeding period was 9.9 weeks, i.e. 2.5 months. Allergy related illnesses and proneness to infections in childhood and preschool age were found in 27.3% and 16.9% of children, respectively, while two children developed diabetes type 1. One child had atopic diathesis, two started speaking after the age of two, one child started walking late (after 20 months) and started speaking after the age of two, one child had loud sound phobia, and one used to overreact and express anger in inconvenient situations, all of them being of female gender and born prematurely. Cognitive and attention disorders and stress reactions were found in 6.5% of the children. Regular elementary school education was completed by 74 (96%) children, while three (3.8%) children experienced failure at school due bad behavior, i.e. delinquency. At the age of 23, 34 (46%) children had developed bad habits, i.e. 33 of them smoked, 2 were addicted to alcohol, whereas one was addicted to both smoking and alcohol. Forty (54%) subjects did not use any harmful substances. Psychiatric disorders related to anxiety, depression or other illnesses were not found in this research. In conclusion, it should be noted that pregnant women who gave birth during the study period spent the first trimester of their pregnancy in a relatively peaceful pre-war period without acute stressors, so the long-term results and morbidity actually did not differ from those in the general
population. The most important isolated risk factor was premature delivery with the known short-term and long-term consequences typical for premature delivery (perinatal mortality, slow neuromotor and cognitive development).

2016-99 0136

Prevalence of Perinatal Depression in the Military: A Systematic Review of the Literature

Source
Maternal & Child Health Journal 2016 20 52-65

Author(s)
Klaman,S. and Turner,K.

Abstract
Objectives Perinatal depression (PND) has been widely studied in the general population, but has been under studied in military populations. This literature review evaluates studies of PND in military service women and spouses of military servicemen. Methods Articles from peer-reviewed journals published from January 2005 to September 2015 were included if they reported on US military women and/or spouses of military servicemen who were screened for PND symptoms during the prenatal and/or postpartum periods; and were available in English. Qualitative studies were excluded. Studies were compared and contrasted by screening instrument, screening time-period, study population, deployment status as a unique risk factor, and results. Results Ten articles were included. Studies varied greatly in methodology and use of screening instruments and screening time-period, but collectively indicate a wide prevalence range of PND symptoms in military populations. Studies also indicate deployment status as a unique risk factor associated with PND symptoms. Common methodological issues include excluding women at high risk for PND, and not reporting if adequate clinical resources were readily available to ensure appropriate diagnostic and therapeutic services treatment for women who screened positive for PND. Conclusions for Practice PND is receiving increasing attention and military populations should be studied more closely to identify this condition, and understand the complex interactions of unique risk factors associated with a military way of life in order to implement more rigorous screening and early, appropriate intervention strategies.
OCCUPATIONAL HEALTH

2016-99 0137

Are Internalized Metals a Long-term Health Hazard for Military Veterans? – Ctrl + Click to follow link

Source
Public Health Reports 2016 131 (6) 831-833
Author(s)
Kalinich, J.F. and Kasper, C.E.

Abstract
Military personnel on today's battlefields face a plethora of potentially toxic hazards, not the least of which is exposure to heavy metals. Metals can be internalized through various routes, including ingestion and—as the most likely routes for military personnel—inhalation and embedding of fragments. Metal-containing particulates in smoke from destroyed vehicles and open-air burn pits, as well as environmental dust, present a risk for internalizing metals via inhalation. Likewise, wounds containing embedded metal fragments can result in a long-term depot of potentially toxic metals.

2016-99 0138

Audiologic characteristics in a sample of recently-separated military Veterans: The Noise Outcomes in Servicemembers Epidemiology Study (NOISE Study)

Source
Hearing Research 2016
Author(s)
Gordon, J.S., Griest, S.E., et al.

Abstract
Military Service Members are often exposed to high levels of occupational noise, solvents, and other exposures that can be damaging to the auditory system. Little is known about hearing loss and how it progresses in Veterans following military service. This epidemiology study is designed to evaluate and monitor a cohort of Veterans for 20 years or more to determine how hearing loss changes over time and how those changes are related to noise exposure and other ototoxic exposures encountered during military service. Data reported here are from baseline assessments of the first 100 study participants (84 males; 16 females; mean age 33.5 years; SD 8.8; range 21-58). Each participant was asked to complete a comprehensive audiologic examination and self-report questionnaires regarding sociodemographic characteristics, noise and solvent exposures, health conditions common among post-deployment Veterans, and the social and
emotional consequences of hearing loss. For this relatively young cohort, 29% exhibited hearing loss, defined as average hearing threshold >20 dB HL in the conventional audiometric range. Forty-two percent exhibited hearing loss in the extended-high-frequency audiometric range using the same criterion (average hearing threshold >20 dB HL). Certain factors were found to be associated with poorer hearing in both conventional and extended-high-frequency ranges, including age, type of military branch, years of military service, number of military deployments, noise exposure, tinnitus, and a positive screen for post-traumatic stress disorder. Although the majority of participants had hearing within normal limits, 27% reported a self-perceived mild/moderate hearing handicap and 14% reported a significant handicap. Further research is needed to identify a cause for this discrepancy in audiologic results versus self-report. The information obtained from this longitudinal study could be used in future resource planning with the goal of preventing, as much as possible, the development of hearing loss during military service, and the exacerbation of prevalent hearing loss after military service and over Veterans' lifetimes.

2016-99 0139

The effects of elevated hearing thresholds on performance in a paintball simulation of individual dismounted combat

Source
International Journal of Audiology 2016 1-7

Author(s)

Abstract
Objective: To examine the relationship between hearing acuity and operational performance in simulated dismounted combat.; Design: Individuals wearing hearing loss simulation systems competed in a paintball-based exercise where the objective was to be the last player remaining. Four hearing loss profiles were tested in each round (no hearing loss, mild, moderate and severe) and four rounds were played to make up a match. This allowed counterbalancing of simulated hearing loss across participants.; Study Sample: Forty-three participants across two data collection sites (Fort Detrick, Maryland and the United States Military Academy, New York). All participants self-reported normal hearing except for two who reported mild hearing loss.; Results: Impaired hearing had a greater impact on the offensive capabilities of participants than it did on their "survival", likely due to the tendency for individuals with simulated impairment to adopt a more conservative behavioural strategy than those with normal hearing.; Conclusions: These preliminary results provide valuable insights into the impact of impaired hearing on combat
effectiveness, with implications for the development of improved auditory fitness-for-duty standards, the establishment of performance requirements for hearing protection technologies, and the refinement of strategies to train military personnel on how to use hearing protection in combat environments.

2016-99 0140

Herbicide exposure, Vietnam service, and hypertension risk in army chemical corps veterans.

Source
Journal of Occupational and Environmental Medicine 2016 58 (11) 1127-1136

Author(s)

Abstract
Objective: We examined hypertension risk in Army Chemical Corps (ACC) veterans who sprayed defoliant in Vietnam.
Methods: We analyzed data from the 2013 health survey of 3086 ACC veterans and investigated the association between self-reported physician-diagnosed-hypertension (SRH) and herbicide-spray-history adjusting for Vietnam-service-status, rank, age, tobacco/alcohol use, race, and body mass index (BMI). Spray-history was verified against serum 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) (n=636). SRH was confirmed by blood pressure (BP) measurement by trained medical technicians and medical record reviews. Results: Herbicidespray-history (ORadjusted[95%confidence interval {CI}]=1.74[1.44,2.11]) and Vietnam-service-status (ORadjusted=1.26[1.05,1.53]) were significantly associated with SRH. The association was highest when comparing Vietnam-service-sprayers to non-Vietnam-service-nonsprayers (ORAdjusted=2.21[1.76,2.77]). Serum TCDD was highest for Vietnamservice-sprayers. Mean systolic BPs were significantly higher among veterans with SRH than those without (P<0.001). Medical records and SRH overall agreement was 89%. Conclusion: Occupational herbicide exposure history and Vietnam-service-status were significantly associated with hypertension risk.
2016-99 0141

How Do Aftermath of Battle Experiences Affect Returning OEF/OIF Veterans?

Source
Military Behavioral Health 2016 4 (4) 345-350

Author(s)
Henschel, A.V., and McDevitt-Murphy, M.E.,

Abstract
Aftermath of battle experiences (ABEs) may contribute to adverse mental and physical health outcomes. This study examined ABEs and their effect on health functioning and post-traumatic stress disorder (PTSD) in 66 Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF)/Operation New Dawn (OND) veterans. Bivariate correlations were conducted to investigate the contribution of ABEs to PTSD and health functioning, after controlling for combat experiences. In addition, a mediation analysis was conducted on role limitations due to emotional problems. Results suggested that the association between ABEs and role limitations due to emotional problems was mediated by PTSD. These initial findings suggest the need for more research on differences in deployment experiences.

2016-99 0142

Long-term Health Consequences of Military Service: A Proposal to Strengthen Surveillance and Research

Source
Public Health Reports 2016 131 (6) 834-838

Author(s)

Abstract
Military service can affect health years after military service, but studying these long-term health effects is challenging. US Department of Defense (DoD) records may not span sufficient time, because most service members leave active duty after only a few years in service. Long-term studies are needed on veterans who use US Department of Veterans Affairs (VA) health care. Now is an opportune time to conduct these studies, in part because the DoD and VA are moving toward electronic health record (EHR) interoperability. However, many veterans use private sector health care in addition to, or instead of, VA health care. The growing adoption of EHRs in the federal government and private sector and the development of a federal infrastructure for health information
exchange offer an opportunity to study the long-term health consequences of military service. We propose that the DoD and VA invite all members who are departing service to participate in a long-term observational study of their health that would span military service and postservice periods. The initiative would use an existing health information exchange program to capture health-related data from military service records and health care data from veterans’ place of care (ie, the DoD, VA, or private sector). It would impose minimal burden on participants but could provide substantial benefits to them, to other veterans, and to service members.

2016-99 0143

The long-term impact of combat exposure on health, interpersonal, and economic domains of functioning

Source
Aging & Mental Health 2016 20 (11) 1202-1212

Author(s)
Sheffler, J.L., Rushing, N.C., et al.

Abstract
Purpose: Wartime combat exposure is linked to a broad array of negative outcomes. The current study identified potential differences between middle-to-older aged men exposed to combat and those not exposed for physical health, interpersonal, and economic functioning over 10 years. Post-traumatic stress disorder (PTSD) and social support were examined as moderators between combat exposure and outcomes. Methods: Data from the National Comorbidity Survey, baseline and 10-year follow-up, were utilized. Only men aged 50–65 at follow-up (N = 727) were included. Group differences between combat and non-combat men were examined. Regression analyses were performed to examine relationships between earlier combat and health, interpersonal, and economic outcomes over time, while controlling for important covariates. Results: Combat-exposed men were at increased risk for asthma, arthritis/rheumatism, lung diseases, headaches, and pain; they also had greater marital instability. However, combat-exposed men reported economic advantages, including higher personal earnings at follow-up. For combat-exposed men, PTSD did not increase risk for headaches; however, PTSD in non-combat men was associated with increased risk for headaches at follow-up. Whereas combat-exposed men with higher levels of social support were less likely to report chronic pain at follow-up,
there were no group differences in pain at lower levels of social support. Implications: Individuals who experience combat may be susceptible to later health and marital problems; however, as combat-exposed men age, they demonstrate some resilience, including in economic domains of life. Given that consequences of combat may manifest years after initial exposure, knowledge of combat exposure is necessary to inform treatments and the delivery of disability benefits.

2016-99 0144

Medical Provider Ballistic Protection at Active Shooter Events.

Source
Journal of Special Operations Medicine 2016 16 (3) 36-40

Author(s)
Stopyra, J.P., and Bozeman, W.P.,

Abstract
There is some controversy about whether ballistic protective equipment (body armor) is required for medical responders who may be called to respond to active shooter mass casualty incidents. In this article, we describe the ongoing evolution of recommendations to optimize medical care to injured victims at such an incident. We propose that body armor is not mandatory for medical responders participating in a rapid-response capacity, in keeping with the Hartford Consensus and Arlington Rescue Task Force models. However, we acknowledge that the development and implementation of these programs may benefit from the availability of such equipment as one component of risk mitigation. Many police agencies regularly retire body armor on a defined time schedule before the end of its effective service life. Coordination with law enforcement may allow such retired body armor to be available to other public safety agencies, such as fire and emergency medical services, providing some degree of ballistic protection to medical responders at little or no cost during the rare mass casualty incident. To provide visual demonstration of this concept, we tested three "retired" ballistic vests with ages ranging from 6 to 27 years. The vests were shot at close range using police-issue 9mm, .40 caliber, .45 caliber, and 12-gauge shotgun rounds. Photographs demonstrate that the vests maintained their ballistic protection and defeated all of these rounds.
Noise dosimetry for tactical environments

Source
Hearing Research 2016

Author(s)

Abstract
Noise exposure and the subsequent hearing loss are well documented aspects of military life. Numerous studies have indicated high rates of noise-induced hearing injury (NIHI) in active-duty service men and women, and recent statistics from the U.S. Department of Veterans Affairs indicate a population of veterans with hearing loss that is growing at an increasing rate. In an effort to minimize hearing loss, the U.S. Department of Defense (DoD) updated its Hearing Conservation Program in 2010, and also has recently revised the DoD Design Criteria Standard Noise Limits (MIL-STD-1474E) which defines allowable noise levels in the design of all military acquisitions including weapons and vehicles. Even with such mandates, it remains a challenge to accurately quantify the noise exposure experienced by a Warfighter over the course of a mission or training exercise, or even in a standard work day. Noise dosimeters are intended for exactly this purpose, but variations in device placement (e.g., free-field, on-body, in/near-ear), hardware (e.g., microphone, analog-to-digital converter), measurement time (e.g., work day, 24-h), and dose metric calculations (e.g., time-weighted energy, peak levels, Auditory Risk Units), as well as noise types (e.g., continuous, intermittent, impulsive) can cause exposure measurements to be incomplete, inaccurate, or inappropriate for a given situation. This paper describes the design of a noise dosimeter capable of acquiring exposure data across tactical environments. Two generations of prototypes have been built at MIT Lincoln Laboratory with funding from the U.S. Army, Navy, and Marine Corps. Details related to hardware, signal processing, and testing efforts are provided, along with example tactical military noise data and lessons learned from early fieldings. Finally, we discuss the continued need to prioritize personalized dosimetry in order to improve models that predict or characterize the risk of auditory damage, to integrate dosimeters with hearing-protection devices, and to inform strategies and metrics for reducing NIHI.

Source
Military Medicine 2016 181 (11) e1637-e1643
Author(s)
Gaydos, J.C., and Mallon, T.M.,

Abstract
Background: Reorganization of the Army and critical assessment of Army Graduate Medical Education programs prompted the Occupational and Environmental Medicine (OEM) Consultant to the Army Surgeon General to initiate a review of current Army OEM residency training. Available information indicated the Army OEM residency at Aberdeen Proving Ground, MD, was the first and longest operating Army OEM residency. Describing this residency was identified as the first step in the review, with the objectives of determining why the residency was started and sustained and its relevance to the needs of the Army. Methods: Records possibly related to the residency were reviewed, starting with 1954 since certification of physicians as Occupation Medicine specialists began in 1955. Interviews were conducted with selected physicians who had strong affiliations with the Army residency and the practice of Army OEM. Findings: The Army OEM residency began in 1960 and closed in 1996 with the transfer of Army OEM residency training to the Uniformed Services University of the Health Sciences, Bethesda, MD. Over 36 years, 47 uniformed residency graduates were identified; 44 were from the Army. Forty graduated between 1982 and 1996. The OEM residency was part of a dynamic cycle. Uniformed OEM leaders identified the knowledge and skills required of military OEM physicians and where these people should be stationed in the global Army. Rotations at military sites to acquire the needed knowledge and skills were integrated into the residency. Residency graduates were assigned to positions where they were needed. Having uniformed residents and preceptors facilitated the development of trust with military leaders and access to areas where OEM physician skills and knowledge could have a positive impact. Early reports indicated the residency was important in recruiting and retaining OEM physicians, with emphasis placed on supporting the Army industrial base. The late 1970s into the 1990s was a more dynamic period. There was heightened interest in environmental protection and restoration of military installations, and in the threats posed by nuclear, biological and chemical weapons. Additionally, President Reagan initiated a military buildup that brought new health risks to soldiers who would use and maintain modern equipment. Army OEM
physicians were required to possess competencies in many areas, to include depots in the Army industrial base, occupational health for the soldier for exposures like carbon monoxide in armored vehicles, military unique exposures like those from chemical threat agents, and environmental medicine to assess health risks on contaminated U.S. military sites and from exposures of deployed forces. These offered interesting OEM training opportunities that challenged residents in the program and helped recruit new residents.

Discussion: The strength of the first Army OEM residency was that it was part of a dynamic cycle that consisted of identifying and defining Army OEM needs, training physicians to meet those needs and assigning residency graduates to positions where they would have a positive impact. This paradigm can be used as the basis for contemporary assessments of the Army's need for uniformed OEM physicians and a uniformed OEM residency program.

See also


Longitudinal assessment of distress among veterans with incidental pulmonary nodules.

Source

Author(s)
Slatore C.G., Wiener R.S., et al.

Abstract
Rationale: Millions of patients are diagnosed with pulmonary nodules every year. Increased distress may be a common harm, but methods of mitigating this distress are unclear. Objectives: We aimed to determine whether high-quality communication regarding the discovery of a pulmonary nodule is associated with a lower level of patient distress. Methods: We conducted a prospective, repeated-measures cohort study of 121 patients with newly reported, incidentally detected pulmonary nodules. The primary exposure was participant-reported quality of communication regarding the nodule. Secondary exposures included communication measures regarding participants' values, preferences, and decision making. The main outcome was nodule-related distress measured using the Impact of Event Scale. We used adjusted generalized estimating equations to measure the association between nodule communication quality and at least mild distress. Measurements and Main Results: Most participants (57%) reported at least mild distress at least once. While average distress scores decreased over time, one-fourth still had elevated distress after 2 years of surveillance for a nodule. The average calculated risk of cancer at baseline was 10% (SD, 13%), but 52.4% believed they had a greater than 30% risk of lung cancer at baseline, and this percentage remained fairly constant at all visits. High-quality nodule communication was associated with decreased odds of distress (adjusted odds ratio, 0.42; 95% confidence interval, 0.24-0.73). Lower-quality communication processes regarding participants' values and preferences were also associated with increased odds of distress, but concordance between the actual and preferred decision-making roles was not. Conclusions: Among patients with incidentally discovered pulmonary nodules, distress is common and persistent for about 25%. Many participants substantially overestimate their risk of lung cancer.
Incorporating patients' values and preferences into communication about a pulmonary nodule and its evaluation may mitigate distress.

2016-99 0148

Military Veteran Cancer Survivors' Preferences for a Program to Address Lifestyle Change and Psychosocial Wellness following Treatment

Source
Journal of Psychosocial Oncology 2016 ( ) 0-0

Author(s)

Abstract
Objective: This study aimed to understand military veteran cancer survivors' preferences regarding the delivery of post-treatment wellness services.

Methods: Thirty-three military veteran cancer survivors were interviewed about their perceptions of three models of health service delivery (home-, primary care-, and oncology-based services).

Results: Conventional qualitative content analysis revealed strengths and weaknesses of each service delivery model's content and structure (e.g., program location, inclusion of emotional support, access to clinical experts).

Conclusions: All service delivery programs had strengths, with clinic-based programs offering the greatest breadth of services deemed important for wellness by cancer survivors.
Symptoms and Satisfaction of Patients in the Patient-Reported Outcomes With Laser In Situ Keratomileusis (PROWL) Studies

Source
JAMA Ophthalmology 2016
Author(s)

Abstract
Importance: Patient-reported outcomes should be collected using validated questionnaires prior to and following laser in situ keratomileusis (LASIK) surgery.; Objective: To report the frequency of patient-reported visual symptoms, dry eye symptoms, satisfaction with vision, and satisfaction with LASIK surgery in the Patient-Reported Outcomes With LASIK (PROWL) studies.; Design, Setting, and Participants: The PROWL-1 and PROWL-2 studies were prospective, observational studies conducted from September 13, 2011, to June 27, 2014. The PROWL-1 study was a single-military center study of 262 active-duty Navy personnel 21 to 52 years of age. The PROWL-2 study was a study of 312 civilians 21 to 57 years of age conducted at 5 private practice and academic centers. The LASIK surgery and the postoperative care were performed based on the usual practice and clinical judgment at the site. Participants completed a self-administered, web-based questionnaire, preoperatively and postoperatively at 1 and 3 months (the PROWL-1 and -2 studies) and at 6 months (the PROWL-2 study).; Exposures: Participants underwent LASIK surgery for myopia, hyperopia, and/or astigmatism.; Main Outcomes and Measures: Visual symptoms (double images, glare, halos, and/or starbursts), dry eye symptoms, participant satisfaction (with vision and LASIK surgery), and clinical measures (visual acuity, refractive error, and slitlamp and posterior segment eye examination findings) were assessed preoperatively and at 1, 3, and 6 months postoperatively.; Results: A total of 262 participants were enrolled in the PROWL-1 study (mean SD] age, 29.1 6.1] years), and a total of 312 participants were enrolled in the PROWL-2 study (mean SD] age, 31.5 7.3] years). Visual symptoms and dissatisfaction with vision were common preoperatively. Overall, the prevalence of visual symptoms and dry eye symptoms decreased, although a substantial percentage of participants reported new visual symptoms after surgery (43% 95% CI, 31%-55%) from the PROWL-1 study and 46% 95% CI, 33%-58%) from the PROWL-2 study at 3 months). The percentages of participants in the PROWL-1 study with normal Ocular Surface Disease Index scores were 55% (95% CI, 48%-61%)
at baseline, 66% (95% CI, 59%-72%) at 3 months, and 73% (95% CI, 67%-79%) at 6 months. The percentages of participants in the PROWL-2 study with normal Ocular Surface Disease Index scores were 44% (95% CI, 38%-50%) at baseline and 65% (95% CI, 59%-71%) at 3 months. Of those participants who had normal scores at baseline in both the PROWL-1 and -2 studies, about 28% (95% CI, 19%-37%) had mild, moderate, or severe dry eye symptoms at 3 months. While most participants were satisfied, the rates of dissatisfaction with vision ranged from 1% (95% CI, 0%-4%) to 4% (95% CI, 2%-7%), and the rates of dissatisfaction with surgery ranged from 1% (95% CI, 0%-4%) to 2% (95% CI, 1%-5%).

Conclusions and Relevance: The systematic administration of a questionnaire to patients who have undergone LASIK surgery is a new approach to assess symptoms and satisfaction. Our findings support the need for adequate counseling about the possibility of developing new symptoms after LASIK surgery.

See also

G-Induced Visual Symptoms in a Military Helicopter Pilot.
Under Aviation and Space Medicine.
Causes of Primary Total Hip Arthroplasty in Active Duty Soldiers—Are Recurrent Medical Assessments Associated With Reduced Rates of Secondary Osteoarthritis in This Population?

Source
Military Medicine 2016 181 (11) e1657-e1660

Author(s)
Grözinger,A., and Musa,A.,

Abstract
The purpose of this study was to analyze the different causes of symptomatic osteoarthritis (OA) of the hip joint in active duty soldiers requiring a total hip arthroplasty and the hypothesis that soldiers had a reduced prevalence of secondary OA as a result of a selection process that has taken place through multiple medical assessments during their military career. We analyzed patient records from 2006 to 2012 for male patients ≤60 years with OA of the hip and indication for total hip arthroplasty in a military hospital in which civilian patients are also treated. About 44 military patients (MP) and 69 civilian patients (CP) were included. The prevalence of different causes of OA of the hip did not differ significantly in both groups (primary OA MP: 59.1% [n = 26], CP: 56.5% [n = 39]; dysplasia MP: 25.0% [n = 11], CP: 24.6% [n = 17]; femoral head necrosis MP: 11.4% [n = 5], CP: 13% [n = 9]; post-traumatic OA MP: 4.5% [n = 2], CP: 5.8% [n = 4]). In conclusion, recurrent medical assessments that are usually based alone on clinical examinations were not able to reduce the prevalence of prearthrotic deformities as a joint-specific risk factor for the development of symptomatic hip OA in our military collective.

A comparison of multidisciplinary team residential rehabilitation with conventional outpatient care for the treatment of non-arthritic intra-articular hip pain in UK Military personnel - a protocol for a randomised controlled trial

Source
BMC Musculoskeletal Disorders 2016 17 (1) 459-459

Author(s)
Coppack,R.J., Bilzon,J.L., et al.

Abstract
Background: Non-arthritic hip disorders are defined as
Abnormalities of the articulating surfaces of the acetabulum and femur before the onset of osteoarthritis, including intra-articular structures such as the acetabular labrum and chondral surfaces. Abnormal femoroacetabular morphology is commonly seen in young men who constitute much of the UK military population. Residential multidisciplinary team (MDT) rehabilitation for patients with musculoskeletal injuries has a long tradition in the UK military, however, there are no studies presenting empirical data on the efficacy of a residential MDT approach compared with individualised conventional outpatient treatment. With no available data, the sustainability of this care pathway has been questioned. The purpose of this randomised controlled trial is to compare the effects of a residential multidisciplinary intervention, to usual outpatient care, on the clinical outcomes of young active adults undergoing treatment for non-arthritic intra-articular hip pain.

**Methods/design:** The trial will be conducted at the Defence Medical Rehabilitation Centre, Headley Court, UK. One hundred military male participants with clinical indicators of non-arthritic intra-articular hip pain will be randomly allocated to either: (1) 7-day residential multidisciplinary team intervention, n = 50; (2) 6-week physiotherapist-led outpatient intervention (conventional care), n = 50. Measurements will be taken at baseline, post-treatment (1-week MDT group; 6-weeks physiotherapy group), and 12-weeks. The primary outcome measures are the function in daily living sub-scale of the Copenhagen Hip and Groin Outcome Score (HAGOS), the physical function subscale of the Non-arthritic Hip Score (NAHS), and VAS pain scale. Secondary outcomes include objective measures of physical capacity and general health. An intention-to-treat analysis will be performed using linear and mixed models.

**Discussion:** This study will be the first to assess the efficacy of intensive MDT rehabilitation, versus conventional outpatient care, for the management of non-arthritic hip pain. The results from this study will add to the evidence-base and inform clinical practice for the management of intra-articular non-arthritic hip pain and femoroacetabular impingement in young active adults.

**Trial Registration:** ISRCTN Reference: ISRCTN 59255714 dated 11-Nov-2015.
Background: Upper limb amputations are one of the unpleasant war injuries that armed forces are exposed to frequently. The present study aimed to assess the musculoskeletal and peripheral nervous systems in Iraq-Iran war veterans with bilateral upper extremity amputation. Methods: The study consisted of taking a history and clinical examinations including demographic data, presence and location of pain, level of amputation, passive and active ranges of movement of the joints across the upper and lower extremities and spine, manual palpation, neurological examination, blood circulation pulses and issues related to a prosthetic limb. In this study, 103 Iranian bilateral upper extremity amputees (206 amputations) from the Iran-Iraq war were evaluated, and a detailed questionnaire was also administered. Results: The most common level of amputation was the finger or wrist level (108, 52.4 %). Based on clinical examination, we found high frequencies of limited active and passive joint range of movement across the scapula, shoulder, elbow, wrist and metacarpophalangeal, interphalangeal and thumb joints. Based on muscle strength testing, we found varying degrees of weakness across the upper limbs. Musculoskeletal disorders included epicondylitis (65, 31.6 %), rotator cuff injury (24, 11.7 %), bicipital tendonitis (69, 33.5 %), shoulder drop (42, 20.4 %) and muscle atrophy (19, 9.2 %). Peripheral nerve disorders included carpal tunnel syndrome in 13 (6.3 %) and unilateral brachial plexus injury in 1 (1 %). Fifty-three (51.5 %) were diagnosed with facet joint syndrome at the level of the cervical spine (the most frequent site). Using a prosthesis was reported by 65 (63.1 %), both left and right sides. The back was the most common site of pain (71.8 %). Conclusion: The high prevalence of neuro-musculoskeletal disorders among bilateral upper extremity amputees indicates that they need regular rehabilitation care.

2016-99 0153

Descriptive Characteristics and Amputation Rates With Use of Intrepid Dynamic Exoskeleton Orthosis.

Source
Military Medicine 2016 181 (S4) 77-80

Author(s)
Hill,O., and Bulathsinhal,a.,.

Abstract
Advancements in ankle-foot orthotic devices, such as the Intrepid Dynamic Exoskeletal Orthosis (IDEO), are designed to improve function and reduce pain of the injured lower extremity. There is a paucity of research detailing the demographics, injury patterns and amputation outcomes of patients who have been prescribed an IDEO. The purpose of this study was to describe the demographics, presenting
diagnosis and patterns of amputation in patients prescribed an IDEO at the Center for the Intrepid (CFI). The study population was comprised of 624 service members who were treated at the CFI and prescribed an IDEO between 2009 and 2014. Data were extracted from the Expeditionary Medical Encounter Database, Defense Manpower Data Center, Military Health System Data Repository, and CFI patient records for demographic and injury information as well as an amputation outcome. The most common injury category that received an IDEO prescription was injuries at or surrounding the ankle joint (25.0%), followed by tibia injuries (17.5%) and nerve injuries below the knee (16.4%). Over 80% of the sample avoided amputation within a one year time period using this treatment modality. Future studies should longitudinally track IDEO users for a longer term to determine the long term viability of the device.

2016-99 0154

The effect of army vest design on the occurrence of stress fractures and overuse injuries in female military recruits –

Source
Journal of the Royal Army Medical Corps 2016 ( )

Author(s)

Abstract
Introduction: Stress fractures (SFs) occur when microdamage caused by repetitive mechanical load exceeds the biological load-bearing capacity of the bone. The study objective was to test whether a vest specifically designed and manufactured for female recruits, compared with the standard vest used on a regular basis by Border Police recruits, would reduce the incidence of SF in female Border Police recruits. Data based on reports of military personnel show that women are more likely to sustain SFs.; Methods: A follow-up of 240 female Border Police infantry recruits, divided into two trial groups, was conducted from 2007 to 2009. Two different vests were evaluated-the standard special unit fighting vest, which was conventionally used by both men and women during basic training, and the new fighting vest, specially design for female body shape.; Results: No significant difference was noted in the number of SFs between the two groups which may be attributed to increased weight of the new vest. There was a lower incidence of long bone SFs which may have been due to the superior vest design. The female Border Police Infantry recruits expressed great satisfaction with the new vest.;
Conclusions: Increased effort should be invested to further reduce the weight of female combat gear, alongside efforts to improve fit and comfort.

2016-99 0155

Gender differences in load carriage injuries of Australian army soldiers

Source
BMC Musculoskeletal Disorders 2016 17 (1) 488-488

Author(s)
Orr, R.M. and Pope, R.

Abstract
Background: With the removal of gender restrictions and the changing nature of warfare potentially increasing female soldier exposure to heavy military load carriage, the aim of this research was to determine relative risks and patterns of load carriage related injuries in female compared to male soldiers.

Methods: The Australian Defence Force Occupational Health, Safety and Compensation Analysis and Reporting workplace injury database was searched to identify all reported load carriage injuries. Using key search terms, the narrative description fields were used as the search medium to identify records of interest. Population estimates of the female: male incident rate ratio (IRR) were calculated with ninety-five percent confidence interval (95% CI) around the population estimate of each IRR determined.

Results: Female soldiers sustained 10% (n = 40) of the 401 reported injuries, with a female to male IRR of 1.02 (95% CI 0.74 to 1.41). The most common site of injury for both genders was the back (F: n = 11, 27%; M: n = 80, 22%), followed by the foot in female soldiers (n = 8, 20%) and the ankle (n = 60, 17%) in male soldiers. Fifteen percent (n = 6) of injuries in female soldiers and 6% (n = 23) of injuries in males were classified as Serious Personal Injuries (SPI) with the lower back the leading site for both genders (F: n = 3, 43%; M: n = 8, 29%). The injury risk ratio of SPI for female compared to male soldiers was 2.40 (95% CI 0.98 to 5.88).

Conclusions: While both genders similarly have the lower back as the leading site of injury while carrying load, female soldiers have more injuries to the foot as the second leading site of injury, as opposed to ankle injuries in males. The typically smaller statures of female soldiers may have predisposed them to their observed higher risk of suffering SPI while carrying loads.
Heavy Loads and Lifting are Risk Factors for Musculoskeletal Injuries in Deployed Female Soldiers.

Source
Military Medicine 2016 181 (11) e1476-e1483
Author(s)
Roy, T.C., and Piva, S.R.,

Abstract
The purpose of this prospective cohort study was to investigate physical, occupational, and psychosocial risk factors for musculoskeletal injuries (MSI) in deployed female soldiers. Before deployment, participants completed performance testing and surveys and after deployment an additional survey detailing occupational demands and MSI. Data analyzed found 57/160 (36%) suffered 78 MSI. In unadjusted analyses, these factors increased the relative risk (RR, 95% confidence interval) of injury: wearing an average load >10% body weight (BW) (RR = 2.00, 1.31–4.57), wearing an average load >1 hour (RR = 2.44, 1.30–4.57), heaviest load worn >15% BW (RR = 5.83, 1.51–22.50), wearing a backpack (RR = 1.82, 1.23–2.80), wearing body armor >1 hour (RR = 1.62, 1.002–2.62), lifting objects weighing above 22.68 kg (RR = 1.96, 1.08–3.57), lifting objects one to two times (RR = 1.73, 1.002–2.97), carrying objects >7.62 m (RR = 2.01, 1.19–3.42), and Y Balance composite score <95.23 (RR = 1.71, 1.13–2.60). The best logistic regression model predicting MSI was average load as % BW (odds ratio [OR] = 1.04, 1.01–1.07), heaviest load as % BW (OR = 1.03, 1.01–1.05), average repetitions lifting objects (OR = 1.07, 1.01–1.14), and sit-ups (OR = 0.93, 0.93–0.99). Results indicate that risk of MSI in deployed female soldiers increased with heavier equipment worn and more repetitious lifting, although more performing more sit-ups on the fitness test before deployment reduced the risk.

Incidence and Risk Factors for Volar Wrist Ganglia in the U.S. Military and Civilian Populations

Source
The Journal of Hand Surgery 2016 41 (11) 1064-1070
Author(s)
Balazs, G.C., Dworak, T.C., et al.

Abstract
Purpose: To identify the incidence and demographic factors
associated with volar wrist ganglia in both military and civilian beneficiary populations.; Methods: The U.S. Department of Defense Management Analysis and Reporting Tool (M2) accesses a comprehensive database of all health care visits by military personnel and their dependents. Because there is no specific code for ganglions of the wrist, the database was searched for all military personnel and civilian beneficiaries with an International Classification of Diseases, 9th Revision, diagnosis of 727.41 (ganglion of a joint) or 727.43 (ganglion, unspecified location) between 2009 and 2014. Two random samples of 1000 patients were selected from both the military and the civilian beneficiary cohorts, and their electronic medical records were examined to identify those with volar wrist ganglia. The proportion of volar wrist ganglia was then applied to the overall population data to estimate the total incidence with a 95% confidence interval and 5% margin of error. Unadjusted incidence rates and adjusted incidence rate ratios were determined using Poisson regression, controlling for age, sex, branch of military service, and military seniority.; Results: The unadjusted incidence of volar wrist ganglia is 3.72 per 10,000 person-years (0.04%/y) in female civilian beneficiaries, 1.04 per 10,000 person-years (0.01%/y) in male civilian beneficiaries, 7.98 per 10,000 person-years (0.08%/y) in female military personnel, and 3.73 per 10,000 person-years (0.04%/y) in male military personnel. When controlled for age, military personnel have a 2.5-times increased rate of volar wrist ganglia, and women have a 2.3-times increased rate. In the military cohort, female sex, branch of service, and seniority were significantly associated with the diagnosis of a volar wrist ganglion when controlled for age. In the civilian beneficiary cohort, only female sex was significant.; Conclusions: Military service members have higher rates of volar wrist ganglia diagnoses than their age- and sex-matched civilian counterparts. Women are significantly more likely to be diagnosed with a volar wrist ganglion, regardless of age or military status.; Clinical Relevance: The epidemiology of volar wrist ganglia is poorly defined, and few studies have firmly defined demographic factors associated with the diagnosis. We provide the overall incidence rate of the diagnosis and report a significant association with female sex even when controlled for age.
Lower Extremity Compartment Syndrome From Prolonged Limb Compression and Immobilization During an Airborne Operation.

Source
Journal of Special Operations Medicine 2016 16 (3) 5-10
Author(s)
Smedick,B.C., and van Wyck,D.,.

Abstract
Acute compartment syndrome (ACS) involving the leg can occur in association with various traumatic and nontraumatic conditions, and it can have serious longterm consequences when unrecognized or untreated. Nontraumatic causes of ACS, such as those associated with cases of prolonged immobilization and/or extremity compression, can be easily overlooked, and several cases of ACS occurring with prolonged surgical positioning can be found in the literature. We present the case of a 19-year-old Army paratrooper who developed acute anterior and lateral compartment syndrome of the lower extremity after being immobilized in an aircraft for hours with several hundred pounds of equipment compressing his lower extremities. To our knowledge, this is the first documented case of ACS occurring as a result of prejump conditions. It demonstrates a potentially serious complication that could result in medical separation and/or permanent disability of the service member. ACS of the extremity should be considered in any Soldier who is required to bear heavy loads, is immobilized for several hours at a time, and complains of symptoms such as extremity pain, numbness, and weakness.

A Narrative Review of the Prevalence and Risk Factors Associated With Development of Knee Osteoarthritis After Traumatic Unilateral Lower Limb Amputation

Source
Military Medicine 2016 181 ( ) 38-44
Author(s)
Farrokhi,S., Mazzone,B., et al.

Abstract
Introduction: Young military Service Members with traumatic
unilateral lower limb amputations may be at a high risk for developing knee osteoarthritis (OA). There is growing evidence for potential influence and predictive value of nonsystemic risk factors on development and progression of primary knee OA in older adults. Proposed factors include chronic knee pain, obesity, abnormal knee joint mechanics, muscle weakness, previous knee trauma, and altered physical activity level. However, there is limited information available regarding whether such nonsystemic risk factors could also be responsible for the increased risk of knee OA after traumatic, unilateral lower limb amputation in young military Service Members. The purpose of this narrative review is to compile and present evidence regarding prevalence of nonsystemic and potentially modifiable knee OA risk factors in Service Members with traumatic, unilateral lower limb amputation, and to identify potential strategies for intervention.; Materials and Methods: A comprehensive literature search was performed in July 2015 using structured search terms related to nonsystemic risk factors for knee OA.; Results: Current collective evidence does suggest an elevated prevalence of the nonsystemic knee OA risk factors in young military Service Members with unilateral lower limb amputation. In conclusion, the present state of the literature supports that young military Service Members with traumatic unilateral lower limb amputations may be at increased risk for developing knee OA compared to nonamputees. Military Service Members injured at a young age have a long life expectancy, and thus require comprehensive rehabilitation programs to prevent or delay progression of knee OA. Given the lack of strong evidence, further clinical research is needed to determine whether early identification and modification of nonsystemic risk factors for knee OA could optimize long-term function and quality of life in young Service Members after traumatic, unilateral, limb amputations.

2016-99 0160

No clinically meaningful weight changes in a young cohort following total joint arthroplasty at 3-year follow-up

Source
ANZ Journal of Surgery 2016
Author(s)
Formby, P.M., Purcell, R.L., et al.

Abstract
Background: Total joint arthroplasty (TJA) is one of the most successful operations. There is little in the literature regarding
weight change following TJA, particularly in a young cohort.; Methods: Retrospective analysis of 181 primary total hip arthroplasty (THA) and 185 primary total knee arthroplasty (TKA) patients was conducted. We reviewed preoperative and post-operative weights and post-operative body mass index at 3 and 6 months, 1 year, 2 and 3 years. We evaluated expected versus actual weight gain, and performed subgroup analyses of obese versus non-obese patients and active duty versus civilian patients. We used a minimal clinically meaningful weight change from baseline of ≥5%; Results: One hundred and fifty-one (41.3%) patients were active duty military service members with the mean age of 53 ± 11.1 years. In TKA patients, statistically significant differences were found in mean weights at 3 months (-1.8%, P ≤ 0.0001) and 2 years (+1.9%, P = 0.0006). In THA patients, statistically significant weight gains were found at 6 months (+1.1%, P = 0.006). For obese TKA patients, significant weight changes were observed at 3 months (-2.5%, P ≤ 0.0001), and none in the obese THA group. There were no statistical or clinically meaningful weight changes in the non-obese TKA or THA groups. There was a clinically meaningful weight gain in active duty TKA patients at 3 years (5.18%, P = 0.17); Conclusion: Despite a theoretical ability to lose weight following TJA, patients maintain their preoperative weight following TJA. We found a clinically meaningful weight gain at 3 years post-operatively only in active duty TKA patients. Overall, however, we found no clinically significant weight changes following TJA at 3-year follow-up.

2016-99 0161

Open fracture care during war: Opportunities for research.

Source
JBJS Reviews 2016 4 (10)

Author(s)
Rivera J.C., Wenke J.C., et al.

Abstract
Reported infection rates following severe open fractures of the lower extremity sustained in combat have varied widely, from 23% to 85%. The infection rates have been either similar to or higher than those reported in the civilian trauma literature. Deployed surgeons have increased the frequency of fasciotomy procedures for limbs with or at risk for clinical compartment syndrome. The long-term sequelae of compartment syndrome and fasciotomies are not clearly
defined. The definition of the term late amputation has varied in the literature, and studies have not consistently included information on the causes of the amputations. Preclinical and clinical translational studies on the reduction of the rates of infection and other limb morbidities are needed to address the acute care of combat extremity wounds.

2016-99 0162

Osteoporosis Preventive Practice Between Veteran and Nonveteran Older Adults

Source
Orthopaedic Nursing 2016 35 (6) 401-410

Author(s)
Eun-Shim Nahm, Charters,K., et al.

Abstract
BACKGROUND: Veterans are prone to bone-related illnesses due to multiple risk factors such as prior injuries. The aim of this study was to compare trends in osteoporosis preventive practices between veteran and nonveteran older adults.METHODS: This was a secondary data analysis using selected baseline data and discussion postings from an online bone health trial including participants (N = 866) recruited from My HealtheVet (MHV) and SeniorNet (SN). Data were analyzed using descriptive statistics, parametric statistics, and content analysis.FINDINGS: Overall, MHV participants were younger and included more men than SN participants. However, they reported higher rates of bone health issues, spent less time exercising, took fewer calcium and vitamin D supplements, and were less likely to discuss bone health with their care providers. More MHV participants discussed pain and disability as barriers to bone health behaviors and fear of deteriorating health as motivators. In addition, more MHV participants found that participating in the original study was helpful for changing health behaviors. CONCLUSION: Overall, the findings suggest a disparity in bone health between veterans and nonveterans and a significant potential for using eHealth programs for veterans.

2016-99 0163

The Prevalence of Gait Deviations in Individuals With Transtibial Amputation.

Source
Military Medicine 2016 181 (S4) 30-37

Author(s)
Rábago,C.A., and Wilken,J.M.,

Abstract
Individuals with a transtibial amputation (TTA) are at increased risk for developing secondary musculoskeletal disorders as a result of multiple gait deviations. These deviations are primarily characterized using group mean comparisons, which do not establish if deviations are prevalent, of large magnitude, or
both. In contrast, use of normative reference ranges and prevalence specifically identifies the percentage of individuals outside of a predefined acceptable range. The purpose of this study was to identify and characterize gait deviations in service members with unilateral TTA using group mean comparisons and normative reference ranges (able-bodied mean ± 2 SD). Temporal spatial, kinematic, and kinetic data were collected during biomechanical gait assessments of 40 able-bodied males and 16 males with a TTA. Highly prevalent and statistically significant deviations were observed at the ankle and knee of the prosthetic limb and hip of the intact limb in the TTA group. Approximately 20% of measures that were significantly different between groups demonstrated 0% deviation prevalence. Deviations in the prosthetic limb were in agreement with literature, although most intact limb deviations were not. Further study is needed to determine the exact etiology of these deviations, and their association with the development of secondary musculoskeletal conditions.

2016-99 0164

Predictors of Revision Surgery After Anterior Cruciate Ligament Reconstruction

Source
American Journal of Sports Medicine 2016 44 (12) 3140-3145

Author(s)
Pullen,W.M., Bryant,B., et al.

Abstract
BACKGROUND:Arthroscopically assisted anterior cruciate ligament (ACL) reconstruction is a common orthopaedic procedure. Graft failure after reconstruction remains a devastating complication, often requiring revision surgery and less aggressive or modified rehabilitation. Worse functional and patient-reported outcomes are reported compared with primary reconstruction. Moreover, both rates and risk factors for revision are variable and inconsistent within the literature.

PURPOSE:To determine the rate of revision surgery after ACL reconstruction in a large cohort of patients, to assess the influence of patient characteristics on the odds of revision, and to compare revision rates between active-duty military members and non-active-duty beneficiaries.

STUDY DESIGN:Descriptive epidemiology study.

METHODS:Using administrative data from the Military Health System, a retrospective study was designed to characterize the rate of ACL revision surgery among patients treated within a military facility. All patients ≥18 years at the time of ACL reconstruction were identified using the American Medical Association Current
Procedural Terminology (CPT) for ACL reconstruction (CPT code 29888) over 7 years (2005-2011). Revision ACL reconstructions were identified as having ≥2 ACL reconstruction procedure codes on the ipsilateral knee at least 90 days apart. Univariate analysis was performed to calculate odds ratios (ORs) for demographic, perioperative medication use, and concomitant procedure-related risk factors. A multivariate logistic regression model determined risk covariates in the active-duty cohort. RESULTS: The study population consisted of 17,164 ACL reconstructions performed among 16,336 patients, of whom 83.3% were male with a mean ± SD age of 28.9 ± 7.6 years for the nonrevision group, and was predominantly active duty (89.2%). Patients undergoing ACL reconstruction on both knees only contributed their index knee for analyses. There were 587 patients who underwent revision surgery, corresponding to an overall revision rate of 3.6%. The median time from the index surgery to revision surgery was 500 days (interquartile range, 102-2406 days). Revision rates were higher in the active-duty cohort as compared with non-active-duty beneficiaries (3.8% vs 1.8%, respectively; OR, 2.14; 95% CI, 1.49-3.07). Based on multivariate logistic regression in the active-duty cohort, age ≥35 years (OR, 0.44; 95% CI, 0.33-0.58) and concomitant meniscal repair (OR, 0.69; 95% CI, 0.53-0.91) were found to be protective with regard to the odds of revision surgery. Perioperative medication use of nonsteroidal anti-inflammatory drugs (NSAIDs) (OR, 1.33; 95% CI, 1.12-1.58; number needed to harm [NNH], 100) and COX-2 inhibitors (OR, 1.31; 95% CI, 1.04-1.66; NNH, 333) was associated with increased odds of revision surgery. No significant findings were detected among sex, race, nicotine use, body mass index, or other concomitant procedures of interest. CONCLUSION: In this large cohort study, the rate of revision ACL reconstruction was 3.6%, which is consistent with the existing literature. Increased odds of revision surgery among active-duty personnel were associated with the perioperative use of NSAIDs and COX-2 inhibitors. Age ≥35 years and concomitant meniscal repair were found to be protective against ACL revision.

2016-99 0165
The Relationship Between Deployment Frequency and Cumulative Duration, and Discharge for Disability Retirement Among Enlisted Active Duty Soldiers and Marines
Source
Military Medicine 2016 181 (11) e1532-e1539
Author(s)

Abstract
Background: The frequency and duration of deployments associated with increased morbidity is a significant concern for force health protection within the military population. Understanding the association between deployment and disability may provide a clearer understanding of factors adversely affecting U.S. military force readiness.; Methods: A case-control analysis was conducted using records on enlisted active duty personnel in the Army and Marine Corps who were evaluated for a musculoskeletal disability and received a final disability disposition between FY 2003 and 2012. The study compared deployment, deployment frequency, and total time deployed in personnel who received musculoskeletal disability retirement to those with a musculoskeletal disability discharge other than retirement.; Results: For females and males in either service, any deployment was associated with an increased risk of disability retirement (adjusted odds ratios aOR [95% confidence intervals (CI)]: males 1.76 1.65-1.87; females 1.41 1.21-1.64). Furthermore, increasing number of deployments (3+ deployments males aOR 95% CI: 2.21 1.92-2.53) and time spent deployed (24+ months Army Males aOR 95% CI: 2.07 1.79-2.40) significantly increased the odds for disability retirement.; Conclusion: Increasing frequency and duration of military deployments has an increased risk of disability retirement in service members with a musculoskeletal disability. Further research on this relationship is needed in a more representative sample of the U.S. military population.

2016-99 0166

Return to Duty Rates Following Meniscal Repair Surgery in an Active Duty Military Population

Source
Military Medicine 2016 181 (11) e1661-e1665
Author(s)

Abstract
Meniscal injury is a common knee injury in a young athletic population. Maintaining the integrity of the meniscus is critical to reducing contact pressures on the tibiofemoral articulation. The purpose of this study is to analyze the outcomes of
meniscal repair in a young military population. We conducted a retrospective review of all meniscal repairs performed on active duty Army personnel at a Military Medical Center from January 2002 to December 2012. One hundred seventy-eight active duty patients, mean age 28 (19-48) years underwent 178 meniscal repairs. Postoperatively, 33 (18.5%) patients were medically separated from the military at an average time of 29 months. Fifty (28%) patients required a permanent duty restricting profile. Ninety-five (53.5%) patients required no profile after meniscal repair at an average follow-up of 5 (1.5-12.3) years. Meniscal repair in this young military population allowed 81.5% of patients to return to duty; however, 34% of those required a permanent duty restricting profile. Approximately 20% of patients required medical separation from the military after meniscal repair. Older age was significantly associated with the ability to remain on active duty (p = 0.01).

2016-99 0167

The Success of Hip Arthroscopy in an Active Duty Population

Source

Author(s)

Abstract
Purpose: To examine the outcomes of arthroscopic treatment of the hip in a young, active military population. Specifically, the ability to return to duty was the prime indicator of success. In addition, an objective evaluation of various demographic and surgery-related variables was performed to identify predictors for success or failure of treatment in this military population.;

Methods: A retrospective chart review was undertaken to ascertain the results of hip arthroscopy at a single academic military medical center. A total of 206 patients underwent 223 hip arthroscopies during a 13-year period (2000-2013). Of these, 159 patients met the inclusion criteria, which included active duty military service and at least 12-month follow-up. Veterans Affairs Beneficiaries, active duty dependents, and those with less than 12 months of follow-up were excluded. Surgeries were performed by 1 of 5 fellowship-trained orthopaedic surgeons. Data were collected from the Armed Forces Health Longitudinal Technology Application, Electronic
profiling system, and Physical Evaluation Board.; Results: A total of 159 patients were available for the study, 102 males and 57 females. The average age of the patients overall was 30.9 ± 8.3 years (range, 18-52 years). Junior enlisted, which is considered entry level, made up 64.2% of the subjects. The most common diagnosis was femoroacetabular impingement, and the most common procedure performed was acetabuloplasty. Twenty-two percent of patients underwent evaluation by the medical retention board after hip arthroscopy and were separated from military service. Seventy-eight percent of soldiers were maintained on active duty after hip arthroscopy. The overall complication rate was 15.7%, with a major complication rate of 1.25% defined as femoral neck fracture, abdominal compartment syndrome, osteonecrosis, deep vein thrombosis and/or pulmonary embolus, and septic arthritis. Univariate analysis of risk factors showed the presence of a complication to be a significant predictor for failure to return to active duty (odds ratio OR 4.04, P = .0035) as was senior noncommissioned officer rank (OR 0.20, P = .0347). Multivariate analysis showed only the presence of a complication to be a significant predictor for failure to return to active duty (OR 3.71, P = .0083).; Conclusions: Hip arthroscopy in a military population is effective in treating multiple causes and retaining soldiers on active duty status. Complications of any kind from surgery or postoperatively are significant predictors of medical separation and may warrant earlier initiation of a medical evaluation board.; Level Of Evidence: Level IV, therapeutic case series.

2016-99 0168

Top 100 Cited Articles on Back Pain Research: A Citation Analysis

Source
Spine 2016 41 (21) 1683-1692

Author(s)
Huang,W., Wang,L., et al.

Abstract
Study Design: A bibliometric review of the literature.; Objective: Back pain is a global burden that leads people to seek medical service and results in work disability. Numerous studies are published annually to give new insights into back pain. However, characteristics of the high-impact articles on back pain have not been explored. The current study aimed to identify the 100 most cited articles on back pain and determine their characteristics.; Summary Of Background Data: Back pain
is a globally leading cause of work disability. Numerous studies have been published annually to give new insight to back pain. However, comprehensive analysis to identify the most influential articles is not available until now.

Methods: The Web of Science core database was searched using the subject terms "back NEAR pain," "dorsalgia," "backache," "lumbar NEAR pain," "lumbago," "back NEAR disorder," "discitis." The searching results were listed by citation times and the top 100 cited articles on back pain were identified. Important information such as author, journal, publishing year, country, institution, and study type were elicited.

Results: A total of 44,460 articles on back pain were displayed. Citation times of the enrolled 100 articles ranged from 249 to 1638 with a mean value of 418. The most productive periods were 1991 to 1995 and 1996 to 2000. The journal Spine holds the largest number of 45 articles, followed by Pain with seven articles. A total of 11 countries contribute to the 100 articles and the United States topped the list. None of the high-impact articles were produced in Asian and African.

Conclusion: The current citation analysis demonstrated the essential advances in the history of back pain research and determined the influential authors, institutions, countries, and journals that had outstanding contributions to the studies of back pain.

Level Of Evidence: 3.

2016-99 0169

Ultrasound-assisted external fixation: a technique for austere environments – Ctrl + click to follow link

Source
Journal of the Royal Army Medical Corps 2016 162 pp456-459

Author(s)
Max Talbot, E J Harvey, R Reindl, P Martineau and P Schneider

Abstract
Introduction Ultrasound-assisted external fixation of long bones has the potential to enhance extremity damage control surgery in locations without fluoroscopy, such as forward surgical elements, the intensive care unit, and spacecraft. This pre-clinical study specifically sought to evaluate orthopaedic surgeons’ ability to sonographically define fracture patterns and the associated zone of injury in order to improve surgical decision-making and safely insert Schanz pin percutaneously.

Methods We encased small composite femurs in a cylindrical echogenic gelatin matrix to simulate a human thigh. Three orthopaedic trauma surgeons with no prior ultrasound experience were taught to use sonography to diagnose fractures and assist external fixation. The surgeons were then presented with five specimens in a randomized sequence: three diaphyseal fractures (32-A2, 32-C2 and 32-C3); a distal femur fracture (33-A1.2); and an intact femur, all encased in an
opaque black gelatin matrix to blind the participants to the underlying pathology. If they diagnosed a diaphyseal fracture, the surgeons were instructed to insert two Schanz pins proximal and two distal to the fracture, no closer than 40 mm from the fracture edges. Results Fracture diagnosis and surgical decision-making were correct in all cases. All intact femurs were recognized as such. The need for a knee-spanning external fixator was recognized for all distal femur fractures. The three surgeons performed appropriate ultrasound-assisted pin placement in every case of diaphyseal fracture. The pins adjacent to the fracture site were on average 58 mm (SD ±11 mm) from the edge of the fracture. No pins were inserted in the fracture or in the knee joint. Conclusions The current study results suggest that with minimal training, orthopaedic surgeons can use portable ultrasound to diagnose femur fractures, decide the appropriate external fixator configuration, and safely insert Schanz pins outside the zone of injury.

2016-99 0170

Underreporting of Musculoskeletal Injuries in the US Army: Findings From an Infantry Brigade Combat Team Survey Study

Source
Sports Health 2016 8 (6) 507-513

Author(s)

Abstract
Background: Musculoskeletal injury is a significant threat to readiness in the US Army. Current injury surveillance methods are constrained by accurate injury reporting. Input into electronic medical records or databases therefore may not accurately reflect injury incidence. The purpose of this study was to evaluate injury reporting among active-duty US Army soldiers to explore potential limitations of surveillance approaches.; Hypothesis: A significant number of injuries go unreported to medical personnel.; Study Design: Cross-sectional study.; Level Of Evidence: Level 4.; Methods: Surveys were completed by soldiers assigned to an Army Infantry Brigade Combat Team. Survey questions inquired about injuries sustained in the previous 12 months, injury onset, and whether injuries were reported to a medical provider. Participants were asked to rank reasons for accurately reporting, underreporting, and/or exaggerating injuries. Chi-square analyses were used to compare
differences among underreported injuries in terms of injury onset (gradual vs acute) and sex.; Results: A total of 1388 soldiers reported 3202 injuries that had occurred in the previous 12-month period, including 1636 (51%) that were reported and 1566 (49%) that were identified as not reported to medical personnel. More than 49% of reported injuries were described as acute and 51% were described as chronic. Injury exaggeration was reported by 6% of soldiers. The most common reasons for not reporting injuries were fear that an injury might affect future career opportunities and avoidance of military "profiles" (mandated physical restrictions).; Conclusion: Approximately half of musculoskeletal injuries in a Brigade Combat Team were not reported.; Clinical Relevance: Unreported and untreated injuries can lead to reinjury, chronic pain, performance decrements, and increased costs associated with disability benefits. Additionally, unreported injuries can undermine injury surveillance efforts aimed at reducing the musculoskeletal injury problem in the military.

See also

**Effect of Lumbar Progressive Resistance Exercise on Lumbar Muscular Strength and Core Muscular Endurance in Soldiers.** Under Rehabilitation.

**Excess Stress Fractures, Musculoskeletal Injuries, and Health Care Utilization Among Unfit and Overweight Female Army Trainees.** Under Fitness Levels & Physical Performance.


**Patterns of Stress Related Injuries of Lower Limbs in Military Setup on Skeletal Scintigraphy.** Under Anatomy & Physiology.

**Pectoralis Major Injury During Basic Airborne Training.** Under Aviation & Physiology.
Management and reconstruction of blast wounds of the head and neck.

Source
Current Opinion in Otolaryngology and Head and Neck Surgery 2016 24 (5) 426-432
Author(s)
Stevens J.R. and Brennan, J.

Abstract
Purpose of review The purpose of this review is to highlight recent literature related to the initial management and reconstruction of blast injuries to the head and neck. Recent findings An increasing percentage of combat-related injuries are caused by blast trauma. Management of blast trauma over the last 10 years has improved understanding of the unique nature of these injuries and the importance of thoughtful management and reconstruction. Blast trauma is associated with an increased need for definitive airway management. As a result, initial triage principles of airway management and hemorrhage control are extremely important in the acute setting. Blast trauma results in high-velocity injuries that can lead to extensive soft tissue damage, which has important implications for reconstruction. Staging reconstruction is an important consideration for more extensive injuries. Summary Experience on the battlefield with blast injuries over the last decade has led to efficient triage with focus on hemorrhage and airway control. The lessons learned in Iraq and Afghanistan with the unique physiology of blast trauma have improved the casualty care of service members and can be used both in future military conflicts and in civilian trauma care.

Modern Surgical Cutting Technologies Used In the Rhinopharyngolaryngeal Pathology.

Source
Aeronautical Medicine and Psychology Revue 2016 1
Author(s)
Pietroșanu, C., and Zainea, V.,

Abstract
In the field of ENT surgery, the continuous development of surgical technologies has caused significant advancements. This has changed not only the pathology that the surgeon can treat, but also the manner of approach and the results. From the surgical point of view, we can treat today a greater variety
of pathological entities that were considered before inoperable. From the patient’s point of view, the tendency towards minimally invasive surgery leads to less surgical trauma, a shorter recovery time and an overall better quality of life. However, the most important benefit remains the achievement of curative interventions in advanced cases, which was not possible before. The aim of this article is to present the modern technologies that are available today, with both the correct indications and their limitations. We consider this an extremely useful tool for all ENT surgeons, as it will allow them to better choose the correct instrument for each pathology.
PAEDIATRICS

2016-99 0173

**Ipsilateral fibular transfer as a salvage procedure for large traumatic tibial defects in children in an austere environment** – Ctrl + click to follow link

**Source**
Journal of the Royal Army Medical Corps 2016 162 pp476-478

**Author(s)**
Andre J Keenan, O J F Keenan, C Tubb, A M Wood, T Rowlands and S E Christensen

**Abstract**
Large tibial defects present a challenging scenario for the orthopaedic surgeon, particularly in the paediatric patient. Most management options, such as the vascularised fibular graft or Ilizarov technique, require microsurgical techniques or specialist equipment. In an austere environment, acute shortening or limb amputation may be most appropriate. However, limb salvage may be achieved by ipsilateral fibular transfer. In a one-stage operation, the fibular graft is harvested and either placed in the tibial defect in an intramedullary position or secured to the tibia with screws. We present two paediatric cases where this approach was used to preserve the lower limb despite extensive explosive trauma. In the first case, an 11 cm tibial defect was managed with an ipsilateral fibular graft. The graft was placed in an intercalary position proximally, with medial displacement of the ankle and fixation of the fibula as a strut graft. In the second case, a 10 cm tibial defect was managed with an ipsilateral fibular graft, using intercalary placement proximally and distally. Both children returned to weight bearing with crutches within several months of surgery. For large tibial defects, ipsilateral fibular transfer is an effective one-stage operation that represents a viable alternative to amputation in austere environments.

2016-99 0174

**Use of Indigenously Designed Nasal Bubble Continuous Positive Airway Pressure (Nb-Cpap) In Neonates with Respiratory Distress - Experience from a Military Hospital.** – Ctrl + Click to follow link.

**Source**
Pakistan Armed Forces Medical Journal 2016 66 (5) 645-650

**Author(s)**
Ahmed,Z.,
Abstract
Objective: To study the efficacy and safety of an indigenously designed low cost nasal bubble continuous positive airway pressure (NB-CPAP) in neonates admitted with respiratory distress. Study Design: A descriptive study. Place and Duration of Study: Combined Military Hospital (CMH), Peshawar from Jan 2014 to May 2014. Material and Methods: Fifty neonates who developed respiratory distress within 6 hours of life were placed on an indigenous NB-CPAP device (costing 220 PKR) and evaluated for gestational age, weight, indications, duration on NB-CPAP, pre-defined outcomes and complications. Results: A total of 50 consecutive patients with respiratory distress were placed on NB-CPAP. Male to Female ratio was 2.3:1. Mean weight was 2365.85 ± 704 grams and mean gestational age was 35.41 ± 2.9 weeks. Indications for applying NB-CPAP were transient tachypnea of the newborn (TTN, 52%) and respiratory distress syndrome (RDS, 44%). Most common complications were abdominal distension (15.6%) and pulmonary hemorrhage (6%). Out of 50 infants placed on NB-CPAP, 35 (70%) were managed on NB-CPAP alone while 15 (30%) needed mechanical ventilation following a trial of NB-CPAP. Conclusion: In 70% of babies invasive mechanical ventilation was avoided using NB-CPAP.

2016-99 0175

The latent structure of Acute Stress Disorder symptoms in trauma-exposed children and adolescents

Source
Journal of Child Psychology & Psychiatry 2016 57 (11) 1308-1316

Author(s)
McKinnon,A., Meiser-Stedman,R., et al.

Abstract
Background The revision of Acute Stress Disorder (ASD) in the DSM-5 (DSM-5, 2013) proposes a cluster-free model of ASD symptoms in both adults and youth. Published evaluations of competing models of ASD clustering in youth have rarely been examined. Methods We used Confirmatory Factor Analysis (combined with multigroup invariance tests) to explore the latent structure of ASD symptoms in a trauma-exposed sample of children and young people (N = 594). The DSM-5 structure was compared with the previous DSM-IV conceptualization (4-factor), and two alternative models proposed in the literature.
(3-factor; 5-factor). Model fit was examined using goodness-of-fit indices. We also established DSM-5 ASD prevalence rates relative to DSM-IV ASD, and the ability of these models to classify children impaired by their symptoms. Results Based on both the Bayesian Information Criterion, the interfactor correlations and invariance testing, the 3-factor model best accounted for the profile of ASD symptoms. DSM-5 ASD led to slightly higher prevalence rates than DSM-IV ASD and performed similarly to DSM-IV with respect to categorising children impaired by their symptoms. Modifying the DSM-5 ASD algorithm to a 3+ or 4+ symptom requirement was the strongest predictor of impairment. Conclusions These findings suggest that a uni-factorial general-distress model is not the optimal model of capturing the latent structure of ASD symptom profiles in youth and that modifying the current DSM-5 9+ symptom algorithm could potentially lead to a more developmentally sensitive conceptualization.

See Also

2016-99 0176

Future Uses of the Department of Defense Joint Pathology Center Biorepository.

Source
Military Medicine 2016 181 (11) 1395-1396

Author(s)
N.K.

Abstract
Foreword: Can old bones teach new lessons? Can careful study of human and animal tissues, saved over many decades, be used to better understand pathological processes? Can case material of patients long ago be used effectively to teach important concepts today about normal and abnormal body functioning? The Institute of Medicine of the National Academies of Sciences, Engineering, and Medicine was asked to convene a committee to assess the utility of voluminous medical materials of many types, collected for more than 100 years, to advance clinical care, medical education, and medical research. The collection of many millions of specimens does seem to offer unique opportunities and the committee describes how these materials might best be used such that the knowledge gained would be properly considered along with the need to protect privacy and the need to verify the viability of and preserve the material as it was transferred from the Armed Forces Institute of Pathology to the Joint Pathology Center. After reading this summary, you may agree that study of historical specimens can teach more than history.

2016-99 0177

Prolonged Repetitive Head Trauma Induces a Singular Chronic Traumatic Encephalopathy-Like Pathology in White Matter Despite Transient Behavioral Abnormalities

Source
The American Journal of Pathology 2016 186 (11) 2869-2886

Author(s)

Abstract
Repetitive mild traumatic brain injury (rmTBI), resulting from insults caused by an external mechanical force that disrupts normal brain function, has been linked to the development of neurodegenerative diseases, such as chronic traumatic encephalopathy and Alzheimer disease; however, neither the severity nor frequency of head injury required to trigger adverse behavioral outcomes is well understood. In this study,
the administration of 30 head impacts using two different weights to lightly anesthetized, completely unrestrained mice established a paradigm that simulates the highly repetitive nature of sports- and military-related head injury. As the number of head impacts increases, the time to recover consciousness diminishes; however, both the sensorimotor function and behavioral outcomes of impacted mice evolve during the ensuing weeks. Postmortem analyses reveal robust Alzheimer disease and chronic traumatic encephalopathy-like conditions that manifest in a singular manner throughout the white matter concomitant with evidence of chronic oligodendrogenesis. Our data suggest that latency to recover the righting reflex may be an inadequate measure of injury severity and imply that exposure to repeated head impacts may mask the severity of an underlying and developing neuropathologic condition that does not manifest itself until long after head collisions cease. In addition, our data indicate that there is a cumulative and dose-dependent effect of repetitive head impacts that induces the neurobehavioral and neuropathologic outcomes seen in humans with a history of rmTBI.
Acetaminophen overdoses, active component, U.S. Armed Forces, 2006-2015

Source
Msmr 2016 23 (11) 16-19

Author(s)
Clark, L.L. and Taubman, S.B.

Abstract
Acetaminophen, a drug commonly used to relieve pain and fever, is generally safe and effective when used as directed. However, acetaminophen overdose can cause serious adverse events, including liver damage and death. From 2006 through 2015, a total of 2,588 cases of acetaminophen overdose were identified in active component military members. Rates of acetaminophen overdose declined during this 10-year surveillance period, from 2.2 cases per 10,000 person-years (p-yrs) in 2006 to 1.2 cases per 10,000 p-yrs in 2015. Rates of overdose were higher among females, members of the Army, and service members younger than 25 years of age. Despite the apparent decline in acetaminophen overdose in the active component, continued surveillance is warranted to monitor this trend.

Influence of Successful Chronic Hepatitis C Virus Treatment with Ledipasvir/Sofosbuvir on Warfarin Dosing Requirements in Four Veterans.

Source
Pharmacotherapy 2016 36 (11) 1173-1179

Author(s)

Abstract
Study Objective: To describe international normalized ratio (INR) trends and warfarin dosage adjustments required for four veterans who were receiving warfarin therapy and started treatment for hepatitis C virus (HCV) with ledipasvir/sofosbuvir with or without ribavirin. Design: Case series. Setting: Pharmacist-led anticoagulation clinic in a Veterans Affairs Health Care System. Patients: Four patients aged 59-66 years who were receiving warfarin and had stable, therapeutic INRs and started ledipasvir/sofosbuvir therapy with or without ribavirin for HCV infection. Measurements and Main Results: All four patients developed subtherapeutic INRs after the addition of ledipasvir/sofosbuvir with or without ribavirin. An
increase in weekly warfarin dose ranging from 14-67% was required, with changes in warfarin doses starting 2-3 weeks after ledipasvir/sofosbuvir initiation. Two patients required dose reductions after HCV treatment completion, whereas the other two did not. Use of the Drug Interaction Probability Scale indicated that the interaction between warfarin and ledipasvir/sofosbuvir was doubtful (score of 1 [two patients]) or possible (score of 4 [two patients]). The mechanism of this interaction is unknown but may be related to improvements in hepatic function during HCV treatment. Conclusion: To our knowledge, this is the first case series describing a possible drug interaction between warfarin and ledipasvir/sofosbuvir (with or without ribavirin). Close monitoring is warranted when ledipasvir/sofosbuvir is initiated in patients receiving anticoagulation therapy with warfarin, especially those with evidence of cirrhosis prior to treatment. This is particularly important in the first month after starting treatment and the first month after completion. Failure to monitor and achieve therapeutic INR after HCV therapy completion may have the potential to result in adverse outcomes.

2016-99 0180

Introducing an antibiotic stewardship program in a humanitarian surgical hospital.

Source
American Journal of Infection Control 2016 44 (11) 1381-1384

Author(s)
Bhalla N., Hussein N., et al.

Abstract
Antibiotic stewardship program (ASP) implementation in humanitarian settings is a new endeavor. Doctors Without Borders/Medecins Sans Frontieres introduced an ASP within a hospital in Amman, Jordan, where patients from Iraq, Syria, and Yemen with chronic, often multidrug-resistant, infections related to war are managed. Antibiotics were reviewed, and real-time recommendations were made to optimize choice, dose, duration, and route by a small team. Over the first year of implementation, acceptance of the ASP's recommendations improved. When compared with the year prior to implementation, antibiotic cost in 2014 declined considerably from approximately $252,077 (average, $21,006/month) to <$159,948 ($13,329/month), and a reduction in use of broad-spectrum agents was observed. An ASP in a humanitarian surgical hospital proved acceptable and effective, reducing antibiotic expenditures and use of broad-spectrum agents.
Oral Toxicity of 2,4-Dinitroanisole in Rats

Source
International Journal of Toxicology 2016 35 (6) 692-711
Author(s)

Abstract
Subacute and subchronic studies were conducted to assess the toxicity of 2,4-dinitroanisole (DNAN) and to provide information important for protecting the health of military and civilian personnel. In the subchronic study, male and female Sprague-Dawley rats were dosed with DNAN via oral gavage at 0, 1.25, 5, 20, and 80 mg/kg/d. Likely owing to its conversion to 2,4-dinitrophenol, an inhibitor of energy homeostasis, DNAN caused an apparent increase in metabolism, leading to reduced feed efficiency ratios and body mass gains in males. Anemia, splenic enlargement, hemosiderosis, and extramedullary hematopoiesis indicated blood as a target organ, with females more sensitive than males. The DNAN was a testicular toxicant, causing decreased mass of testes and epididymides, as well as degeneration and atrophy of testicular seminiferous tubules and epididymal aspermia. Stereotypical behavior in males, gait irregularities, and cerebellar lesions indicated that DNAN is neurotoxic. Splenic enlargement, anemia, testicular toxicity, and neurotoxicity occurred only at or near lethal doses in the subchronic study.

A Prospective Observation Study of Medical Toxicology Consultation in a U.S. Combat Theater

Source
Military Medicine 2016 181 (11) e1666-e1668
Author(s)
Maddry,J.K., Ng,P.C., et al.

Abstract
Objectives: Since 2001, U.S. military personnel and active duty, uniformed physicians providing medical support have been deployed to Afghanistan. Medical toxicologists are among the physicians deployed. There is a paucity of information present in the literature that has documented cases treated by toxicologists in theater. This prospective observational study describes 15 male patients treated in theater by a military medical toxicologist.; Methods: We performed a prospective observational study in which a medical toxicologist consulted and reported on deployed toxicology cases occurring during a 5-month deployment to Bagram, Afghanistan.; Results: Fifteen
toxicology cases were collected during the 5-month period. The patients included three Afghan civilians, three U.S. civilians, and nine U.S. military personnel. Eight cases were attempts at recreational euphoria, two were self-harm attempts, two were from performance-enhancing supplements, two were accidental occupational exposures and one was alcohol withdrawal. Methanol was the most common exposure followed by dextromethorphan, supplements, opiates, and chlorine gas.; Conclusion: In our study, we found that toxic alcohols and non-prescription medications were the most common exposures. In addition, this is the first study to describe bedside toxicology consults for U.S. combat forces in theater and the use of an observation unit for critically ill patients.

2016-99 0183

Suicide in the veteran population.

Source
U.S. Pharmacist 2016 41 (11) HS12-HS18

Author(s)

Abstract
In 2014, the Office of Suicide Prevention of the U.S. Department of Veterans Affairs reported that veterans have a 21% higher risk for suicide when compared to civilian adults. Greater prevalence of mental health conditions, such as depression and post-traumatic stress disorder (PTSD), as well as substance use disorders, place veterans at a higher risk for suicide. Early identification of high-risk patients allows for appropriate intervention and assistance to recovery. Understanding the unique risk factors associated with veterans, being aware of the warning signs of suicidality, possessing knowledge of medications associated with an increased risk of suicide, and being familiar with available suicide-related resources can better equip pharmacists with the tools needed to help prevent suicide in this population.

2016-99 0184

Translational potential of long-term decreases in mitochondrial lipids in a mouse model of Gulf War Illness.

Source
Toxicology 2016 372 22-33

Author(s)

Abstract
Gulf War Illness (GWI) affects 25% of veterans from the 1990-1991 Gulf War (GW) and is accompanied by damage to the brain regions involved in memory processing. After twenty-five
years, the chronic pathobiology of GWI is still unexplained. To address this problem, we examined the long-term consequences of GW exposures in an established GWI mouse model to identify biological processes that are relevant to the chronic symptoms of GWI. Three-month old male C57BL6 mice were exposed for 10 days to GW agents (pyridostigmine bromide and permethrin). Barnes Maze testing conducted at 15- and 16-months post-exposure revealed learning and memory impairment. Immunohistochemical analyses showed astroglia and microglia activation in the hippocampi of exposed mice. Proteomic studies identified perturbation of mitochondria function and metabolomics data showed decreases in the Krebs cycle compounds, lactate, beta-hydroxybutyrate and glycerol-3 phosphate in the brains of exposed mice. Lipidomics data showed decreases in fatty acids, acylcarnitines and phospholipids, including cardiolipins in the brains of exposed mice. Pilot biomarker studies showed that plasma from exposed mice and veterans with GWI had increases in odd-chain, and decreases in long-chain, acylcarnitines compared to their respective controls. Very long-chain acylcarnitines were decreased in veterans with GWI compared to controls. These studies suggest that mitochondrial lipid disturbances might be associated with GWI and that further investigation is required to determine its role in the pathophysiology of this illness. Targeting mitochondrial function may provide effective therapies for GWI, and that lipid abnormalities could serve as biomarkers of GWI.

See also

Pharmacogenetics and pharmacotherapy of military personnel suffering from posttraumatic stress disorder. Under Post Traumatic Stress Disorder.

Prevalence of use of erectile dysfunction medication by Dutch military personnel between 2003 and 2012. Under Pharmacology and Toxicology.

Use of an extended INR follow-up interval for Veteran patients in an anticoagulation clinic. Under Haematology.
Reconstruction of auricular conchal defects with local flaps

Source
Medicine 2016 95 (46) e5282-e5282

Author(s)
Zhu,J., Zhao,H., et al.

Abstract
Reconstruction of the auricular conchal cavity is relatively difficult because of its unique structure, shape, and location. We compared different methods of repair of the auricular concha to determine the method that would cause the least injury to the donor site. The method selected was based on the location and size of the defect. If the defect was located in the upper part of the concha, or if the defect was >15 mm in diameter, we used a post-auricular subcutaneous pedicle island flap that was pulled through a post-auricular sulcus tunnel to cover the wound. If the defect was located in the lower part of the concha and was <15 mm in diameter, we used a pre-auricular translocation flap that was passed through the intertragic notch to cover the wound. The donor site was closed primarily. All flaps survived well and any scars associated with the surgery were unnoticeable. No tumor relapse or metastasis was observed over a mean follow-up period of 35 months. All patients were satisfied with the outcome. The periauricular flap technique chosen for reconstruction of skin defects in the auricular concha depends on the size and location of the defect. With appropriate flap selection, excellent functional, and aesthetic outcomes are achieved.
POST TRAUMATIC STRESS DISORDER (PTSD)

2016-99 0186

An Environmental Scan of Programs and Services for Families of Veterans With Operational Stress Injuries.

Source
Military Behavioral Health 2016 4 (4) 390-397

Author(s)
Tam-Seto,L., and Cramm,H.,

Abstract
This study identifies and describes currently available programs and services for families who have a veteran family member living with Operational Stress Injuries (OSIs). An environmental scan was completed of web-based program information for familial OSI supports. Resources were reviewed and informed a SWOT (strength, weakness, opportunity, and threat) analysis. The study accessed 278 sources. Sixty-six resources met inclusion criteria, including 19 from Canada, 24 from the United States, 15 from the United Kingdom, and eight from Australia. Most resources are for active military members or veterans. Resource descriptions indicate a range of formats and intended family members. Existing resources are often embedded in supporting daily military life rather than issues related to life with OSIs, which may decrease efficacy of OSI-specific interventions. Information on evaluation and evidence for resources is also limited. Due to geographical challenges, there is a call for increasing use of technology to address equitable access.

2016-99 0187


Source
Journal of Clinical Medicine 2016 5 (11)

Author(s)
Saraiya T. and LopezCastro,T.

Abstract
Background: Despite considerable progress in the treatment of post-traumatic stress disorder (PTSD), a large percentage of individuals remain symptomatic following gold-standard therapies. One route to improving care is examining affective disturbances that involve other emotions beyond fear and threat. A growing body of research has implicated shame in PTSD's development and course, although to date no review of this specific literature exists. This scoping review investigated
the link between shame and PTSD and sought to identify research gaps. Methods: A systematic database search of PubMed, PsycInfo, Embase, Cochrane, and CINAHL was conducted to find original quantitative research related to shame and PTSD. Results: Forty-seven studies met inclusion criteria. Review found substantial support for an association between shame and PTSD as well as preliminary evidence suggesting its utility as a treatment target. Several design limitations and under-investigated areas were recognized, including the need for a multimodal assessment of shame and more longitudinal and treatment-focused research. Conclusion: This review provides crucial synthesis of research to date, highlighting the prominence of shame in PTSD, and its likely relevance in successful treatment outcomes. The present review serves as a guide to future work into this critical area of study.

2016-99 0188

Breakthrough found in the Treatment of Posttraumatic Stress

Source
Exceptional Parent 2016 46 (12) 54-58
Author(s)
Bourke,F.

Abstract
September 11, 2001. The events that occurred on that day shook the world to its roots. Hundreds of survivors of the attacks, the first responders who survived the horrors of that day and many family members, began to suffer from exposure to that extreme trauma. The resulting posttraumatic stress disorder (PTSD) symptoms began to take a toll on their lives.

2016-99 0189

Couple forgiveness and its moderating role in the intergenerational transmission of veterans' posttraumatic stress symptoms.

Source
Journal of Marital and Family Therapy 2016
Author(s)

Abstract
This study examined the moderating effect couple forgiveness (as perceived by the wives/mothers) may have on the intergenerational transmission of posttraumatic stress symptoms (PTSS) among families of combat veterans and
former prisoners of war (ex-POWs). The sample included 123 (79 ex-POWs and 44 control combatants) Israeli father-mother-adult offspring triads. Self-report measures were administered at 2008 to veterans, at 2010-2011 to wives, and at 2013-2014 to offspring. The findings indicated that ex-POWs' PTSS were positively related to their offspring's PTSS, while couple forgiveness buffered this effect, particularly, and detrimentally, when couple forgiveness was low. These findings imply that apprehending the quality of the forgiving atmosphere within the marital relationship may be important for understanding the apparatus of intergenerational transmissions of trauma.

**2016-99 0190**

**Early Intervention for Post-Traumatic Stress Disorder, Depression, and Quality of Life in Mortuary Affairs Soldiers Postdeployment.**

**Source**
Military Medicine 2016 181 (11) e1553-e1560

**Author(s)**
Biggs,Q.M., and Fullerton,C.S.,

**Abstract**
U.S. Army mortuary affairs (MA) soldiers experience stressors of deployment and exposure to the dead, increasing risk for post-traumatic stress and depression. This study examines Troop Education for Army Morale, a postdeployment early intervention based on Psychological First Aid. MA soldiers (N = 126) were randomized to intervention or comparison groups 1-month postdeployment. Intervention sessions were held at 2, 3, 4, and 7 months. Assessments of post-traumatic stress disorder (PTSD), depression, and quality of life (QOL) were conducted at 1, 2, 3, 4, 7, and 10 months for both groups. At baseline, 25.0% of the total sample had probable PTSD (17-item PTSD Checklist M = 35.4, SD = 16.9) and 23.6% had probable depression (9-item Patient Health Questionnaire Depression Scale M = 7.8, SD = 6.9). Over 10 months, PTSD and depression symptoms decreased and QOL improved for the total sample. At study conclusion, intervention and comparison groups were not different. Intervention group males showed a transient symptom increase at 2 to 3 months. Males attended fewer intervention sessions than females. Lower attendance was associated with more symptoms and lower QOL. Higher attendance was associated with greater intervention benefits. Findings highlight the need for better understanding postdeployment interventions and facilitating attendance. Further intervention for MA soldiers is indicated.
EFT (Emotional Freedom Techniques) and Resiliency in Veterans at Risk for PTSD: A Randomized Controlled Trial.

Source
Explore: The Journal of Science and Healing 2016

Author(s)
Church D., Sparks T., et al.

Abstract
Prior research indicates elevated but subclinical posttraumatic stress disorder (PTSD) symptoms as a risk factor for a later diagnosis of PTSD. This study examined the progression of symptoms in 21 subclinical veterans. Participants were randomized into a treatment as usual (TAU) wait-list group and an experimental group, which received TAU plus six sessions of clinical emotional freedom techniques (EFT). Symptoms were assessed using the PCL-M (Posttraumatic Checklist-Military) on which a score of 35 or higher indicates increased risk for PTSD. The mean pretreatment score of participants was 39 +/- 8.7, with no significant difference between groups. No change was found in the TAU group during the wait period. Afterward, the TAU group received an identical clinical EFT protocol. Posttreatment groups were combined for analysis. Scores declined to a mean of 25 (-64%, P < .0001). Participants maintained their gains, with mean three-month and six-month follow-up PCL-M scores of 27 (P < .0001). Similar reductions were noted in the depth and breadth of psychological conditions such as anxiety. A Cohen's d = 1.99 indicates a large treatment effect. Reductions in traumatic brain injury symptoms (P = .045) and insomnia (P = .004) were also noted. Symptom improvements were similar to those assessed in studies of PTSD-positive veterans. EFT may thus be protective against an increase in symptoms and a later PTSD diagnosis. As a simple and quickly learned self-help method, EFT may be a clinically useful element of a resiliency program for veterans and active-duty warriors.

Heart rate variability: Pre-deployment predictor of post-deployment PTSD symptoms

Author(s)
Pyne, Jeffrey M.; Constans, Joseph I.; Wiederhold, Mark D.; Gibson, Douglas P.; Kimbrell, Timothy; Kramer, Teresa L.; Pitcock, Jeffery A.; Han, Xiaotong; Williams, D. Keith;
Chartrand, Don; Gevirtz, Richard N.; Spira, James; Wiederhold, Brenda K.; McCraty, Rollin; McCune, Thomas R.
Source
Biological Psychology; Dec 2016; vol. 121

Abstract: Heart rate variability is a physiological measure associated with autonomic nervous system activity. This study hypothesized that lower pre-deployment HRV would be associated with higher post-deployment post-traumatic stress disorder (PTSD) symptoms. Three-hundred-fourty-three Army National Guard soldiers enrolled in the Warriors Achieving Resilience (WAR) study were analyzed. The primary outcome was PTSD symptom severity using the PTSD Checklist—Military version (PCL) measured at baseline, 3- and 12-month post-deployment. Heart rate variability predictor variables included: high frequency power (HF) and standard deviation of the normal cardiac inter-beat interval (SDNN). Generalized linear mixed models revealed that the pre-deployment PCL*ln(HF) interaction term was significant (p < 0.0001). Pre-deployment SDNN was not a significant predictor of post-deployment PCL. Covariates included age, pre-deployment PCL, race/ethnicity, marital status, tobacco use, childhood abuse, pre-deployment traumatic brain injury, and previous combat zone deployment. Pre-deployment heart rate variability predicts post-deployment PTSD symptoms in the context of higher pre-deployment PCL scores.

Impact of alcohol use disorder comorbidity on defensive reactivity to errors in veterans with posttraumatic stress disorder

Source
Psychology of Addictive Behaviors: Journal of the Society of Psychologists in Addictive Behaviors 2016 30 (7) 733-742

Author(s)
Gorka,S.M., MacNamara,A., et al.

Abstract
Converging lines of evidence suggest that individuals with comorbid posttraumatic stress disorder (PTSD) and alcohol use disorder (AUD) may be characterized by heightened defensive reactivity, which serves to maintain drinking behaviors and anxiety/hyperarousal symptoms. However, it is important to note that very few studies have directly tested whether individuals with PTSD and AUD exhibit greater defensive reactivity compared with individuals with PTSD without AUD. Therefore, the aim of the current study was to test this emerging hypothesis by examining individual differences in error-related negativity (ERN), an event-related component that is larger among anxious individuals and is
thought to reflect defensive reactivity to errors. Participants were 66 military veterans who completed a well-validated flanker task known to robustly elicit the ERN. Veterans were comprised of 3 groups: controls (i.e., no PTSD or AUD), PTSD-AUD (i.e., current PTSD but no AUD), and PTSD + AUD (i.e., current comorbid PTSD and AUD). Results indicated that individuals with PTSD and controls generally did not differ in ERN amplitude. However, among individuals with PTSD, those with comorbid AUD had significantly larger ERNs than those without AUD. These findings suggest that PTSD + AUD is a neurobiologically unique subtype of PTSD, and the comorbidity of AUD may enhance defensive reactivity to errors in individuals with PTSD.

2016-99 0194

Inpatient Trauma-Focused Treatment for Veterans: Implementation and Evaluation of Patient Perceptions and Outcomes of an Integrated Evidence-Based Treatment Approach.

Source
Military Medicine 2016 181 (11) e1590-e1599
Author(s)
Menefee,D.S., and Leopoulous,W.S.,

Abstract
Background: Practice guidelines for post-traumatic stress disorder (PTSD) treatment suggest that inpatient care may be warranted when the severity of the clinical presentation is marred with significant concerns about suicidality and psychiatric comorbidity. Yet, limited guidance exists on conducting trauma-focused treatment in acute hospital settings beyond the traditional medical or stabilization model. Objective: The purpose of this current article is to describe and evaluate the integration of evidence-based treatments (EBTs) for PTSD implemented in two gender-specific, Veterans Affairs inpatient programs. The theoretical underpinnings of these trauma-focused programs are elucidated in this article, and program delivery is explained. The concurrent versus sequential delivery of multiple EBTs over the course of a 30-day, cohorted admission is explained. Results: Paired sample t tests were conducted to determine the effectiveness of these programs on PTSD and depressive symptom severity, and clinically significant reductions in symptoms were found. The characteristics of 584 Veterans (men = 290 and women = 284) who were voluntarily admitted for intensive, trauma-focused work are presented. Treatment completion among the men was 74.8% and 92.4% among the women. Participants’ perceptions of treatment acceptability were examined and presented. Conclusions: These preliminary results offer promising evidence for interventions that concurrently provide strategies
for increasing coping skills, suicidal disruption, and emotion dysregulation while providing EBTs for PTSD.

**2016-99 0195**

**Interplay between service era, PTSD symptom expression, and treatment completion among veterans.**

**Source**
Military Psychology 2016 28 (6) 418-428

**Author(s)**
Brown, W., and Grubaugh, A.L.

**Abstract**
The current veteran population has grown significantly as a result of 3 recent major conflicts: Vietnam, Persian Gulf War, and Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF). Despite a strong presence in VA PTSD specialty clinics nationwide, little is known about how these veteran cohort groups differ in PTSD symptom presentation. Additionally, it is unclear how variations in PTSD symptom presentation may in turn affect treatment adherence and completion. Understanding factors associated with treatment dropout from exposure-based therapy for PTSD is an important area of study, as individuals who drop out of treatment are likely to remain symptomatic and experience significant impairment across a number of psychosocial domains. The present study examined the relationship between service theater affiliation and pretreatment symptom expression as predictors of treatment completion in a sample of 164 veterans. Although treatment completion did not differ by service era, study data revealed statistically significant differences in initial PTSD symptom expression. Implications of the results and future directions are discussed.

**2016-99 0196**

**The impact of social support, unit cohesion, and trait resilience on PTSD in treatment-seeking military personnel with PTSD: The role of posttraumatic cognitions**

**Source**
Journal of Psychiatric Research 2016 86 18-25

**Author(s)**
Zang, Y., Gallagher, T., et al.

**Abstract**
Background: The personal resources of social support, unit cohesion, and trait resilience have been found to be associated with posttraumatic stress disorder (PTSD) severity among
military personnel. However, the underlying mechanisms of these relationships are unclear. We hypothesized that negative posttraumatic cognitions, which are associated with PTSD, mediate the relationships between these personal resources and PTSD.; Methods: The relationship between PTSD symptom severity and a latent factor comprised of social support, unit cohesion, and trait resilience was evaluated using cross-sectional data from 366 treatment-seeking active duty military personnel with PTSD following deployments to or near Iraq or Afghanistan. Structural equation modeling (SEM) was used to test whether posttraumatic cognitions mediated this relationship.; Results: The SEM model indicated that (1) a robust latent variable named personal resources (indicated by social support, unit cohesion, and trait resilience) was negatively associated with PTSD severity; (2) personal resources were negatively associated with negative posttraumatic cognitions; (3) negative posttraumatic cognitions fully mediated the association between personal resources and PTSD severity. The final SEM mediation model showed a highly satisfactory fit $\chi^2(22) = 16.344, p = 0.798$; $\chi^2/df = 0.743; CFI = 1; RMSEA = 0.000$.; Conclusions: These findings suggest that among active duty military personnel seeking treatment for PTSD, personal resources (social support, unit cohesion, and trait resilience) may mitigate PTSD severity by reducing negative posttraumatic cognitions.

2016-99 0197

Longitudinal Examination of Posttraumatic Stress Disorder as a Long-Term Outcome of Iraq War Deployment

Source
American Journal of Epidemiology 2016 184 (11) 796-805

Author(s)

Abstract
The mental health toll of the Iraq and Afghanistan Wars on military veterans has been considerable, yet little is known about the persistence of these adverse outcomes, especially relative to predeployment status. We prospectively examined posttraumatic stress disorder (PTSD) as a long-term consequence of warzone deployment, integrating data collected from 2003-2014. In the Neurocognition Deployment Health Study, we measured PTSD symptoms in US Army soldiers before and shortly after Iraq War deployment. We used the PTSD Checklist-Civilian Version and a structured clinical interview (i.e., Clinician-Administered PTSD Scale) to reassess PTSD in 598 service members and military veterans a median of 7.9 years (interquartile range, 7.2-8.5 years) after an index Iraq deployment. At long-term follow-up, 24.7% (95% confidence interval (CI): 21.5, 28.4) of participants met the
case definition for PTSD, which was an absolute increase of 14.2% from the percentage assessed postdeployment (10.5%; 95% CI: 7.8, 13.7) and of 17.3% from the percentage assessed predeployment (7.4%; 95% CI: 5.5, 9.8). These findings highlight that PTSD is an enduring consequence of warzone participation among contemporary military personnel and veterans. The largest increase in PTSD cases occurred between the postdeployment and long-term follow-up assessments, which suggests that adverse stress reactions cannot necessarily be expected to dissipate over time and actually may increase.

2016-99 0198

The many wounds of war: The association of service-related and clinical characteristics with problems with the law in Iraq and Afghanistan veterans.

Source

Author(s)
Backhaus, A., Gholizadeh, S., et al.

Abstract
Previous research has demonstrated that veterans with posttraumatic stress disorder (PTSD) are at higher risk for aggression, hostility, and anger, potentially leading to problems with the law or disciplinary action while in the military. There have been calls for increased consideration of the unique aspects of the judicial system in legal matters with veterans involved. The bulk of the research so far has considered the link between PTSD, traumatic brain injury (TBI), and combat exposure, but little is known about the potential role of chronic pain and Military Sexual Trauma (MST) in a veteran’s experience of anger, aggression, and discipline while in the military and legal concerns. The present study used retrospective cross-sectional health screening data in a sample of 1250 Iraq and Afghanistan veterans to examine the associations of demographic, service-related, and clinical characteristics with self-reported legal problems. A total of 440 veterans (34.6%) endorsed having experienced some type of problems with the law. Independent logistic regression analyses demonstrated that those who screened positive for PTSD, MST, TBI, and clinical levels of pain were more likely to report legal problems; only the associations with positive PTSD (p=0.001) and MST (p=0.007) screens remained significant in multivariate regression analyses. The findings underscore the need for a thorough psychological evaluation when veterans are involved in the legal system with a special emphasis on factors prevalent to Iraq and Afghanistan veterans.
Military veterans and canine assistance for post-traumatic stress disorder: A narrative review of the literature

Source
Nurse Education Today 2016 47 43-50

Author(s)
Krause-Parello, C., Sarni, S., et al.

Abstract
Background
Veterans with post-traumatic stress disorder (PTSD) are a vulnerable population at high risk for depression, isolation, and suicide. A substantial body of anecdotal evidence exists supporting the use of canines as an effective adjunct treatment for this population. However, a comprehensive review of its use based on scientific literature has thus far not been conducted.

Methods
A narrative literature review was conducted to examine the current state of the science on canine assistance for veterans diagnosed with PTSD in order to synthesize current empirical knowledge on the subject. Articles were retrieved among the small body of recent literature using computerized database searches. Inclusion criteria included peer-reviewed journal publications published through October 1st, 2015. Only originally published articles that examined the outcomes of canine assistance on veterans with PTSD were examined. Additionally, each included article was specific to veterans, dogs, and PTSD in combination rather than article that discuss the concepts separately. Exclusion criteria included symposia and conference material, dissertations, media articles, and no mention of canines as a treatment modality. 563 articles were retrieved; 6 met the criteria. When evaluating data, information and themes were extracted into an Excel table; this table was employed in the synthesis of information into manuscript form.

Results
The following themes were explored within the selected publications: What is Canine Assistance; Why Use Canine Assistance for PTSD in Veterans; Concerns; and Future Directions. The literature endorsed canine assistance for PTSD in veterans as a promising modality. Authors also raised concerns about lack of protocols, cost and availability barriers, and animal welfare calling for additional, rigorous research to advance its use as a treatment for veterans with PTSD.
Conclusions
PTSD continues to pose significant psychological, health, and welfare challenges to veterans and the multi-disciplinary providers who treat them. Analysis of this literature should expand knowledge and outline future directions for healthcare professions and improve health and wellness for veterans with PTSD through the use of canine assistance.

2016-99 0200

Neurobiology of comorbid post-traumatic stress disorder and alcohol-use disorder.

Source
Genes, Brain & Behavior 2016

Author(s)
Gilpin,N.W. and Weiner,J.L.

Abstract
Post-traumatic stress disorder (PTSD) and alcohol-use disorder (AUD) are highly comorbid in humans. Although we have some understanding of the structural and functional brain changes that define each of these disorders, and how those changes contribute to the behavioral symptoms that define them, little is known about the neurobiology of comorbid PTSD and AUD, which may be due in part to a scarcity of adequate animal models for examining this research question. The goal of this review is to summarize the current state-of-the-science on comorbid PTSD and AUD. We summarize epidemiological data documenting the prevalence of this comorbidity, review what is known about the potential neurobiological basis for the frequent co-occurrence of PTSD and AUD and discuss successes and failures of past and current treatment strategies. We also review animal models that aim to examine comorbid PTSD and AUD, highlighting where the models parallel the human condition, and we discuss the strengths and weaknesses of each model. We conclude by discussing key gaps in our knowledge and strategies for addressing them: in particular, we (1) highlight the need for better animal models of the comorbid condition and better clinical trial design, (2) emphasize the need for examination of subpopulation effects and individual differences and (3) urge cross-talk between basic and clinical researchers that is reflected in collaborative work with forward and reverse translational impact.

2016-99 0201

Neuroanatomical features in soldiers with post-traumatic stress disorder

Source
BMC Neuroscience; Dec 2016; vol. 17
Author(s)
Sussman, D.; Pang, E. W.; Jetly, R.; Dunkley, B. T.; Taylor, M.

Abstract
Background: Posttraumatic stress disorder (PTSD), an anxiety disorder that can develop after exposure to psychological trauma, impacts up to 20% of soldiers returning from combat-related deployment. Advanced neuroimaging holds diagnostic and prognostic potential for furthering our understanding of its etiology. Previous imaging studies on combat-related PTSD have focused on selected structures, such as the hippocampi and cortex, but none conducted a comprehensive examination of both the cerebrum and cerebellum. The present study provides a complete analysis of cortical, subcortical, and cerebellar anatomy in a single cohort. Forty-seven magnetic resonance images (MRIs) were collected from 24 soldiers with PTSD and 23 Control soldiers. Each image was segmented into 78 cortical brain regions and 81,924 vertices using the corticometric iterative vertex based estimation of thickness algorithm, allowing for both a region-based and a vertex-based cortical analysis, respectively. Subcortical volumetric analyses of the hippocampi, cerebellum, thalamus, globus pallidus, caudate, putamen, and many sub-regions were conducted following their segmentation using Multiple Automatically Generated Templates Brain algorithm. Results: Participants with PTSD were found to have reduced cortical thickness, primarily in the frontal and temporal lobes, with no preference for laterality. The region-based analyses further revealed localized thinning as well as thickening in several sub-regions. These results were accompanied by decreased volumes of the caudate and right hippocampus, as computed relative to total cerebral volume. Enlargement in several cerebellar lobules (relative to total cerebellar volume) was also observed in the PTSD group. Conclusions: These data highlight the distributed structural differences between soldiers with and without PTSD, and emphasize the diagnostic potential of high-resolution MRI.

A new diagnosis of complex Post-traumatic Stress Disorder, PTSD - a window of opportunity for the treatment of patients in the NHS?

Source
Psychoanalytic Psychotherapy 2016 1-16

Author(s)
Matheson, C.

Abstract
The concept of complex trauma has been around for a long time and in 2018, it’s expected to become a new diagnosis in the International Classification of Diseases eleventh revision,
ICD-11, the World Health Organisation, WHO, manual used formally in the NHS. Psychiatric diagnosis often does not sit well with psychoanalysis, which is at least as interested in unconscious phantasy as it is in symptoms. But as psychodynamically-trained practitioners in the NHS we need to engage with ICD-11 and apply our own understanding to service design so that patients have access to treatment which works for them. The service where I work (a secondary mental health team in the London borough of Lewisham) has already been receiving referrals for 'complex trauma' for some time, despite its not being formally classified. Patients so described are most often those with a history of childhood sexual abuse, and refugees with a history of brutality and torture. Differential diagnosis includes personality disorder since many have difficulties with interpersonal issues. In this paper I want to discuss how we might understand the new diagnosis of complex Post-traumatic Stress Disorder, PTSD, and its implications for treatment in the NHS.

2016-99 0203

Parent-child relationship quality and family transmission of parent posttraumatic stress disorder symptoms and child externalizing and internalizing symptoms following fathers' exposure to combat trauma.

Source
Development and Psychopathology 2016 28 (4) 947-969

Author(s)
Snyder,J., Gewirtz,A., et al.

Abstract
Transactional cascades among child internalizing and externalizing symptoms, and fathers' and mothers' posttraumatic stress disorder (PTSD) symptoms were examined in a sample of families with a male parent who had been deployed to recent military conflicts in the Middle East. The role of parents' positive engagement and coercive interaction with their child, and family members' emotion regulation were tested as processes linking cascades of parent and child symptoms. A subsample of 183 families with deployed fathers and nondeployed mothers and their 4- to 13-year-old children who participated in a randomized control trial intervention (After Deployment: Adaptive Parenting Tools) were assessed at baseline prior to intervention, and at 12 and 24 months after baseline, using parent reports of their own and their child's symptoms. Parents' observed behavior during interaction with their children was coded using a multimethod approach at each assessment point. Reciprocal cascades among fathers' and mothers' PTSD symptoms, and child internalizing and externalizing symptoms, were observed. Fathers' and mothers' positive engagement during parent-child
interaction linked their PTSD symptoms and their child's internalizing symptoms. Fathers' and mothers' coercive behavior toward their child linked their PTSD symptoms and their child's externalizing symptoms. Each family member's capacity for emotion regulation was associated with his or her adjustment problems at baseline. Implications for intervention, and for research using longitudinal models and a family-systems perspective of co-occurrence and cascades of symptoms across family members are described.

**2016-99 0204**

**Perceived Ability to Cope With Trauma Among U.S. Combat Veterans.**

**Source**
Military Psychology 2016

**Author(s)**
Bartholomew,T.T., BaduraBrack,A.S., et al.

**Abstract**
The Perceived Ability to Cope With Trauma (PACT) scale measures perceived forward-focused and trauma-focused coping. This measure may also have significant utility measuring positive adaption to life-threatening trauma, such as combat. Our objective was to examine perceived ability to cope with trauma, as measured by the PACT, and the relationships between this perceived ability and clinically pertinent information (anxiety, depression, posttraumatic stress disorder [PTSD]) among U.S. military veterans. Data were provided from 71 combat veterans, consisting of 47 veterans with PTSD and 24 veterans without PTSD who had subthreshold symptoms of the disorder. All veterans completed standardized clinical interviews as well as a battery of well-validated self-report symptom measures. We found that veterans with PTSD had significantly lower PACT scores than veterans without PTSD; those without PTSD self-reported more ability to engage in forward-focused and trauma-focused coping than those with PTSD. Importantly, we also showed relationships between the PACT scores and indices of psychological difficulties as both Forward Focus and Trauma Focus coping scores negatively correlated with PTSD, depression, anxiety, and alexithymia. Finally, the Forward Focus PACT scale improved prediction of PTSD severity over combat exposure alone. The PACT, especially the Forward Focus scale, appears to be a useful measure of perceived positive coping ability with trauma in combat-exposed veterans who report symptoms of traumatic stress, extending the utility of the measure from normative to clinical populations. The importance of adopting forward-focused coping is discussed.
Pharmacogenetics and pharmacotherapy of military personnel suffering from posttraumatic stress disorder

Source
Current Neuropharmacology 2016

Author(s)
Naß, J. and Efferth, T.

Abstract
Background: Posttraumatic stress disorder (PTSD) is a severe problem among soldiers with combat experience and still difficult to treat. The pathogenesis is still not fully understood at the psychological level. Therefore, genetic research became a focus of interest. The identification of single nucleotide polymorphisms (SNPs) may help to predict, which persons are at high risk to develop PTSD as a starting point to develop novel targeted drugs for treatment.; Methods: We conducted a systematic review on SNPs in genes related to PTSD pathology and development of targeted pharmacological treatment options based on PubMed database searches. We focused on clinical trials with military personnel.; Results: SNPs in 22 human genes have been linked to PTSD. These genes encode proteins acting as neurotransmitters and receptors, downstream signal transducers and metabolizing enzymes. Pharmacological inhibitors may serve as drug candidates for PTSD treatment, e.g. β2 adrenoreceptor antagonists, dopamine antagonists, partial dopamine D2 receptor agonists, dopamine β hydroxylase inhibitors, fatty acid amid hydrolase antagonists, glucocorticoid receptor agonists, tropomyosin receptor kinase B agonists, selective serotonin reuptake inhibitors, catechol-O-methyltransferase inhibitors, gamma-aminobutyric acid receptor agonists, glutamate receptor inhibitors, monoaminooxidase B inhibitors, N-methyl-D-aspartate receptor antagonists.; Conclusion: The combination of genetic and pharmacological research may lead to novel target-based drug developments with improved specificity and efficacy to treat PTSD. Specific SNPs may be identified as reliable biomarkers to assess individual disease risk. Focusing on soldiers suffering from PTSD will not only help to improve treatment options for this specific group, but for all PTSD
patients and the general population.

2016-99 0206

Posttraumatic stress symptoms across the deployment cycle: A latent transition analysis

Source
Journal of Psychiatric Research 2016 83 54-60

Author(s)

Abstract
Our objective was to examine symptom-level changes in the course in posttraumatic stress disorder (PTSD) across the deployment cycle among combat-exposed Marines, and to determine the degree to which combat exposure and post-deployment stressor exposure predicted PTSD symptom profile transitions. We examined PTSD symptoms in a cohort of U.S. Marines (N = 892) recruited for the Marine Resiliency Study (MRS). Marines deployed as one battalion infantry unit to Afghanistan in 2010 and were assessed pre-deployment and one, five, and eight months post-deployment. We employed latent transition analysis (LTA) to examine Marines' movement across PTSD symptom profiles, determined by latent class analysis (LCA). LCAs revealed a 3-class solution one month pre-deployment, a 4-class solution at five months post-deployment, and a 3-class solution at eight months post-deployment. LTA revealed notable movement between classes over time, which depended chiefly on pre-deployment symptom presentation. Marines who reported few pre-deployment symptoms either maintained these low levels or returned to low levels by eight months. Marines who reported a moderate number of symptoms at pre-deployment had variable outcomes; 50% had reductions by eight months, and those who reported numbing symptoms at five months post-deployment tended to report more symptoms at eight months. Marines who reported more PTSD symptoms prior to deployment retained more symptoms eight months post-deployment. Combat exposure and post-deployment stressor exposure predicted profile transitions. Examining transitions between latent class membership over time revealed prognostic information about Marines' eight-month PTSD.
outcomes. The extent of pre-deployment PTSD symptoms was particularly informative of likely PTSD outcomes.

2016-99 0207

Practice comparisons between accelerated resolution therapy, eye movement desensitization and reprocessing and cognitive processing therapy with case examples

Source
Nurse Education Today 2016 47 74-80

Author(s)

Abstract
Recent outcomes for Cognitive Processing Therapy (CPT) and Prolonged Exposure (PE) therapy indicate that as many as 60–72% of patients retain their PTSD diagnosis after treatment with CPT or PE. One emerging therapy with the potential to augment existing trauma focused therapies is Accelerated Resolution Therapy (ART). ART is currently being used along with evidence based approaches at Fort Belvoir Community Hospital and by report has been both positive for clients as well as less taxing on professionals trained in ART. The following is an in-practice theoretical comparison of CPT, EMDR and ART with case examples from Fort Belvoir Community Hospital. While all three approaches share common elements and interventions, ART distinguishes itself through emphasis on the rescripting of traumatic events and the brevity of the intervention. While these case reports are not part of a formal study, they suggest that ART has the potential to augment and enhance the current delivery methods of mental health care in military environments.

2016-99 0208

Predictors and outcomes of growth mixture modeled trajectories across an exposure-based PTSD intervention with veterans.

Source
Abstract

Objectives Exposure-based psychotherapies for posttraumatic stress disorder (PTSD) are effective for many, but not all patients. It is important to determine for whom these treatments work and to examine predictors of success. Method An 8-week modified prolonged exposure (PE) treatment, including components of behavioral activation and reducing the number of imaginal exposure sessions, was administered to a sample of 231 Veterans (mean age = 45.7 years, standard deviation = 14.89). Growth mixture modeling was used to model PTSD symptom trajectories across the 8-week intervention and a postintervention appointment. Further, baseline demographics, social support, clinician-rated PTSD symptoms, anxiety, and depression were examined as predictors of trajectories. Results Three classes emerged, labeled responders (n = 35), nonresponders (n = 190), and immediate responders (n = 6). The only significant baseline difference between responders and nonresponders was higher anxiety symptoms in the nonresponders. At follow-up time points, there were higher levels of clinician-rated PTSD, anxiety, and depression symptoms and lower social support in the nonresponders compared to the responders. Conclusion Findings suggest that modifying standard PE treatments by reducing imaginal exposure sessions while adding behavioral activation may not be advisable for most Veterans with PTSD.

2016-99 0209

Prevalence of PTSD and other mental disorders in UK service personnel by time since end of deployment: A meta-analysis

Source
BMC Psychiatry; Dec 2016; vol. 16

Author(s)
Rona, Roberto J.; Burdett, Howard; Bull, Samantha; Jones, Margaret; Jones, Norman; Greenberg, Neil; Wessely, Simon; Fear, Nicola T.

Abstract

Background: US studies have shown an increase of posttraumatic stress disorder (PTSD) and depression, but not alcohol misuse related to time of assessment since returning from deployment. We assessed if similar trends occur in the UK Armed Forces. Methods: We selected UK studies based on
our database of King’s Centre for Military Health Research publications from 2006 until January 2016 with at least one of the following measures: PTSD checklist-civilian version (PCL-C), the General Health Questionnaire (GHQ-12) and the Alcohol Use Disorders Identification Test (AUDIT). The studies included personnel assessed for these outcomes after their most recent deployment. A search in Medline, Psycho-Info and Embase confirmed that no relevant publication was missed.

Results: Twenty one thousand, seven hundred and forty-six deployed personnel from nine studies contributed to the meta-analyses by time since end of deployment in the PTSD analysis. The number of studies for period of time varied from two to four studies. The trend by time-category of questionnaire completion since returning from deployment were for PTSD $\beta = 0.0021$ (95% CI $-0.00046$ to $0.0049$, $p = 0.12$), for psychological distress $\beta = 0.0123$ (95% CI $0.005$ to $0.019$, $p = 0.002$) and for alcohol misuse $\beta = 0.0013$ ($-0.0079$ to $0.0105$, $p = 0.77$). Conclusions: There was no evidence that the prevalence of PTSD and alcohol misuse changed according to time since the end of deployment over a three-year period, but there was evidence for an association with increasing psychological distress.

2016-99 0210

The Psychological Effects of Rapid Aeromedical Evacuation in a Predator Exposure Animal Model of Post-Traumatic Stress Disorder.

Source
Military Medicine 2016 181 (11) e1561-e1568

Author(s)
Wilson, C.B., and Harre, J.,.

Abstract
Recent conflicts have contributed to an escalation in combat-related psychiatric disorders, including post-traumatic stress disorder (PTSD). Although technological advances have increased the speed from which battlefield injuries reach definitive care, mental health conditions have continued to rise. This study sought to analyze the effects of flight stressors and the lack of a postcombat decompression period on stress-related behavior. We hypothesized that a 1-week decompression period before flight would attenuate stress-related behavior compared to no decompression. PTSD-like effects were induced in male Sprague–Dawley rats. The rats were placed in cages with a cat on two occasions during the 31-day stress regimen. PTSD rats were also subjected to daily cage cohort changes. At the conclusion of the stress regimen, the animals were flown on a military aircraft (WC-130J) for 4 hours. They were subsequently tested via elevated plus-maze
and fear conditioning system. The PTSD animals that experienced a decompression period demonstrated decreased anxiety as compared to the no decompression group. In contrast, no difference was noted between the non-PTSD decompression and no decompression flight and no flight groups. The decrease in anxiety between the PTSD flight groups suggests that a decompression period before evacuation may minimize the potential for PTSD development.

2016-99 0211

PTSD confounds detection of compromised cerebral white matter integrity in military veterans reporting a history of mild traumatic brain injury

Source
Brain Injury 2016 30 (12) 1491-1500
Author(s)

Abstract
Primary objective: Based on high comorbidity between mild traumatic brain injury (mTBI) and post-traumatic stress disorder (PTSD) among deployed military service members, this study tested the hypothesis that the presence of PTSD disrupts the association between mTBI and lower white matter integrity identified in non-military samples. Research design/Methods and procedures: In a sample of 124 recent veterans with a range of mTBI and PTSD history, diffusion tensor imaging (DTI) metrics of white matter integrity in 20 regions were compared using multiple mTBI and PTSD contrasts. Main outcomes and results: Civilian mTBI was associated with lower global anisotropy, higher global diffusivity and higher diffusivity in 17 of 20 regions. No main effects of deployment mTBI were observed, but an interaction between deployment mTBI and lifetime PTSD on FA was observed globally and in 10 regions. Impact and blast mTBI demonstrated similar but weaker effects to those of civilian and deployment mTBI, respectively, demonstrating the context of mTBI is more relevant to white matter integrity than mechanism of injury. Conclusions: Overall, a main effect of civilian mTBI indicates long-term disruptions to
white matter are likely present, while the interaction between deployment mTBI and PTSD indicates that a history of PTSD alters this relationship.

**2016-99 0212**

**PTSD in victims of terroristic attacks - A comparison with the impact of other traumatic events on patients' lives.**

**Source**
Psychiatria Polska 2016 50 (5) 907-921

**Author(s)**
Bossini L., Casolaro I., et al.

**Abstract**
Objectives. To identify possible differences, in terms of duration and severity of Post-Traumatic Stress Disorder, between victims of terrorist attacks and subjects who underwent other types of traumatic events. Methods. A sample of subjects suffering from PTSD was selected. After a clinical interview aimed at the collection of anamnestic data, CAPS to confirm the diagnosis of PTSD and DTS to assess frequency and severity of post-traumatic symptoms were administered. One-way ANOVA was used in order to compare the differences in the parameters analysed through the DTS scales and its clusters between the victims of terrorist attacks and patients undergone other traumatic events. Results. The duration of PTSD was 258 +/- 144.9 months for people who underwent a terrorist attack and 41.6 +/- 11.8 months for victims of other traumatic events. As regards the severity of the disorder, the total score of the DTS scale was 65.6 +/- 26.9 in victims of terrorist attacks and 78.2 +/- 28.2 in people who undergone other traumatic events. However, the difference was not statistically significant; Avoidance and Hypervigilance clusters showed an important statistical significance. Conclusions. No significant differences are present in terms of severity, showing that PTSD is a disabling disorder regardless the type of event that triggers it; however, a significant difference in terms of duration of the disorder leads to reflect on the importance of an early diagnostic process aimed toward the victims of terrorism, in order to avoid the risk of chronicity and progression to other psychiatric disorders such as depression.

**2016-99 0213**

**Qualitative Inquiry Explores Health-Related Quality of Life of Female Veterans With Post-Traumatic Stress Disorder.**

**Source**
Military Medicine 2016 181 (11) e1470-e1475

**Author(s)**
Haun, J. N., and Duffy, A.,

Abstract
As the number of female veterans increases, health care systems must be prepared to meet the individualized needs of this population. To date, published data on health-related quality of life (HRQOL) of veterans with post-traumatic stress disorder (PTSD) focus on quantitative data and primarily represent the male population. The purpose of this study was to qualitatively explore the impact of PTSD on female veterans' HRQOL. A descriptive qualitative study used focus groups and demographic surveys to achieve data collection in a sample of veterans with PTSD. This report focuses on the analysis of a sample of 12 females to explore PTSD HRQOL experiences unique to female veterans. Female veterans reported several areas in which their HRQOL was impacted adversely in social participation, physical, cognitive, and emotional aspects of their lives. Issues with self-medication and substance abuse were also reported by participants. Female participants' perceptions about Veterans Health Administration were also discussed, highlighting unmet needs when receiving care for PTSD. These data provide unique insights from the perspective of female veterans with PTSD about their HRQOL and receiving care within the Veterans Health Administration health care system. These data can inform future research to better address the needs of female veterans living with PTSD.

2016-99 0214

Randomized controlled trial of a brief Internet-based intervention for families of Veterans with posttraumatic stress disorder.

Source
Journal of Rehabilitation Research and Development 2016 53 (5) 629-640

Author(s)

Abstract
Veterans with posttraumatic stress disorder (PTSD) and their families require resources to cope with postdeployment readjustment. Responding to this need, the current study examined a brief Internet-based intervention that provided Veterans' families with psychoeducation on postdeployment readjustment. Participants were 103 dyads of Veterans with probable PTSD and a designated family member/partner. Dyads were randomized to an intervention group, in which the family member completed the intervention, or to a control group with no intervention. Each member of the dyad completed surveys at baseline and 2 mo follow-up. Family member surveys focused on perceived empowerment, efficacy to
provide support, and communication (perceived criticism and reactivity to criticism). Veteran surveys assessed perceived family support and communication. Results showed that Veterans in the intervention group reported decreases in reactivity to criticism but also decreased perceived family support. No significant differences were observed in outcomes reported by family members. This preliminary study provides an early understanding of this novel outreach program, as well as the challenges inherent with a very brief intervention. Future research can build on the current study by more closely evaluating the communication changes that occur with this form of intervention and whether greater intervention intensity is needed.

2016-99 0215

Randomized controlled trial of prolonged exposure using imaginal exposure vs. virtual reality exposure in active duty soldiers with deployment-related posttraumatic stress disorder (PTSD)

Source
Journal of Consulting and Clinical Psychology 2016 84 (11) 946-959

Author(s)

Abstract
Objective: Prolonged exposure (PE) is an evidence-based psychotherapy for posttraumatic stress disorder (PTSD) but there is limited research with active-duty military populations. Virtual reality exposure (VRE) has shown promise but randomized trials are needed to evaluate efficacy relative to existing standards of care. This study evaluated the efficacy of VRE and PE for active duty soldiers with PTSD from deployments to Iraq and Afghanistan.; Method: Active-duty soldiers (N = 162) were randomized to 10-sessions of PE, VRE, or a minimal attention waitlist (WL). Blinded assessors evaluated symptoms at baseline, halfway through treatment, at posttreatment, and at 3- and 6-month follow-ups using the Clinician Administered PTSD Scale (CAPS).; Results: Intent-to-treat analyses found that both PE and VRE resulted in significant reductions in PTSD symptoms relative to those in the WL. The majority of patients demonstrated reliable change in PTSD symptoms. There was no difference between PE and VRE regarding treatment drop out before completing 10 sessions (44 and 41% for VRE and PE, respectively). Contrary
to hypotheses, analyses at posttreatment did not show that VRE was superior to PE. Post hoc analyses found that PE resulted in significantly greater symptom reductions than VRE at 3- and 6-month follow-up. Both treatments significantly reduced self-reported stigma.

Conclusions: PE is an efficacious treatment for active-duty Army soldiers with PTSD from deployments to Iraq or Afghanistan. Results extend previous evidence supporting the efficacy of PE to active-duty military personnel and raise important questions for future research on VRE.

2016-99 0216

A real-world evaluation of the clinical and economic burden of united states veteran patients with post-traumatic stress disorder.

Source

Author(s)

Abstract
Objectives: Post-traumatic stress disorder (PTSD) is an anxiety disorder occurring after experiencing a traumatic event, and can lead to severe impairment of a patient's daily life. The study aims to assess the clinical and economic burden of PTSD in the US veteran population. Methods: Patients diagnosed with PTSD (International Classification of Diseases, Ninth Revision, Clinical Modification code: 309.81) were selected from the Veterans Health Administration (VHA) database (October 1, 2010-September 30, 2014). The first observed PSD diagnosis claim date was defined as the index date. Continuous medical and pharmacy benefits were required for the 12 months pre- and post-index date. The 10 most common comorbidities were calculated for the 12-month baseline period. The 10 most commonly prescribed medications in the 60 days post-index date were also calculated. Health care resource utilization (inpatient, outpatient, pharmacy) and costs (inpatient, outpatient, pharmacy, total) during the 12-month follow-up period were assessed and calculated. Descriptive statistics were calculated as means +/- standard deviation (SD) and percentages to...
measure treatment, cost, and utilization distribution in the sample. Results: For VHA PTSD patients (n= 492,546), the most common comorbidities were hypertension (17.18%), depressive disorder (15.35%), diabetes (10.85%), anxiety (9.60%), and lumbago (9.58%). The most commonly prescribed medications were sertraline hydrochloride (14.54%), trazodone hydrochloride (12.54%), omeprazole (12.27%), citalopram hydrobromide (10.50%), and lisinopril (10.43%). The percentage of patients with inpatient stays (13.91%), outpatient visits (99.80%), and pharmacy visits (91.46%) was also calculated. PTSD patients incurred $5,486 (SD= $29,620) in inpatient, $10,057 (SD= $13,284) in outpatient, and $1,207 (SD= $5,817) in pharmacy costs. Total expenditures were observed at $16,750 (SD= $36,330). Conclusions: Results suggest that hypertension and depressive disorder are the most common comorbidities among PTSD patients. This disease was associated with high outpatient visit utilization, which translated to a high cost burden.

2016-99 0217

Resilience, post-traumatic stress, and posttraumatic growth: Veterans' and active duty military members' coping trajectories following traumatic event exposure

Source
Nurse Education Today 2016 47 57-60

Author(s)
Angel,C.M.

Abstract
As part of the “Joining Forces” Initiative (“JFI”), the White House and nursing leaders announced nurses' commitment to recognize symptoms, provide care, and refer veterans and active duty military members for post-traumatic stress disorder (“PTSD”). The JFI is positioned to save lives through nursing education and raising PTSD awareness. Nurses should also be educated to recognize resilience (stable trajectory of healthy functioning across time following a traumatic event) and assess for post-traumatic growth (“PTG”) (positive meaning making) alongside PTSD. In veterans who do develop PTSD, nearly three fourths of them with moderate PTSD will also experience PTG. Nurses' frontline contact with veterans in the VA, private sector healthcare settings, and community enable them to educate veterans and active duty military members about these coping trajectories.
Stakeholder Experiences in a Stepped Collaborative Care Study Within U.S. Army Clinics.

Source
Psychosomatics 2016 57 (6) 586-597

Author(s)
Batka C., Tanielian T., et al.

Abstract
Objective This article examines stakeholder experiences with integrating treatment for posttraumatic stress disorder (PTSD) and depression within primary care clinics in the U.S. Army, the use-of-care facilitation to improve treatment, and the specific therapeutic tools used within the Stepped Treatment Enhanced PTSD Services Using Primary Care study. Methods We conducted a series of qualitative interviews with health care providers, care facilitators, and patients within the context of a large randomized controlled trial being conducted across 18 Army primary care clinics at 6 military installations. Results Most of stakeholders' concerns clustered around the need to improve collaborative care tools and care facilitators and providers' comfort and abilities to treat behavioral health issues in the primary care setting. Conclusions Although stakeholders generally recognize the value of collaborative care in overcoming barriers to care, their perspectives about the utility of different tools varied. The extent to which collaborative care mechanisms are well understood, navigated, and implemented by providers, care facilitators, and patients is critical to the success of the model. Improving the design of the web-based therapy tools, increasing the frequency of team meetings and case presentations, and expanding training for primary care providers on screening and treatment for PTSD and depression and the collaborative care model's structure, processes, and offerings may improve stakeholder perceptions and usage of collaborative care.

2016-99 0219

Symptoms of Post-Traumatic Stress Disorder and Major Depressive Disorder in Veterans of Operations Enduring Freedom/Iraqi Freedom in Comparison With Those Veterans of Other Conflicts.

Source
Military Behavioral Health 2016 4 (4) 383-389

Author(s)
Gros, D.F., and Szafranski, D.D.,

Abstract
Limited research exists on comparing psychiatric symptomatology in veterans of Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) and other conflicts.
The present study investigated psychiatric symptoms in 238 treatment-seeking veterans. After controlling for demographic differences, participants from OEF/OIF demonstrated a significantly smaller percentage of full diagnosis post-traumatic stress disorder (PTSD), smaller percentage of comorbid depression, and less severe self-reported PTSD intrusions than veterans from other conflicts. The present findings may help to explain previously identified differences in treatment outcome in veterans from OEF/OIF and other conflicts.

2016-99 0220

VA Residential Treatment Providers’ Use of Two Evidence-Based Psychotherapies for PTSD: Global Endorsement Versus Specific Components.

Source
Psychological Trauma: Theory, Research, Practice, and Policy.2016, Pp No Pagination Specified ( )

Author(s)
Thompson,R., Simiola,V., et al.

Abstract
Objective: Despite a growing body of knowledge about the dissemination of evidence-based psychotherapies (EBPs), their actual use in clinical settings is not well understood. The purpose of the current study was to compare self-reported component use with global use for 2 EBPs for posttraumatic stress disorder (PTSD), prolonged exposure (PE), and cognitive processing therapy (CPT). Method: Around 174 providers from 38 VA PTSD residential treatment programs were asked about both global use and component use of PE and CPT. Results: Among frequent users of these EBPs, component use was generally high, especially for low-intensity and nonspecific components. For each form of treatment, there were a small number of providers who reported using the treatment frequently but did not use most of the key components of the treatment. Conclusions: These findings highlight the importance of understanding the modifications that providers make to EBPs and suggest the importance of flexibility within fidelity to these treatments.

See also


Cortisol, heart rate, and blood pressure as early markers of PTSD risk: A systematic review and meta-analysis. Under Endocrinology.
Indirect exposure to captivity details is not related to posttraumatic stress symptoms among the spouses and offspring of former prisoners of war. Under Military Dependants


PTSD prevalence among Polish World War II survivors. Under History of Medicine.


Reduced P3b Brain Response during Sustained Visual Attention is associated with Remote Blast mTBI and Current PTSD in U.S. Military Veterans. Under Traumatic Brain Injury.

The importance of taking a military history.

Source
Public Health Reports 2016 131 (5) 711-713
Author(s)

Abstract
The most important action a provider can take to ensure that a veteran receives optimal health care is perhaps the easiest and, ironically, the most neglected: asking if a patient has served in the military and taking a basic military history. In previously published articles, Jeffrey Brown and Ross Boyce, physicians with prior military service, reported that their own health care providers had rarely asked about their service.

Veterans' Mental Health Beliefs: Facilitators and Barriers to Primary Care-Mental Health Use.

Source
Families, Systems, & Health 2016
Author(s)

Abstract
Introduction: The Veterans Health Administration (VA) Primary Care-Mental Health Integration (PC-MHI) program aims to increase availability and acceptability of mental health (MH) care by integrating these services into primary care. Little is known about veterans' perceptions of this method of MH care delivery. This study explored the range of veterans' beliefs and perceptions of MH and MH services with the aim of describing potential facilitators and barriers to the uptake of PC-MHI services. Method: Team-based qualitative analysis of proceedings from focus groups. Participants included 41 veterans from across service eras. Focus groups were organized by service era and use of PC-MHI services. Codes pertaining to beliefs about MH and MH treatment were identified, grouped into subthemes, and then larger organizing themes. Barriers and facilitators to treatment seeking were identified. Results: Although our study was focused on veteran perceptions of PC-MHI, participants did not appear to discriminate between PC-MHI and other MH services when discussing their decisions to seek services. Facilitators and
barriers to MH treatment-seeking included systems, personal and social influences. Stigma was mentioned infrequently relative to other beliefs. Discussion: Veterans with and without experience of PC-MHI services described a variety of beliefs about MH without regard to whether this service location. These findings suggest that while integration increases access, it may not in itself decrease some barriers to seeking treatment. These findings suggest that more work is needed to address the way potential PC-MHI patients decide whether or not to engage in care.

See also


Women Veterans with Depression in Veterans Health Administration Primary Care: An Assessment of Needs and Preferences. Under Veteran's Health.
Assessing Civilian Perceptions of Combat Veterans: An IAT Study.

Source
Psychological Trauma: Theory, Research, Practice, and Policy. 2016, Pp No Pagination Specified

Author(s)
Schreger, C. and Kimble, M.

Abstract
Objective: Evidence suggests that civilians may have considerable ambivalence to returning veterans. While civilians are frequently grateful for the service of military personnel, they can often be wary of the mental health and stability of returning veterans. If civilians do hold such negative biases toward veterans, whether implicit or explicit, this may have a significant impact on the ability of military personnel to integrate back into society. The goal of the study was to test whether participants held an implicit bias of mental instability toward veterans.

Method: In this study, 48 participants took an adapted version of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). Pictures of veterans and civilians were paired with words that either reflected mental stability (safe, sane, reliable, responsible) or instability (crazy, dangerous, unstable, unpredictable). Results: The results demonstrated a finding of moderate effect size for an association between veterans and instability. Participants had significantly shorter response times (RTs) for IAT blocks in which veteran pictures and negative words were paired. Conclusions: This is the first study in the literature to demonstrate implicit biases of veterans as unstable. If implicit biases do in fact exist, the reintegration issues that veterans face may be due, at least in part, to a negative bias they face upon their return.

Bridging the Research to Application Divide: Recommendations for Community-Based Participatory Research in a Military Setting.

Source
Military Behavioral Health 2016 4 (4) 316-324

Author(s)
Shenberger-Trujillo, J.M., and Kurinec, C.A.,

Abstract
Currently, in the United States, of 100 military service members needing behavioral health care it is estimated that around 50
would receive any care and only 30 to 50 would be provided “minimally adequate” care according to clinical, evidence-based standards. The current article discusses the existing gap between research and application and proposed reasons for this disparity. We briefly highlight existing research approaches developed by various disciplines (e.g., public health, psychology, social work) to address the research to application gap and provide example opportunities for the military’s use of a community-based participatory approach. We also provide recommendations for a way forward to promote a research approach that utilizes both cutting-edge research methods and the richness of the applied expertise provided by military personnel. The recommended research approach aims to empower those individuals who provide or receive social, behavioral, or mental health services by creating an opportunity to shape the research from inception to implementation.

2016-99 0225

Conducting Qualitative Research on Stigmatizing Conditions With Military Populations.

Source
Military Behavioral Health 2016 4 (4) 307-315
Author(s)
Lincoln,M.L., and Ames,G.M.,

Abstract
This article addresses the conduct of qualitative research regarding sensitive or stigmatizing topics with military populations, and provides suggestions for implementing culturally responsive and effective data collection with these groups. Given high rates of underreporting of sensitive and stigmatizing conditions in the military, qualitative methods have potential to shed light on phenomena that are not well understood. Drawing on a study of U.S. Army National Guard personnel by civilian anthropologists, we present lessons learned and argue that the value of similar studies can be maximized by culturally responsive research design.

2016-99 0226

Deaths Due to Use of Lethal Force by Law Enforcement: Findings From the National Violent Death Reporting System, 17 U.S. States, 2009-2012

Source
Author(s)
Abstract
Introduction: Several high-profile cases in the U.S. have drawn public attention to the use of lethal force by law enforcement (LE), yet research on such fatalities is limited. Using data from a public health surveillance system, this study examined the characteristics and circumstances of these violent deaths to inform prevention.; Methods: All fatalities (N=812) resulting from use of lethal force by on-duty LE from 2009 to 2012 in 17 U.S. states were examined using National Violent Death Reporting System data. Case narratives were coded for additional incident circumstances.; Results: Victims were majority white (52%) but disproportionately black (32%) with a fatality rate 2.8 times higher among blacks than whites. Most victims were reported to be armed (83%); however, black victims were more likely to be unarmed (14.8%) than white (9.4%) or Hispanic (5.8%) victims. Fatality rates among military veterans/active duty service members were 1.4 times greater than among their civilian counterparts. Four case subtypes were examined based on themes that emerged in incident narratives: about 22% of cases were mental health related; 18% were suspected "suicide by cop" incidents, with white victims more likely than black or Hispanic victims to die in these circumstances; 14% involved intimate partner violence; and about 6% were unintentional deaths due to LE action. Another 53% of cases were unclassified and did not fall into a coded subtype. Regression analyses identified victim and incident characteristics associated with each case subtype and unclassified cases.; Conclusions: Knowledge about circumstances of deaths due to the use of lethal force can inform the development of prevention strategies, improve risk assessment, and modify LE response to increase the safety of communities and officers and prevent fatalities associated with LE intervention.

Disaster Mental Health and Positive Psychology: An Afterward to the Special Issue

Source
Journal of Clinical Psychology 2016 72 (12) 1364-1368

Author(s)

Abstract
The articles in this Special Issue are devoted to integrating the fields of disaster mental health and positive psychology. Their focus on resilience building, individual and community preparation, meaning making, and posttraumatic growth represents an important new development in disaster mental health. The overarching goal of this effort is to inform strategies to help both individuals-including children, adolescent, adult
disaster survivors, and relief workers-and communities prepare for, respond to, recover from, and possibly even grow stronger in the face of adversity. To achieve this goal, this body of literature suggests that it is important for disaster mental health workers to partner with community leaders, organizations, and the population at large to understand community vulnerabilities, take advantage of existing strengths, and respect cultural factors implicated in disaster recovery. It further suggests that an effective community-based approach to disaster recovery will make psychosocial support and skill-building programs available to large numbers of survivors, which is critical for responding to future national and international disasters. Continued high-quality research that is comprehensive and considers not only relevant psychological, social, cultural, and biological factors but also interrelations between individuals, organizations and communities is needed to advance this relatively new and important direction of the disaster mental health field.

2016-99 0228

Identity Adjustment Among Afghanistan and Iraq War Veterans With Reintegration Difficulty.

Source
Psychological Trauma: Theory, Research, Practice, and Policy.2016, Pp No Pagination Specified

Author(s)

Abstract
Objective: To examine perceptions of identity adjustment in a diverse, national sample of U.S. veterans of the wars in Afghanistan and Iraq. Method: The authors conducted a planned thematic analysis of text written by Afghanistan and Iraq war veterans when they were asked to describe their reintegration difficulties as part of a randomized controlled trial (RCT) of online expressive writing (Sayer et al., 2015). Participants were 100 randomly selected veterans from the larger study (42 women and 58 men, 60 active duty and 38 reserves or National Guard). Results: Nearly 2/3s of participants wrote about their identity adjust...
reserves or National Guard experienced difficulty in reestablishing former civilian identities. Conclusions: Identity adjustment is a critical yet understudied aspect of veteran reintegration into community life following combat deployment.

**2016-99 0229**

The Impact of Insufficient Sleep on Combat Mission Performance.

**Source**
Military Behavioral Health 2016 4 (4) 356-363

**Author(s)**
LoPresti, M.L., and Anderson, J.A.,

**Abstract**
A significant concern for the U.S. military is the inability of service members to obtain sufficient sleep during combat deployments as it directly affects the health and readiness of the force. The performance deficits that result from sleep loss are well known, and the implications of such deficits include increased risk for accidents and mistakes. This study assessed the relationship between average daily sleep duration and combat mission performance. Anonymous survey data were collected from U.S. Army combat platoons deployed to Afghanistan in 2013. Participants reported getting between five and six hours of sleep per day, and 14.6% of soldiers reported accidents that affected the mission, with half of these (51%) attributed to sleepiness. A logistic regression showed a significant association between the number of hours of sleep and the incidence of accidents or mistakes that affected the mission. In addition, 34.1% of soldiers reported falling asleep on guard duty, which was also significantly associated with the number of hours of sleep per day. This is the first report to our knowledge on the relationship between sleep and performance in a deployed environment and confirms that soldiers obtain significantly less sleep than the recommended seven to eight hours per day.

**2016-99 0230**

The impact of psychological factors on recovery from injury: A multicentre cohort study.

**Source**
Social Psychiatry and Psychiatric Epidemiology 2016

**Author(s)**
Kellezi, B., Coupland, C., et al.

**Abstract**
Purpose: Unintentional injuries have a significant long-term health impact in working age adults. Depression, anxiety and
post-traumatic stress disorder are common post-injury, but their impact on self-reported recovery has not been investigated in general injury populations. This study investigated the role of psychological predictors 1 month post-injury in subsequent self-reported recovery from injury in working-aged adults.

Methods: A multicentre cohort study was conducted of 668 unintentionally injured adults admitted to five UK hospitals followed up at 1, 2, 4 and 12 months post-injury. Logistic regression explored relationships between psychological morbidity 1 month post-injury and self-reported recovery 12 months post-injury, adjusting for health, demographic, injury and socio-legal factors. Multiple imputations were used to impute missing values.

Results: A total of 668 adults participated at baseline, 77% followed up at 1 month and 63% at 12 months, of whom 383 (57%) were included in the main analysis. Multiple imputation analysis included all 668 participants. Increasing levels of depression scores and increasing levels of pain at 1 month and an increasing number of nights in hospital were associated with significantly reduced odds of recovery at 12 months, adjusting for age, sex, centre, employment and deprivation. The findings were similar in the multiple imputation analysis, except that pain had borderline statistical significance.

Conclusions: Depression 1 month post-injury is an important predictor of recovery, but other factors, especially pain and nights spent in hospital, also predict recovery. Identifying and managing depression and providing adequate pain control are essential in clinical care post-injury.

The influence of predeployment training on coordination in multinational headquarters: The moderating role of organizational obstacles to information sharing.

Source
Military Psychology 2016 28 (6) 390-405

Author(s)
Valaker,S., and Lofquist,E.A.,

Abstract
Coordination is critical to the success of multinational military operations and may be fostered by predeployment training. We argue that whether such training is related to a high degree of perceived coordination at the individual level is likely to depend on whether individuals experience a low degree of organizational obstacles to information sharing. We examined this using data from the North Atlantic Treaty Organization (NATO) Kosovo Force headquarters (survey: n = 131). We controlled for whether it was the participants’ first deployment, the participants’ background (military or civilian), the amount of time spent in the headquarters by participants, whether differences pertaining to culture and opinions were valued by
the organization, the quality of supervisor/subordinate relationships, and the degree of national cultural obstacles to information sharing. The results showed no significant direct effects on coordination from 3 different training configurations: national training, multinational training, and a combination of national and multinational training. However, we found a negative direct effect from organizational obstacles to information sharing on coordination, and support for organizational obstacles to information sharing as negatively moderating the multinational predeployment training and coordination relationship. Qualitative interviews (n = 14) indicated that informal information sharing, and the problems exchanging information from tactical to operational levels could hinder coordination. Interventions to foster coordination could benefit from a focus on multinational training and lowering organizational obstacles to information sharing. Our findings contribute to more precisely pinpointing the types of training that are useful in multinational operations, as well as the factors upon which training transfer is contingent.

2016-99 0232

Initial validation of the U.S. Army Global Assessment Tool.

Source
Military Psychology 2016 28 (6) 468-487

Author(s)
Vie,L.L., and Scheier,L.M.,.

Abstract
The U.S. Army developed the Global Assessment Tool (GAT) to monitor psychosocial fitness and well-being among soldiers and provide a means to objectively gauge the success of newly implemented resilience training programs. Despite its widespread use (taken over 5.2 million times) and stated utility for program evaluation, there is relatively little published evidence regarding the GAT's reliability and validity. We used exploratory structural equation modeling (ESEM) with 4 random samples of soldiers (n = 10,000 each) to examine the factorial validity and reliability of the GAT. An 11-factor solution (Self-Management, Positive Affect, Meaning, Work Engagement, Organizational Trust, Loneliness, Negative Cognitions, Hostility, Negative Emotions, Depressive Symptoms, and Emotion-Focused Coping), with 4 additional factors assessing character strengths (Intellect, Warmth, Civic Strengths, and Temperance), fit well and replicated in a second random sample. A higher order, 2-factor model using composites scores and positning positive and negative psychosocial competencies also fit well. Tests of measurement invariance using a third random sample reinforced consistent measurement properties across gender, age, and rank, with the exception of character strengths, which produced different
factor structures for males and females. Further validity tests using a fourth random sample underscored a modicum of divergence among the resilience factors and convergence among the character strengths factors. We conclude with recommendations for enhancing and refining the GAT and discuss the GAT’s utility as a reliable, multidimensional psychosocial assessment that can be used to evaluate the efficacy of military resilience training programs.

2016-99 0233

Learning the ropes: The protective role of mentoring in correctional police officers’ socialization process.

Source
Military Psychology 2016 28 (6) 429-447

Author(s)
Farnese,M.L., and Bellò,B.,

Abstract
Formal mentoring is an individualized and contextualized socialization tactic to enhance newcomers’ learning—acknowledged as essential in the early career stage—that can be of particular value when entering a fairly unpredictable and stressful workplace. This research aims to understand the moderating role of formal mentoring in the relationship between organizational socialization and 2 adjustment indicators, a positive 1 (commitment) and a negative 1 (turnover intention). A questionnaire was administered to 117 correctional police officer newcomers, as prisons are especially critical work contexts for newcomers. The results show a direct effect from both socialization and mentoring on commitment and turnover, and an interaction between socialization and mentoring on turnover, although not on commitment. When the socialization process progresses steadily, both socialization and mentoring contribute to good adjustment, but when traditional tactics go wrong, a different learning source (formal mentoring) exerts a protective function, limiting newcomers’ intention to quit. These findings give support to the usefulness of mentoring in a law enforcement context and provide some insight into defining formal mentoring programs.

2016-99 0234

A Measure of Perceived Family Stigma: Validity in a Military Sample.

Source
Psychological Assessment 2016

Author(s)
Abstract
The primary aim of the present study was to evaluate the reliability and validity of the newly developed Perceived Family Stigma Scale (PFSS) in a diverse sample of 623 military veterans. The PFSS is a 4-item scale that has acceptable internal consistency (alpha = .86) and strong interitem correlations (r = .51 to .76). Confirmatory factor analysis (CFA) indicated the single factor model was a good fit statistically (chi2[df = 2, N = 620] = .34, p = .84) and descriptively (CFI = 1.00, RMSEA < .001). Multigroup CFA was performed to test the measurement invariance of the PFSS across demographic indicators. The PFSS achieved full scalar invariance across deployment history, education level, urban/rural location, marital status, and military rank, and partial scalar invariance across gender, ethnicity/race, and income level. Results of a logistic regression analysis indicated significant relationships of mean PFSS scores and gender with likelihood of needing help for an emotional problem, above and beyond a measure of self- and public stigma. Specifically, each point increase in mean PFSS scores predicted an almost 4 times higher probability of reporting a need for help, and men were also 6 times more likely than women to report a need for help. However, there was a significant relationship between the PFSS and gender such that, for women, each 1 point increase in mean PFSS scores predicted a likelihood of reporting a need/desire for help for an emotional problem 3 times that of men. (PsycINFO Database Record (c) 2016 APA, all rights reserved) Impact Statement Public Significance Statement-The present study provides a valid, short scale for researchers and clinicians to use to measure the construct of family stigma. Additionally, the present study highlights the importance of studying family stigma as a barrier to care.

2016-99 0235

Personality Traits and Coping Strategies.

Source
Aeronautical Medicine and Psychology Revue 2016 2
Author(s)
ionela,F.A., and Trandafir,D.,

Abstract
Summary The concept of personality, stress and coping have been widely investigated by researchers, but exploring the relationship between them has become necessary with finding the complex relationship resulting from the interaction between individual differences and stress mechanism. Thus, in the literature there are many models that try to explain these relationships. Objective. The primary objective of this study is to identify the existence of a relationship between personality factors presented in the Big Five model: extraversion,
agreeability, conscientiousness, emotional stability, intellect/imagination and coping strategies used, classified in problem focused coping strategies and emotion focused coping strategies. Method. The study was conducted on 85 participants who are part of military aviation personnel. It used questionnaire that measures the Big Five personality factors and “Ways of coping questionnaire” designed by Lazarus and Folkman. The two tests were individual completed by the participants and the results were pooled carry out the procedures necessary statistical hypothesis testing. Results. The results showed statistically significant positive correlations between extraversion.

2016-99 0236

Physically strong men are more militant: A test across four countries.

Source
Evolution and Human Behavior 2016

Author(s)

Abstract
There is substantial evidence from archaeology, anthropology, primatology, and psychology indicating that humans have a long evolutionary history of war. Natural selection, therefore, should have designed mental adaptations for making decisions about war. These adaptations evolved in past environments, and so they may respond to variables that were ancestrally relevant but not relevant in modern war. For example, ancestrally in small-scale combat, a skilled fighter would be more likely to survive a war and bring his side to victory. This ancestral regularity would have left its mark on modern men's intergroup psychology: more formidable men should still be more supportive of war. We test this hypothesis in four countries: Argentina, Denmark, Israel, and Romania. In three, physically strong men (but not strong women) were significantly more supportive of military action. These findings support the hypothesis that modern warfare is influenced by a psychology designed for ancestral war.

2016-99 0237

Predictors of support for women in military roles: Military status, gender, and political ideology.

Source
Military Psychology 2016 28 (6) 488-497

Author(s)
Laurence, J.H., Milavec, B.L., et al.
Abstract
The repeal of combat restrictions by gender raises the importance of understanding factors related to the acceptance of women serving in the full range of military jobs. Previous research shows military affiliated cadets, especially males, are substantially less approving of women serving in military jobs, especially those involving exposure to direct combat or command positions, than are other college students. The current study extends these findings by considering political ideology in addition to gender and military affiliation, as related to attitudes toward women’s roles in the military overall and in combat roles in particular. Survey data from Service Academy cadets (n = 3,116), Reserve Officer Training Corps (ROTC) cadets (n = 1,367), and nonmilitary affiliated college students (n = 2,648), provided measures of whether a woman should or should not be allowed to serve in 9 different military job areas. In addition to overall approval, a scale for combat jobs was created from a subset of 4 of the jobs. Regression analysis indicated that once gender, political party, political position (left/right), and attitudes toward mothers in the workforce overall were controlled, type of college did not add to the prediction of acceptance of women in various military roles. In general, nonmilitary affiliated respondents, women, and those identifying as Democrat offered higher approval scores. Our findings suggest more aggressive programs, designed to educate and socialize these future leaders about women’s roles in the military, may require development.

2016-99 0238

Psychological contracts and their implications for job outcomes: A social exchange view.

Source
Military Psychology 2016 28 (6) 406-417

Author(s)
Pohl,S., and Bertrand,F.,

Abstract
Coordination is critical to the success of multinational military operations and may be fostered by predeployment training. We argue that whether such training is related to a high degree of perceived coordination at the individual level is likely to depend on whether individuals experience a low degree of organizational obstacles to information sharing. We examined this using data from the North Atlantic Treaty Organization (NATO) Kosovo Force headquarters (survey: n = 131). We controlled for whether it was the participants’ first deployment, the participants’ background (military or civilian), the amount of time spent in the headquarters by participants, whether differences pertaining to culture and opinions were valued by the organization, the quality of supervisor/subordinate
relationships, and the degree of national cultural obstacles to information sharing. The results showed no significant direct effects on coordination from 3 different training configurations: national training, multinational training, and a combination of national and multinational training. However, we found a negative direct effect from organizational obstacles to information sharing on coordination, and support for organizational obstacles to information sharing as negatively moderating the multinational predeployment training and coordination relationship. Qualitative interviews (n = 14) indicated that informal information sharing, and the problems exchanging information from tactical to operational levels could hinder coordination. Interventions to foster coordination could benefit from a focus on multinational training and lowering organizational obstacles to information sharing. Our findings contribute to more precisely pinpointing the types of training that are useful in multinational operations, as well as the factors upon which training transfer is contingent.

2016-99 0239


Source
Military Medicine 2016 181 (11) e1515-e1531

Author(s)
Vyas,K.J., and Delaney,E.M.,

Abstract
Objective: To examine the potential psychological impact of deploying in support of the U.S. response to Ebola in west Africa by systematic review and meta-analysis. Methods: Peer-reviewed articles published between January 2000 and December 2014 were identified using PubMed, PsycINFO, and Web of Science. Thirty-two studies involving 26,869 persons were included in the systematic review; 13 studies involving 7,785 persons were included in the meta-analysis. Pooled standardized mean differences (SMD) and 95% confidence intervals (CI) were calculated. Results: Reflecting the sociodemographics of the military, those who are younger, single, not living with family, have fewer years of work experience, lower education, and lower income are at increased risk for psychological distress, alcohol/drug misuse, post-traumatic stress disorder (PTSD), depression, and/or anxiety as a result of their perceived risk of infection. Effect sizes for post-traumatic stress disorder, depressive, and anxiety symptoms were considered small (SMD = 0.12, 95% CI = −0.23 to 0.47), moderate (SMD = 0.40, 95% CI = 0.24–0.51), and small (SMD = 0.08, 95% CI = −0.09 to 0.25), respectively; however, only the effect size for depressive symptoms was
statistically significant. Conclusions: Deployed service members may return with clinically significant problems, the most notable of which is depression. Delivering resilience training and fostering altruistic acceptance may protect service members from developing mental health disorders.

2016-99 0240

Strength at Home Couples program to prevent military partner violence: A randomized controlled trial.

Source
Journal of Consulting and Clinical Psychology 2016 84 (11) 935-945

Author(s)
Taft C.T., Creech S.K., et al.

Abstract
Objective: We evaluated the efficacy of Strength at Home Couples, a cognitive-behavioral traumainformed intimate partner violence (IPV) preventive intervention for married or partnered military service members or veterans. No prior randomized controlled trial had supported the efficacy of such an intervention in this population. Method: Participants included 69 male service members or veterans and their female partners. Recruitment was conducted from February 2010 through August 2013, and participation occurred within 2 Department of Veterans Affairs hospitals. All couples completed an initial assessment including diagnostic interviews and measures of physical and psychological IPV and were randomized by cohort to a supportive prevention couples group or Strength at Home Couples. All couples were reassessed at postintervention and at 6 and 12 months follow-ups. Results: Both service members or veterans and their female partners engaged in fewer acts of reported physical and psychological IPV in the Strength at Home Couples condition relative to supportive prevention, and relative risk of physical violence was lower for both members of the dyad in Strength at Home Couples at follow-up assessments (male service member or veteran IPV relative risk [RR] = .53; female IPV RR = .43). Those in Strength at Home Couples evidenced significantly greater program completion than did those in supportive prevention (RR = 1.73; 95% confidence interval [1.00, 2.99]). Exploratory analyses did not find differences between groups on relationship satisfaction. Conclusion: Results provide support for the efficacy of Strength at Home Couples in preventing physical IPV and reducing psychological IPV. These results have important implications for preventing violence and associated physical and mental health problems.
A systematic review of the relationship between psychological disorders or substance use and self-reported cognitive failures.

Source
Cognitive Neuropsychiatry 2016 1-26
Author(s)
Carrigan N. and Barkus, E.

Abstract
Introduction: Cognitive failures are errors in normal everyday functioning. Individuals with psychological disorders may possess heightened vulnerability. We sought to review the literature on cognitive failures in psychological disorders to determine the nature of this association, and whether failures relate to neuropsychological performance. We also examine the relationship between cognitive failures and substance use since it is relevant to everyday cognition and co-occurs in many psychological disorders. Methods: We conducted a systematic review of self-reported cognitive failures in psychological disorders and substance use, identifying 21 papers in total. Results: Papers identified studied trauma, mood, and anxiety disorders, and schizophrenia. Substance use papers included nicotine, alcohol, cannabis, and ecstasy use. Cognitive failures were increased in some but not all papers; the most consistent findings were for depression, PTSD, and daily smokers of nicotine. Subjective failures did not correlate closely with neuropsychological outcomes in any disorders. We were unable to discern distinct profiles of failures for each disorder; rather they may reflect emotional dysregulation more broadly. Conclusions: The real world cognitive experiences of people with psychological disorders may differ to their performance in the clinic or lab. It is important that self-reports of minor cognitive issues are considered as both a potential risk and a maintaining factor of illness. Substance use also needs to be considered in assessing cognitive failures.

Using Cranial Electrotherapy Stimulation Therapy to Treat Behavioral Health Symptoms in a Combat Operational Setting.

Source
Abstract
Addressing combat operational stress reactions (COSR) in the deployed setting can be a challenging endeavor. During the Global War on Terror, the modalities of psychotherapy and general medicine are not always feasible to manage COSR. Available behavioral health resources and practitioners remain taxed despite the most robust behavioral health billeting in recent history. Studies have suggested that COSR symptoms including sleep problems, anxiety, and depression are common presenting issues in the operational setting. Cranial electrotherapy stimulation (CES) is a treatment modality that passes low-frequency microcurrent into neuronal tissue. A growing body of research suggests that CES offers relief from symptoms associated with COSR in similar populations. A recent survey revealed that 50 to 66% of respondents using CES reported symptom improvement, with less than 1% reporting side effects. CES provided our behavioral health team with an innovative and efficient tool in improving functioning in our warfighters affected by COSR.

See also

An exploratory study of the mental toughness psychological skills profile psychometrics, and the mediating effect of social support sources on mental toughness and suicidal ideation among military police. Under Mental Health.


Psychometrics of behavioral health screening scales in military contexts. Under Mental Health.

Social support and mental health outcomes among U.S. Army Special Operations personnel. Under Mental Health.
Acceptability of Medication and Nonmedication Treatment for Insomnia Among Female Veterans: Effects of Age, Insomnia Severity, and Psychiatric Symptoms.

Source
Clinical Therapeutics 2016 38 (11) 2373-2385

Author(s)
Culver N.C., Song Y., et al.

Abstract
Purpose Female veterans are at high risk for sleep problems, and there is a need to provide effective treatment for this population who experience insomnia. This study's primary goal was to compare the acceptability of medication versus nonmedication treatments for insomnia among female veterans. In addition, we examined the role of patient age, severity of sleep disturbance, and psychiatric symptoms on acceptability of each treatment approach and on the differences in acceptability between these approaches.

Methods A large nationwide postal survey was sent to a random sample of 4000 female veterans who had received health care at a Veterans Administration (VA) facility in the previous 6 months (May 29, 2012 - November 28, 2012). A total of 1559 completed surveys were returned. Survey items used for the current analyses included: demographic characteristics, sleep quality, psychiatric symptoms, military service experience, and acceptability of medication and nonmedication treatments for insomnia. For analysis, only ratings of "very acceptable" were used to indicate an interest in the treatment approach (vs ratings of "not at all acceptable," "a little acceptable," "somewhat acceptable," and "no opinion/don't know").

Findings In the final sample of 1538 women with complete data, 57.7% rated nonmedication treatment as very acceptable while only 33.5% rated medication treatment as very acceptable. This difference was statistically significant for the group as a whole and when examining subgroups of patients based on age, sleep quality, psychiatric symptoms, and military experience. The percentage of respondents rating medication treatment as very acceptable was higher for women who were younger, had more severe sleep disturbances, had more psychiatric symptoms, who were not combat exposed, and who had experienced military sexual trauma. By contrast, the percentage of respondents rating nonmedication treatment as very acceptable differed only by age (younger women were more likely to find nonmedication treatment acceptable) and difficulty falling asleep.

Implications Female veterans are more likely to find nonmedication insomnia treatment acceptable compared with medication treatment. Thus, it is important to
match these patients with effective behavioral interventions such as cognitive behavioral therapy for insomnia. Efforts to educate providers about these preferences and about the efficacy of cognitive behavioral therapy for insomnia may serve to connect female veterans who have insomnia to the treatment they prefer. These findings also suggest that older female veterans may be less likely to find either approach as acceptable as their younger counterparts.

2016-99 0244

Death by suicide in US military during the Afghanistan and Iraq wars.

Source
The Lancet Psychiatry 2016 3 (11) 1001-1003
Author(s)
Hoge C.W., Ivany C.G., et al.

Abstract
Deaths by suicide in US service members and veterans have risen substantially since 2005, leading to substantial investment in research, prevention, and treatment initiatives for suicides and underlying mental health conditions.1–7 An article by Yu-Chu Shen and colleagues6 in The Lancet Psychiatry sheds new light on the risk of death by suicide in active duty personnel (including reservists activated >30 days) during and after leaving military service, and highlights the remaining challenges and research priorities.

2016-99 0245

Development of Veteran-Centric Competency Domains for Psychiatric-Mental Health Nurse Practitioner Residents

Source
Journal of Psychosocial Nursing and Mental Health Services 2016 54 (11) 31-36
Author(s)

Abstract
The mental health needs of military service members, Veterans, and their families are a designated national priority; however, there has been little emphasis on the inclusion of Veteran-centric domains in competency-based nursing education for psychiatric-mental health nurse practitioners (PMHNPs). The current article describes the identification and application of Veteran-centric domains in an innovative pilot residency program for PMHNPs, funded by the Veterans Health Administration Office of Academic Affiliations. Fourteen
Veteran-centric competency domains were developed from literature review, including knowledge, attitudes, and skill behaviors. Adoption and application of these domains in curricular components included the resident competency evaluation, baseline assessment of military experience, and evidence-based practice seminars and training. Methods of competency domain evaluation are presented, along with gaps related to the evaluation of competency skills. The delivery of mental health services reflecting these domains is consistent with the VA core values and goal of developing a positive service culture. Journal of Psychosocial Nursing and Mental Health Services, 54(11), 31-36.

2016-99 0246

Exploring Reliability and Validity of the Deployment Risk and Resilience Inventory-2 Among a Nonclinical Sample of Discharged Soldiers Following Mandatory Military Service

Source
Journal of Traumatic Stress 2016 29 (6) 556-562

Author(s)
Maoz,H., Goldwin,Y., et al.

Abstract
The Deployment Risk and Resilience Inventory (DRRI) is a widely used questionnaire assessing deployment-related risk and resilience factors among war veterans. Its successor, the DRRI-2, has only been validated and used among veterans deployed for overseas military missions, but because many countries still enforce compulsory military service, validating it among nonclinical samples of healthy discharged soldiers following mandatory service is also a necessity. In the current study, a sample of 101 discharged Israeli soldiers (39 males, 62 females; mean time since discharge 13.92, SD = 9.09 years) completed the DRRI-2. There were 52 participants who completed the questionnaire at a second time point (mean time between assessments 19.02, SD = 6.21 days). Both physical and mental health status were examined, as well as symptomatology of depression, anxiety, and posttraumatic stress disorder. Cronbach's αs for all latent variables in the inventory ranged from .47 to .95. The DRRI-2 risk factors were negatively associated with psychological functioning, whereas resilience factors were positively associated with better self-reported mental health. Test-retest reliability coefficients were generally high (Pearson correlations were .61 to .94, all p values < .01). Our study provides evidence for the reliability and validity of the DRRI-2 in assessing salient deployment experiences among a nonclinical sample following mandatory military service.
Implicit Measures of Suicide Risk in a Military Sample

Source
Assessment 2016

Author(s)

Abstract
Suicide has become an issue of great concern within the U.S. military in recent years, with recent reports indicating that suicide has surpassed combat related deaths as the leading cause of death. One concern regarding suicide risk in the military is that existing self-report measures allow service members to conceal or misrepresent current suicidal ideation or suicide plans and preparations. Implicit association tests (IATs) are computer-based, reaction time measures that have been shown to be resilient to such masking of symptoms. The death/suicide implicit association test (d/s-IAT) is an empirically supported IAT that is specific to death and suicide. The present study examined whether the performance of 1,548 U.S. military service members on the d/s-IAT significantly predicted lifetime suicidal ideation and depression. Zero-inflated negative binomial regression analyses were used to test these associations. Results indicated that the d/s-IAT was neither associated with history of suicidal ideation nor history of depression.

Isolating effects of moral injury and low post-deployment support within the U.S. military

Source
Psychiatry Research 2016 247 194-199

Author(s)
Houtsma, C., Khazem, L.R., et al.

Abstract
Suicide rates within U.S. military components, particularly the National Guard, are significantly higher than the general population suicide rate. To better understand and prevent suicide within this population, we must identify mechanisms of risk contributing to these discrepancies. One risk factor relevant to military service is moral injury, a term for experiences that violate one's moral beliefs. Using a series of hierarchical multiple regressions, the current study examined
the moderating role of post-deployment social support on the association between moral injury (self-transgressions, other-transgressions, and betrayal) and thwarted belongingness among military personnel. The current sample was comprised of 552 military personnel with at least one previous deployment. Partially consistent with hypotheses, results revealed that other-transgressions and betrayal were significantly associated with thwarted belongingness at low, but not mean or high levels of post-deployment support. In contrast, the interaction of self-transgressions and post-deployment support was not significantly associated with thwarted belongingness, nor was there a significant main effect of self-transgressions on thwarted belongingness. This suggests that experiencing other-perpetrated morally injurious events (i.e., watching a fellow soldier die, being betrayed by a comrade) can be compounded by low post-deployment social support, increasing risk for thwarted belongingness. Implications for prevention and treatment are discussed.

2016-99 0249

Patterns of help-seeking in a national sample of student veterans: A matched control group investigation.

Source
General Hospital Psychiatry 2016 43 58-62

Author(s)

Abstract
Objectives: This study examined patterns of professional and nontraditional help-seeking in a national sample of veterans from 57 colleges/universities and demographically matched students from the same institutions who had not served in the US Armed Forces. Methods: In total, 945 veterans and 2835 demographically matched nonveteran students from the same 4-year institutions completed assessments of help-seeking intentions and behaviors from professional, religious and informal sources in the Healthy Minds Study between 2011 and 2015. Results: Drawing on bivariate and multivariate logistic regression models, equal ratios of these samples (2:1) did not endorse professional help-seeking intentions or behaviors. When compared to nonveteran students, veterans had greater intentions for religious help-seeking but were less likely to seek help from family/friends. Nearly half of depressed veterans who had not utilized services had also not sought help from any religious or informal sources. Conclusions: Unmet mental health needs might interfere with the success of a sizeable contingent of veterans pursuing new vocational goals.
Community-based programs that can educate and/or equip nontraditional sources of support in veterans' naturally occurring relationships might offset these concerns.

2016-99 0250

A Population-Based Study of Help Seeking and Self-Medication among Trauma-Exposed Individuals.

Source
Psychology of Addictive Behaviors 2016 30 (7) 771-777

Author(s)
Sheerin C., Berenz E.C., et al.

Abstract
Epidemiologic studies of trauma highlight the imbalance between prevalence of psychiatric diagnoses and help seeking. We investigated prevalence and correlates of help seeking and self-medication in Norwegian adults with trauma history with a focus on common posttrauma outcomes of posttraumatic stress disorder (PTSD) and substance use disorders (alcohol or drug). Participants reporting at least 1 PTSD symptom (n = 307) were asked if they consulted with a doctor/another professional (help seeking) or used drugs/alcohol (self-medication) for trauma-related problems. PTSD, alcohol abuse or dependence (AUD), and drug use or dependence (DUD) were assessed via structured diagnostic interviews. Help seeking and self-medication were endorsed by 37.4% and 10.4% of the sample, respectively. As compared to the full sample, help seeking was endorsed at a greater rate in individuals with PTSD (chi2 = 8.59, p = .005) and at a lower rate in those with AUD (chi2 = 7.34, p = 7.34, p 2 = 25.68, p < .001). In regression analyses, PTSD was associated with increased likelihood of self-medication (odds ratio [OR] = 4.56) and help seeking (OR = 2.29), while AUD was associated with decreased likelihood of help-seeking (OR = .29). When self-medication was included as a predictor, PTSD was no longer associated with help seeking, although AUD remained inversely associated. PTSD and AUDs have a nuanced relationship with formal help seeking as well as the use of substances to cope. Trauma-exposed individuals are likely engaging in adaptive and maladaptive coping strategies, the latter of which may be compounding distress.

2016-99 0251


Source
Military Behavioral Health 2016 4 (4) 351-355

Author(s)
Levitt,G.A., and Weller,J.,

Abstract
Admissions of military members (MMs) to community psychiatric hospitals are increasingly common, bringing unfamiliar challenges to civilian providers. To broaden the knowledge base on psychiatric issues facing MMs, investigators collected demographic and clinical variables from medical records of inpatients treated on a community hospital unit that specializes in MM treatment. Military members in this study had high rates of post-traumatic stress disorder (PTSD), depression, anxiety, and substance use disorders. Future research and information focusing on the psychiatric needs of MMs is greatly needed. Educating community mental health providers to help them better understand the unique challenges of working with active duty MMs will improve care and outcomes.

2016-99 0252

Suicidal ideation among young Afghanistan/Iraq War Veterans and civilians: Individual, social, and environmental risk factors and perception of unmet mental healthcare needs, United States, 2013.

Source
Psychiatry Research 2016 245 398-405

Author(s)

Abstract
Suicidal Ideation among Afghanistan/Iraq War Veterans remains a health concern. As young Veterans adjust to civilian life, new risk factors might emerge and manifest differently in this group versus those in the general population. We explored these differences. With 2013 National Survey on Drug Use and Health data, we examined differences in risk of past-year suicidal ideation between Veterans of the Afghanistan/Iraq War periods aged 18-34 years (N = 328) and age-comparable civilians (N = 23,222). We compared groups based on individual and socio-environmental risk factors as well as perceptions of unmet mental healthcare needs. We report adjusted rate ratios (aRRs); interaction terms tested for between-group differences. PY suicidal ideation rates for Veterans and civilians did not differ (52 versus 59 per 1,000, p = 0.60) and both groups shared many risk factors. However, drug problems and perceived unmet mental health care needs were vastly stronger risk factors among Veterans versus civilians (interaction terms indicated that the aRRs were 3.8-8.0 times higher for Veterans versus civilians). Other differences
were discovered as well. Past-year suicidal ideation rates did not differ by Veteran status among young adults. However, different risk factors per group were detected, which can inform Veteran suicide prevention efforts.

**2016-99 0253**

**Suicide Among Military Personnel and Veterans Aged 18-35 Years by County-16 States.**

**Source**
American Journal of Preventive Medicine 2016 51 (5 Supplement3) (pp S197-S208)

**Author(s)**

**Abstract**
Introduction Suicide among military personnel and young Veterans remains a health concern. This study examined stateside distribution of suicides by U.S. county to help focus prevention efforts. Methods Using 2005-2012 National Violent Death Reporting System data from 16 states (963 counties, or county-equivalent entities), this study mapped the county-level distribution of suicides among current military and Veteran decedents aged 18-35 years. This study also compared incident circumstances of death between decedents in high-density counties (i.e., counties with the highest proportion of deaths) versus those in medium/low-density counties to better understand the precipitators of suicide in counties most affected. Last, this study identified potential military and Veteran Health Administration intervention sites. All analyses were conducted in 2015. Results Within the National Violent Death Reporting System participating states, an estimated 262 (33%) current military suicides occurred in just ten (1.0%) counties, and 391 (33%) Veteran suicides occurred in 33 (3.4%) counties. Mental health and intimate partner problems were common precipitating circumstances, and some circumstances differed between cases in high- versus those in medium/low-density counties. Multiple potential intervention sites were identified in high-density counties. Conclusions These findings suggest that military and Veteran suicides are concentrated in a small number of counties. Increased efforts at these locales might be beneficial.

**2016-99 0254**

**Time-varying associations of suicide with deployments, mental health conditions, and stressful life events among current and former US military personnel: a retrospective**
multivariate analysis

Source
The Lancet Psychiatry 2016 3 (11) 1039-1048

Author(s)

Abstract
Background: US military suicides have increased substantially over the past decade and currently account for almost 20% of all military deaths. We investigated the associations of a comprehensive set of time-varying risk factors with suicides among current and former military service members.

Methods: We did a retrospective multivariate analysis of all US military personnel between 2001 and 2011 (n=110 035 573 person-quarter-years, representing 3 795 823 service members). Outcome was death by suicide, either during service or post-separation. We used Cox proportional hazard models at the person-quarter level to examine associations of deployment, mental disorders, history of unlawful activity, stressful life events, and other demographic and service factors with death by suicide.

Findings: The strongest predictors of death by suicide were current and past diagnoses of self-inflicted injuries, major depression, bipolar disorder, substance use disorder, and other mental health conditions (compared with service members with no history of diagnoses, the hazard ratio HR] ranged from 1·4 95% CI 1·14-1·72] to 8·34 6·71-10·37]). Compared with service members who were never deployed, hazard rates of suicide (which represent the probability of death by suicide in a specific quarter given that the individual was alive in the previous quarter) were lower among the currently deployed (HR 0·50, 95% CI 0·40-0·61) but significantly higher in the quarters following first deployment (HR 1·51 1·17-1·96] if deployed in the previous three quarters; 1·14 1·06-1·23] if deployed four or more quarters ago). The hazard rate of suicide increased within the first year of separation from the military (HR 2·49, 95% CI 2·12-2·91), and remained high for those who had separated from the military 6 or more years ago (HR 1·63, 1·45-1·82).

Interpretation: The increased hazard rate of death by suicide for military personnel varies by time since exposure to deployment, mental health diagnoses, and other stressful life events. Continued monitoring is especially needed for these high-risk individuals. Additional information should be gathered to address the persistently raised risk of suicide among service members after separation.

See also

The impact of psychological factors on recovery from injury: A multicentre cohort study. Under Psychology.
The impact of social support, unit cohesion, and trait resilience on PTSD in treatment-seeking military personnel with PTSD: The role of posttraumatic cognitions. Under Post Traumatic Stress Disorder.


Interplay between service era, PTSD symptom expression, and treatment completion among veterans. Under Post Traumatic Stress Disorder.


Psychiatric history, post-discharge distress, and personality characteristics among incident female cases of takotsubo cardiomyopathy: A case-control study. Under Cardiology.

Suicide in the veteran population. Under Pharmacology and Toxicology.

Suicide Risk among Women Veterans in Distress: Perspectives of Responders on the Veterans Crisis Line. Under Women's Health.

A Virtual Hope Box: Randomized Controlled Trial of a Smartphone App for Emotional Regulation and Coping With Distress. Under Technology & Research.
PUBLIC HEALTH

2016-99 0255


Source
Author(s)
Li S.J., Flaxman A., et al.

Abstract
Objectives: We estimated war-related Iraqi mortality for the period 1980 through 1993. Method To test our hypothesis that deaths reported by siblings (even dating back several decades) would correspond with war events, we compared sibling mortality reports with the frequency of independent news reports about violent historic events. We used data from a survey of 4,287 adults in 2000 Iraqi households conducted in 2011. Interviewees reported on the status of their 24,759 siblings. Death rates were applied to population estimates, 1980 to 1993. News report data came from the ProQuest New York Times database. Results: About half of sibling-reported deaths across the study period were attributed to direct warrelated injuries. The Iran-Iraq war led to nearly 200,000 adult deaths, and the 1990+/-1991 First Gulf War generated another approximately 40,000 deaths. Deaths during peace intervals before and after each war were significantly lower. We found a relationship between total sibling-reported deaths and the tally of war events across the period, p = 0.02.
Conclusions: We report a novel method to verify the reliability of epidemiological (household survey) estimates of direct war-related injury mortality dating back several decades.

2016-99 0256

Preparedness for Ebola: Can it transform our current public health system?

Source
Eastern Mediterranean Health Journal 2016 22 (8) 566-567
Author(s)
Malik,M.R., and Mahjour,J.,

Abstract
The devastating Ebola outbreak that raged in west Africa most of 2014 and 2015 has finally come to an end. The epidemic reached unprecedented levels with far reaching implications for global health security. The epidemic, which started in
December 2013, killed more than 11 000 people and infected at least 28 600 (1), more than the total deaths and cases combined reported in the entire history of the disease (2). In addition, it resulted in an unquantified increase in indirect mortality as well as severe societal consequences (3).

2016-99 0257

Tuberculosis Screening and Control in the US Military in War and Peace

Source
American Journal of Public Health 2016 ( ) e1-e8

Author(s)
Mancuso, J.D.

Abstract
Tuberculosis (TB) has a well-established association with military populations, but the association of increased TB risk during armed conflict is less certain. This historical review focuses on the evolution of screening practices, the changing epidemiology of TB, and the risk of TB among US military service members during armed conflict from 1885 to the present. Overall, deployed soldiers were not at increased risk for TB compared with nondeployed soldiers in any of these conflicts, and the risk of TB in the US military largely reflected that of the underlying US population. Nevertheless, there are focal risk groups with higher rates of TB in the military, including prisoners of war. Although the principles of TB control in the military conform to those used in the civilian population, unique military exposures during both times of peace and of armed conflict require additional screening, surveillance, and control measures.

See also


The impact of military activities on the concentration of mercury in soils of military training grounds and marine sediments. Under Environmental Science.

Oral Toxicity of 2,4-Dinitroanisole in Rats. Under Pharmacology and Toxicology
A Magnetoencephalographic (MEG) Study of Gulf War Illness (GWI).

Source
Ebiomedicine 2016 12 ( ) 127-132
Author(s)

Abstract
Background Gulf War Illness (GWI) has affected many Gulf War veterans. It involves several organs, most notably the brain. Neurological-cognitive-mood-related symptoms frequently dominate and are at the root of chronic ill-health and disability in GWI. Here we investigated the neural mechanisms underlying brain dysfunction in GWI in the absence of mental health disorders. Methods Eighty-six veterans completed diagnostic interviews to establish the presence of GWI and assess mental health status. Participants diagnosed with GWI met both Center for Disease Control and Kansas criteria. We studied 46 healthy controls and 40 veterans with GWI without mental illness. They all underwent a resting-state magnetoencephalographic (MEG) scan to assess brain communication based on synchronous neural interactions (SNI; Georgopoulos et al., 2007). Findings We found substantial differences in SNI between control and GWI groups centered on the cerebellum and frontal cortex. In addition, using the maxima and minima of SNI per sensor as predictors, we successfully classified 94.2% of the 86 participants (95% sensitivity, 93.5% specificity). Interpretation These findings document distinct differences in brain function between control and GWI in the absence of mental health comorbidities, differences that are excellent predictors of GWI.

See also
Incidence, risk factors, and mortality associated with acute respiratory distress syndrome in combat casualty care.

Source
Journal of Trauma and Acute Care Surgery 2016 81 (5 Supplement2) (pp S150-S156)

Author(s)

Abstract
BACKGROUND: The overall incidence and mortality of acute respiratory distress syndrome (ARDS) in civilian trauma settings have decreased over the past four decades; however, the epidemiology and impact of ARDS on modern combat casualty care are unknown. We sought to determine the incidence, risk factors, resource utilization, and mortality associated with ARDS in current combat casualty care.

METHODS: This was a retrospective review of mechanically ventilated US combat casualties within the Department of Defense Trauma Registry (formerly the Joint Theater Trauma Registry) during Operation Iraqi Freedom/Enduring Freedom (October 2001 to August 2008) for ARDS development, resource utilization, and mortality. RESULTS: Of 18,329 US Department of Defense Trauma Registry encounters, 4,679 (25.5%) required mechanical ventilation; ARDS was identified in 156 encounters (3.3%). On multivariate logistic regression, ARDS was independently associated with female sex (odds ratio [OR], 2.62; 95% confidence interval [CI], 1.21-5.71; p = 0.02), higher military-specific Injury Severity Score (Mil ISS) (OR, 4.18; 95% CI, 2.61-6.71; p > 0.001 for Mil ISS 15), hypotension (admission systolic blood pressure >90 vs. 90 beats per minute; OR, 1.53; 95% CI, 1.06-2.22; p = 0.02). Explosion injury was not associated with increased risk of ARDS. Critical care resource utilization was significantly higher in ARDS patients as was all-cause hospital mortality (ARDS vs. no ARDS, 12.8% vs. 5.9%; p = 0.002). After adjustment for age, sex, injury severity, injury mechanism, Mil ISS, hypotension, tachycardia, and admission Glasgow Coma Scale score, ARDS remained an independent risk factor for death (OR, 1.99; 95% CI, 1.12-3.52; p = 0.02). CONCLUSIONS: In this large cohort of modern combat casualties, ARDS risk factors included female sex, higher injury severity, hypotension, and tachycardia, but not explosion injury. Patients with ARDS also required more medical resources and were at greater risk of death compared with patients without ARDS. Thus, ARDS remains a significant complication in current combat casualty care. (J Trauma Acute Care Surg. 2016;81: S150-S156.)
Isolated diffusing capacity reduction is a common clinical presentation in deployed Iraq and Afghanistan veterans with deployment-related environmental exposures.

Source
Clinical Respiratory Journal 2016
Author(s)

Abstract
Following deployment to Iraq and Afghanistan ("post-9/11"), a spectrum of respiratory conditions has been reported; however, there are few published reports of objective physiologic data or later experience of symptoms and function. To better understand the post-deployment clinical presentation, we conducted a retrospective review of pulmonary function testing in 143 veterans referred to our tertiary care clinic for post-deployment health concerns. More than 75% of our sample had normal lung volumes and spirometry on pulmonary function testing; however, an isolated reduction in lung diffusing capacity (DLCO) was observed in 30% of our sample of post-9/11 veterans. An isolated reduction in DLCO is a rare pattern in primary-care seeking dyspneic patients, but is commonly associated with underlying pulmonary disease. Post-9/11 veterans with respiratory complaints and an isolated reduction in DLCO should undergo further evaluation.

Lifetime Prevalence of Respiratory Diseases and Exposures Among Veterans of Operation Enduring Freedom and Operation Iraqi Freedom Veterans: Results From the National Health Study for a New Generation of U.S. Veterans

Source
Journal of Occupational and Environmental Medicine 2016 58 (12) 1175-1180
Author(s)
Barth,S.K., Dursa,E.K., et al.

Abstract
Objective: The objective of this study was to determine the prevalence of respiratory exposures and the association between respiratory exposures and respiratory disease among veterans deployed to Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) compared with nondeployed veterans of this era.; Methods: Data come from a national health survey of 20,563 deployed and nondeployed OEF/OIF era veterans. Prevalence estimates and adjusted
odds ratios were calculated. Results were weighted to represent the population.; Results: Prevalence of at least one respiratory exposure was high among both deployed and nondeployed groups (95% and 70%, respectively). In both groups, those with any respiratory exposure were at an increased risk for reporting a respiratory disease.; Conclusion: Respiratory exposures are highly prevalent and are associated with increased odds of respiratory diseases among the OEF/OIF era population.

See also

The Bridging Advanced Developments for Exceptional Rehabilitation (BADER) Consortium: Reaching in Partnership for Optimal Orthopaedic Rehabilitation Outcomes.

Source
Military Medicine 2016 181 (S4) 13-19
Author(s)
Stanhope,S.J., and Wilken,J.M.,

Abstract
The Bridging Advanced Developments for Exceptional Rehabilitation (BADER) Consortium began in September 2011 as a cooperative agreement with the Department of Defense (DoD) Congressionally Directed Medical Research Programs Peer Reviewed Orthopaedic Research Program. A partnership was formed with DoD Military Treatment Facilities (MTFs), U.S. Department of Veterans Affairs (VA) Centers, the National Institutes of Health (NIH), academia, and industry to rapidly conduct innovative, high-impact, and sustainable clinically relevant research. The BADER Consortium has a unique research capacity-building focus that creates infrastructures and strategically connects and supports research teams to conduct multiteam research initiatives primarily led by MTF and VA investigators. BADER relies on strong partnerships with these agencies to strengthen and support orthopaedic rehabilitation research. Its focus is on the rapid forming and execution of projects focused on obtaining optimal functional outcomes for patients with limb loss and limb injuries. The Consortium is based on an NIH research capacity-building model that comprises essential research support components that are anchored by a set of BADER-funded and initiative-launching studies. Through a partnership with the DoD/VA Extremity Trauma and Amputation Center of Excellence, the BADER Consortium's research initiative-launching program has directly supported the identification and establishment of eight BADER-funded clinical studies. BADER's Clinical Research Core (CRC) staff, who are embedded within each of the MTFs, have supported an additional 37 non-BADER Consortium-funded projects. Additional key research support infrastructures that expedite the process for conducting multisite clinical trials include an omnibus Cooperative Research and Development Agreement and the NIH Clinical Trials Database. A 2015 Defense Health Board report highlighted the Consortium's vital role, stating the research capabilities of the DoD Advanced Rehabilitation Centers are significantly enhanced and facilitated by the BADER...
Consortium.

2016-99 0263

The Center for Rehabilitation Sciences Research: Advancing the Rehabilitative Care for Service Members With Complex Trauma

Source
Military Medicine 2016 181 20-25

Author(s)

Abstract
The Center for Rehabilitation Sciences Research (CRSR) was established to advance the rehabilitative care for service members with combat-related injuries, particularly those with orthopedic, cognitive, and neurological complications. The center supports comprehensive research projects to optimize treatment strategies and promote the successful return to duty and community reintegration of injured service members. The center also provides a unique platform for fostering innovative research and incorporating clinical/technical advances in the rehabilitative care for service members. CRSR is composed of four research focus areas: (1) identifying barriers to successful rehabilitation and reintegration, (2) improving pain management strategies to promote full participation in rehabilitation programs, (3) applying novel technologies to advance rehabilitation methods and enhance outcome assessments, and (4) transferring new technology to improve functional capacity, independence, and quality of life. Each of these research focus areas works synergistically to influence the quality of life for injured service members. The purpose of this overview is to highlight the clinical research efforts of CRSR, namely how this organization engages a broad group of interdisciplinary investigators from medicine, biology, engineering, anthropology, and physiology to help solve clinically relevant problems for our service members, veterans, and their families.

2016-99 0264

Differences in Military Obstacle Course Performance Between Three Energy-Storing and Shock-Adapting Prosthetic Feet in High-Functioning Transtibial Amputees: A Double-Blind, Randomized Control Trial

Source
Military Medicine 2016 181 45-54

Author(s)
Highsmith,M.J., Kahle,J.T., et al.
Abstract
Background: Approximately 683 persons engaged in military service experienced transtibial amputation (TTA) related to recent war in Iraq and Afghanistan. Military TTAs function at a level beyond basic ambulation. No empirical data demonstrate which higher functioning prosthetic feet maximize injured service personnel's ability to continue performing at a level commensurate with return to duty. This study's purpose was to determine which of three high-functioning, energy-storing prosthetic feet maximize performance and preference in a field obstacle course (OC) and to quantify physical performance differences between TTAs and high-functioning nonamputees.

Procedures: A randomized, double-blind, repeated measures experimental design compared three prosthetic feet (Ossur Variflex, Endolite Elite Blade, and Ossur Re-Flex Rotate) during performance on a field OC. TTAs accommodated with study feet and the OC before assessment. 14 TTAs and 14 nonamputee controls completed the course. Subjective and objective performance differences were compared across feet conditions and between groups.

Results: Total OC completion times were similar between prosthetic feet: Elite-Blade (419 seconds ± 130), Variflex (425 seconds ± 144), and Re-Flex Rotate (444 seconds ± 220). Controls' OC completion time (287.2 seconds ± 58) was less (p ≤ 0.05) than TTA times. In total, controls had faster completion times (p ≤ 0.05) compared to all prosthetic feet conditions in 13/17 obstacles. Re-Flex Rotate had 2 additional obstacles different (p ≤ 0.05) than controls and required more time to complete. Median RPE values were lower (p ≤ 0.05) for controls than TTA regardless of foot. Regarding foot preference for OC completion, 7/14 (50%) preferred Elite Blade, 5/14 (36%) preferred Re-Flex Rotate, and the remaining 2/14 (14%) preferred Variflex.

Conclusion: Controls completed the OC faster and with less effort than TTAs regardless of prosthetic foot. No clear differences in prosthetic feet emerged during OC completion; however, individual task performance, perceived effort, and preference resulted in trends of slight performance improvement with and preference for Elite Blade, a dual function energy-storing and return foot combined with vertical shock absorption. Understanding how to maximally improve performance in such functional tasks may allow service members to best sustain physical fitness, return to their military occupational specialty and possibly in-theater duty.

2016-99 0265

Effect of Lumbar Progressive Resistance Exercise on Lumbar Muscular Strength and Core Muscular Endurance in Soldiers

Source
Military Medicine 2016 181 (11) e1615-e1622
Author(s)
Mayer, J.M., Childs, J.D., et al.

Abstract
Objectives: Low back pain is common, costly, and disabling for active duty military personnel and veterans. The evidence is unclear on which management approaches are most effective. The purpose of this study was to assess the effectiveness of lumbar extensor high-intensity progressive resistance exercise (HIPRE) training versus control on improving lumbar extension muscular strength and core muscular endurance in soldiers.

Methods: A randomized controlled trial was conducted with active duty U.S. Army Soldiers (n = 582) in combat medic training at Fort Sam Houston, Texas. Soldiers were randomized by platoon to receive the experimental intervention (lumbar extensor HIPRE training, n = 298) or control intervention (core stabilization exercise training, n = 284) at one set, one time per week, for 11 weeks. Lumbar extension muscular strength and core muscular endurance were assessed before and after the intervention period.

Results: At 11-week follow-up, lumbar extension muscular strength was 9.7% greater (p = 0.001) for HIPRE compared with control. No improvements in core muscular endurance were observed for HIPRE or control.

Conclusions: Lumbar extensor HIPRE training is effective to improve isometric lumbar extension muscular strength in U.S. Army Soldiers. Research is needed to explore the clinical relevance of these gains.

2016-99 0266

The effects of underwater treadmill therapy on the rehabilitation of a polytrauma patient: A case report.

Source
PM and R 2016 Conference

Author(s)
Urbisci A.E., Rawji A.H., et al.

Abstract
Case/Program Description: The patient is a 30-year-old man status post motor vehicle accident who was ejected from his vehicle. He sustained multiple fractures of his extremities and spine which required multiple surgical corrections. Once medically stable, the patient's therapy regimen started with 2 months of land based physical therapy before underwater treadmill therapy (UTT) was incorporated. Based on prior studies of UTT, the following functional outcome measures were recorded throughout the rehabilitation process: heart rate, blood pressure, pain scores, range of motion, manual muscle testing, and two-minute walk tests. To account for the concurrent land based therapy, the rate of improvement of each outcome measure was noted before and after the
initiation of underwater treadmill therapy. Setting: Polytrauma inpatient rehabilitation unit at a veterans' hospital. Results: Based on the data collected, the patient showed an appreciable change in pain scores after initiation of UTT. His left ankle dorsiflexion also improved significantly after initiation of UTT, improving from 0degree to 15degree. The rate of improvement of manual muscle strength, range of motion of other joints, and two-minute walk tests did not change once UTT was incorporated. His heart rate and blood pressure remained unchanged during the admission. Subjectively, the patient and his therapists noted improvement in gait and improved exercise tolerance with subsequent UTT sessions. Significant reduction in left knee, left hip, and back pain was also reported. Discussion: UTT is not a very well studied area of rehabilitation and may be a useful adjunct to traditional land based therapy to assist with reduction of pain and improvement of function. Conclusions: UTT may be a useful form of therapy to assist with the rehabilitation of polytrauma patients.

2016-99 0267

**Functional Outcomes of Service Members With Bilateral Transfemoral and Knee Disarticulation Amputations Resulting From Trauma**

**Source**
Military Medicine 2016 181 55-60

**Author(s)**
Schnall,B.L., Chen,Y., et al.

**Abstract**
As longitudinal studies for those with bilateral transfemoral amputation (BTFA) or knee disarticulation (KD) are lacking, it is important to quantify performance measures during rehabilitation in an effort to determine reasonable expectations and trends that may influence the rehabilitation process. At initial evaluation (date of first independent ambulation) and follow up (median 135 range = 47-300 days later), 10 participants with BTFA/KD completed 6 minute walk testing and Activity Specific Balance Confidence and Lower Extremity Functional Scale questionnaires. Of these, six participants also completed stair ambulation; ascent time and stair assessment index (SAI) scores were calculated. Patients utilized their prescribed prostheses at each visit. Participants were able to cover a significantly greater distance (135.3 70.1] m) in 6 minutes at the follow-up visit (*p = 0.005). The change in SAI scores for stair ascent and descent was not statistically significant (p = 0.247). Stair ambulation confidence scores were significantly greater at the final visit (*p = 0.034). Stair negotiation appears to plateau early; however, confidence builds despite absence of functional gains over time. Service members with BTFAs/KDs are able to achieve functional
community ambulation skills. Thus, this investigation suggests that clinicians can realign rehabilitation paradigms to shift focus towards community distance ambulation once safe stair ascent and descent is achieved.

2016-99 0268

Improving Outcomes Following Extremity Trauma: The Need for a Multidisciplinary Approach.

Source
Military Medicine 2016 181 (S4) 26-29

Author(s)
Stinner, D.J.,

Abstract
Extremity injuries contribute a significant amount to the overall disability of combat-injured soldiers. Tracking patient outcomes allows military health care providers to gain a better understanding of the disability associated with various injury patterns. Only recently have orthopedic surgeons begun to collect functional outcome measures, and perhaps even more importantly, have begun to collect patient-reported outcomes. There is a growing body of evidence demonstrating the importance of a multidisciplinary approach to optimize outcomes in patients following severe extremity trauma. Tracking the outcomes of these interventions longitudinally will ultimately provide the military surgeon with an evidence-based plan to treat severe combat-related extremity injuries, leading to optimal care for future combat injured patients. “However beautiful the strategy, you should occasionally look at the results.”—Winston Churchill.

2016-99 0269

Physical and social factors determining quality of life for veterans with lower-limb amputation(s): a systematic review

Source
Disability and Rehabilitation 2016 38 (24) 2345-2353

Author(s)
Christensen, J., Ipsen, T., et al.

Abstract
Purpose: Most veterans live for many years after their war-related traumatic lower-limb amputation, which is why understanding which factors influence health-related quality of life (HRQoL) remains important to their long-term management. The objective of this study was to perform a review of the literature to summarize any evidence on the physical and social determinants for HRQoL in veterans with uni- or bilateral lower-limb amputation(s). Method: MEDLINE, EMBASE, PEDro,
CINAHL, Scopus and Cochrane databases were searched systematically for eligible studies. Inclusion criteria were: traumatic lower-limb amputation(s), HRQoL outcome and veterans. Physical and social factors that influence HRQoL were extracted.; Results: The literature search identified 2073 citations, leading to the inclusion of 10 studies in the systematic review. Physical activity level, sport participation, level of amputation, back pain, years of education, as well as duration and severity of phantom pain were found to be determining factors for HRQoL among veterans with lower-limb amputation.; Conclusions: The identified physical and social determinants were similar to those found in civilian traumatic amputees. More high quality research designs, interventions and complex statistical analyses are warranted to identify the physical and social factors that influence the HRQoL of veteran amputees. Implications for Rehabilitation Rehabilitation staff should promote physical activity and participation in sport among veterans with lower-limb amputation(s). Level of amputation, back pain severity, years of education, duration of phantom pain and severity of phantom pain have been found to be determining factors for HRQoL and should be taken into consideration when planning rehabilitation programs for veterans with lower-limb amputations.

2016-99 0270

A Review of Unique Considerations for Female Veterans With Amputation.

Source
Military Medicine 2016 181 (S4) 66-68

Author(s)
Randolph,B.J., and Nelson,L.M.,

Abstract
This article explores unique considerations that face both women living with limb loss and their health care providers. This demographic of patient has a higher rate of artificial limb rejection, thus challenging providers to address needs for cosmesis and function that varies from those of male counterparts. Health care providers for women with amputations, such as the Veterans Affairs, must evolve health care delivery, research practices, and work jointly with industry in order to meet the needs of this population.

2016-99 0271

Temporal spatial and metabolic measures of walking in highly functional individuals with lower limb amputations

Source
Archives of Physical Medicine and Rehabilitation 2016
Author(s)
Jarvis, H.L., Bennett, A.N., et al.

Abstract
Objective: The aim of this descriptive exploratory study is to record the temporal spatial parameters and metabolic energy expenditure during walking of individuals with amputation, walking with advanced prostheses and following completion of comprehensive rehabilitation, to able-bodied controls.; Design: Cross-sectional SETTING: Multi-disciplinary comprehensive rehabilitation centre PARTICIPANTS: Thirty severely injured United Kingdom military personnel with amputation and subsequent completion of their rehabilitation programme (10 unilateral trans-tibial, 10 unilateral trans-femoral, and 10 bilateral trans-femoral) were compared to (and of similar age, height and mass (p >0.537) as) 10 able-bodied controls.; Interventions: Not applicable Main Outcomes and Measures: Temporal spatial and metabolic energy expenditure data were captured during walking on level ground at self-selected speed.; Results: The individuals with amputation were all male, with a mean age 29 years (SD = 4) and mean New Injury Severity Score of 31 (SD = 16). Walking speed, stride length, step length and cadence of individuals with a unilateral trans-tibial or trans-femoral amputation was comparable to controls, and only for individuals with a bilateral trans-femoral amputation was walking speed significantly slower (1·12 m/s, p = 0.025) and cadence reduced (96 steps/min, p = 0.026). Oxygen cost for individuals with a unilateral trans-tibial amputation (0·15 ml/kg/m) was the same as for controls (0·15 ml/kg/m), and significantly increased by 20% (0·18 ml/kg/m, p = 0.023) for unilateral trans-femoral and by 60% (0·24 ml/kg/m, p < 0.001) for bilateral trans-femoral individuals with amputation.; Conclusion: The scientific literature reports a wide range of gait and metabolic energy expenditure across individuals with amputation. The results of this study indicate that the individuals with amputation have a gait pattern which is highly functional and efficient. This is comparable to a small number of studies reporting similar outcomes for individuals with a unilateral trans-tibial amputation, but the results from this study are better than those on individuals with trans-femoral amputations reported elsewhere, despite comparison with populations wearing similar prosthetic componentry. Those studies that do report similar outcomes have included individuals who have been provided with a comprehensive rehabilitation programme. This suggests that such a programme may be as important as, or even more important than, prosthetic component selection in improving metabolic energy expenditure. The data are made available as a benchmark for what is achievable in the rehabilitation of some individuals with amputations, but agreeably may not be possible for all amputees to achieve.
**SEXUAL TRAUMA**

**2016-99 0272**

**In her own words: Semi-structured interviews of women veterans who experienced military sexual assault.**

**Source**
Journal of Contemporary Psychotherapy 2016

**Author(s)**

**Abstract**
Twenty-one female veterans volunteered to talk about 29 events of military sexual assault (MSA) via semi-structured interviews covering pre-military abuse, during and immediately after the assault and reactions post-assault. The 14 who reported on-going abuse in childhood, also experienced multiple events of MSA. Common themes revealed that most events happened at night (52% specifically referenced night, while 69% most likely occurred at night), 24% in a car, and 24% while the victim was on duty. MSA was associated with a low use of weapons (17% with knives or guns) but a high use (52%) of physical violence (e.g., hitting, choking) and intimidation (59%). 69% knew their perpetrator prior to the assault and 12 of them (60%) were superiors. 34.5% of the perpetrators and 24% of the victims were drinking alcohol prior to the assault. 27.5% reported the MSA; however, 52% had to continue to interact with the perpetrator as part of her job. 67% reported being pregnant or seriously injured as a result of the MSA; however, only 28% received help. 71% disclosed that they had suicidal ideation 14% made suicide attempts while on active duty, and 38% made a suicide attempt some time in their lifetime post-MSA. 52% said the MSA lead to an early discharge from the military. 76% stated MSA interfered with their ability to have an intimate relationship. All participants graduated Warrior Renew sexual trauma treatment and reported positive responses. Although this is a small sample, findings may help generate hypotheses for larger scale studies.

**2016-99 0273**

**Mental health of transgender veterans of the iraq and afghanistan conflicts who experienced military sexual trauma.**

**Source**
Journal of Traumatic Stress 2016 29 (6) 563-567

**Author(s)**
Lindsay,J.A., KeoMeier,C., et al.
Abstract
Little is known about military sexual trauma (MST) in transgender veterans. To address this gap, we examined archival data regarding transgender veterans from the Iraq and Afghanistan conflicts. There were 332 transgender veterans treated at the Veterans Health Administration between 2000 and 2013 (78 men, 254 women; mean age 33.86 years), with most being non-Hispanic White. Transgender status and mental health conditions were identified using the International Classification of Diseases, 9th Revision (ICD-9; World Health Organization, 1980) codes and chart review. Men and women were analyzed separately, using contingency tables and chi-squared testing for categorical variables and t tests for continuous variables. Likelihood of having a mental health condition and MST were examined using logistic regression. Among the 15% of participants who experienced MST, MST was associated with the likelihood of posttraumatic stress disorder, adjusted OR = 6.09, 95% confidence interval (CI) [1.22, 30.44] and personality disorder, OR = 3.86, 95% CI [1.05, 14.22] for men and with depressive, OR = 3.33, 95% CI [1.12, 9.93], bipolar, OR = 2.87, 95% CI [1.12, 7.44], posttraumatic stress, OR = 2.42, [1.11, 5.24], and personality disorder, OR = 4.61, 95% CI [2.02, 10.52] for women. Implications include that medical forms should include gender identity and biological gender and that MST treatment should be culturally competent.

2016-99 0274
The Relationship Between US Military Officer Leadership Behaviors and Risk of Sexual Assault of Reserve, National Guard, and Active Component Servicewomen in Nondeployed Locations

Source
American Journal of Public Health 2016 e1-e9

Author(s)

Abstract
Objectives: To determine if military leader behaviors are associated with active component and Reserve-National Guard servicewomen's risk of sexual assault in the military (SAIM) for nondeployed locations.; Methods: A community sample of 1337 Operation Enduring Freedom and Operation Iraqi Freedom-era Army and Air Force servicewomen completed telephone interviews (March 2010-December 2011) querying sociodemographic and military characteristics, sexual assault histories, and leader behaviors. We created 2 factor scores (commissioned and noncommissioned) to summarize behaviors by officer rank.; Results: A total of 177
servicewomen (13%) experienced SAIM in nondeployed locations. Negative leader behaviors were associated with increased assault risk, at least doubling servicewomen’s odds of SAIM (e.g., noncommissioned officers allowed others in unit to make sexually demeaning comments; odds ratio = 2.7; 95% confidence interval = 1.8, 4.1). Leader behavior frequencies were similar, regardless of service type. Negative leadership behavior risk factors remained significantly associated with SAIM risk even after adjustment for competing risk. Noncommissioned and commissioned officer factor scores were highly correlated (r = 0.849). Conclusions: The association between leader behaviors and SAIM indicates that US military leaders have a critical role in influencing servicewomen’s risk of and safety from SAIM.
High-Fidelity Simulation Model of Pelvic Hemorrhagic Trauma: The Future for Military Surgical Skills Training?

Source
Military Medicine 2016 181 (11) 1407-1409
Author(s)
Naumann, D.N., and Bowley, D.M.,.

Abstract
The widespread use of improvised explosive devices (IEDs) during recent conflicts in Iraq and Afghanistan has resulted in devastating blast injury emerging as a signature pattern of trauma among combat casualties. It is of paramount importance that deployed military surgeons are familiar with, and highly trained in, the management of such injuries. Simulation training offers an opportunity to gain insight and practical experience of the management of combat casualties before the surgeon is faced with a real-life scenario, and can assist in the maintenance of these core military surgical skills after the surgeon has returned to nondeployed practice. Additionally, simulation allows team training in nontechnical skills required to optimize patient pathways in time-critical interventions.

Injury representation against ballistic threats using three novel numerical models

Source
Journal of the Royal Army Medical Corps 2016
Author(s)
Breeze, J., Fryer, R., et al.

Abstract
Injury modelling of ballistic threats is a valuable tool for informing policy on personal protective equipment and other injury mitigation methods. Currently, the Ministry of Defence (MoD) and Centre for Protection of National Infrastructure (CPNI) are focusing on the development of three interlinking numerical models, each of a different fidelity, to answer specific questions on current threats. High-fidelity models simulate the physical events most realistically, and will be used in the future to test the medical effectiveness of personal armour systems. They are however generally computationally intensive, slow running and much of the experimental data to base their algorithms on do not yet exist. Medium fidelity models, such as
the personnel vulnerability simulation (PVS), generally use algorithms based on physical or engineering estimations of interaction. This enables a reasonable representation of reality and greatly speeds up runtime allowing full assessments of the entire body area to be undertaken. Low-fidelity models such as the human injury predictor (HIP) tool generally use simplistic algorithms to make injury predictions. Individual scenarios can be run very quickly and hence enable statistical casualty assessments of large groups, where significant uncertainty concerning the threat and affected population exist. HIP is used to simulate the blast and penetrative fragmentation effects of a terrorist detonation of an improvised explosive device within crowds of people in metropolitan environments. This paper describes the collaboration between MoD and CPNI using an example of all three fidelities of injury model and to highlight future areas of research that are required.

See also

Pressure effects on the nose by an in-flight oxygen mask during simulated flight conditions. Under Aviation and Space Medicine.
A population-based epidemiologic study of adult-onset narcolepsy incidence and associated risk factors, 2004-2013

Source
Journal of the Neurological Sciences 2016 370 29-34

Author(s)
Lee,R.U. and Radin,J.M.

Abstract
An increase in narcolepsy incidence was noted after the novel pandemic influenza of 2009, leading to further interest in risk factors associated with this disease. However, there is limited data on the epidemiology of narcolepsy, particularly in the adult population. Therefore, we sought to examine narcolepsy incidence rates in the United States and describe associated characteristics. We performed a population based epidemiologic study of active duty military personnel. All outpatient clinics in the continental United States providing care for active duty military between 2004 through 2013 were included utilizing existing databases. Narcolepsy was defined in 3 ways: (1) 2 diagnoses of narcolepsy within 6 months of each other, one made by a sleep expert; (2) 2 diagnoses by any provider followed by a narcolepsy prescription within 14 days of last visit; and (3) procedure code for a sleep study followed by a narcolepsy diagnosis by a sleep expert within 6 months. There were 1675 narcolepsy cases. Overall incidence of narcolepsy trended from 14.6 to 27.3 cases per 100,000 person-years, with an increase starting after 2005-2006 and peaking during the 2011-2012 influenza season. Higher frequencies were seen among females, non-Hispanic blacks, and members living in the south. Narcolepsy incidence rates among active duty military members are higher than previously described. The reason for the steady rise of incidence from 2005 to 2006 through 2011-2012 is unknown; however, these findings require further exploration. We detected risk factors associated with the development of narcolepsy which may aid in future study efforts.
The Role of Fear of Loss of Vigilance and Reexperiencing in Insomnia Among Veterans.

Source
Military Behavioral Health 2016 4 (4) 373-382
Author(s)
Hull,A., and Holliday,S.B.,.

Abstract
This study examined the relationship between sleep fears and insomnia in veterans. Participants completed questionnaires assessing mental health, pain, insomnia, and sleep fears. Most veterans (84.54%) endorsed clinically significant insomnia. Veterans with a history of combat zone deployment and who screened positive for possible post-traumatic stress disorder (PTSD) reported more insomnia symptoms, and both factors were associated with increased fear of reexperiencing and losing vigilance. Regression analyses indicated that fear of reexperiencing and losing vigilance were associated with insomnia severity, controlling for depression, pain, and possible PTSD. These results suggest the importance of assessing and targeting these cognitions when treating veterans with insomnia.

Thwarted belongingness as an explanatory link between insomnia symptoms and suicidal ideation: Findings from three samples of military service members and veterans

Source
Journal of Affective Disorders 2016 209 114-123
Author(s)

Abstract
Background: Although insomnia has been identified as a robust predictor of suicidal ideation and behaviors, little is known about the mechanisms by which sleep disturbances confer risk for suicide. We investigated thwarted belongingness as an explanatory link between insomnia symptoms and suicidal ideation across three military service member and veteran samples.; Methods: Data were collected among United States military service members and veterans (N1=937, N2=3,386, N3=417) who completed self-report measures of insomnia symptoms, thwarted belongingness, suicidal ideation, and related psychiatric symptoms (e.g., anxiety, hopelessness). Bias-corrected bootstrap mediation analyses were utilized to
examine the indirect effects of insomnia symptoms on suicidal ideation through thwarted belongingness, controlling for related psychiatric symptoms.; Results: Consistent with study hypotheses, thwarted belongingness significantly accounted for the relationship between insomnia and suicidal ideation across all three samples; however, insomnia symptoms did not significantly account for the relationship between thwarted belongingness and suicidal ideation, highlighting the specificity of our findings.; Limitations: This study utilized cross-sectional self-report data.; Conclusions: Insomnia may confer suicide risk for military service members and veterans, in part, through the pathway of thwarted belongingness. Additional prospective studies are warranted to further delineate this model of risk. Our results offer a potential therapeutic target for the prevention of suicide, via the promotion of belongingness, among service members and veterans experiencing insomnia symptoms.

See also

The Combined Effect of Sleep Duration and Quality on Mental Health Among Republic of Korea Armed Forces. Under Mental Health.

Risk Factors for Medial Tibial Stress Syndrome in Active Individuals: An Evidence-Based Review

Source
Journal of Athletic Training 2016

Author(s)

Abstract
Reference/Citation: Hamstra-Wright KL, Bliven KC, Bay C. Risk factors for medial tibial stress syndrome in physically active individuals such as runners and military personnel: a systematic review and meta-analysis. Br J Sports Med. 2015;49(6):362-369.; Clinical Question: What factors put physically active individuals at risk to develop medial tibial stress syndrome (MTSS)?; Data Sources: The authors performed a literature search of CINAHL, the Cochrane Central Register of Controlled Trials, EMBASE, and MEDLINE from each database's inception to July 2013. The following key words were used together or in combination: armed forces, athlete, conditioning, disorder predictor, exercise, medial tibial stress syndrome, military, military personnel, physically active, predictor, recruit, risk, risk characteristic, risk factor, run, shin pain, shin splints, and vulnerability factor.; Study Selection: Studies were included in this systematic review based on the following criteria: original research that (1) investigated risk factors associated with MTSS, (2) compared physically active individuals with and without MTSS, (3) was printed in English, and (4) was accessible in full text in peer-reviewed journals.; Data Extraction: Two authors independently screened titles or abstracts (or both) of studies to identify inclusion criteria and quality. If the article met the inclusion criteria, the authors extracted demographic information, study design and duration, participant selection, MTSS diagnosis, investigated risk factors, mean difference, clinical importance, effect size, odds ratio, and any other data deemed relevant. After the data extraction was complete, the authors compared findings for accuracy and completeness. When the mean and standard deviation of a particular risk factor were reported 3 or more times, that risk factor was included in the meta-analysis. In addition, the methodologic quality was assessed with an adapted checklist developed by
previous researchers. The checklist contained 5 categories: study objective, study population, outcome measurements, assessment of the outcome, and analysis and data presentation. Any disagreement between the authors was discussed and resolved by consensus.

Main Results: A total of 165 papers were initially identified, and 21 original research studies were included in this systematic review. More than 100 risk factors were identified in the 21 studies. Continuous data were reported 3 or more times for risk factors of body mass index (BMI), navicular drop, ankle plantar-flexion range of motion (ROM), ankle dorsiflexion ROM, quadriceps angle, hip internal-rotation ROM, hip external-rotation ROM, ankle-eversion ROM, and ankle-inversion ROM. As compared with the control group, significant risk factors for developing MTSS identified in the literature were (1) greater BMI (mean difference MD] = 0.79, 95% confidence interval CI] = 0.38, 1.20; P < .001), (2) greater navicular drop (MD = 1.9 mm, 95% CI = 0.54, 1.84; P < .001), (3) greater ankle plantar-flexion ROM (MD = 5.94°, 95% CI = 3.65°, 8.24°; P < .001), and (4) greater hip external-rotation ROM (MD = 3.95°, 95% CI = 1.78°, 6.13°; P < .001). Dorsiflexion ROM (MD = -0.01°, 95% CI = -0.96, 0.93; P = .98), quadriceps angle (MD = -0.22°, 95% CI = -0.95°, 0.50°; P = .54), hip internal-rotation ROM (MD = 0.18°, 95% CI = -5.37°, 5.73°; P = .95), ankle-eversion ROM (MD = 1.17°, 95% CI = -0.02, 2.36; P = .06), and ankle-inversion ROM (MD = 0.98°, 95% CI = -3.11°, 5.07°; P = .64) were not different between individuals with MTSS and controls.

Conclusions: The primary factors that appeared to put a physically active individual at risk for MTSS were increased BMI, increased navicular drop, greater ankle plantar-flexion ROM, and greater hip external-rotation ROM. These primary risk factors can guide health care professionals in the prevention and treatment of MTSS.
Combat casualties from two current conflicts with the Seventh French Forward Surgical Team in Mali and Central African Republic in 2014

Source
Journal of the Royal Army Medical Corps 2016 162 pp450-455

Author(s)
Clément Dubost, Y Goudard, E Soucanye de Landevoisin, C Contargyris, D Evans and G Pauleau

Abstract
Objectives The Seventh Airborne Forward Surgical Team (FST) has been deployed in Gao, Mali, and in Bangui, Central African Republic (CAR), for two 3-month periods in 2014. The initial role of the FST was to provide emergent care to French and coalition soldiers but it was expanded to include humanitarian assistance. The aim of the present study was to describe and compare injuries and surgical activity of the Seventh Airborne FST during these two conflicts. Methods All surgical patients treated by the FST between January and December 2014 have been included. Patient demographics, mechanisms of injury, surgical management including triage categories and types of surgery performed and evacuation modalities were recorded. Results During the 6-month deployment period in 2014, the FST performed 129 operations on 134 patients, 61 of which were trauma patients (45 battle injuries (BI)). The remaining 73 patients were treated as part of the humanitarian mission. Thirty of the BI were managed during the Malian conflict and 15 in CAR; 29 patients (64%) were military. The median Injury Severity Score (range) was 20 (10–34) in Mali and 8 (5–21) in CAR with median (range) evacuation time of 390 min (240–947) in Mali and 120 min (60–120) in CAR (p<0.0001). The most frequent mechanisms of injury were gunshot wounds in Mali (15/30) and road traffic accident in CAR (7/15). Extremity injuries were most common (58%) with head, face and neck injuries and thoracic injuries in 15% of cases each and 12% had suffered abdominopelvic injuries. Ten patients were categorised as T1 and underwent urgent surgery, five had damage control surgery and four received transfusion. The average length of stay was 2 days (1–2), with most patients being transferred to another hospital. Conclusions Casualties from Mali and CAR presented with a wide variety of injury patterns, and there were some instances where damage control surgery and whole blood transfusion were necessary. Surgical equipment scales must allow treatment of a large variety of injuries including all body regions and extreme emergency procedures. These two conflicts differ in terms of scope, one being an urban guerrilla and the other
an open conflict in a large desertic area. Long distances in the Malian desert increase significantly the evacuation time. It has to be taken into account in the FST location when coalition forces are deployed in such places.

**2016-99 0282**

**Dismounted Complex Blast Injuries: A Comprehensive Review of the Modern Combat Experience.**

**Source**
Journal of the American College of Surgeons 2016 223 (4) 652-664.e8

**Author(s)**

**Abstract**

One of the most challenging injury patterns to emerge from the recent military conflicts in Iraq and Afghanistan is the dismounted complex blast injury (DCBI), with multiple proximal amputations, pelvic fractures, and extensive perineal wounds. Lessons learned from managing patients with this pattern of injury must be captured to minimize the morbidity and mortality of those suffering similar injuries in the future.

**2016-99 0283**

**Health related quality of life in patients with single lower limb amputation.**

**Source**
Journal of the College of Physicians and Surgeons Pakistan 2016 26 (10) 851-854

**Author(s)**
Hisam A., Ashraf F., et al.

**Abstract**

Objective: To determine the effects of age, cause of amputation, and anatomic level of amputation on the health related quality of life (HRQOL) in individuals with unilateral lower limb amputation. Study Design: A cross-sectional survey. Place and Duration of Study: The Armed Forces Institute of Rehabilitation Medicine, from August 2014 to February 2015. Methodology: Short Form-36 (SF-36) health related quality of life (HRQOL). Survey questionnaire was used to collect data. The responses were scored by using the quality metric health outcomesTM scoring software 4.5. The scores were entered and analysed in SPSS version 21. Results: A total of 52 patients were inducted with mean age of 30.71 +/- 7.50 years. Mean physical component summary (PCS) was lower than mental component summary (MCS) (38.7 vs. 44.8). RP and RE scores were found to be significantly associated with gender
Age group was also significantly associated with RP (p=0.037) and SF (p=0.041). When SF-36 domains were compared with level of amputation (i.e. trans-tibial and transfemoral), none of the domains showed any statistically significant results. Conclusion: Age and indication affect different aspects of quality of life but level of amputation did not. If these are known and anticipated before any type of rehabilitation, this could help in anticipation of health consequences and prevention accordingly.

**2016-99 0284**

**Minimally Invasive Surgical Technique Used for Reduction of the Anterior Table of the Frontal Sinus Fracture.**

**Source**
Aeronautical Medicine and Psychology Revue 2016 2

**Author(s)**
Hainarosie, R., and Dragoș, Ş. C.,

**Abstract**
The frontal sinus is resilient to injury. Traumas from car accidents and assaults can cause fractures of the frontal sinus walls. Facial deformities, mucocele formation or recurrent rhinosinusitis are common problems that can be caused by trauma. The authors propose, as an addition to the Southampton protocol, a minimally invasive, endoscopic, surgical technique for reducing fractures of the anterior table of the frontal sinus. The proposed minimally invasive surgical technique used for reduction of the anterior table of the frontal sinus fracture with endoscopic tunneling dissection seems to be a viable alternative to the classic approaches in selected cases. Compared to the traditional bicoronal approach and eyebrow incision it has some advantages because it is a minimally invasive approach and does not have any visible incisions.

**2016-99 0285**

**Service Block Time Allocation in the US Army Medical Command**

**Source**
AORN Journal 2016 104 (5) 417-425

**Author(s)**

**Abstract**
Service block time allocation is a critical requirement for the optimization of patient throughput and access to care in the Surgical Services Service Line of the US Army Medical Command. The procedure complexity, volume, and diversity...
across 25 facilities create significant variation in service block time. This variation requires the involvement of both the informatics and leadership teams for block time allocation to be effective. This article describes our use of the Army's Surgery Scheduling System, which includes service block time as an embedded function, to develop a standardized process that helps ensure service block time is optimized. We also present guidelines for block time allocation and offer case studies that demonstrate the application of these guidelines.

2016-99 0286

Surgical Resection for Epilepsy Following Cerebral Gunshot Wounds.

Source
World Neurosurgery 2016 95 276-284

Author(s)

Abstract
Objective The surgical management of epilepsy after penetrating gunshot wounds (GSWs) to the head has not been described in the modern era. Given the extensive damage to the cranium and cortex from such injuries, the safety and efficacy of surgical intervention are unclear. We report surgical strategy and outcomes after resection for medically refractory epilepsy following GSWs in 4 patients. Methods A prospectively compiled database of 325 patients with epilepsy was used to identify patients undergoing surgery for medically refractory epilepsy after a GSW to the brain. Seizure frequency, scalp and intracranial electroencephalography evaluation, type of resection, and seizure outcomes were compiled. Results All 4 patients underwent direct electrocorticography recordings either with implanted electrodes or intraoperatively that were used to drive surgical decision making. All patients had intracranial shrapnel fragments and large areas of encephalomalacia on imaging. Intracranial electrodes were placed in 2 patients to localize seizure onsets. Two patients underwent frontal lobe resections, and the other 2 patients underwent multilobar resections. Latency between injury and epilepsy surgery was 12 years, and mean age at surgery was 28 years. In all cases, epilepsy surgery led to a significant improvement in seizure control (Engel class I, 2 patients; II, 1 patient; and III, 1 patient). Conclusions Epilepsy is common after penetrating head injury, and the incidence is likely to increase given the growing numbers of armed conflicts in urban centers worldwide. In selected cases, intracranial monitoring and surgical resections may be safely performed and can lead to favorable seizure outcomes.
Venous Thoracic Outlet Syndrome: The Role of Early Rib Resection.

Source
Military Medicine 2016 181 (11) e1706-e1710

Author(s)
Katana,V.G., and Weiss,J.S.,.

Abstract
The upper extremity is an uncommon site for deep vein thrombosis and, although most of these thrombotic events are secondary to catheters or indwelling devices, venous thoracic outlet syndrome is an important cause of primary thrombosis. Young, active, otherwise healthy individuals that engage in repetitive upper extremity exercises, such as those required by a military vocation, may be at an increased risk. We present the case of a Naval Officer diagnosed with venous thoracic outlet syndrome whereby a multimodal approach with early surgical decompression was used. Although thoracic outlet decompression by means of first rib resection is the standard of care, timing of first rib resection after thrombolysis is debated. With respect to the active duty service member, the optimal timing of additional postoperative interventions for residual venous defects and duration of anticoagulation remain in question. A more streamlined perioperative treatment regimen may benefit the military patient without jeopardizing the quality of care and allow more expeditious return to full duty.

Venous thromboembolism after combat amputations: a war we must fight and win.

Source
American Journal of Surgery 2016 212 (2) 235-237

Author(s)
Martin,M.J.

Abstract
Although the United States is now winding down the longest sustained period of military combat in its history, there will undoubtedly be new scientific analyses and advances borne out of this experience for decades to follow. Like all periods of war throughout history, the decade-plus of sustained combat operations in Iraq and Afghanistan have led to new insights and advances in the field of trauma surgery and emergency care.
Venous thromboembolism after traumatic amputation: an analysis of 366 combat casualties.

Source
American Journal of Surgery 2016 212 (2) 230-234

Author(s)

Abstract
Background We sought to determine the incidence, risk factors, and time course for deep vein thrombosis and pulmonary embolism (DVT/PE) after combat-related major limb amputations. Methods Patients with amputation in Iraq or Afghanistan from 2009 through 2011 were eligible. Details of postinjury care, date of diagnosis of DVT/PE, and injury specific data were collected. Military databases and chart reviews were used. Results In 366 patients, 103 (28%) had DVT/PE; PE was diagnosed in 59 (16%) and DVT in 59 (16%). Most DVT (69%) and PE (66%) occurred within 10 days. Increasing ventilator days (odds ratio [OR], 1.97; 95% CI, 1.16 to 3.37) and units of blood transfused (OR, 1.72; 95% CI, 1.11 to 2.68) were associated with DVT. Increasing units of fresh-frozen plasma were associated with PE (OR, 1.31; 95% CI, 1.10 to 1.55). Conclusions The incidence of DVT/PE is high after combat-related amputation. Most DVT/PE occur early and prophylaxis is indicated.

See also

Management and reconstruction of blast wounds of the head and neck. Under Otolaryngology.

A Prospective Observation Study of Medical Toxicology Consultation in a U.S. Combat Theater. Under Pharmacology and Toxicology.

Source
Stress 2016 19 (6) 593-598

Author(s)

Abstract
Post-traumatic stress disorder (PTSD) can occur in the wake of exposure to a traumatic event. Currently, PTSD symptoms are assessed mainly through self-report in the form of questionnaire or clinical interview. Self-report has inherent limitations, particularly in psychiatric populations who may have limited awareness of deficit, reduced attention span, or poor vocabulary and/or literacy skills. Diagnosis and evaluation of treatment efficacy would be aided by behavioral measures. A viable alternative may be virtual environments, in which the participant guides an on-screen "avatar" through a series of onscreen events meant to simulate real-world situations. Here, a sample of 82 veterans, self-assessed for PTSD symptoms was administered such a task, in which the avatar was confronted with situations that might evoke avoidant behavior, a core feature of PTSD. Results showed a strong correlation between PTSD symptom burden and task performance; in fact, the ability to predict PTSD symptom burden based on simple demographic variables (age, sex, combat exposure) was significantly improved by adding task score as a predictor variable. The results therefore suggest that virtual environments may provide a new way to assess PTSD symptoms, while avoiding at least some of the limitations associated with symptom self-report, and thus might be a useful complement to questionnaire or clinical interview, potentially facilitating both diagnosis and evaluation of treatment efficacy.

Facilitating mental health screening of war-torn populations using mobile applications.

Source
Social Psychiatry and Psychiatric Epidemiology 2016

Author(s)

Abstract
Background: War-torn populations are often hard to screen for mental health disorders. Classical data collection approaches, such as paper-based, online, or SMS-operated, are either infeasible or lack accuracy due to a variety of challenges associated with dynamics and consequences of war.

Methods: In this paper, we introduce a novel approach for accurate and fast screening using free open-source software, Open Data Kit (ODK) mobile application. This approach was developed by the Palestine Children's Relief Fund (PCRF) to assess the mental health symptoms of 986 Palestinian children (age 6-18) in the aftermath of Israel's Operation Protective Edge (OPE) in 2014. The organization developed assessment questionnaires and trained local field workers on the use of the mobile application, and on recruiting and interviewing war victims.

Results: War-affected children were found to suffer from several alarming symptoms associated with post-traumatic stress disorder (PTSD), depression, and somatic symptoms. Children with highest number of psychological symptoms were referred for further evaluation and treatment.

Conclusions: The use of ODK mobile technologies facilitated efficient screening of affected children in war zones. The offline data collection capability was crucial for handling the difficult conditions associated with war-torn areas, enabling timely intervention for urgent cases. Further applications of the novel mobile technology are to be explored.

2016-99 0292

Home-based telebehavioral health for U.S. military personnel and veterans with depression: A randomized controlled trial.

Source
Journal of Consulting and Clinical Psychology 2016 84 (11) 923-934

Author(s)

Abstract
Objective: Evidence of feasibility, safety, and effectiveness of home-based telebehavioral health (HBTBH) needs to be established before adoption of HBTBH in the military health system can occur. The purpose of this randomized controlled noninferiority trial was to compare the safety, feasibility, and effectiveness of HBTBH to care provided in the traditional in-office setting among military personnel and veterans. Method: One hundred and twenty-one U.S. military service members and veterans were recruited at a military treatment facility and a Veterans Health Administration hospital. Participants were randomized to receive 8 sessions of behavioral activation treatment for depression (BATD) either in the home via videoconferencing (VC) or in a traditional in-office (same room)
setting. Participants were assessed at baseline, midtreatment (4 weeks), posttreatment (8 weeks), and 3 months posttreatment. Results: Mixed-effects modeling results with Beck Hopelessness Scale and Beck Depression Inventory II scores suggested relatively strong and similar reductions in hopelessness and depressive symptoms for both groups; however, noninferiority analyses failed to reject the null hypothesis that in-home care was no worse than in-office treatment based on these measures. There were not any differences found between treatment groups in regards to treatment satisfaction. Safety procedures were successfully implemented, supporting the feasibility of home-based care. Conclusion: BATD can be feasibly delivered to the homes of active duty service members and veterans via VC. Small-group differences suggest a slight benefit of in-person care over in-home telehealth on some clinical outcomes. Reasons for this are discussed.

2016-99 0293

Social Media Communication Among Military Spouses: Review of Research and Recommendations for Moving Forward.

Source
Military Behavioral Health 2016 4 (4) 325-333

Author(s)
Sherman, M.D., and Rudi, J.H.,

Abstract
A literature review was conducted on online social networking among military spouses. The unique experiences of military spouses are described, followed by a review of the growth of online social networking. Although minimal research has been conducted with military samples, civilian research has found that social media is largely used to foster social interactions; further, social media has distinct advantages and potential challenges. Social media can function to either connect people or isolate them; it can also promote well-being or cause distress. Best practices are offered to further research and utilization of social media among military spouses.

2016-99 0294

A Virtual Hope Box: Randomized Controlled Trial of a Smartphone App for Emotional Regulation and Coping With Distress

Source
Psychiatric Services (Washington, D.C.) 2016

Author(s)

Abstract
Objective: The purpose of this study was to assess the impact of the Virtual Hope Box (VHB), a smartphone app to improve stress coping skills, suicidal ideation, and perceived reasons for living among patients at elevated risk of suicide and self-harm.; Methods: The authors conducted a parallel-group randomized controlled trial with two groups of U.S. service veterans in active mental health treatment who had recently expressed suicidal ideation. Between March 2014 and April 2015, 118 patients were enrolled in the study. Participants were assigned to use the VHB (N=58) or to a control group that received printed materials about coping with suicidality (N=60) to supplement treatment as usual over a 12-week period. Three measures—the Coping Self-Efficacy Scale, Beck Scale for Suicidal Ideation, and Brief Reasons for Living Inventory—were collected at baseline (before randomization) and three, six, and 12 weeks. Secondary measures—the Interpersonal Needs Questionnaire, Perceived Stress Scale, and Columbia-Suicide Severity Rating Scale—were collected at baseline and 12 weeks.; Results: VHB users reported significantly greater ability to cope with unpleasant emotions and thoughts (Coping Self-Efficacy Scale) at three (b=2.41, 95% confidence interval CI=[.29-.45]) and 12 weeks (b=2.99, 95% CI=[.08-.59]) compared with the control group. No significant advantage was found on other outcome measures for treatment augmented by the VHB.; Conclusions: The VHB is a demonstrably useful accessory to treatment—an easily accessible tool that can increase stress coping skills. Because the app is easily disseminated across a large population, it is likely to have broad, positive utility in behavioral health care.

See also

Randomized controlled trial of a brief Internet-based intervention for families of Veterans with posttraumatic stress disorder. Under Post Traumatic Stress Disorder.

Randomized controlled trial of prolonged exposure using imaginal exposure vs. virtual reality exposure in active duty soldiers with deployment-related posttraumatic stress disorder (PTSD). Under Post Traumatic Stress Disorder.
2016-99 0295

“Raising the Bar” in Extremity Trauma Care: A Story of Collaboration and Innovation.

Source
Military Medicine 2016 181 (S4) 1-2

Author(s)
Cecere, F.A., and Oldham, B.W.

Abstract
Today’s military health system is working in remarkable ways to provide complex extremity trauma care that helps injured service members reach their highest level of function.

2016-99 0296

Averted health burden over 4 years at Medecins Sans Frontieres (MSF) Trauma Centre in Kunduz, Afghanistan, prior to its closure in 2015.

Source
Surgery (United States) 2016 160 (5) 1414-1421

Author(s)
Trelles M., Stewart B.T., et al.

Abstract
Background On October 3, 2015, a United States airstrike hit Medecins Sans Frontieres (Doctors Without Borders) Trauma Centre in Kunduz, Afghanistan. Our aim was to describe the care provided and estimate the health burden averted by surgical care at the hospital. We also report the benefit rendered by the Trauma Centre to the health of the local population prior to its destruction. Methods All operations performed in an operating theater at the Trauma Centre from its opening on August 30, 2011, to August 31, 2015, were described. Disability-adjusted life years averted by operative care over the same period were estimated. Results The Trauma Centre performed 13,970 operations, which included 17,928 procedures for 6,685 patients. The median age of patients who required operative intervention was 21 years (interquartile range 12-34 years). More than 85% of patients were men (12,034 patients; 86%). Of the 6,685 patients who required operative care, 4,387 suffered unintentional, non-violence-related injuries (66%), while 2,276 suffered violence-related injuries (34%). The perioperative death rate at the facility decreased from 7.2 deaths per 1,000 operations in 2011 to 1.3 deaths in 2015 (P = .03). More than 154,250 disability-adjusted life years were averted by operative care (95% confidence interval 153,042-155,465). Conclusion The health
burden averted by the surgical care provided at the Trauma Centre was large; it is critically felt by those still living in the region. Access to essential trauma care for all victims of armed conflict is a human right; as directed by International Humanitarian Law, we must guarantee special protection for the wounded, sick, and medical personnel and facilities during war.

2016-99 0297


Source
Military Medicine 2016 181 (11) e1491-e1494
Author(s)
Bradley, M.,

Abstract
Background: Pre-hospital systemic vascular access with early resuscitation in the hypovolemic trauma patient can be problematic and is attempted through venous cut-downs, peripheral IV lines, and/or interosseous routes. This brief report examines an alternative for males via the corpus cavernosum (CC). Methods: A systematic literature review using certain inclusion criteria including, but not limited to, corpus cavernosum access and resuscitation was conducted and a summary table created. Findings: The six articles that met criteria revealed quick and easy CC access with rapid flow rates and resuscitation times in both humans and in animal models using either fluids or blood products. Only one article revealed a complication which was a shaft hematoma that resolved spontaneously over a period of a few days.
Discussion/Impact/Recommendations: Systemic vascular access and resuscitation via the CC could be considered as a safe and effective alternative if more traditional techniques fail in an appropriate pre-hospital hypovolemic male casualty (i.e., no genital or pelvic trauma that could interfere with the technique). If further studies are conducted and the technique more robustly validated it could be considered as a possible addition to pre-hospital treatment protocols such as TCCC. Possible publication bias could have been a limitation of this study.

2016-99 0298

A Case of Prehospital Traumatic Arrest in a US Special Operations Soldier: Care From Point of Injury to Full Recovery.

Source
Journal of Special Operations Medicine 2016 16 (3) 93-96
Author(s)
McKenzie, M.R., and Parrish, E.W.,

Abstract
During an assault on an extremely remote target, a US Special Operations Soldier sustained multiple gunshot and fragmentation wounds to the thorax, resulting in a traumatic arrest and subsequent survival. His care, including care under fire, tactical field care, tactical evacuation care, and Role III, IV, and V care, is presented. The case is used to illustrate the complex dynamics of Special Operations care on the modern battlefield and the exceptional outcomes possible when evidence-based medicine is taken to the warfighter with effective, farforward, expeditionary medical-force projection.

2016-99 0299

Combat MEDEVAC: A comparison of care by provider type for en route trauma care in theater and 30-day patient outcomes

Source
The Journal of Trauma and Acute Care Surgery 2016 81 (5) S104-S110

Author(s)

Abstract
Background: Medical evacuation (MEDEVAC) is the movement and en route care of injured and medically compromised patients by medical care providers via helicopter. Military MEDEVAC platforms provide lifesaving interventions that improve survival in combat. There is limited evidence to support decision making related to en route care and allocation of resources. The association between provider type and en route care is not well understood. Our objective was to describe MEDEVAC providers and identify associations between provider type, procedures performed, and outcomes.

Methods: We conducted an institutional review board-approved, retrospective record review of patients traumatically injured in combat, evacuated by MEDEVAC from the point of injury, between 2011 and 2014. Data abstracted included injury description, provider type, procedures performed, medications administered, survival, and 30-day outcomes. Subjects were grouped according to provider type: medics, paramedics, and ADVs (advanced-level providers to include nurses, physician assistants, and physicians). Groups were compared. Analyses were performed using χ tests for categorical variables and analysis of variance tests (Kruskal-Wallis tests) for continuous variables; p < 0.05 was considered significant.

Results: The MEDEVAC records were reviewed, and data were abstracted from 1,237 subjects. The providers were composed of medics,
76%; paramedics, 21%; and ADVs, 4%. Patient and injury demographics were similar among groups. The ADVs were most likely to perform intubation, chest needle decompressions \((p < 0.0001)\), and hypothermia prevention \((p = 0.01)\). Paramedics were most likely to administer blood en route \((p < 0.0001)\). All other procedures were similar between groups. Paramedics were most likely to administer ketamine \((p < 0.0001)\), any analgesic \((p < 0.0001)\), or any medication en route \((p < 0.0001)\). Incidence rates of en route events (pain, hypoxia, abnormal hemodynamics, vital signs) were similar between provider types. In-theater and 30-day survival rates were similar between provider types.; Conclusion: Providers with higher-level training were more likely to perform more advanced procedures during en route care. Our study found no significant association between provider type and in-theater or 30-day mortality rates. Upon subgroup analysis, no difference was found in patients with an injury severity score greater than 16. More evidence is needed to determine the appropriate level of MEDEVAC personnel training and skill maintenance necessary to minimize combat mortality.; Level Of Evidence: Therapeutic study, level III.

2016-99 0300

**Early prevention of trauma-related infection/sepsis.**

Source
Military Medical Research 2016

Author(s)
Ma,X., and Tian,L.,

Abstract
Trauma still represents one of the major causes of death worldwide. Despite the reduction of post-traumatic sepsis over the past two decades, the mortality of septic trauma inpatients is still high \((19.5–23 \%)\). Early prevention of sepsis development can aid in the subsequent treatment of patients and help improve their outcomes. To date, the prevention of trauma-related infection/sepsis has mainly included infection prevention (e.g., surgical management, prophylactic antibiotics, tetanus vaccination, immunomodulatory interventions) and organ dysfunction prevention (e.g., pharmaceuticals, temporary intravascular shunts, lung-protective strategies, enteral immunonutrition, acupuncture). Overall, more efficient ways should be developed to prevent trauma-related infection/sepsis.
2016-99 0301

**The Extremity Trauma and Amputation Center of Excellence: Overview of the Research and Surveillance Division.**

**Source**  
Military Medicine 2016 181 (S4) 3-12

**Author(s)**  
Rábago,C.A., and Clouser,M.,

**Abstract**  
Congress authorized creation of the Extremity Trauma and Amputation Center of Excellence (EACE) as part of the 2009 National Defense Authorization Act. The legislation mandated the Department of Defense (DoD) and Department of Veterans Affairs (VA) to implement a comprehensive plan and strategy for the mitigation, treatment, and rehabilitation of traumatic extremity injuries and amputation. The EACE also was tasked with conducting clinically relevant research, fostering collaborations, and building partnerships across multidisciplinary international, federal, and academic networks to optimize the quality of life of service members and veterans who have sustained extremity trauma or amputations. To fulfill the mandate to conduct research, the EACE developed a Research and Surveillance Division that complements and collaborates with outstanding DoD, VA, and academic research programs across the globe. The EACE researchers have efforts in four key research focus areas relevant to extremity trauma and amputation: (1) Novel Rehabilitation Interventions, (2) Advanced Prosthetic and Orthotic Technologies, (3) Epidemiology and Surveillance, and (4) Medical and Surgical Innovations. This overview describes the EACE efforts to innovate, discover, and translate knowledge gleaned from collaborative research partnerships into clinical practice and policy.

2016-99 0302

**Military Genitourinary Trauma: Policies, Implications, and Ethics**

**Source**  
The Hastings Center Report 2016 46 (6) 10-13

**Author(s)**  

**Abstract**  
The men and women who serve in the armed forces, in the words of Major General Joseph Caravalho, "sign a blank
check, co-signed by their families, payable to the Army, Navy, Air Force, or Marines, up to and including their lives.” It is human nature to consider such a pact in polarized terms; the pact concludes in either a celebratory homecoming or funereal mourning. But in reality, surviving catastrophic injury may incur the greatest debt. The small but real possibility of losing the ability to bear biological children due to genitourinary combat injury has been a topic of discussion in hushed tones, behind closed doors. But as policy changes move the conversation into the open, we must be fully aware of the far-reaching and long-term impacts of decisions on those who have sustained genitourinary injury. In January 2016, Secretary of Defense Ashton Carter outlined a set of reforms that would improve the quality of life for military families by recognizing the importance of maintaining fertility, even in the face of severe injury. This first promising step could build a solid foundation of insuring fertility preservation for wounded service members with genitourinary injury, and it could set a precedent beyond the military for insuring treatment for people who have lost their reproductive capacity. Thus, the ethical challenges raised by the new policy require careful analysis.

2016-99 0303

Outcomes Associated With the Intrepid Dynamic Exoskeletal Orthosis (IDEO): A Systematic Review of the Literature.

Source
Military Medicine 2016 181 (S4) 69-76
Author(s)
Highsmith,M.J., and Nelson,L.M.,

Abstract
High-energy lower extremity trauma is a consequence of modern war and it is unclear if limb amputation or limb salvage enables greater recovery. To improve function in the injured extremity, a passive dynamic ankle-foot orthosis, the Intrepid Dynamic Exoskeletal Orthosis (IDEO), was introduced with specialized return to run (RTR) therapy program. Recent research suggests, these interventions may improve function and return to duty rates. This systematic literature review sought to rate available evidence and formulate empirical evidence statements (EESs), regarding outcomes associated with IDEO utilization. PubMed, CINAHL, and Google Scholar were systematically searched for pertinent articles. Articles were screened and rated. EESs were formulated based upon data and conclusions from included studies. Twelve studies were identified and rated. Subjects (n = 487, 6 females, mean age 29.4 year) were studied following limb trauma and salvage. All included studies had high external validity, whereas internal validity was mixed because of reporting issues. Moderate
Evidence supported development of four EESs regarding IDEO use with specialized therapy. Following high-energy lower extremity trauma and limb salvage, use of IDEO with RTR therapy can enable return to duty, return to recreation and physical activity, and decrease pain in some high-functioning patients. In higher functioning patients following limb salvage or trauma, IDEO use improved agility, power and speed, compared with no-brace or conventional bracing alternatives.

2016-99 0304

**Pre-trauma interventions in force health protection: introducing the 'left of bang' paradigm.**

**Source**

**Author(s)**

**Abstract**
Efficacious early care following combat trauma has traditionally focused on earlier and speedier care after injury. To push this boundary even further, a Left-Of-Bang paradigm shift is proposed. Such interventions would aim to prevent morbidity and mortality, control symptoms, and mitigate the secondary effects of trauma through the judicious application of medical interventions before traumatic injury has occurred. This proposal has major challenges to overcome if it is to be given full consideration, including the establishment of a robust evidence base, ethical discussion and consensus, and cost-benefit analysis. We propose that it is time to look “left of the bang” and examine what pretraumatic medical treatments can offer.

2016-99 0305

**TCCC Standardization The Time Is Now.**

**Source**
Journal of Special Operations Medicine 2016 16 (3) 53-54

**Author(s)**
Goforth,C.W., and Antico,D.,

**Abstract**
Trauma remains the leading cause of death in adults worldwide, and a significant portion of those deaths occur within the first 6 to 24 hours after initial injury secondary to hemorrhage. The evolution of modern-day trauma care has witnessed revolutionary changes over the past century, with lessons learned from war providing the primary stimulus. Major advances in surgical vascular procedures and resuscitation
techniques, such as whole blood infusion, prehospital hemorrhage control, and a resurgence of immediate and aggressive tourniquet use, are more recent developments.\textsuperscript{4,5} In addition to prehospital advances, the timing from injury to medical interventions also emerged as an important factor for positive outcomes. During the wars in Iraq and Afghanistan, under the Tactical Combat Casualty Care (TCCC) construct, trauma care and the enhanced capability to collect trauma information from the battlefield have resulted in a greater understanding of managing penetrating injuries, explosive injuries, and life-threatening hemorrhage. The fatality rate during Vietnam was approximately 14%; that has dropped to 9\% during Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF).\textsuperscript{6} This improved survivability is widely attributed to two recent advances: rapid evacuation from the battlefield and early prehospital treatment. The purpose of our commentary is to emphasize that while great strides in prehospital care TCCC have been made in the past 14 years, the lack of institutional standardization is one of the remaining challenges of trauma care.

2016-99 0306

Trauma Resuscitation Evaluation Times and Correlating Human Patient Simulation Training Differences—What is the Standard?

Source
Military Medicine 2016 181 (11) e1630-e1636

Author(s)
Bonjour,T.J., and Charny,G.,

Abstract
Background: Rapid effective trauma resuscitations (TRs) decrease patient morbidity and mortality. Few studies have evaluated TR care times. Effective time goals and superior human patient simulator (HPS) training can improve patient survivability. Objectives: The purpose of this study was to compare live TR to HPS resuscitation times to determine mean incremental resuscitation times and ascertain if simulation was educationally equivalent. The study was conducted at San Antonio Military Medical Center, Department of Defense Level I trauma center. Design and Methods: This was a prospective observational study measuring incremental step times by trauma teams during trauma and simulation patient resuscitations. Trauma and simulation patient arms had 60 patients for statistical significance. Participants included Emergency Medicine residents and Physician Assistant residents as the trauma team leader. Results: The trauma patient arm revealed a mean evaluation time of 10:33 and simulation arm 10:23. Comparable time characteristics in the airway, intravenous access, blood sample collection, and blood
pressure data subsets were seen. Conclusions: TR mean times were similar to the HPS arm subsets demonstrating simulation as an effective educational tool. Effective stepwise approaches, incremental time goals, and superior HPS training can improve patient survivability and improved departmental productivity using TR teams.

See also

Incidence, risk factors, and mortality associated with acute respiratory distress syndrome in combat casualty care. Under Respiratory Medicine.

Injury representation against ballistic threats using three novel numerical models. Under Simulation Training.

Pressure effects on the nose by an in-flight oxygen mask during simulated flight conditions. Under Aviation and Space Medicine.
TRAUMATIC BRAIN INJURY

2016-99 0307

Active duty service members who sustain a traumatic brain injury have chronically elevated peripheral concentrations of Aβ 40 and lower ratios of Aβ 42/40

Source
Brain Injury 2016 30 (12) 1436-1441
Author(s)
Lejbman,N., Olivera,A., et al.

Abstract
Primary objective: Excessive accumulation of amyloid beta (Aβ) and tau have been observed in older individuals with chronic neurological symptoms related to a traumatic brain injury (TBI), yet little is known about the possible role of Aβ in younger active duty service members following a TBI. The purpose of the study was to determine if Aβ 40 or 42 related to sustaining a TBI or to chronic neurological symptoms in a young cohort of military personnel.
Research design: This was a cross-sectional study of active duty service members who reported sustaining a TBI and provided self-report of neurological and psychological symptoms and provided blood. Methods and procedures: An ultrasensitive single-molecule enzyme-linked immunosorbent assay was used to compare concentrations of Aβ in active duty service members with (TBI+; n = 53) and without (TBI–; n = 18) a history of TBI. Self-report and medical history were used to measure TBI occurrence and approximate the number of total TBIs and the severity of TBIs sustained during deployment. Main outcomes and results: This study reports that TBI is associated with higher concentrations of Aβ40 (F₁,₆₈ = 6.948, p = 0.009) and a lower ratio of Aβ42/Aβ40 (F₁,₆₂ = 5.671, p = 0.020). These differences remained significant after controlling for co-morbid symptoms of post-traumatic stress disorder and depression. Conclusions: These findings suggest that alterations in Aβ relate to TBIs and may contribute to chronic neurological symptoms.

2016-99 0308

Assessment of the King-Devick® (KD) test for screening acute mTBI/concussion in warfighters

Source
Journal of the Neurological Sciences 2016 370 305-309
Author(s)
Abstract
Objectives: The Department of Defense reported that 344,030 cases of traumatic brain injury (TBI) were clinically confirmed from 2000 to 2015, with mild TBI (mTBI) accounting for 82.3% of all cases. Unfortunately, warfighters with TBI are often identified only when moderate or severe head injuries have occurred, leaving more subtle mTBI cases undiagnosed. This study aims to identify and validate an eye-movement visual test for screening acute mTBI.; Methods: Two-hundred active duty military personnel were recruited to perform the King-Devick® (KD) test. Subjects were equally divided into two groups: those with diagnosed acute mTBI (≤72h) and age-matched controls. The KD test was administered twice for test-retest reliability, and the outcome measure was total cumulative time to complete each test.; Results: The mTBI group had approximately 36% mean slower performance time with significant differences between the groups (p<0.001) in both tests. There were significant differences between the two KD test administrations in each group, however, a strong correlation was observed between each test administration.; Conclusions: Significant differences in KD test performance were seen between the acute mTBI and control groups. The results suggest the KD test can be utilized for screening acute mTBI. A validated and rapidly administered mTBI screening test with results that are easily interpreted by providers is essential in making return-to-duty decisions in the injured warfighter.

2016-99 0309

Compromised Neurocircuitry in Chronic Blast-Related Mild Traumatic Brain Injury.

Source
Human Brain Mapping 2016

Author(s)
Yeh P.H., Guan Koay C., et al.

Abstract
The aim of this study was to apply recently developed automated fiber segmentation and quantification methods using diffusion tensor imaging (DTI) and DTI-based deterministic and probabilistic tractography to access local and global diffusion changes in blast-induced mild traumatic brain injury (bmTBI). Two hundred and two (202) male active US service members who reported persistent post-concussion symptoms for more than 6 months after injury were recruited. An additional forty (40) male military controls were included for comparison. DTI results were examined in relation to post-concussion and post-traumatic stress disorder (PTSD) symptoms. No significant group difference in DTI metrics was
found using voxel-wise analysis. However, group comparison using tract profile analysis and tract specific analysis, as well as single subject analysis using tract profile analysis revealed the most prominent white matter microstructural injury in chronic bmTBI patients over the frontal fiber tracts, that is, the front-limbic projection fibers (cingulum bundle, uncinate fasciculus), the fronto-parieto-temporal association fibers (superior longitudinal fasciculus), and the fronto-striatal pathways (anterior thalamic radiation). Effects were noted to be sensitive to the number of previous blast exposures, with a negative association between fractional anisotropy (FA) and time since most severe blast exposure in a subset of the multiple blast-exposed group. However, these patterns were not observed in the subgroups classified using macrostructural changes (T2 white matter hyperintensities). Moreover, post-concussion symptoms and PTSD symptoms, as well as neuropsychological function were associated with low FA in the major nodes of compromised neurocircuitry.

2016-99 0310

Depressive symptomatology mediates associations with community reintegration in veterans with TBI.

Source
Military Psychology 2016 28 (6) 376-389

Author(s)
Moriarty,H., and Winter,L.,

Abstract
Community reintegration (CR) is a challenge for military veterans with traumatic brain injury (TBI). Posttraumatic stress disorder (PTSD), depression, bodily pain, and limitations in physical functioning—common comorbidities with TBI in veterans—have all been associated with problems in CR, but their interrelationships are unclear. The role of depression as a possible mediator of effects on CR has not been examined. We tested depressive symptoms as a possible mediator of CR’s associations with physical limitations, PTSD, and bodily pain. This cross-sectional study used baseline data from a larger randomized controlled trial that evaluated the impact of an in-home intervention for veterans with TBI and their families. Eighty-three military veterans with TBI recruited from a medical rehabilitation service at an urban U.S. Department of Veterans Affairs medical center participated in the study. Interview instruments measured CR, depressive symptoms, physical limitations (limitations in physical functioning), bodily pain, quality of the relationship with key family members, and sociodemographic characteristics. PTSD was determined through review of the electronic medical record. Interview data were collected in veterans’ homes. Depressive symptoms totally mediated the association between physical limitations
and CR and the association between PTSD and CR. The bodily pain–CR association was not significant after quality of relationship had been entered into the regression models. Findings suggest that interventions to increase CR of veterans with TBI should address depression, a treatable condition. Replication of our mediation findings in larger veteran and civilian samples with TBI is needed.

2016-99 0311

Early traumatic brain injury screen in 6594 inpatient combat casualties.

Source
Injury 2016

Author(s)
Connelly C., Martin K., et al.

Abstract
Introduction: The purpose of this study was to review the inpatient traumatic brain injury (TBI) screening program at a Role IV regional resource trauma center. TBI has been coined the "signature wound" during current U.S. combat operations. All patients injured in Iraq or Afghanistan who transit through Landstuhl Regional Medical Center (LRMC) undergo an initial TBI screen regardless of anatomic injury. The incidence and factors associated with positive screening for concussion (physical event + alteration of consciousness (AOC)) and TBI diagnoses were examined. Methods: A retrospective review of consecutively admitted patients to LRMC who underwent a TBI screen from 5/06 to 7/11 was performed. Patient characteristics, self-reported symptoms, and TBI diagnoses were analyzed. Findings: Among 43,852 patients screened during the 5-year period, 6594 were admitted, of whom, 6590 received a complete TBI screen. Predominantly male (97.1%), the mean age was 26.7 +/- 7.4 yrs. The average GCS and ISS at admission were 13.9 +/- 2.8 and 10.1 +/- 8.6, respectively. Positively screened patients averaged 1.8 deployments, 69.5% experienced one or more blasts, 16.1% experienced one or more vehicular crashes, with 18.0% reporting a prior head injury. Of the 2805 (42.6%) who screened positive for possible concussion, 2393 (85.3%) were diagnosed with a concussion/TBI during their inpatient stay; the remaining 412 (14.7%) were identified by screening only. Of the screened positive patients, 1953 (69.6%) reported 1 or more current concussion/TBI-related symptoms; of those with symptom(s), 532 (27.2%) reported 5 or more. Conclusions: Early screening based on self-report identified a large number of patients admitted directly from the combat zone with possible deployment-related concussion and TBI symptoms. Such screening provides valuable information to guide
decisions about early management and return to duty. Level of evidence: Level III, Therapeutic.

2016-99 0312

Evaluation and Treatment of Mild Traumatic Brain Injury Through the Implementation of Clinical Video Telehealth: Provider Perspectives From the Veterans Health Administration.

Source
PM and R 2016: January 04, 2016
Author(s)

Abstract
Background: Substantial numbers of U.S. military veterans who served in recent conflicts experience mild traumatic brain injury. Data suggests that as many as 25% of veterans do not have a comprehensive traumatic brain injury evaluation to determine a diagnosis and develop a plan to treat symptoms. Technologies like clinical video telehealth offer a potential means to overcome travel distance and other barriers that can impact veteran receipt of a comprehensive traumatic brain injury evaluation after a positive screening; however, little is known about implementing clinical video telehealth in this context. Objective: To examine the perspectives of Veterans Health Administration health care providers on implementing clinical video telehealth technology for the assessment and treatment of mild traumatic brain injury among veterans of Operation Enduring Freedom, Operation Iraqi Freedom, and Operation New Dawn. Design: Qualitative; semistructured interviews. Setting: Veterans Health Administration Polytrauma System of Care. Participants: Twenty-six providers who participated in a Veterans Health Administration Rehabilitation and Prosthetic Services Teleconsultation Pilot Project for administering comprehensive traumatic brain injury evaluations over clinical video telehealth. Methods: Semistructured interviews that used content-analytic techniques to assess provider experiences implementing clinical video telehealth for veterans with traumatic brain injury, including inhibiting factors and best practices to administer comprehensive traumatic brain injury evaluations. Results: The most commonly reported inhibiting factors to implementing clinical video telehealth for traumatic brain injury evaluation and treatment included scheduling, setting up the clinic, and conducting physical exams over a virtual modality. To enhance clinical video telehealth implementation, participants described best practices including establishing solid communication and relationships with staff, building rapport with patients, and recognizing the unique needs of patients with traumatic brain injury.
injury. Conclusions: Implementing clinical video telehealth programs involves coordinating multiple steps with providers at different sites, highlighting the need for effective communication. Provider-patient communication also emerged as vital to successful clinical video telehealth implementation. These findings suggest that providers would benefit from efforts to build communication competencies. Level of Evidence: To be determined.

2016-99 0313

Exposure to a predator scent induces chronic behavioral changes in rats previously exposed to low-level blast: Implications for the relationship of blast-related TBI to PTSD.

Source
Frontiers in Neurology 2016 7 (OCT) 18 2016

Author(s)
PerezGarcia G., Gama Sosa M.A., et al.

Abstract
Blast-related mild traumatic brain injury (mTBI) has been unfortunately common in veterans who served in the recent conflicts in Iraq and Afghanistan. The postconcussion syndrome associated with these mTBIs has frequently appeared in combination with post-traumatic stress disorder (PTSD). The presence of PTSD has complicated diagnosis, since clinically, PTSD and the postconcussion syndrome of mTBI have many overlapping symptoms. In particular, establishing how much of the symptom complex can be attributed to the psychological trauma associated with PTSD in contrast to the physical injury of traumatic brain injury has proven difficult. Indeed, some have suggested that much of what is now being called blast-related postconcussion syndrome is better explained by PTSD. The relationship between the postconcussion syndrome of mTBI and PTSD is complex. Association of the two disorders might be viewed as additive effects of independent psychological and physical traumas suffered in a war zone. However, we previously found that rats exposed to repetitive low-level blast exposure in the absence of a psychological stressor developed a variety of anxiety and PTSD-related behavioral traits that were present months following the last blast exposure. Here, we show that a single predator scent challenge delivered 8 months after the last blast exposure induces chronic anxiety related changes in blast-exposed rats that are still present 45 days later. These observations suggest that in addition to independently inducing PTSD-related traits, blast exposure sensitizes the brain to react abnormally to a subsequent psychological stressor. These studies have implications for conceptualizing the relationship between blast-related mTBI and PTSD and suggest that blast-
related mTBI in humans may predispose to the later development of PTSD in reaction to subsequent psychological stressors.

2016-99 0314

**History of loss of consciousness with mild traumatic brain injury affects PTSD symptom presentation in treatment-seeking Iraq/Afghanistan veterans**

**Source**
Brain Injury 2016 30 (13) 1561-1569

**Author(s)**

**Abstract**

Objective: This study was conducted (1) to examine differences in post-traumatic stress disorder (PTSD) symptoms, perceived quality-of-life (QoL) and post-concussive symptoms (PCS) among veterans who experienced deployment-related mild traumatic brain injuries (mTBIs) with or without loss of consciousness (LOC) and (2) to test the additive role of PCS on QoL.

Design: Two hundred and twelve Iraq/Afghanistan veterans who were admitted to a residential programme for PTSD were assessed shortly following intake. A MANCOVA was conducted to examine QoL, PTSD symptom domains and PCS across the No LOC and LOC groups. Multivariate regression models were conducted to examine whether prevalence of PCS might be uniquely linked with veterans’ QoL (physical, psychological and social).

Results: When controlling for combat exposure (CE), LOC status was uniquely linked with avoidance symptomatology, Psychological QoL and PCS; LOC status was not significantly linked with other domains of PTSD or QoL. When controlling for CE and PTSD, PCS was similarly linked with QoL in the psychological domain, but not Physical or Social QoL.

Conclusion/Implications: LOC associated with a mTBI may contribute to behavioural avoidance and poorer psychological well-being among veterans seeking treatment for PTSD. In addition, PCS associated with mTBI may diminish Psychological QoL for veterans seeking treatment for PTSD.

2016-99 0315

**Hyperbaric oxygen therapy as a potential treatment for post-traumatic stress disorder associated with traumatic brain injury.**

**Source**
Neuropsychiatric Disease and Treatment 2016 12 2689-2705

**Author(s)**

Abstract
Traumatic brain injury (TBI) describes the presence of physical damage to the brain as a consequence of an insult and frequently possesses psychological and neurological symptoms depending on the severity of the injury. The recent increased military presence of US troops in Iraq and Afghanistan has coincided with greater use of improvised exploding devices, resulting in many returning soldiers suffering from some degree of TBI. A biphasic response is observed which is first directly injury-related, and second due to hypoxia, increased oxidative stress, and inflammation. A proportion of the returning soldiers also suffer from post-traumatic stress disorder (PTSD), and in some cases, this may be a consequence of TBI. Effective treatments are still being identified, and a possible therapeutic candidate is hyperbaric oxygen therapy (HBOT). Some clinical trials have been performed which suggest benefits with regard to survival and disease severity of TBI and/or PTSD, while several other studies do not see any improvement compared to a possibly poorly controlled sham. HBOT has been shown to reduce apoptosis, upregulate growth factors, promote antioxidant levels, and inhibit inflammatory cytokines in animal models, and hence, it is likely that HBOT could be advantageous in treating at least the secondary phase of TBI and PTSD. There is some evidence of a putative prophylactic or preconditioning benefit of HBOT exposure in animal models of brain injury, and the optimal time frame for treatment is yet to be determined. HBOT has potential side effects such as acute cerebral toxicity and more reactive oxygen species with long-term use, and therefore, optimizing exposure duration to maximize the reward and decrease the detrimental effects of HBOT is necessary. This review provides a summary of the current understanding of HBOT as well as suggests future directions including prophylactic use and chronic treatment.

2016-99 0316

Neuropsychological test validity in Veterans presenting with subjective complaints of 'very severe' cognitive symptoms following mild traumatic brain injury

Source
Brain Injury 2016 1-7

Author(s)
Spencer,R.J., Waldron-Perrine,B., et al.

Abstract
Objective: This study explored the utility of combining data from measures of performance validity and symptom validity among Veterans undergoing neuropsychological evaluation for mild
traumatic brain injury (mTBI).; Background: Persistent cognitive impairments following mTBI are often reported by returning combat veterans. However, objectively-measured cognitive deficits are not common among individuals with mTBI, raising the question of whether negative impression management influences self-ratings.; Methods: Self-report ratings were obtained for memory, concentration, decision-making, and processing speed/organization using a 5-point scale ranging from 'none' to 'very severe'. Veterans also completed brief neuropsychological testing which included measures of performance validity.; Results: Study 1 examined data from 122 participants and demonstrated that veterans reporting a 'very severe' cognitive deficit were over three times as likely to demonstrate poor effort on a validity test than those without a very severe rating. Study 2 replicated these findings in an independent sample of 127 veterans and also demonstrated that both severity of self-report ratings and performance on an embedded measure of effort were predictive of poor effort on a stand-alone performance validity test.; Conclusion: Veterans with suspected mTBI who report 'very severe' cognitive impairment have a greater likelihood of putting forth sub-optimal effort on objective testing.;

2016-99 0317

Performance on the Defense Automated Neurobehavioral Assessment across controlled environmental conditions

Source
Applied Neuropsychology.Adult 2016 23 (6) 411-417

Author(s)

Abstract
Neurocognitive assessment tools (NCAT) are commonly used to screen for changes in cognitive functioning following a mild traumatic brain injury and to assist with a return to duty decision. As such, it is critical to determine if performance on the Defense Automated Neurobehavioral Assessment (DANA) is adversely affected by operationally-relevant field environments. Differences in DANA performance between a thermoneutral environment and three simulated operationally-relevant field environments across the thermal stress continuum were calculated for 16 healthy U.S. Navy service members. Practice effects associated with brief test-retest intervals were calculated within each environmental condition. There were no significant differences between the simulated environmental conditions suggesting that performance on the DANA Brief is not impacted by thermal stress. Additionally, there were no significant differences in performance within each simulated environmental condition associated with repeated administrations.
2016-99 0318

Postconcussive symptom overreporting in Iraq/Afghanistan veterans with mild traumatic brain injury.

Source
Journal of Rehabilitation Research and Development 2016 53 (5) 571-584

Author(s)

Abstract
A comprehensive evaluation, including the assessment of neurobehavioral symptoms, has been instituted at the Department of Veterans Affairs (VA) healthcare system to address the large number of Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) Veterans returning with mild traumatic brain injuries (mTBIs). The Validity-10 is a measure of symptom overreporting embedded within the Neurobehavioral Symptom Inventory, a component of the comprehensive evaluation that assesses postconcussive symptom severity. The Validity-10 is composed of 10 unlikely/low-frequency items and a validated cutoff score to identify postconcussive symptom overreporting. We examined the items and cutoff used in the initial development and validation study of the Validity-10 through retrospective chart reviews of 331 treatment-seeking Veterans who sustained an mTBI. The Validity-10 exhibited significant relationships with psychiatric variables, VA service connection, and neuropsychological performance validity (all p 0.05). Furthermore, the Validity-10 modestly predicted neuropsychological performance validity test failure over and above psychiatric comorbidities and VA service connection. The present study supports the use of the Validity-10 to assess symptom validity in treatment-seeking OIF/OEF Veterans with a history of mTBI.

2016-99 0319

Problem alcohol use in veterans with mild traumatic brain injury: Associations with cognitive performance and psychiatric symptoms

Source
Journal of Clinical and Experimental Neuropsychology 2016 38 (10) 1115-1130

Author(s)
Hanson, K.L., Schiehser, D.M., et al.

Abstract
Introduction: Given that little is known about the associations between alcohol use, cognition, and psychiatric symptoms among veterans with a history of mild traumatic brain injury (mTBI), we aimed to (a) characterize how they differ from veteran controls on a measure of problem drinking; (b) investigate whether problem drinking is associated with demographic or mTBI characteristics; and (c) examine the associations between alcohol use, mTBI history, psychiatric functioning, and cognition.

Method: We assessed 59 veterans (n = 32 with mTBI history; n = 27 military controls) for problem alcohol use (Alcohol Use Disorders Identification Test: AUDIT), psychiatric symptoms, and neuropsychological functioning.

Results: Compared to controls, veterans with mTBI history were more likely to score above the AUDIT cutoff score of 8 (p = .016), suggesting a higher rate of problem drinking. Participants with mTBI history also showed elevated psychiatric symptoms (ps < .001) and lower cognitive scores (ps < .05 to < .001). Veterans with higher AUDIT scores were younger (p = .05) and had less education (p < .01) and more psychiatric symptoms (ps < .01), but mTBI characteristics did not differ. After controlling for combat and mTBI history (R(2) = .04, ns) and posttraumatic stress disorder (PTSD) symptoms (ΔR(2) = .08, p = .05), we found that higher AUDIT scores were associated with poorer attention/processing speed, F(9, 37) = 2.55, p = .022; ΔR(2) = .26, p = .03.

Conclusions: This preliminary study suggested that veterans with mTBI history may be at increased risk for problem drinking. Problem alcohol use was primarily associated with more severe PTSD symptoms and poorer attention/processing speed, though not with combat or mTBI characteristics per se. Importantly, findings emphasize the importance of assessing for and treating problematic alcohol use and comorbid psychiatric symptoms among veterans, including those with a history of neurotrauma.

2016-99 0320

Reduced P3b Brain Response during Sustained Visual Attention is associated with Remote Blast mTBI and Current PTSD in U.S. Military Veterans

Source
Behavioural Brain Research 2016

Author(s)

Abstract
Approximately 275,000 American service members deployed to Iraq or Afghanistan have sustained a mild traumatic brain injury
(mTBI), with 75% of these incidents involving an explosive blast. Combat-related mTBI is frequently associated with comorbid mental health disorders, especially posttraumatic stress disorder (PTSD). Attention problems, including sustained attention, are common cognitive complaints of veterans with TBI and PTSD. The present study sought to examine neural correlates of sustained attention in veterans with blast mTBI and/or current PTSD. In 124 veterans of Operations Enduring and Iraqi Freedom (OEF/OIF), we examined event-related potentials (ERPs) elicited by targets and non-targets during performance of a degraded-stimulus continuous performance task (DS-CPT). Four groups, consisting of veterans with blast-related mTBI only, current PTSD only, both blast mTBI and PTSD, and a control group, were studied. Compared to all other groups, blast mTBI only participants were more likely to respond regardless of stimulus type during the DS-CPT. During target detection, the three mTBI/PTSD groups showed reduced amplitude of the P3b (i.e., P300) ERP at Pz compared to the control group. P3b of the three affected groups did not differ from each other. These results suggest that parietal P3b amplitude reduction during target detection in the DS-CPT task may be an index of brain pathology after combat trauma, yet the diminished brain response fails to differentiate independent effects of blast-related mTBI or severity of PTSD symptomatology.

2016-99 0321

Resilience and Traumatic Brain Injury Among Iraq/Afghanistan War Veterans: Differential Patterns of Adjustment and Quality of Life

Source
Journal of Clinical Psychology 2016

Author(s)

Abstract
Objective: We examined the degree to which a resilient personality prototype predicted adjustment among war Veterans with and without a traumatic brain injury (TBI) while covarying the level of combat exposure.; Method: A total of 127 war Veterans (107 men, 20 women; average age = 37 years) participated. Personality prototypes were derived from the Multidimensional Personality Questionnaire (Patrick, Curtain, & Tellegen, 2002). Measures were administered at baseline, and a subset was administered at 4- and 8-month follow-ups.; Results: Veterans with resilient personalities reported less sleep disturbance, more health-promoting behaviors, psychological flexibility, and emotional distress tolerance than Veterans with undercontrolled or overcontrolled prototypes. Path models revealed that resilience significantly predicted
posttraumatic stress disorder (PTSD), depression, quality of life, and social support over time. TBI had unique and consistent effects only on PTSD.; Conclusion: Personality characteristics influence distress and quality of life among war Veterans with and without TBI. Implications for assessment, interventions, and research are discussed.

2016-99 0322

Resting-State Magnetoencephalography Reveals Different Patterns of Aberrant Functional Connectivity in Combat-Related Mild Traumatic Brain Injury

Source
Journal of Neurotrauma 2016

Author(s)

Abstract
Blast mild traumatic brain injury (mTBI) is a leading cause of sustained impairment in military service members and veterans. However, the mechanism of persistent disability is not fully understood. The present study investigated disturbances in brain functioning in mTBI participants using a source-imaging-based approach to analyze functional connectivity (FC) from resting-state magnetoencephalography (rs-MEG). Study participants included 26 active-duty service members or veterans who had blast mTBI with persistent post-concussive symptoms, and 22 healthy control active-duty service members or veterans. The source time courses from regions of interest (ROIs) were used to compute ROI to whole-brain (ROI-global) FC for different frequency bands using two different measures: 1) time-lagged cross-correlation and 2) phase-lock synchrony. Compared with the controls, blast mTBI participants showed increased ROI-global FC in beta, gamma, and low-frequency bands, but not in the alpha band. Sources of abnormally increased FC included the: 1) prefrontal cortex (right ventromedial prefrontal cortex vmPFC, right rostral anterior cingulate cortex rACC), and left ventrolateral and dorsolateral prefrontal cortex; 2) medial temporal lobe (bilateral parahippocampus, hippocampus, and amygdala); and 3) right putamen and cerebellum. In contrast, the blast mTBI group also showed decreased FC of the right frontal pole. Group differences were highly consistent across the two different FC measures. FC of the left ventrolateral prefrontal cortex correlated with executive functioning and processing speed in mTBI participants. Altogether, our findings of increased and decreased regional patterns of FC suggest that disturbances in intrinsic brain connectivity may be the result of multiple mechanisms, and are associated with cognitive sequelae of the injury.

Source
Brain Injury 2016 30 (12) 1481-1490

Author(s)
Pugh M.J., Finley E.P., et al.

Abstract
Objectives: To identify and validate trajectories of comorbidity associated with traumatic brain injury in male and female Iraq and Afghanistan war Veterans (IAV). Methods: Derivation and validation cohorts were compiled of IAV who entered the Department of Veterans Affairs (VA) care and received 3 years of VA care between 2002-2011. Chronic disease and comorbidities associated with deployment including TBI were identified using diagnosis codes. A latent class analysis (LCA) of longitudinal comorbidity data was used to identify trajectories of comorbidity. Results: LCA revealed five trajectories that were similar for women and men: (1) Healthy, (2) Chronic Disease, (3) Mental Health, (4) Pain and (5) Polytrauma Clinical Triad (PCT: pain, mental health and TBI). Two additional classes found in men were 6) Minor Chronic and 7) PCT with chronic disease. Among these gender-stratified trajectories, it was found that women were more likely to experience headache (Pain trajectory) and depression (Mental Health trajectory), while men were more likely to experience lower back pain (Pain trajectory) and substance use disorder (Mental Health trajectory). The probability of TBI was highest in the PCT-related trajectories, with significantly lower probabilities in other trajectories. Conclusions: It was found that TBI was most common in PCT-related trajectories, indicating that TBI is commonly comorbid with pain and mental health conditions for both men and women. The relatively young age of this cohort raises important questions regarding how disease burden, including the possibility of neurodegenerative sequelae, will accrue alongside normal age-related decline in individuals with TBI. Additional 'big data' methods and a longer observation period may allow the development of predictive models to identify individuals with TBI that are at-risk for adverse outcomes.
Sensory sensitivity in operation enduring freedom/operation Iraqi freedom veterans with and without blast exposure and mild traumatic brain injury

Source
Applied Neuropsychology.Adult 2016 1-11

Author(s)

Abstract
To examine factors associated with noise and light sensitivity among returning Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans with a self-reported history of mild traumatic brain injury (mTBI) due to blast exposure, we compared the self-report of noise and light sensitivity of 42 OEF/OIF Veterans diagnosed with mTBI resulting from combat blast-exposure to that of 36 blast-exposed OEF/OIF Veterans without a history of mTBI. Results suggest a statistically significant difference between Veterans with and without a history of mTBI in the experience of noise and light sensitivity, with sensory symptoms reported most frequently in the mTBI group. The difference remains significant even after controlling for symptoms of PTSD, depression, and somatization. These data suggest that while psychological distress is significantly associated with the complaints of noise and light sensitivity, it may not fully account for the experience of sensory sensitivity in a population with mTBI history.

Use of a multi-level mixed methods approach to study the effectiveness of a primary care progressive return to activity protocol after acute mild traumatic brain injury/concussion in the military

Source
Contemporary Clinical Trials 2016 52 95-100

Author(s)

Abstract
The large number of U.S. service members diagnosed with concussion/mild traumatic brain injury each year underscores
the necessity for clear and effective clinical guidance for managing concussion. Relevant research continues to emerge supporting a gradual return to pre-injury activity levels without aggravating symptoms; however, available guidance does not provide detailed standards for this return to activity process. To fill this gap, the Defense and Veterans Brain Injury Center released a recommendation for primary care providers detailing a step-wise return to unrestricted activity during the acute phase of concussion. This guidance was developed in collaboration with an interdisciplinary group of clinical, military, and academic subject matter experts using an evidence-based approach. Systematic evaluation of the guidance is critical to ensure positive patient outcomes, to discover barriers to implementation by providers, and to identify ways to improve the recommendation. Here we describe a multi-level, mixed-methods approach to evaluate the recommendation incorporating outcomes from both patients and providers. Procedures were developed to implement the study within complex but ecologically-valid settings at multiple military treatment facilities and operational medical units. Special consideration was given to anticipated challenges such as the frequent movement of military personnel, selection of appropriate design and measures, study implementation at multiple sites, and involvement of multiple service branches (Army, Navy, and Marine Corps). We conclude by emphasizing the need to consider contemporary approaches for evaluating the effectiveness of clinical guidance.

2016-99 0326

Vestibular, balance, microvascular and white matter neuroimaging characteristics of blast injuries and mild traumatic brain injury: Four case reports

Source
Brain Injury 2016 30 (12) 1501-1514

Author(s)
Gattu,R., Akin,F.W., et al.

Abstract
Background: Case reports are presented on four Veterans, aged 29–46 years, who complained of chronic dizziness and/or postural instability following blast exposures. Two of the four individuals were diagnosed with mild traumatic brain injury and three of the four were exposed to multiple blasts. Comprehensive vestibular, balance, gait, audiometry and neuroimaging procedures were used to characterize their
injuries. *Case report:* Vestibular assessment included videonystagmography, rotary chair and cervical and ocular vestibular evoked myogenic potentials. Balance and gait testing included the sensory organization test, preferred gait speed and the dynamic gait index. Audiometric studies included pure tone audiometry and middle-ear measurements. Neuroimaging procedures included high resolution structural magnetic resonance imaging, susceptibility-weighted imaging and diffusion-tensor imaging. *Findings:* Based on the neuroimaging and vestibular and balance test results, it was found that all individuals had diffuse axonal injuries and all had one or more micro-hemorrhages or vascular anomalies. Three of the four individuals had abnormal vestibular function, all had abnormally slow walking speeds and two had abnormal gait and balance dysfunction. *Conclusion:* The use of contemporary neuroimaging studies in conjunction with comprehensive vestibular and balance assessment provided a better understanding of the pathophysiology and pathoanatomy of dizziness following blast exposures than standard vestibular and balance testing alone.

**See also**

*Prolonged Repetitive Head Trauma Induces a Singular Chronic Traumatic Encephalopathy-Like Pathology in White Matter Despite Transient Behavioral Abnormalities.* Under Pathology.
Accuracy of Tourniquet Test for the Diagnosis of Dengue Infection.

Source
Pakistan Armed Forces Medical Journal 2016 66 (5) 663-666

Author(s)
Ismail,T., and Khan,A.A.,.

Abstract
Objective: This study was carried out to determine the accuracy of tourniquet test for diagnosis of dengue infection in patients with clinically suspected dengue fever, keeping dengue IgM/IgG as gold standard. Study Design: Cross sectional validation study. Place and Duration of Study: The study was carried out at Military Hospital Rawalpindi and Combined Military Hospital Malir Cantt Karachi from Jun 2011 to Dec 2013. Material and Methods: One hundred and sixty cases of undetermined fever of two to seven days duration were enrolled by non-probability convenience sampling to determine the accuracy of tourniquet test. Previously diagnosed patients of chronic liver disease, chronic renal failure and those on anticoagulant/anti-platelet therapy were excluded. The dengue tourniquet test was performed according to the standardized method within 24 hours of admission, and the results of tourniquet test were compared with dengue IgM/IgG as gold standard. Results: Diagnostic accuracy of tourniquet test for diagnosis of dengue infection in patients with clinically suspected dengue fever, keeping dengue IgM/IgG as gold standard showed 26.88%(95% CI = 20.01- 33.75%) were true positive, 7.5%(95% CI =3.42–11.58%) were false positive, 46.25% (95% CI=38.52–53.98%) were true negative and 19.38% (95% CI =13.26–25.5%) were false negative, whereas sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy was calculated as 58.11%, 86.05%, 78.18%, 70.48%, and 73.12% respectively. Conclusion: In view of the results of the current study demonstrating high specificity and diagnostic accuracy, the tourniquet test may be used routinely in clinical practice. Comparatively lower sensitivity may be related to time of presentation, which needs to be further evaluated.

Source
Military Medicine 2016 181 (11) e1495-e1498

Author(s)
Maluil,S., and Stevens,R.A.,

Abstract
Schistosomiasis is a known risk after exposure to freshwater in tropical parts of the world. In March 2014, 28 off-duty U.S. service members went on a water adventure in the Nile River in Jinja, Uganda. In April 2014, 10 of the 28 service members returned for a second water adventure. Twelve weeks after freshwater exposure, schistosomiasis enzyme-linked immunosorbent assay testing was performed. Twenty-five percent had elevated Schistosomiasis mansoni immunoglobulin G (7 positive of 28 exposed); all had negative pre-exposure serology. The serology-positive service members were treated with oral praziquantel 60 mg/kg in divided doses. Our report is the first schistosomiasis report among U.S. service members deployed to Africa since World War II. The absence of reports among U.S. service members and several reports among deployed foreign military units and tourists in sub-Saharan Africa suggest a lack of postexposure testing. We recommend schistosomiasis testing of prior and future U.S. military units deployed to sub-Saharan Africa with fresh water exposure. Unit commanders and medical personnel should discourage unnecessary fresh water contact in sub-Saharan Africa.

Cutaneous Leishmaniasis in Khyber Pakhtunkhwa Province of Pakistan: Clinical Diversity and Species-Level Diagnosis

Source
The American Journal of Tropical Medicine and Hygiene 2016 95 (5) 1106-1114

Author(s)

Abstract
This study primarily aimed to identify the causative species of cutaneous leishmaniasis (CL) in the Khyber Pakhtunkhwa Province of Pakistan and to distinguish any species-specific variation in clinical manifestation of CL. Diagnostic performance of different techniques for identifying CL was
assessed. Isolates of Leishmania spp. were detected by in vitro culture, polymerase chain reaction (PCR) on DNA extracted from dried filter papers and microscopic examination of direct lesion smears from patients visiting three major primary care hospitals in Peshawar. A total of 125 CL patients were evaluated. Many acquired the disease from Peshawar and the neighboring tribal area of Khyber Agency. Military personnel acquired CL while deployed in north and south Waziristan. Leishmania tropica was identified as the predominant infecting organism in this study (89.2%) followed by Leishmania major (6.8%) and, unexpectedly, Leishmania infantum (4.1%). These were the first reported cases of CL caused by L. infantum in Pakistan. PCR diagnosis targeting kinetoplast DNA was the most sensitive diagnostic method, identifying 86.5% of all samples found positive by any other method. Other methods were as follows: ribosomal DNA PCR (78.4%), internal transcribed spacer 2 region PCR (70.3%), culture (67.1%), and microscopy (60.5%). Clinical examination reported 14 atypical forms of CL. Atypical lesions were not significantly associated with the infecting Leishmania species, nor with “dry” or “wet” appearance of lesions. Findings from this study provide a platform for species typing of CL patients in Pakistan, utilizing a combination of in vitro culture and molecular diagnostics. Moreover, the clinical diversity described herein can benefit clinicians in devising differential diagnosis of the disease.

2016-99 0330

Filaria surveys in the Armed Forces: Need for a revisit.

Source
Medical Journal Armed Forces India 2016 72 (4)

Author(s)
Kushwaha, A.S., and Verma, M.P.,

Abstract
Background Routine annual filarial surveys are conducted amongst various categories of military personnel and their families as per policies in vogue in the Armed Forces. The neglect and inattention faced by this disease needs to be addressed in terms of policy, provisioning and processes while dealing with filariasis in the Armed Forces. Methods Routine annual filarial survey was conducted in a garrison during the months of Nov and Dec in 2013 and 2014. Blood slides from 6305 and 10,162 persons were collected in 2013 and 2014 respectively. 546 (60.66%) civilian migratory labourers were also subjected to the filarial survey. Results Of the blood slides collected amongst service personnel, 41 were positive for mf in 2013 and 29 in 2014 (i.e. a slide positivity rate (SPR) of 0.65% and 0.28% respectively). Out of 546 blood slides of the migratory population, 10 were found mf positive (SPR 1.83%) and three males had lymphedema. Conclusion It is
recommended that routine annual filarial survey conducted in military garrisons should include all personnel belonging to known endemic states. Newer modalities of detection of infection may be considered to replace night blood surveys. An organization-specific surveillance programme on prevention and control of Lymphatic filariasis in the Armed Forces thus may need to be launched so that we can achieve elimination.

2016-99 0331

**Leptospirosis in a British soldier after travel to Borneo**

Source
Journal of the Royal Army Medical Corps 2016 162 pp473-475

Author(s)

Abstract
Undifferentiated febrile illness in a returning soldier is a common problem encountered by serving medical officers. A 32-year-old soldier presented to Birmingham Heartlands Hospital with fever and acute kidney injury after return from Borneo. Leptospirosis was suspected and empirical antibiotics were started before subsequent confirmation by serology and PCR. Leptospirosis is common in South-East Asia, and troops exercising in jungle areas, and in the UK, are at risk. Advice, including inpatient management when appropriate, is available from the UK Role 4 Military Infectious Diseases and Tropical Medicine Service.

2016-99 0332

**Schistosomiasis: Travellers in Africa.**

Source
Journal of Special Operations Medicine 2016 16 (3) 47-52

Author(s)
Strohmayer,J., and Matthews,I.,

Abstract
Schistosomiasis is a parasitic infection acquired through freshwater exposure in the tropics. It is an infection that can have devastating implications to military personnel if it is not recognized and treated, especially later in life. While there is an abundance of information available about schistosomiasis in endemic populations, the information on nonendemic populations, such as deployers, is insufficient. Definitive studies for this population are lacking, but there are actions that can and should be taken to prevent infection and to treat patients. This literary review presents a case study, reviews basic science, and explores the information available about
schistosomiasis in nonendemic populations. Specifically, the authors provide recommendations for the prevention, diagnosis, and postexposure management in military personnel.

2016-99 0333

Seroconversion to causes of febrile illness in Mongolian peacekeepers deployed to south Sudan.

Source
American Journal of Tropical Medicine and Hygiene 2016 95 (6) 1469-1471

Author(s)

Abstract
Immediately before deployment (Fall 2012) and after deployment (Spring 2013) in support of United Nations peacekeeping operations, Mongolian Armed Forces medical personnel obtained serum samples from the first contingent of Mongolian peacekeepers deploying to South Sudan to monitor serologic evidence of exposure to diseases that cause acute febrile illness. A total of 632 paired samples were tested for IgG antibody for the following (number of seroconversions in parentheses): Rickettsia (spotted fever and typhus groups) (25), West Nile fever virus (WNV) (23), Coxiella burnetii (causative agent of Q fever) (12), dengue virus (8), leptospirosis (6), chikungunya virus (0), Congo-Crimean hemorrhagic fever virus (0), Japanese encephalitis virus (0), and Rift Valley fever virus (0).
2016-99 0334

Application of the Intersystem Approach for Combat Veterans Experiencing Sexual Problems Related to Trauma and Injuries of War.

Source
Journal of Family Psychotherapy 2016 27 (4) 243-259

Author(s)
McGillivray, K.

Abstract
The purpose of this article is to explore how the Intersystem Approach can be applied to combat veterans experiencing sexual problems related to post-traumatic stress disorder, traumatic brain injury, and severe wounds. Thousands of combat veterans have returned home with injuries and traumatic memories that are influencing their overall functioning. The information presented looks at 5 different domains combat veterans might experience problems within, including individual/medical, individual/psychological, dyadic, intergenerational, and society/culture. Assessment ideas and treatment considerations are described in detail within the domains, conveying to therapists the importance of the issue. Following the descriptions of problems combat veterans might face overseas and returning home is a case example. The presenting problems, theoretical framework, and treatment approach are thoroughly explained in order to see how the application of the Intersystem Approach can be used with combat veterans experiencing invisible and physical injuries.

2016-99 0335

Assessing the clinical and economic burden of prostate cancer in the United States veteran population.

Source

Author(s)

Abstract
Objectives: To assess the clinical burden, health care utilization, and cost patterns of prostate cancer patients in the US veteran population. Methods: Patients diagnosed with prostate cancer (International Classification of Diseases, Ninth Revision, Clinical Modification code: 185.xx) were selected from the Veterans Health Administration (VHA) database
(October 1, 2010-September 30, 2014). The first observed diagnosis date was defined as the index date. Continuous medical and pharmacy benefits were required 12 months pre- and post-index date. The 10 most common comorbidities were calculated for the 12-month baseline period. The 10 most commonly prescribed medications were calculated for 60 days post-index date. Health care resource utilization (inpatient, outpatient, pharmacy) and costs (inpatient, outpatient, pharmacy, total) were assessed for the 12-month followup period. Descriptive statistics were calculated as means +/- standard deviation (SD) and percentages to measure treatment, cost, and utilization distribution in the sample.

Results: Among all study patients diagnosed with prostate cancer (n= 195,989), the most common comorbidities were hypertension (24.24%), elevated prostate-specific antigen (PSA) levels (22.26%), diabetes (13.96%), bilateral hearing loss (8.19%), and hyperlipidemia (7.95%). The most commonly prescribed medications for prostate cancer patients were simvastatin (16.95%), lisinopril (14.62%), omeprazole (13.43%), amlodipine besylate (11.05%), and hydrochlorothiazide (7.56%). The percentage of patients with inpatient stays (12.24%), outpatient visits (99.88%), and pharmacy visits (85.26%) were calculated. Prostate cancer patients incurred $4,488 (SD= $27,143) in inpatient, $8,690 (SD= $13,923) in outpatient visit, and $1,296 (SD= $4,839) in pharmacy costs. Total expenditures were $14,474 (SD= $34,318). Conclusions: Results suggest that hypertension and elevated PSA levels were the most common comorbidities among prostate cancer patients. This disease is associated with high outpatient visit utilization, resulting in a high cost burden.

2016-99 0336

Genitourinary injuries and extremity amputation in Operations Enduring Freedom and Iraqi Freedom: Early findings from the Trauma Outcomes and Urogenital Health (TOUGH) project

Source
The Journal of Trauma and Acute Care Surgery 2016 81 (5) S95-S99

Author(s)
Nnamani,N.S., Janak,J.C., et al.

Abstract
Background: In Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF), genitourinary (GU) wounds have occurred in unprecedented numbers. Severe concomitant injuries, including extremity amputations, are common. The epidemiology of GU injury and extremity amputation in OEF/OIF has not been described.; Materials and Methods: The
Department of Defense Trauma Registry was queried from October 2001 through August 2013 to identify all surviving US male service members with GU injuries sustained in OEF/OIF. Genitourinary injury was defined as sustaining one or more injuries to any organ or structure within the genitourinary and/or reproductive system(s) based on International Classification of Diseases, Ninth Revision, Clinical Modification diagnosis codes. Injury severity was quantified based on Abbreviated Injury Scale scores and overall Injury Severity Scores. The incidence, nature, and severity of GU injuries and extremity amputations are described.; Results: Of the 1,367 service members with GU injury included in this analysis, 433 (31.7%) had one or more extremity amputations. Most GU injuries were to the external genitalia scrotum (55.6%), testes (33.0%), penis (31.0%), and urethra (9.1%) vs. the kidneys (21.1%). Those with amputation(s) had greater GU injury severity (Abbreviated Injury Scale score ≥ 3) than those without amputations (50.1% vs. 30.5%, respectively; p < 0.0001). Approximately 3.4% of male service members with GU injury had an upper extremity amputation only, 8.9% had both lower and upper extremity amputation(s), and 19.4% had lower extremity amputation(s) only. Of the 387 patients with GU injury and lower extremity amputations, 87 (22.5%) had amputations below the knee and 300 (77.5%) had amputation(s) at/above the knee.; Conclusion: In OEF/OIF, concomitant GU injury and extremity amputation are common and have serious implications for health and quality of life. This wounding pattern presents new challenges to the military medical and research and development communities to prevent, mitigate, and treat these battlefield injuries.; Level Of Evidence: Epidemiologic/prognostic study, level III.

2016-99 0337

Prevalence of use of erectile dysfunction medication by Dutch military personnel between 2003 and 2012.

Source
International Journal of Impotence Research 2016 17

Author(s)

Abstract
Use of ED medication can be seen as a marker for ED. ED is associated with increasing age, exposure to traumatic events and physical injuries in military veterans. The objective of this study was to assess the prevalence of use of ED medication in Dutch military personnel in the period 2003-2012 and to assess its association with age and psychotropic medication use. Data on dispensing of ED medication, age and co-medication with psychotropic medication of all Dutch military personnel between 2003 and 2012 were collected. The prevalence of ED
medication use in each year was estimated, stratified for age and use of psychotropic medication. The number of ED medication users increased a hundredfold from 0.09 to 9.29 per 1000 per year between 2003 and 2012. ED medication was more often used by men over 40 than under 40 (prevalence in 2012: 2.4% vs 0.2%, OR (2003-2012, adjusted for calendar year) 15.6, 95% CI 13.5-17.9) and by men using psychotropic medication (prevalence in 2012: 3.8% vs 0.9%, OR (2003-2012, adjusted for calendar year) 3.13, 95% CI 2.66-3.67). This study shows a strong increase between 2003 and 2012 in a number of ED medication users in male Dutch military personnel. ED medication use increases with age and with psychotropic medication use.
Person-centered older military veteran care when there are consequences

Source
Nurse Education Today 2016 47 61-67
Author(s)

Abstract
The consequences of each war present themselves in many ways and differently within a veteran's lifetime. For civilian nurses to give applicable, vital care to the older veteran, they need to deeply appreciate the military culture, the strength of the ethos, as well as the various health concerns connected with the individual war/conflict. Attentiveness to the evolving health issues of older veterans are a priority at a time when many personal developmental changes are also creating life stressors for the Vietnam veterans and they are often presenting to civilian health facilities for their care. This article explores the controversial war within Vietnam (1955–1973), and the use of the universal question of “Have you ever served in the military?” An incremental veteran health assessment is discussed in order to care for the specific, prior-era physical/behavioral issues of post-traumatic stress disorder, Agent Orange, military sexual trauma, hepatitis C, and homelessness that are discussed for these men and women veterans, along with a rationale for their long-term presence, which is still evident today. Other relevant nursing interventions for veterans are suggested such as reminiscing, and art/animal-assisted therapy to supplement their medical care.


Source
P and T 2016 41 (10) 623-634
Author(s)
Reisman,M.

Abstract
More than a decade of war in the Middle East has pushed post-traumatic stress disorder (PTSD) to the forefront of public health concerns. The last several years have seen a dramatic increase in the number of Iraq and Afghanistan war veterans seeking help for PTSD, shining a spotlight on this debilitating
condition and raising critical questions about appropriate treatment options and barriers to care. While PTSD extends far beyond the military—affecting about eight million American adults in a given year—the problem is especially acute among war veterans. Not only are recent veterans at higher risk of suffering from PTSD than those in the general population, they also face unique barriers to accessing adequate treatment. These include the requirement that they have either an honorable or general discharge to access Department of Veterans Affairs (VA) medical benefits, long waiting lists at VA medical centers, and the social stigma associated with mental illness within military communities. According to a study conducted by the RAND Center for Military Health Policy Research, less than half of returning veterans needing mental health services receive any treatment at all, and of those receiving treatment for PTSD and major depression, less than one-third are receiving evidence-based care.

2016-99 0340

Veteran Women: Mental Health–Related Consequences of Military Service

Source
American Journal of Nursing 2016 116 (11) 32-40

Author(s)
Ganzer, C.A.

Abstract
Abstract The last two decades have seen increasing numbers of women entering all branches of the US armed forces. Now that women in the military are no longer prohibited from holding direct combat positions, they are often exposed to traumatic events that place them at higher risk for mental health conditions.

2016-99 0341

What does the literature say about the needs of veterans in the areas of health?

Source
Nurse Education Today 2016 47 81-88

Author(s)
Hynes, C. and Thomas, M.

Abstract
Abstract This paper reports on a systematic review undertaken in 2013 aimed at identifying evidence and dismissing some of the myths surrounding the needs of the veteran community. Papers were retrieved from a wide range of sources to ensure
that literature covered the key areas of health concerns and focused also on time spent in service. Of the twenty eight papers reviewed categories relating to mental health (including PTSD and suicide), the use of alcohol, trauma, hearing loss, cancer and obesity were identified. Outcomes from the review established that while early service leavers were the most vulnerable there were also aspects within service that had an impact on future life events such as the type of leadership experienced, the cohesion of the unit and facing combat situations. The use of alcohol as a coping mechanism is also considered prevalent with adverse effects as is the worry of family situations at home. The impact of service life on the veteran, especially if suffering trauma will have long lasting psychological and physical outcomes, although it is recognised that veterans in the main have excellent physical and psychological strength and many physical illnesses are not greatly exaggerated from that of the general public.

2016-99 0342

Women Veterans with Depression in Veterans Health Administration Primary Care: An Assessment of Needs and Preferences

Source
Women’s Health Issues 2016 26 (6) 656-666

Author(s)

Abstract
Objective Depression is the most prevalent mental health condition in primary care (PC). Yet as the Veterans Health Administration increases resources for PC/mental health integration, including integrated care for women, there is little detailed information about depression care needs, preferences, comorbidity, and access patterns among women veterans with depression followed in PC.

Methods We sampled patients regularly engaged with Veterans Health Administration PC. We screened 10,929 (10,580 men, 349 women) with the two-item Patient Health Questionnaire. Of the 2,186 patients who screened positive (2,092 men, 94 women), 2,017 men and 93 women completed the full Patient Health Questionnaire-9 depression screening tool. Ultimately, 46 women and 715 men with probable major depression were enrolled and completed a baseline telephone survey. We conducted descriptive statistics to provide information about the depression care experiences of women veterans and to examine potential gender differences at baseline and at seven month follow-up across study variables.

Results Among those patients who agreed to screening, 20% of women (70 of 348) had probable major depression, versus
only 12% of men (1,243 of 10,505). Of the women, 48% had concurrent probable posttraumatic stress disorder and 65% reported general anxiety. Women were more likely to receive adequate depression care than men (57% vs. 39%, respectively; p < .05); 46% of women and 39% of men reported depression symptom improvement at the 7-month follow-up. Women veterans were less likely than men to prefer care from a PC physician (p < .01) at baseline and were more likely than men to report mental health specialist care (p < .01) in the 6 months before baseline. Conclusion and Implications for Practice PC/mental health integration planners should consider methods for accommodating women veterans unique care needs and preferences for mental health care delivered by health care professionals other than physicians.

See also

Hardiness, avoidance coping, and alcohol consumption in war veterans: A moderated-mediation study. Under Addictive Disorders.


Interplay between service era, PTSD symptom expression, and treatment completion among veterans. Under Post Traumatic Stress Disorder.


Military Veteran Cancer Survivors’ Preferences for a Program to Address Lifestyle Change and Psychosocial Wellness following Treatment. Under Oncology.


The Role of Organizational Factors in the Provision of Comprehensive Women’s Health in the Veterans Health Administration. Under Women’s Health.

Suicide Risk among Women Veterans in Distress: Perspectives of Responders on the Veterans Crisis Line. Under Women’s Health.
A bibliometric analysis of exertional heat stroke research in Web of Science.

Source
Military Medical Research 2016
Author(s)
Mao, Z., and Liu, C.,

Abstract
Background: Exertional heat stroke is a fatal condition and remains a health problem. This paper evaluates the publication trend regarding exertional heat stroke research between 1996 and 2015 using a bibliometric method. Method: Articles regarding exertional heat stroke research published between 1996 and December 2015 were searched for in the SCI-EXPANDED database of Web of Science. The search results were analyzed with regard to publication year; publication quantity regarding countries/regions, and authors; citation frequency; and journal distribution. CiteSpace (v3.6) was used for a document co-citation visualization analysis. Results: In total, 289 publications on heat stroke were located. After selection, 209 original articles conducted across 28 countries/regions and published in 83 journals were included in the analysis. The USA, Israel, and France were the most common locations for exertional heat stroke studies. The CiteSpace visualization cluster analysis showed that exertional heat stroke-related mortality and protective measures were constant concerns of research. Conclusions: Research related to exertional heat stroke has been continuous concerned. USA is still the leading country in this field.

British Military freezing cold injuries: a 13-year review

Source
Journal of the Royal Army Medical Corps 2016 162 pp413-418
Author(s)
Heil, K., Oakley, E., Wood, A.,

Abstract
Introduction Cold injuries have been a recurrent feature of warfare for millennia and continue to present during British Military operations today. Those affecting the peripheries are divided into freezing cold injury (FCI) and non-FCI. FCI occurs when tissue fluids freeze at around −0.5°C and is commonly referred to as frostnip or frostbite.

Method All FMED7 notes held at the Institute of Naval Medicine's Cold Weather Injury Clinic (CIC) from 2002 to 2014 were searched for the terms 'frostbite' and 'frostnip' and then analysed to identify common themes. Results In total 245 results were found and from these, 149 patients with a positive FCI diagnosis were identified and formed the cohort of this study. Royal Marines (RM) represented over 50% of patients and Arctic training in Norway accounted for over two thirds of the total cases. The extremities were almost always those areas which were affected by FCI. Further analysis of the RM cases showed the majority of those injured were of the most junior rank (Marine/Private or Lance Corporal).

Conclusions A lack of supporting climatic and activity data meant that it was difficult to draw additional conclusions from the data collected. In future, a greater emphasis should be placed on collection of climatic and additional data when FCIs are diagnosed. These data should be collated at the end of each deployment and published as was regularly done historically. It is hoped that these data could then be used as the starting point for an annual climatic study day, where issues related to FCIs could be discussed in a Tri-Service environment and lessons learned disseminated around all British Forces personnel.

2016-99 0345

Case ascertainment of heat illness in the British Army: evidence of under-reporting from analysis of Medical and Command notifications, 2009–2013

Source
Journal of the Royal Army Medical Corps 2016 162 pp428-433

Author(s)
Stacey, M., at al

Abstract
Background Heat illness in the Armed Forces is considered preventable. The UK military relies upon dual Command and Medical reporting for case ascertainment, investigation of serious incidents and improvement of preventive practices and policy. This process could be vulnerable to under-reporting.

Objectives To establish whether heat illness in the British Army has been under-reported, by reviewing concordance of reporting to the Army Incident Notification Cell (AINC) and the Army Health Unit (AHU) and to characterise the burden of heat illness reported by these means.
Methods Analysis of anonymised reporting databases held by the AHU and AINC, for the period 2009–2013. Results 565 unique cases of heat illness were identified. Annual concordance of reporting ranged from 9.6% to 16.5%. The overall rate was 13.3%. July was the month with the greatest number of heat illness reports (24.4% of total reporting) and the highest concordance rate (30%). Reports of heat illness from the UK (n=343) exceeded overseas notifications (n=221) and showed better concordance (17.1% vs 12.8%). The annual rate of reported heat illness varied widely, being greater in full-time than reservist personnel (87 vs 23 per100 000) and highest in full-time untrained personnel (223 per100 000). Conclusions The risk of heat illness was global, year-round and showed dynamic local variation. Failure to dual-report casualties impaired case ascertainment of heat illness across Command and Medical chains. Current preventive guidance, as applied in training and on operations, should be critically evaluated to ensure that risk of heat illness is reduced as low as possible. Clear procedures for casualty notification and surveillance are required in support of this and should incorporate communication within and between the two reporting chains.

2016-99 0346


Source
Journal of Special Operations Medicine 2016 16 (3) 30-35

Author(s)
d’Aranda,E., and Bordes,J.,

Abstract
Background: Management of critically ill patients in austere environments is a logistic challenge. Availability of oxygen cylinders for the mechanically ventilated patient may be difficult in such a context. One solution is to use a ventilator able to function with an oxygen concentrator (OC). Methods: We tested two Elisée™ 350 ventilators paired with SeQual Integra 10-OM oxygen concentrators (OC) (Chart Industries, http://www.chartindustries.com) and evaluated the delivered fraction of inspired oxygen (Fio2). Ventilators were connected to a test lung and Fio2 was measured and indicated by the ventilator. Continuous oxygen was generated by the OC from 0.5L/min to 10L/min, and administered by the specific inlet port of the ventilator. Several combinations of ventilator settings were evaluated to determine the factors affecting the delivered Fio2. Results: The Elisée 350 turbine ventilator is able to deliver a high Fio2 when functioning with an OC. However,
modifications of the ventilator settings such as an increase in minute ventilation, inspiratory-to-expiratory ratio, and positive end-expiratory pressure affect delivered Fio2 despite steady-state oxygen flow from the concentrator. Conclusion: OCs provide an alternative to oxygen cylinders for delivering high Fio2 with a turbine ventilator. Nevertheless, Fio2 must be monitored continuously, since it decreases when minute ventilation is increased.

2016-99 0347

Incidence of acute mountain sickness in UK Military Personnel on Mount Kenya

Source
Journal of the Royal Army Medical Corps 2016 162 pp465-469

Author(s)
Antonia Hazlerigg, DR Woods, and AJ Mellor.

Abstract
Background Acute mountain sickness (AMS) is a common problem of trekkers to high altitude. The UK military train at high altitude through adventurous training (AT) or as exercising troops. The ascent of Point Lenana at 4985 m on Mount Kenya is frequently attempted on AT. This study sought to establish the incidence of AMS within this population, to aid future planning for military activities at altitude.

Methods A voluntary questionnaire was distributed to all British Army Training Unit Kenya based expeditions attempting to ascend Mount Kenya during the period from February to April 2014. The questionnaire included twice daily Lake Louise and Borg (perceived exertion scale) self-scoring. All expeditions were planned around a 5-day schedule, which included reserve time for acclimatisation, illness and inclement weather.

Results Data were collected on 47 participants, 70% of whom reached the summit of Point Lenana. 62% (29/47) self-reported AMS (defined as Lake Louise score (LLS) ≥3) on at least one occasion during the ascent, and 34% (10/29) suffered severe AMS (LLS ≥6). Those who attempted the climb within 2 weeks of arrival in Kenya had a higher incidence of AMS (12/15 (80%) vs 17/32 (53%), p=0.077). Participants recording a high Borg score were significantly more likely to develop AMS (16/18 vs 9/21, p=0.003).

Conclusions This represents the first informative dataset for Mount Kenya ascents and altitude. The incidence of AMS during AT on Mount Kenya using this ascent profile is high. Adapting the current ascent profile, planning the ascent after time in country and reducing perceived exertion during the trek may reduce the incidence of AMS.
The prehospital management of avalanche victims

Source
Journal of the Royal Army Medical Corps 2016 162 pp406-412

Author(s)
Kornhall, D., Martens-Nielsen, J.

Abstract
Avalanche accidents are frequently lethal events with an overall mortality of 23%. Mortality increases dramatically to 50% in instances of complete burial. With modern day dense networks of ambulance services and rescue helicopters, health workers often become involved during the early stages of avalanche rescue. Historically, some of the most devastating avalanche accidents have involved military personnel. Armed forces are frequently deployed to mountain regions in order to train for mountain warfare or as part of ongoing conflicts. Furthermore, military units are frequently called to assist civilian organised rescue in avalanche rescue operations. It is therefore important that clinicians associated with units operating in mountain regions have an understanding of, the medical management of avalanche victims, and of the preceding rescue phase. The ensuing review of the available literature aims to describe the pathophysiology particular to avalanche victims and to outline a structured approach to the search, rescue and prehospital medical management.

Risk factors for heat illness among British soldiers in the hot Collective Training Environment

Source
Journal of the Royal Army Medical Corps 2016 162 pp434-439

Author(s)

Abstract
Background Heat illness is a preventable disorder in military populations. Measures that protect vulnerable individuals and
contribute to effective Immediate Treatment may reduce the impact of heat illness, but depend upon adequate understanding and awareness among Commanders and their troops.

Objective To assess risk factors for heat illness in British soldiers deployed to the hot Collective Training Environment (CTE) and to explore awareness of Immediate Treatment responses.

Methods An anonymous questionnaire was distributed to British soldiers deployed in the hot CTEs of Kenya and Canada. Responses were analysed to determine the prevalence of individual (Intrinsic) and Command-practice (Extrinsic) risk factors for heat illness and the self-reported awareness of key Immediate Treatment priorities (recognition, first aid and casualty evacuation).

Results The prevalence of Intrinsic risk factors was relatively low in comparison with Extrinsic risk factors. The majority of respondents were aware of key Immediate Treatment responses. The most frequently reported factors in each domain were increased risk by body composition scoring, inadequate time for heat acclimatisation and insufficient briefing about casualty evacuation.

Conclusions Novel data on the distribution and scale of risk factors for heat illness are presented. A collective approach to risk reduction by the accumulation of ‘marginal gains’ is proposed for the UK military. This should focus on limiting Intrinsic risk factors before deployment, reducing Extrinsic factors during training and promoting timely Immediate Treatment responses within the hot CTE.

2016-99 0350

A Skeletal Traction Technique for Proximal Femur Fracture Management in an Austere Environment.

Source
Journal of Special Operations Medicine 2016 16 (3) 1-4

Author(s)
Lidwell,D., and Meghoo,C.A.,

Abstract
Skeletal traction is a useful technique for managing proximal femur fractures in austere environments where fracture stabilization for this injury is difficult. We present a technique and a construct appropriate for field use that facilitates patient evacuation, and we provide guidelines for the use of this technique by an advanced medical provider managing these injuries. The objectives of this article are to enable to reader to (1) recognize the role of skeletal traction in managing proximal femur fractures in an austere environment, (2) identify the key steps in placing transfemoral skeletal traction pins, and (3) identify options and requirements for building a traction
construct in resource-limited environments.

2016-99 0351

**Sudden onset hemiplegia at high altitude**

Source
Journal of the Royal Army Medical Corps 2016 162 pp470-472

Author(s)
Henry C Chandler and A Mellor.

Abstract
Travel to high altitude and the incumbent exposure to hypobaric hypoxia leads to a prothrombotic state. This may increase the likelihood of thromboembolic events, including stroke, in otherwise healthy individuals. While there have been sporadic anecdotal reports of 'stroke-like' syndromes at high altitude for over 100 years, there are surprisingly few detailed reports supported by imaging.

This report describes a case of posterior circulation infarct thought to be due to a paradoxical embolus through a patent foramen ovale. The relationship between high-altitude physiology, increased incidence of thromboembolism and the significance of patent foramen are discussed in the report.

2016-99 0352

**Walking the Plank.**

Source
Journal of Special Operations Medicine 2016 16 (3) 57-62

Author(s)
Banting,J., and Meriano,T.,.

Abstract
CONCEPTS AND OBJECTIVES: The series objective is to review various clinical conditions/ presentations, including the latest evidence on management, and to dispel common myths. In the process, core knowledge and management principles are enhanced. A clinical case will be presented. Cases will be drawn from real life but phrased in a context that is applicable to the Special Operations Forces (SOF) or tactical emergency medical support (TEMS) environment. Details will be presented in such a way that the reader can follow along and identify how they would manage the case clinically depending on their
experience and environment situation. Commentary will be provided by currently serving military medical technicians. The medics and author will draw on their SOF experience to communicate relevant clinical concepts pertinent to different operational environments including SOF and TEMS. Commentary and input from active special operations medical technicians will be part of the feature.

See also

**Thrombotic Microangiopathy Syndrome in a Basic Underwater Demolition/SEAL Student.** Under Naval Medicine.
Military Medics' Insight Into Providing Women's Health Care in Deployed Settings.

Source
Military Medicine 2016 181 (11) e1608-e1614

Author(s)
Wilson, C., and Corrigan, R.,

Abstract
Objectives: To gain better understanding of the military medics' (Navy Independent Duty Corpsman, Air Force Independent Duty Medical Technician, and Army Health Care Specialist, experiences providing health care for women in the deployed or ship setting. Methods: The researchers used an exploratory, descriptive design informed by ethnography. A total of 86 individuals participated in the focus group and individual interviews. Results: Three themes were identified: Training Fidelity, Advocate Leader, and The Challenges of Providing Patient Care. Discussion: Experience in austere settings has convinced a number of medics they need additional women's health care topics in every facet of their training. They further suggested such training should be provided in stepwise fashion, beginning with initial, technical training courses and continuing through medical skills sustainment platforms. They were especially interested in basic women's health concerns. Topics suggested included vaginal infections, urinary tract infections, and birth control management. Conclusions: Although the advancement of women in the military continues to make strides—it is clear the availability of quality women's health care that women feel comfortable accessing may be its defining limitation. Medics are an excellent conduit for reinforcing these healthy messages and providing first-line treatment to deployed military women.

The Role of Organizational Factors in the Provision of Comprehensive Women's Health in the Veterans Health Administration.

Source
Women's Health Issues 2016 26 (6) 648-655

Author(s)

Abstract
Background Increasing numbers of women veterans present an organizational challenge to a health care system that
historically has served men. Women veterans require comprehensive women's health services traditionally not provided by the Veterans Health Administration. Objective: Examine the association of organizational factors and adoption of comprehensive women's health care. Study Design: Cross-sectional analysis of the 2007 Veterans Health Administration National Survey of Women Veterans Health Programs and Practices. Methods: Dependent measures included a) model of women's health care: separate women's health clinic (WHC), designated women's health provider in primary care (DWHP), both (WHC+DWHP), or neither and b) the availability of five women's health services: cervical cancer screening and evaluation and management of vaginitis, menstrual disorders, contraception, and menopause. Exposure variables were organizational factors drawn from the Greenhalgh model of diffusion of innovations including measures of structure, absorptive capacity, and system readiness for innovation. Results: The organizational factors of a gynecology clinic, an academic affiliation with a medical school, a women's health representative on one or more high-impact committees, and a greater caseload of women veterans were more common at sites with WHCs and WHC+DWHPs, compared with sites relying on general primary care with or without a DWHP. Academic affiliation and high-impact committee involvement remained significant in multivariable analysis. Sites with WHCs or WHC+DWHPs were more likely to offer all five women's health services. Conclusion: Facilities with greater apparent absorptive capacity (academic affiliation and women's health representation on high-impact committees) are more likely to adopt WHCs. Facilities with separate WHCs are more likely to deliver a package of women's health services, promoting comprehensive care for women veterans.

2016-99 0355

Suicide Risk among Women Veterans in Distress: Perspectives of Responders on the Veterans Crisis Line.

Source
Women's Health Issues 2016 26 (6) 667-673

Author(s)

Abstract
Background: Women veterans are at increasingly high risk of suicide, but little is known about the concerns and needs of this population. This is, in part, owing to the low base rate of suicide and the inability to conduct retrospective interviews with individuals who died. In this study, we used a qualitative approach to gain insight about the concerns and nature of comments regarding suicidal ideation and intent among women veterans calling the Veterans Crisis Line (VCL). Methods Fifty-
four VCL call responders were interviewed in the spring of 2015. They were asked about the concerns and level of suicide risk of women veteran callers with whom they have spoken and about the ways in which women callers are similar to or different from men callers. Interviews were transcribed and thematic analyses were conducted to examine patterns or themes emerging from the data. Findings Military sexual trauma and non-suicidal self-harm were two commonly reported concerns of women veteran callers according to responders. VCL responders also noted differences between men and women veteran callers, including differences in clinical presentation, suicidal means, and protective factors. Conclusions Our findings shed light on potential avenues to prevent suicide among women veterans, although we spoke to VCL responders about their impressions, rather than to women veterans themselves. Efforts to 1) prevent and treat the consequences of military sexual trauma, 2) recognize, prevent, and treat non-suicidal self-harm, and 3) restrict access to lethal means most commonly reported among women veteran callers may be helpful to mitigate suicide risk in this vulnerable group of veterans.

2016-99 0356

Women service members, veterans, and their families:
What we know now

Source
Nurse Education Today 2016 47 23-28

Author(s)
Mankowski,M. and Everett,J.E.

Abstract
Summary: The purpose of this paper is to highlight what we know now about female service members, veterans, and their families. The experiences of U.S. female service members and veterans are more complex than previous eras and significant demographic changes have taken place. U.S. female veterans are more likely to be younger, come from ethnic and racial minority groups, have children, and combat exposure. U.S. female service members report high rates of sexual violence and they are more vulnerable to homelessness and unemployment when compared to previous female military cohorts. U.S. female service members and veterans are also at higher risk for significant mental and health issues. Children and adolescents of women service members and veterans may also carry a heavy burden as a result of lengthy deployments. A majority of female service members and veterans will utilize community based healthcare and social services, therefore, it is essential that all healthcare providers understand the unique needs of this cohort of women. Practice implications at the micro, mezzo, and macro levels are discussed. Qualitative and
quantitative studies that expand our understanding of women's experience in the military and as veterans are encouraged.

See also

A Review of Unique Considerations for Female Veterans With Amputation. Under Rehabilitation.

Women Veterans with Depression in Veterans Health Administration Primary Care: An Assessment of Needs and Preferences. Under Veteran's Health.
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