

CIHEC

*Complementary and Integrative
Health Evaluation Center*



**The VA Office of Patient Centered Care and Cultural Transformation's
and
VA Complementary and Integrative Health Evaluation Center's**

**Library of Research Articles
on Veterans and Complementary and Integrative Health
Therapies**

April, 2020



Library of Research Articles on Veterans and Complementary and Integrative Health Therapies

We are pleased to announce the VA Office of Patient Centered Care and Cultural Transformation's (OPCC&CT) and VA Complementary and Integrative Health Evaluation Center's (CIHEC) "*Library of Research Articles on Veterans and Complementary and Integrative Health Therapies*".

The Library is comprised of two sections:

- 1) Articles organized by type of CIH therapies, among the nine therapies that the VA considers medical treatments and
- 2) Articles organized by type of health outcome, among nine outcomes (i.e., pain, anxiety, depression, post-traumatic stress disorder (PTSD), substance/opioid abuse, stress and wellbeing, insomnia, suicide, and Veteran caregiver wellbeing and VA employee wellbeing).

The Library provides the citation (with links to either the actual article or to its page in PubMed) as well as the abstract, if available. Although every attempt was made to include all relevant studies conducted, it is possible we missed some and will gladly include additional studies when found. The Library will be updated biannually, with the next update available in June 2020. It can be found at the OPCC&CT website at <https://www.va.gov/wholehealth/> and the CIHEC website at <https://www.hsrd.research.va.gov/centers/cshiip.cfm>.

For questions on the Library, please contact both Stephanie L. Taylor, PhD (Director of CIHEC) Stephanie.Taylor8@va.gov and Mr. Mike McGowan at Michael.McGowan3@va.gov if you have questions or additional relevant studies for inclusion.

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Acupuncture	
Citation	Abstract
<p>Arhin AO, Gallop K, Mann J, Cannon S, Tran K, Wang MC. Acupuncture as a Treatment Option in Treating Posttraumatic Stress Disorder-Related Tinnitus in War Veterans: A Case Presentation. J Holist Nurs. 2016</p>	<p>Although close associations between tinnitus and posttraumatic stress disorder (PTSD) among war veterans has been documented, there is limited research that explores evidence-based, efficacious interventions to treat the condition in this particular population. This article presents a case of three war veterans with PTSD symptoms who received a series of acupuncture treatments for tinnitus with positive outcomes. Even though the article presents cases of only three veterans and was based on self-reports, there were very clear trends on how veterans with tinnitus symptoms responded to acupuncture treatments. Information generated from this case presentation is a good starting place in exploring evidence-based approaches in treating tinnitus symptoms in war veterans with PTSD.</p>
<p>Chang BH, Sommers E. Acupuncture and relaxation response for craving and anxiety reduction among military veterans in recovery from substance use disorder. Am J Addict. 2014 Mar-Apr;23(2):129-36. doi: 10.1111/j.1521-0391.2013.12079.x. Epub 2013 Aug 30.</p>	<p>BACKGROUND AND OBJECTIVES: Substance use disorder (SUD) is a major health issue, especially among military veterans. We previously reported the effects of auricular acupuncture and the relaxation response (RR) on reducing craving and anxiety following 10-week interventions among veterans who were in recovery from SUDs. Our current analysis examines effects following each intervention session and RR daily practice.</p> <p>METHODS: We conducted a three-arm randomized controlled trial on residents of a homeless veteran rehabilitation program. Sixty-Seven enrolled participants were randomly assigned to acupuncture (n=23), RR (n=23), or usual care (n=21). Participants in the two intervention groups rated their degree of craving for substance on a scale of 1-10 and anxiety levels on a scale of 1-4 (total score 20-80) before and after each intervention session. Mixed effects regression models were used for analysis.</p> <p>RESULTS: Craving and anxiety levels decreased significantly following one session of acupuncture (-1.04, p=.0001; -8.83, p<.0001) or RR intervention (-.43, p=.02; -4.64, p=.03). The level of craving continued to drop with additional intervention sessions (regression coefficient b=-.10, p=.01, and b=-.10, p=.02 for acupuncture and RR groups, respectively). Number of daily practice days of RR-eliciting techniques is also associated with reduction in craving ratings (b=-.02, p=.008).</p> <p>CONCLUSIONS: Findings demonstrate the value of attending regular acupuncture and RR-eliciting intervention sessions, as well as the daily practice of RR-eliciting techniques.</p> <p>SCIENTIFIC SIGNIFICANCE: Substance addiction is a complex disease and effective treatment remains a challenge. Our study findings add to the scientific evidence of these two non-pharmaceutical approaches for SUD.</p>

<p>Conboy L, Gerke T, Hsu KY, St John M, Goldstein M, Schnyer R. The Effectiveness of Individualized Acupuncture Protocols in the Treatment of Gulf War Illness: A Pragmatic Randomized Clinical Trial. PLoS One. 2016 Mar 31;11(3):e0149161. doi: 10.1371/journal.pone.0149161. eCollection 2016.</p>	<p>BACKGROUND: Gulf War Illness is a Complex Medical Illness characterized by multiple symptoms, including fatigue, sleep and mood disturbances, cognitive dysfunction, and musculoskeletal pain affecting veterans of the first Gulf War. No standard of care treatment exists.</p> <p>METHODS: This pragmatic Randomized Clinical Trial tested the effects of individualized acupuncture treatments offered in extant acupuncture practices in the community; practitioners had at least 5 years of experience plus additional training provided by the study. Veterans with diagnosed symptoms of Gulf War Illness were randomized to either six months of biweekly acupuncture treatments (group 1, n = 52) or 2 months of waitlist followed by weekly acupuncture treatments (group 2, n = 52). Measurements were taken at baseline, 2, 4 and 6 months. The primary outcome is the SF-36 physical component scale score (SF-36P) and the secondary outcome is the McGill Pain scale.</p> <p>RESULTS: Of the 104 subjects who underwent randomization, 85 completed the protocol (82%). A clinically and statistically significant average improvement of 9.4 points (p = 0.03) in the SF-36P was observed for group 1 at month 6 compared to group 2, adjusting for baseline pain. The secondary outcome of McGill pain index produced similar results; at 6 months, group 1 was estimated to experience a reduction of approximately 3.6 points (p = 0.04) compared to group 2.</p> <p>CONCLUSIONS: Individualized acupuncture treatment of sufficient dose appears to offer significant relief of physical disability and pain for veterans with Gulf War Illness. This work was supported by the Office of the Assistant Secretary of Defense for Health Affairs through the Gulf War Illness Research Program under Award No. W81XWH-09-2-0064. Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the Department of Defense.</p>
<p>Crawford P, Penzien DB, Coeytaux R. Reduction in Pain Medication Prescriptions and Self-Reported Outcomes Associated with Acupuncture in a Military Patient Population. Med Acupunct. 2017 Aug 1;29(4):229-231. doi: 10.1089/acu.2017.1234. PubMed PMID: 28874924; PubMed Central PMCID: PMC5580367</p>	<p>Background: Acupuncture is being offered to patients as part of routine medical care in selected military bases in the United States. There is little published information about the clinical outcomes associated with acupuncture in these clinical settings. Objective: The goal of this research was to assess clinical outcomes observed among adult patients who received acupuncture treatments at a United States Air Force medical center. Materials and Methods: This retrospective chart review was performed at the Nellis Family Medicine Residency in the Mike O'Callaghan Military Medical Center at Nellis Air Force Base in Las Vegas, NV. The charts were from 172 consecutive patients who had at least 4 acupuncture treatments within 1 year. The main outcome measures were prescriptions for opioid medications, muscle relaxants, benzodiazepines, and nonsteroidal anti-inflammatory drugs (NSAIDs) in the 60 days prior to the first acupuncture session and in the corresponding 60 days 1 year later; and Measure Yourself Medical Outcome Profile (MYMOP2) values for symptoms, ability to perform activities, and quality of life. Results: Opioid prescriptions decreased by 45%, muscle relaxants by 34%, NSAIDs by 42%, and benzodiazepines by 14%. MYMOP2 values decreased 3.50-3.11 (P < 0.002) for question 1, 4.18-3.46 (P < 0.00001) for question 3, and 2.73-2.43 (P < 0.006) for question 4. Conclusions: In this military patient population, the number of opioid prescriptions decreased and patients reported improved symptom control, ability to function, and sense of well-being after receiving courses of acupuncture by their primary care physicians.</p>

<p>Engel CC, Cordova EH, Benedek DM, Liu X, Gore KL, Goertz C, Freed MC, Crawford C, Jonas WB, Ursano RJ. Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder. Med Care. 2014 Dec;52(12 Suppl 5):S57-64. doi: 10.1097/MLR.000000000000237. PubMed PMID: 25397825.</p>	<p>BACKGROUND: Initial posttraumatic stress disorder (PTSD) care is often delayed and many with PTSD go untreated. Acupuncture appears to be a safe, potentially nonstigmatizing treatment that reduces symptoms of anxiety, depression, and chronic pain, but little is known about its effect on PTSD.</p> <p>METHODS: Fifty-five service members meeting research diagnostic criteria for PTSD were randomized to usual PTSD care (UPC) plus eight 60-minute sessions of acupuncture conducted twice weekly or to UPC alone. Outcomes were assessed at baseline and 4, 8, and 12 weeks postrandomization. The primary study outcomes were difference in PTSD symptom improvement on the PTSD Checklist (PCL) and the Clinician-administered PTSD Scale (CAPS) from baseline to 12-week follow-up between the 2 treatment groups. Secondary outcomes were depression, pain severity, and mental and physical health functioning. Mixed model regression and t test analyses were applied to the data.</p> <p>RESULTS: Mean improvement in PTSD severity was significantly greater among those receiving acupuncture than in those receiving UPC (PCLΔ=19.8±13.3 vs. 9.7±12.9, P<0.001; CAPSΔ=35.0±20.26 vs. 10.9±20.8, P<0.0001). Acupuncture was also associated with significantly greater improvements in depression, pain, and physical and mental health functioning. Pre-post effect-sizes for these outcomes were large and robust.</p> <p>CONCLUSIONS: Acupuncture was effective for reducing PTSD symptoms. Limitations included small sample size and inability to parse specific treatment mechanisms. Larger multisite trials with longer follow-up, comparisons to standard PTSD treatments, and assessments of treatment acceptability are needed. Acupuncture is a novel therapeutic option that may help to improve population reach of PTSD treatment.</p>
<p>Fan AY, Miller DW, Bolash B, Bauer M, McDonald J, Faggert S, He H, Li YM, Matecki A, Camardella L, Koppelman MH, Stone JAM, Meade L, Pang J. Acupuncture's Role in Solving the Opioid Epidemic: Evidence, Cost-Effectiveness, and Care Availability for Acupuncture as a Primary, Non-Pharmacologic Method for Pain Relief and Management-White Paper 2017. J Integr Med. 2017 Nov;15(6):411-425. doi: 10.1016/S2095-4964(17)60378-9. PubMed PMID: 29103410.</p>	<p>The United States (U.S.) is facing a national opioid epidemic, and medical systems are in need of non-pharmacologic strategies that can be employed to decrease the public's opioid dependence. Acupuncture has emerged as a powerful, evidence-based, safe, cost-effective, and available treatment modality suitable to meeting this need. Acupuncture has been shown to be effective for the management of numerous types of pain conditions, and mechanisms of action for acupuncture have been described and are understandable from biomedical, physiologic perspectives. Further, acupuncture's cost-effectiveness can dramatically decrease health care expenditures, both from the standpoint of treating acute pain and through avoiding addiction to opioids that requires costly care, destroys quality of life, and can lead to fatal overdose. Numerous federal regulatory agencies have advised or mandated that healthcare systems and providers offer non-pharmacologic treatment options for pain. Acupuncture stands out as the most evidence-based, immediately available choice to fulfil these calls. Acupuncture can safely, easily, and cost-effectively be incorporated into hospital settings as diverse as the emergency department, labor and delivery suites, and neonatal intensive care units to treat a variety of commonly seen pain conditions. Acupuncture is already being successfully and meaningfully utilized by the Veterans Administration and various branches of the U.S. Military, in some studies demonstrably decreasing the volume of opioids prescribed when included in care.</p>

<p>Glynn LH, Chen JA, Dawson TC, Gelman H, Zeliadt SB. Bringing chronic-pain care to rural veterans: A telehealth pilot program description. Psychol Serv. 2020 Jan 16.</p>	<p>Opioid-related harms disproportionately affect rural communities. Recent research-based policy changes have called for reductions in opioid prescribing and substitution of safe and effective alternatives to opioids for treating chronic pain, but such alternatives are often difficult to access in rural areas. Telehealth services can help address this disparity by bringing evidence-based, biopsychosocial chronic-pain services to rural and underserved patients with chronic pain. This article describes a 2-year pilot project for delivering chronic-pain care by pain specialists from central hubs at Veterans Health Administration (VA) medical centers to spokes at VA community-based outpatient clinics (CBOCs). The VA Puget Sound Pain Telehealth pilot program offered pain education classes, cognitive-behavioral therapy groups, opioid-safety education, and acupuncture education. The program delivered 501 encounters to patients from 1 hub to 4 CBOC spoke sites from 2016 to 2018, and supported training, administration, equipment acquisition, and grant-writing. The quality-improvement project was rolled out using existing local resources. We present initial findings about the patients who utilized Pain Telehealth, share lessons learned, and discuss future directions for expansion. (PsycINFO Database Record (c) 2020 APA, all rights reserved).</p>
<p>Halpin SN et al. J Altern Complement Med. (2014) Determining attitudes toward acupuncture: a focus on older U.S. veterans. Halpin SN et al. J Altern Complement Med. (2014)</p>	<p>OBJECTIVE: To explore whether factors related to attitudes toward acupuncture use in a population of older veterans is similar to previously identified motivators for nonveterans.</p> <p>METHODS: A sample of veterans was asked to complete a questionnaire, which included questions on sociodemographic traits, history of acupuncture, chronic diseases, and the Health Belief Model (HBM). Data reduction was performed by using principal components analysis to identify major factors among the HBM responses. Linear regression was performed to evaluate variables that may contribute to attitudes toward acupuncture.</p> <p>RESULTS: There were 402 completed questionnaires. Principal components analysis yielded three significant factors. Linear regression resulted in a model that explained 35% of the variance for positive attitudes toward acupuncture: Age, race, religion, access to acupuncture, self-efficacy for nonpharmacologic treatments, and the presence of one or more physical and mental chronic health condition were significantly related to positive attitudes toward acupuncture.</p> <p>CONCLUSIONS: Factors related to attitudes toward acupuncture were very similar to factors identified in other literature for nonveterans, with the exception of income and education. The findings suggest that availability of treatment influences attitudes toward acupuncture.</p>

<p>Halpin SN, Huang W, Perkins MM. Physicians' influence on veterans' decision to use acupuncture. Patient Educ Couns. 2014 Nov;97(2):211-5. doi: 10.1016/j.pec.2014.07.021. Epub 2014 Jul 22.</p>	<p>OBJECTIVE: To compare patients' acupuncture use with physician's attitudes toward and history of referral for acupuncture.</p> <p>METHODS: A questionnaire was administered to patients of the Atlanta Veterans Affairs Medical Center and the physicians whom they identified as most influencing their healthcare decisions. A total of 114 patients were matched with 33 physicians.</p> <p>RESULTS: Physicians' history of referral was not significantly related to patients' acupuncture use. Physicians' belief that acupuncture would increase patient satisfaction, however, was associated with higher rates of patient acupuncture use (p=0.01). Qualitative analysis of an open-ended question that probed further into physicians' attitudes regarding acupuncture revealed three key themes: lack of knowledge about the treatment; misperceptions regarding availability of acupuncture at VA; and lack of VA providers to meet demand.</p> <p>CONCLUSION: These results indicate that physicians' referral patterns are not associated with patients' acupuncture use. However, some evidence shows a link between patients' acupuncture use and physicians' beliefs that the treatment will increase patient satisfaction, showing that physician attitudes may have some influence on patients' acupuncture use.</p> <p>PRACTICE IMPLICATIONS: In order to cultivate shared-decision making between patients and their physicians it will be important to address gaps in provider knowledge about acupuncture and its availability.</p>
<p>Halpin SN, Huang WH, Perkins MM. Comparisons between Body Needle Acupuncture, Auricular Acupuncture, and Auricular Magnet Therapy Given to Veterans Suffering from Chronic Pain. 2015</p>	<p>No known research has investigated patients' attitudes toward different acupuncture techniques, including those that require less training to administer and potentially could be made more widely available in order to meet the growing demand for acupuncture. The aim of this study was to determine attitudes toward and expectations regarding three different types of acupuncture. The cohort included all patients (n=114) who received acupuncture treatment at the Atlanta Veterans Affairs Medical Center between May 2012 and May 2014. The patients were mailed questionnaires. Patients who agreed to be contacted by phone also participated in semi-structured telephone interviews. The respondents to the mailed surveys (n=72) varied in their demographics and attitudes toward experiences with different types of acupuncture. Of these, a subset of respondents also completed semi-structured telephone interviews (n=45). Thematic analysis of the data revealed three key themes, including (1) perceived time commitment versus return on investment; (2) anxiety, pain, and fear of needles; and (3) the importance of the patient/clinician relationship. Findings showed that the quality of the patient/clinician relationship was a critical factor that shaped the respondents' attitudes toward the different treatment options and also influenced satisfaction with treatment. Patients who were disinclined toward needles and those who wanted longer-lasting pain relief were more likely to endorse auricular magnet therapy.</p>

<p>Hempel S, Taylor SL, Solloway MR, Miake Lye IM, Beroes JM, Shanman R, Booth MJ, Siroka AM, Shekelle PG. Evidence Map of Acupuncture [Internet]. Washington (DC): Department of Veterans Affairs; 2014 Jan. Available From http://www.ncbi.nlm.nih.gov/books/NBK185072/PubMed PMID: 24575449.</p>	<p>Many Veterans desire complementary and alternative medicine or integrative medicine modalities such as acupuncture, both for treatment and for the promotion of wellness. However, the effectiveness and adverse events associated with acupuncture are not firmly established. Given the VA's desire to promote evidence-based practice, this evidence mapping project will help provide guidance to VA leadership about the distribution of evidence to inform policy and clinical decision making. In general, acupuncture is the stimulation of specific acupuncture points through penetration of the skin with needles, which aims to correct imbalances in the flow of qi, a concept of energy in traditional Chinese medicine (TCM), through meridians (ie, energy channels). The available published literature on acupuncture is extensive. PubMed searches in 2013 identified almost 20,000 citations with the term “acupuncture” and almost 1,500 randomized controlled trials (RCTs) with “acupuncture” in the title. Not surprisingly, a large number of systematic reviews and meta-analyses have been published to-date, and even a number of “reviews of reviews” are available in the published literature on acupuncture in general or for a specific clinical condition. Results from existing reviews of reviews about the effectiveness of acupuncture are non-conclusive. A systematic review of systematic reviews of acupuncture published between 1996 and 2005 included 35 reviews. The overview noted that 12 reviews reported support for acupuncture and 6 reported strong support; however, when applying strict inclusion criteria, such as randomized and double blind studies, good evidence of no benefit was shown. In 2007, Adams compiled a “Brief Overview - A summary of the evidence for use of acupuncture from systematic reviews and meta-analyses” for the Veterans Health Administration Office of Patient Care Services Technology Assessment Program. The report included 42 systematic reviews published since 2002 and concluded that higher quality studies are only beginning to emerge, the evidence base is heterogeneous, and the review results highlight the overall poor quality of studies and reporting. Thus, it is timely to assess the current state of reviews of acupuncture.</p>
<p>Huang W, Johnson TM, Kutner NG, Halpin SN, Weiss P, Griffiths PC, Bliwise DL. Acupuncture for Treatment of Persistent Disturbed Sleep: A Randomized Clinical Trial in Veterans With Mild Traumatic Brain Injury and Posttraumatic Stress Disorder. J Clin Psychiatry. 2018 Dec</p>	<p>OBJECTIVE: To evaluate real, as compared with sham, acupuncture in improving persistent sleep disturbance in veterans with mild traumatic brain injury (mTBI) and posttraumatic stress disorder (PTSD).</p> <p>METHODS: This sham-controlled randomized clinical trial at a US Department of Veterans Affairs Medical Center (2010-2015) included 60 veterans aged 24-55 years (mean of 40 years) with history of mTBI of at least 3 months and refractory sleep disturbance. Most of these participants (66.7%) carried a concurrent DSM-IV clinical diagnosis of PTSD. For the present study, they were randomized into 2 groups and stratified by PTSD status using the PTSD Checklist-Military Version. Each participant received up to 10 treatment sessions. The primary outcome measure was change in baseline-adjusted global Pittsburgh Sleep Quality Index (PSQI) score following intervention. Secondary outcomes were wrist-actigraphy-assessed objective sleep measurements. Comorbid PTSD was analyzed as a covariate.</p> <p>RESULTS: Mean (SD) preintervention global PSQI score was 14.3 (3.2). Those receiving real acupuncture had a global PSQI score improvement of 4.4 points (relative to 2.4 points in sham, P = .04) and actigraphically measured sleep efficiency (absolute) improvement of 2.7% (relative to a decrement of 5.3% in sham, P = .0016). Effective blinding for active treatment was maintained in the study. PTSD participants presented with more clinically significant sleep difficulties at baseline; acupuncture was effective for both those with and without PTSD.</p> <p>CONCLUSIONS: Real acupuncture, compared with a sham needling procedure, resulted in a significant improvement in sleep measures for veterans with mTBI and disturbed sleep, even in the presence of PTSD. These results indicate that an alternative-medicine treatment modality like acupuncture can provide clinically significant relief for a particularly recalcitrant problem affecting large segments of the veteran population.</p>

<p>Hull A, Reinhard M, McCarron K, Allen N, Jecmen MC, Akhter J, Duncan A, Soltes K. Acupuncture and meditation for military veterans: first steps of quality management and future program development. Glob Adv Health Med. 2014 Jul;3(4):27-31. doi: 10.7453/gahmj.2013.050.</p>	<p>Veterans of all war eras have a high rate of chronic disease, mental health disorders, and chronic multi-symptom illnesses (CMI).(1-3) Many veterans report symptoms that affect multiple biological systems as opposed to isolated disease states. Standard medical treatments often target isolated disease states such as headaches, insomnia, or back pain and at times may miss the more complex, multisystem dysfunction that has been documented in the veteran population. Research has shown that veterans have complex symptomatology involving physical, cognitive, psychological, and behavioral disturbances, such as difficult to diagnose pain patterns, irritable bowel syndrome, chronic fatigue, anxiety, depression, sleep disturbance, or neurocognitive dysfunction.(2-4) Meditation and acupuncture are each broad-spectrum treatments designed to target multiple biological systems simultaneously, and thus, may be well suited for these complex chronic illnesses. The emerging literature indicates that complementary and integrative medicine (CIM) approaches augment standard medical treatments to enhance positive outcomes for those with chronic disease, mental health disorders, and CMI.(5-12.).</p>
<p>Jonas WB, Bellanti DM, Paat CF, Boyd CC, Duncan A, Price A, Zhang W, French LM, Chae H. A Randomized Exploratory Study to Evaluate Two Acupuncture Methods for the Treatment of Headaches Associated with Traumatic Brain Injury. Med Acupunct. 2016 Jun 1;28(3):113-130.</p>	<p>Background: Headaches are prevalent among Service members with traumatic brain injury (TBI); 80% report chronic or recurrent headache. Evidence for nonpharmacologic treatments, such as acupuncture, are needed. Objective: The aim of this research was to determine if two types of acupuncture (auricular acupuncture [AA] and traditional Chinese acupuncture [TCA]) were feasible and more effective than usual care (UC) alone for TBI-related headache. Materials and Methods:Design: This was a three-armed, parallel, randomized exploratory study. Setting: The research took place at three military treatment facilities in the Washington, DC, metropolitan area. Patients: The subjects were previously deployed Service members (18-69 years old) with mild-to-moderate TBI and headaches. Intervention: The interventions explored were UC alone or with the addition of AA or TCA. Outcome Measures: The primary outcome was the Headache Impact Test (HIT). Secondary outcomes were the Numerical Rating Scale (NRS), Pittsburgh Sleep Quality Index, Post-Traumatic Stress Checklist, Symptom Checklist-90-R, Medical Outcome Study Quality of Life (QoL), Beck Depression Inventory, State-Trait Anxiety Inventory, the Automated Neuropsychological Assessment Metrics, and expectancy of outcome and acupuncture efficacy. Results: Mean HIT scores decreased in the AA and TCA groups but increased slightly in the UC-only group from baseline to week 6 [AA, -10.2% (-6.4 points); TCA, -4.6% (-2.9 points); UC, +0.8% (+0.6 points)]. Both acupuncture groups had sizable decreases in NRS (Pain Best), compared to UC (TCA versus UC: P = 0.0008, d = 1.70; AA versus UC: P = 0.0127, d = 1.6). No statistically significant results were found for any other secondary outcome measures. Conclusions: Both AA and TCA improved headache-related QoL more than UC did in Service members with TBI.</p>
<p>Madsen C, Patel A, Vaughan M, Koehlmoos T. Use of Acupuncture in the United States Military Healthcare System. Med Acupunct. 2018 Feb 1;30(1):33-38. doi: 10.1089/acu.2017.1260.</p>	<p>Objectives: The Military Healthcare System (MHS) shows increasing interest in acupuncture as an alternative to opioids for pain control. However, specific factors associated with this procedure in the MHS are not well-described in literature. This study examines usage within the MHS to determine patterns among the diagnoses, provider types, and facilities associated with acupuncture. Materials and Methods: Acupuncture-treated patients were identified from TRICARE claims data in the MHS Data Repository as having at least one acupuncture treatment in fiscal year (FY) 2014. Bivariate analysis was performed to determine demographics, diagnoses, and number of visits, for both active-duty and nonactive-duty personnel. Descriptive statistics were used to show associated provider and facility types. Results: A total of 15,761 people received acupuncture in the MHS in FY 2014. Use of acupuncture was greater for Army service, white race, and senior enlisted rank overall, and for males ages 26-35 among active-duty and females ages 46-64 among nonactive-duty beneficiaries. A cumulative 76% of diagnoses were for musculoskeletal or nerve and system issues. Approximately 60% of patients received acupuncture from physicians, 16% from physical therapists or chiropractors, and 9.7% from physician extenders. Specific acupuncture techniques (traditional, auricular, etc.) could not be determined from the data set. Conclusions: The most common diagnoses associated with acupuncture are consistent with pain management. However, full analysis is hampered by inconsistent coding and lack of granularity regarding specific techniques. Given the popularity of acupuncture in the MHS, further research is necessary to explore the full scope of this intervention.</p>

<p>Olson JL. Licensed Acupuncturists Join the Veterans Health Administration. Med Acupunct. 2018 Oct 1;30(5):248-251. doi: 10.1089/acu.2018.1298. Epub 2018 Oct 15.</p>	<p>This article introduces changes occurring in the Veterans Health Administration (VHA) with respect to the delivery of acupuncture. The VHA has published a new occupation code and job qualification standard allowing licensed acupuncturists to practice at the VHA medical centers. This policy shift comes at a time of great need for complementary and integrative health (CIH) options for veterans as identified by the advancing research, policies, and legislation that support CIH. The VHA initiatives include fostering an understanding of the distinct profession of licensed acupuncturists, developing an appreciation of the emerging evidence for acupuncture, and creating the cultural shift to support a wider view of CIH services. Historically, acupuncture was provided in the VHA mostly by physician-acupuncturists and chiropractic acupuncturists. The publication of a qualification standard for licensed acupuncturists allows the VHA to increase its provider base and create cost savings for the delivery of acupuncture. This move requires overcoming barriers to the integration of licensed acupuncturists into the VHA system. The goal is to increase the utilization of acupuncture among veterans.</p>
<p>Redd D, Kuang J, Zeng-Treitler O. Differences in nationwide cohorts of acupuncture users identified using structured and free text medical records. AMIA Annu Symp Proc. 2014 Nov 14;2014:1002-9. eCollection 2014.</p>	<p>Integrative medicine including complementary and alternative medicine (CAM) has become more available through mainstream health providers. Acupuncture is one of the most widely used CAM therapies, though its efficacy for treating various conditions requires further investigation. To assist with such investigations, we set out to identify acupuncture patient cohorts using a nationwide clinical data repository. Acupuncture patients were identified using both structured data and unstructured free text notes: 44,960 acupuncture patients were identified using structured data consisting of CPT codes; Using unstructured free text clinical notes, we trained a support vector classifier with 86% accuracy and was able to identify an additional 101,628 acupuncture patients not identified through structured data (a 226% increase). In addition, characteristics of the patients identified through structured and unstructured data were compared, which show differences in geographic locations and medical service usage patterns. Patients identified with structured data displayed a consistently higher use of the Veterans Health Administration (VHA) medical system.</p>
<p>Reddy KP, Drake D, Kligler B. Acupuncture and Whole Health in the Veterans Administration. Med Acupunct. 2018 Oct 1;30(5):225-227. doi: 10.1089/acu.2018.29096.rdk. Epub 2018 Oct 15. PubMed PMID: 30393506; PubMed Central PMCID: PMC6206594.</p>	<p>Empowering and engaging patients is our goal. Our current healthcare system, however, is a disease-based model in which patients are the passive recipients of advice, prescriptions, and interventions for chronic disorders. Clinical teams often feel they have little choice in managing these chronic conditions, including pain and mental health conditions, and often turn to medications rather than engaging patients in the lifestyle and behavioral modifications that would improve long-term outcomes more significantly.</p>
<p>Sharp SJ, Huynh MT, Filart R. Frequency-Specific Microcurrent as Adjunctive Therapy for Three Wounded Warriors. Med Acupunct. 2019 Jun 1;31(3):189-192. doi: 10.1089/acu.2019.1366. Epub 2019 Jun 17.</p>	<p>Background: Acupuncture is frequently offered for wounded warriors as a component of an integrated approach to pain and associated symptoms, with increasing availability at military treatment facilities and Veterans Administration hospitals. While medications can be effective for many patients, acupuncture and microcurrent therapies address the growing need to offer nonopiate, nonpharmaceutical therapeutics in integrative pain management. Frequency-specific microcurrent (FSM) is a newer, adjustable, microcurrent, electrical stimulation modality with applications for pain and other associated symptoms. Using low amperage, electrical current delivered transcutaneously affects and repairs tissues at the cellular level. Additionally, concomitant treatment with acupuncture is possible, which is particularly helpful when space and time limit the frequency with which acupuncture treatments can be provided. Cases: For 3 wounded warriors, FSM was combined with acupuncture treatments, resulting in more-rapid reduction of their pain and associated symptoms; including memory problems, mental sluggishness, and post-traumatic stress disorder. Results: FSM was found to be a safe, nonpainful, noninvasive treatment that could be administered concurrently and beneficially with acupuncture. Conclusions: While additional, more-rigorous studies are needed, this case series demonstrates the potential that FSM has within an integrated pain treatment program for wounded warriors.</p>

[Wheeler, M.S., Glass, C.R., Arnkoff, D.B. et al. The Effect of Mindfulness and Acupuncture on Psychological Health in Veterans: an Exploratory Study. Mindfulness \(2018\) 9: 564. https://doi.org/10.1007/s12671-017-0798-7](https://doi.org/10.1007/s12671-017-0798-7)

iRest Yoga Nidra® is a guided mindfulness approach that encourages relaxation, focused attention, experience of joy, observation of opposite feelings and emotions, non-judgment, and integration of these principles into daily life. iRest was developed for the military population, but the research on its effectiveness is in its infancy. This exploratory study examined the effectiveness of iRest in combination with acupuncture compared to acupuncture alone in improving psychological health in Veterans. The combined treatment yielded significant psychological benefit in depression, psychological symptom severity, depression or tension due to pain, and emotional interference with life activities, while the acupuncture-only treatment did not. Although both conditions showed significant decreases in perceived stress, the effect size for the treatment group was medium to large compared to a small effect size for those receiving acupuncture only. The combined treatment condition, iRest plus acupuncture, also demonstrated clinically meaningful change, with significant decreases in the number of Veterans meeting criteria for mild, moderate, and severe depression. Finally, the combined treatment was equally beneficial independent of factors such as age, gender, or race. Given the pervasiveness of psychological distress and depression in the Veteran population and the efficiency with which these group treatments can be provided, these findings lend preliminary support for the extension of complementary and integrative health offerings including iRest and acupuncture into more Veterans Administration hospitals across the country to improve military mental health. Indeed, the encouraging results of this exploratory study underscore the importance of expanded research on iRest and acupuncture for the treatment of psychological health.

Battlefield Acupuncture (BFA)	
Citation	Abstract
<p>Abdelfatah MM, Beacham MC, Freedman M, Tillmann HL. Can Battlefield Acupuncture Improve Colonoscopy Experience? Med Acupunct. 2018 Oct 1;30(5):279-281. doi: 10.1089/acu.2018.1289. Epub 2018 Oct 15.</p>	<p>Background: Currently, patients undergoing colonoscopy receive sedation, but pain management with acupuncture could be a safer alternative. Cases: This article describes 3 cases for which Battlefield Acupuncture was applied during colonoscopy to avoid using opioids for sedation. One case was a patient with a life-threatening morphine allergy, and 2 other cases avoided sedation completely. Results: Pain was reduced in all 3 cases to allow completion of colonoscopies without sedation. In Case 2, the patient also gained relief of preexisting mild joint pain. Conclusions: More data are needed, so potentially more patients can indeed avoid morphine/benzodiazepam-based sedation by use of acupuncture to make colonoscopies safer and more pleasant.</p>
<p>Federman DG, Holleck JL. Auricular Acupuncture and Skin-Cancer Detection: An Opportunity. Med Acupunct. 2018 Feb 1;30(1):39-40. doi: 10.1089/acu.2017.1261.</p>	<p>Background: Auricular acupuncture is effective for many patients with pain. Many skin malignancies and precancerous lesions are found on the head and neck. Practitioners of acupuncture are in a unique situation to detect cutaneous malignancy at an early state. Case: An 83-year-old man referred for Battlefield Acupuncture was found to have a scalp lesion suspicious for malignancy as well as several precancerous lesions. Results: Referral to a dermatologist led to excision of a basal-cell cancer and treatment of actinic keratoses. Conclusions: Practitioners of auricular acupuncture should be familiar with common skin cancers and precancerous lesions; these practitioners are in a unique situation to detect these common skin lesions.</p>
<p>Federman DG, Zeliadt SB, Thomas ER, Carbone GF Jr, Taylor SL. Battlefield Acupuncture in the Veterans Health Administration: Effectiveness in Individual and Group Settings for Pain and Pain Comorbidities. Med Acupunct. 2018 Oct 1;30(5):273-278. doi: 10.1089/acu.2018.1296. Epub 2018 Oct 15. PubMed PMID: 30377463; PubMed Central PMCID: PMC6205767.</p>	<p>Objective: The Department of Veterans Affairs trained primary-care providers to deliver Battlefield Acupuncture (BFA), a subset of auricular acupuncture, to patients. However, little is known about BFA effectiveness in group or individual sessions or repeated administrations versus singular use. The aim of this study was to examine the use and effectiveness of BFA for back pain and four pain-comorbid conditions in group and individual sessions at a large Veterans Affairs (VA) medical center.</p> <p>Materials and Methods: This cross-sectional study was conducted at the West Haven VA Medical Center, in West Haven CT. Between October 2016 and December 2017, 284 veterans with pain received BFA. The BFA was administered in group clinics or in individual encounters. The Defense and Veterans Pain Rating Scale was used to assess self-reported pain immediately before and after each BFA administration. Results: Over the study period, an average of 57 (range: 50–66) new patients per month received BFA. Of 753 total patient encounters, an immediate decrease in self-reported pain occurred in 616 (82.0%) patients, no change occurred in 73 (9.7%) patients, and an increase occurred in 62 (8.3%) patients. Decreases in pain were common in the group and individual settings, even in patients with originally high pain scores, and the effectiveness remained with repeated uses.</p> <p>Conclusions: BFA can be effective for immediate relief of pain—whether the BFA is administered in a group or individual setting—for the overwhelming majority of veterans and, as such, holds promise as a nonpharmacologic pain-management intervention.</p>

<p>Federman DG, Poulin LM, Ruser CB, Kravetz JD. Implementation of shared medical appointments to offer battlefield acupuncture efficiently to veterans with pain. Acupunct Med. 2018 Apr;36(2):124-126. doi: 10.1136/acupmed-2016-011315. Epub 2017 Jun 19. PubMed PMID: 28630048.</p>	<p>Background</p> <p>The use of prescription opioids in the treatment of pain has increased notably over recent decades. With this increase, dramatic unintended consequences have arisen. Rates of death from prescribed opioids increased fourfold between 2000 and 2014. Integrative care has been suggested as a potentially safer alternative to opioids in the treatment of chronic non-cancer pain and acupuncture has been shown to be an effective treatment for chronic pain. Battlefield acupuncture (BFA), an easily learnt subset of auricular acupuncture, has been proposed to treat a variety of painful disorders in active military members and veterans. Patients undergo insertion of five auricular semi-permanent (ASP) needles to the following traditional ear acupuncture points bilaterally: Cingulate Gyrus, Thalamus, Omega 2, Point Zero and Shenmen. While other investigators have evaluated models for integrating medical acupuncture into practice,⁵ to our knowledge, there has been no evaluation of how to incorporate BFA efficiently into a busy primary care (PC) practice. Since shared medical appointments (SMA) have been shown to be helpful in chronic disease management and may decrease healthcare utilisation, we developed an SMA approach to deliver BFA in the setting of a US Department of Veterans Affairs (VA) PC practice.</p>
<p>Federman DG, Radhakrishnan K, Gabriel L, Poulin LM, Kravetz JD. Group Battlefield Acupuncture in Primary Care for Veterans with Pain. South Med J. 2018 Oct;111(10):619-624. doi: 10.14423/SMJ.0000000000000877. PubMed PMID: 30285269.</p>	<p>Abstract</p> <p>OBJECTIVE:</p> <p>To obtain preliminary data on the short- and intermediate-term effects of battlefield acupuncture (BFA) on self-reported pain intensity in a relatively large cohort of veterans to assess whether a more comprehensive clinical trial evaluation is warranted.</p> <p>METHODS:</p> <p>The treatment, in an outpatient group setting, consisted of up to five auricular semipermanent needles inserted into each ear at prespecified points. Efficacy of treatment was measured by self-reported pain, using the Defense and Veterans Pain Rating Scale, just before treatment and at posttreatment days 0, 1, 7, and 30.</p> <p>RESULTS:</p> <p>A total of 112 patients attended the group clinics. The mean pretreatment pain score was 6.8, with an immediate postprocedure decrease of 2.4 points. The proportion of patients reporting decreased pain was 88.4%, 80.7%, 52.4%, and 51% at posttreatment days 0, 1, 7, and 30, respectively.</p> <p>CONCLUSIONS:</p> <p>The short- and intermediate-term beneficial effect of BFA on chronic pain is clinically meaningful. The large proportion of patients reporting decreased pain even 30 days after treatment suggests that the long-term effect of BFA merits further investigation.</p>
<p>Freedman M, Bierwirth PA. Pragmatic Use of Acupuncture in a Neurology Practice: Experience in an Outpatient Veterans Administration Neurology Clinic. Med Acupunct. 2018 Oct</p>	<p>Introduction: There is a need for nonopioid alternatives for treating pain. Acupuncture is one such modality. However, institutional resistance to the use of acupuncture is common in the Veterans Administration. Objective: The goal of this article is to lay out the reasoning for integrating acupuncture within the VA as well as in general practice so as to be able to relieve patients' pain quickly. Conclusions: Among the medical specialties, neurology is particularly suited to lead the way in incorporating acupuncture into daily practice. Aggressive training of physicians of at least basic acupuncture skills should be encouraged. The use of acupuncture as part of pain-control planning should be considered with more of a sense of urgency.</p>

<p>Garner BK, Hopkinson SG, Ketz AK, Landis CA, Trego LL. Auricular Acupuncture for Chronic Pain and Insomnia: A Randomized Clinical Trial. Med Acupunct. 2018 Oct 1;30(5):262-272. doi: 10.1089/acu.2018.1294. Epub 2018 Oct 15. PubMed PMID: 30377462; PubMed Central PMCID: PMC6205765.</p>	<p>Objective: In the United States, 1.6 million adults use complementary and alternative or integrative medicine for treating pain and insomnia. However, very few studies have tested the use of auricular acupuncture using a standard protocol for chronic pain and insomnia. The aims of this research were to assess the feasibility and credibility of auricular acupuncture, and to evaluate the effects of auricular acupuncture on pain severity and interference scores, and on insomnia severity over an 8-day study period. Materials and Methods: Forty-five participants were randomized to either an auricular acupuncture group (AAG) or a usual care group (CG) on study day 4. A standard auricular acupuncture protocol was administered, with penetrating semipermanent acupuncture needles in place for up to 4 days. The main outcome measures were feasibility of conducting the study, credibility of auricular acupuncture as a treatment modality, Brief Pain Inventory pain severity and interference scores, and Insomnia Severity Index (ISI) scores. Results: There was high interest in the study and the retention was 96%. Credibility of auricular acupuncture as a treatment was high in both groups. The use of the standard auricular acupuncture protocol in the AAG led to significant within- and between-group reduced pain severity and interference scores, compared to the CG. Both groups showed within-group decreased ISI scores. However, the AAG showed significant between-group reduced ISI severity scores compared to the CG. Conclusions: With the heightened focus on the opioid crisis in the United States, this easy-to-administer protocol may be an option for treating military beneficiaries who have chronic pain and insomnia</p>
<p>Guthrie RM, Chorba R. Physical Therapy Treatment Of Chronic Neck Pain A Discussion And Case Study: Using Dry Needling And Battlefield Acupuncture. J Spec Oper Med. 2016 Spring;16(1):1-5.</p>	<p>PURPOSE: Chronic mechanical neck pain can have a complex clinical presentation and is often difficult to treat. This case study illustrates a successful physical therapy treatment approach using dry needling and auricular acupuncture techniques.</p> <p>CASE REPORT: A 51-year-old active-duty, male US Marine was treated by a physical therapist in a direct-access military clinic for chronic neck pain poorly responsive to previous physical therapy, pharmacologic, and surgical interventions. Needling techniques were combined with standard physical therapy interventions to address the comprehensive needs of the patient. Within five treatments, the patient reported reduced pain levels from 8-9/10 to 0-2/10, improved sleep quality, and increased function with daily activities. Over several months, the patient reduced multiple medication use by greater than 85%. The effects of treatment were lasting, and the patient accomplished a successful transition to an independent maintenance program.</p> <p>CONCLUSION: Needling techniques have the potential to expedite favorable physical therapy outcomes for active-duty service members suffering from chronic mechanical and degenerative neck pain. The dramatic improvements observed in this case warrant additional exploration of treatment efficacy and delineation of best practices in the delivery of these techniques.</p>
<p>Halpin SN, Huang WH, Perkins MM. Comparisons between Body Needle Acupuncture, Auricular Acupuncture, and Auricular Magnet Therapy Given to Veterans Suffering from Chronic Pain.</p>	<p>No known research has investigated patients' attitudes toward different acupuncture techniques, including those that require less training to administer and potentially could be made more widely available in order to meet the growing demand for acupuncture. The aim of this study was to determine attitudes toward and expectations regarding three different types of acupuncture. The cohort included all patients (n=114) who received acupuncture treatment at the Atlanta Veterans Affairs Medical Center between May 2012 and May 2014. The patients were mailed questionnaires. Patients who agreed to be contacted by phone also participated in semi-structured telephone interviews. The respondents to the mailed surveys (n=72) varied in their demographics and attitudes toward experiences with different types of acupuncture. Of these, a subset of respondents also completed semi-structured telephone interviews (n=45). Thematic analysis of the data revealed three key themes, including (1) perceived time commitment versus return on investment; (2) anxiety, pain, and fear of needles; and (3) the importance of the patient/clinician relationship. Findings showed that the quality of the patient/clinician relationship was a critical factor that shaped the respondents' attitudes toward the different treatment options and also influenced satisfaction with treatment. Patients who were disinclined toward needles and those who wanted longer-lasting pain relief were more likely to endorse auricular magnet therapy.</p>

<p>Huang W, Halpin SN, Perkins MM. A case series of auricular acupuncture in a veteran's population using a revised auricular mapping-diagnostic paradigm (RAMP-uP). Complement Ther Med. 2016 Aug;27:130-6. doi: 10.1016/j.ctim.2016.06.002. Epub 2016 Jun 24.</p>	<p>OBJECTIVES: To evaluate clinical effects of auricular acupuncture treatments for pain based on a revised auricular mapping and diagnostic paradigm (RAMP-uP).</p> <p>DESIGN: Retrospective chart review.</p> <p>SETTING: A major US Veterans Affairs Medical Centre located in the Southeaster United States.</p> <p>MAIN OUTCOME MEASURES: Pain and efficacy rating scores based on visual analogue scales during each clinical visit. Duration of acupuncture treatment effects based on clinic notes documentation.</p> <p>RESULTS: Patients' average pain score decreased by almost 60% (p<0.0001). The treatment effects lasted 1-3 months (47%). The overall efficacy reported by most patients was helpful (83.6%).</p> <p>CONCLUSION: The observed clinical effects of auricular acupuncture based on RAMP-uP are promising. Further research is needed to assess its feasibility to generalize and generate clinical effects in randomized controlled clinical trials.</p>
<p>King HC, Spence DL, Hickey AH, Sargent P, Elesh R, Connelly CD. Auricular acupuncture for sleep disturbance in veterans with post-traumatic stress disorder: a feasibility study. Mil Med. 2015 May;180(5):582-90. doi: 10.7205/MILMED-D-14-00451.</p>	<p>The purpose of this study was to examine the feasibility and acceptability of an auricular acupuncture (AA) insomnia regimen among Operation Iraqi Freedom and Operation Enduring Freedom veterans with post-traumatic stress disorder and sleep disturbance. Secondly, this study examined the effect of an AA insomnia regimen on objective sleep times by wrist actigraphy, subjective sleep times by sleep diary, and sleep quality ratings utilizing the Pittsburg Sleep Quality Index. Veterans (n = 30) were randomized to receive a 3-week AA insomnia regimen. Veterans receiving the AA insomnia regimen reported it as a more acceptable treatment for sleep disturbance than subjects in the control group (AA group median = 5 vs. control group median = 3, p = 0.004). Significant differences between groups were found on the sleep quality and daytime dysfunction components of the Pittsburgh Sleep Quality Index (p = 0.003, p = 0.004). No other significant differences between groups were found for objective and subjective sleep measures. These results suggest that an AA insomnia regimen may improve sleep quality and daytime dysfunction among veterans with post-traumatic stress disorder. Future, large-scale, prospective clinical trials are needed to examine AA effects on sleep.</p>

<p>King CH et al. J Holist Nurs. (2016). Exploring Self-Reported Benefits of Auricular Acupuncture Among Veterans With Posttraumatic Stress Disorder.</p>	<p>PURPOSE: Auricular acupuncture treatments are becoming increasingly available within military treatment facilities, resulting in an expansion of nonpharmacologic treatment options available to veterans with posttraumatic stress disorder (PTSD). This study aimed to explore the self-reported benefits of auricular acupuncture treatments for veterans living with PTSD.</p> <p>DESIGN: A qualitative research methodology, thematic content analysis, was used to analyze data.</p> <p>METHOD: Seventeen active duty veterans with PTSD provided written comments to describe their experiences and perceptions after receiving a standardized auricular acupuncture regimen for a 3-week period as part of a pilot feasibility study.</p> <p>FINDINGS: A variety of symptoms experienced by veterans with PTSD were improved after receiving auricular acupuncture treatments. Additionally, veterans with PTSD were extremely receptive to auricular acupuncture treatments. Four themes emerged from the data: (1) improved sleep quality, (2) increased relaxation, (3) decreased pain, and (4) veterans liked/loved the auricular acupuncture treatments.</p> <p>CONCLUSIONS: Veterans with PTSD reported numerous benefits following auricular acupuncture treatments. These treatments may facilitate healing and recovery for veterans with combat-related PTSD, although further investigations are warranted into the mechanisms of action for auricular acupuncture in this population.</p>
<p>Madsen C, Koehlmoos T. Acupuncture: Bridging the Gap Between the Military and Veterans' Health Systems. Med Acupunct. 2018 Oct</p>	<p>This research brief describes the use of acupuncture as a mechanism for the development of crossagency knowledge translation and evidence-based practices in order to ensure the best possible care for the nation's veterans.</p>
<p>Montgomery AD, Ottenbacher R. Battlefield Acupuncture for Chronic Pain Management in Patients on Long-Term Opioid Therapy. Med Acupunct. 2020 Feb 1;32(1):38-44.</p>	<p>Objectives: Battlefield Acupuncture (BFA) is a unique auricular acupuncture procedure utilized by many Veterans Affairs Healthcare Administration facilities. Several previous studies have shown an immediate reduction in pain for up to 2 weeks post BFA. The long-term effects of BFA and its potential to decrease opioid use had yet to be analyzed. This study was conducted to analyze the effectiveness of BFA to decrease chronic pain immediately and 6 months after treatment and to decrease the number of opioids needed for management of chronic pain.</p> <p>Materials and Methods: This was a retrospective cohort study comparing veterans who received BFA and were prescribed opioids for their chronic pain to veterans who did not receive BFA. The treatment group included 24 veterans who received BFA and had opioid contracts. The comparison group consisted of 23 randomly selected veterans who had opioid contracts but did not receive BFA. A numeric rating scale (NRS) was used to measure pain before and after treatment, as well as 3 months prior and 6 months post. The average morphine mg equivalents for opioids 3 months prior and 6 months post treatment were also compared. Differences between groups were statistically analyzed by an analysis of variance and a Student's t-test. Results: Significant average decreases of 1.3 points on the NRS occurred in 66.1% immediately after the procedure. No significant decreases in pain were found. No significant changes of the average number of opioids over the 9 months analyzed were found. Conclusions: BFA is effective for immediate pain reduction. Further research with a randomized controlled trial in a larger population is needed to assess BFA effects on chronic pain and opioid dependency.</p>

<p>Niemtzow R, Baxter J, Gallagher RM, Pock A, Calabria K, Drake D, Galloway K, Walter J, Petri R, Piazza T, Burns S, Hofmann L, Biery J, Buckenmaier C 3rd. Building Capacity for Complementary and Integrative Medicine Through a Large, Cross-Agency, Acupuncture Training Program: Lessons Learned from a Military Health System and Veterans Health Administration Joint Initiative Project. Mil Med. 2018 Nov 1;183(11-12):e486-e493. doi: 10.1093/milmed/usy028.</p>	<p>INTRODUCTION: Complementary and integrative medicine (CIM) use in the USA continues to expand, including within the Military Health System (MHS) and Veterans Health Administration (VHA). To mitigate the opioid crisis and provide additional non-pharmacological pain management options, a large cross-agency collaborative project sought to develop and implement a systems-wide curriculum, entitled Acupuncture Training Across Clinical Settings (ATACS).</p> <p>MATERIALS AND METHODS: ATACS curriculum content and structure were created and refined over the course of the project in response to consultations with Subject Matter Experts and provider feedback. Course content was developed to be applicable to the MHS and VHA environments and training was open to many types of providers. Training included a 4-hr didactic and "hands on" clinical training program focused on a single auricular acupuncture protocol, Battlefield Acupuncture. Trainee learning and skills proficiency were evaluated by trainer-observation and written examination. Immediately following training, providers completed an evaluation survey on their ATACS experience. One month later, they were asked to complete another survey regarding their auricular acupuncture use and barriers to use. The present evaluation describes the ATACS curriculum, faculty and trainee characteristics, as well as trainee and program developer perspectives.</p> <p>RESULTS: Over the course of a 19-mo period, 2,712 providers completed the in-person, 4-hr didactic and hands-on clinical training session. Due to the increasing requests for training, additional ATACS faculty were trained. Overall, 113 providers were approved to be training faculty. Responses from the trainee surveys indicated high satisfaction with the ATACS training program and illuminated several challenges to using auricular acupuncture with patients. The most common reported barrier to using auricular acupuncture was the lack of obtaining privileges to administer auricular acupuncture within clinical practice.</p> <p>CONCLUSION: The ATACS program provided a foundational template to increase CIM across the MHS and VHA. The lessons learned in the program's implementation will aid future CIM training programs and improve program evaluations. Future work is needed to determine the most efficient means of improving CIM credentialing and privileging procedures, standardizing and adopting uniform CIM EHR codes and documentation, and examining the effectiveness of CIM techniques in real-world settings.</p>
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<p>Prisco MK, Jecmen MC, Bloeser KJ et al. Group auricular acupuncture for PTSD-related insomnia in veterans: a randomized trial. 17 Dec 2013https://doi.org/10.1089/acu.2013.0989</p>	<p>Objectives: This study examined how group auricular acupuncture may influence sleep quality, sleep patterns, and hypnotic medication use associated with PTSD-related insomnia in Operation Enduring Freedom and Operation Iraqi Freedom veterans.</p> <p>Design: This study was a randomized controlled trial with sham acupuncture and wait-list controls.</p> <p>Setting: This study took place at the Washington, DC, Department of Veterans Affairs (VA), Medical Center.</p> <p>Subjects: Thirty-five subjects were randomized to participate in the study, but only 25 subjects completed the study.</p> <p>Interventions: Subjects were randomized to one of three groups: (1) true group auricular acupuncture; (2) sham auricular acupuncture; or (3) wait-list control.</p> <p>Outcome Measures: The primary outcome measure was perceived sleep quality (as measured by Insomnia Severity Index (ISI) questionnaires and Morin Sleep Diaries [MSDs]). Secondary outcome measures were total sleep time (TST), sleep efficiency, sleep latency, naps (as measured by MSD and wrist actigraphs [WAs]), hypnotic medication use, veteran satisfaction, and attrition rates.</p> <p>Results: Subjects in the true auricular acupuncture group had a statistically significant improvement ($p=0.0165$) in sleep quality as measured by the ISI at time (t)=1 month. This group had a trend toward lower MSD TST at $t=2$ months ($p=0.078$), lower WA TST at $t=1$ month ($p=0.0893$), and toward higher MSD nap times than the other two groups post-treatment ($p=0.0666$). No statistically significant association between group assignment and hypnotic medication use and satisfaction scores were noted.</p> <p>Conclusions: Acupuncturists should consider incorporating sleep hygiene education into their clinical practices and/or collaborate with insomnia health care professionals when working with individuals with insomnia. This study also supports the finding that perceived sleep quality and objective WA measurements are not significantly correlated.</p>
<p>Shao X, Corcoran M, O'Bryan M. The Use of Battlefield Acupuncture Prior to Botulinum Toxin A Administration: A 2-Patient Case Series. Med Acupunct. 2018 Oct 1;30(5):282-284. doi: 10.1089/acu.2018.1302. Epub 2018 Oct 15.</p>	<p>Background: Botulinum toxin type A injection is a common and safe procedure used for the treatment of overactive muscles through local injection. This toxin inhibits the release of acetylcholine in the neuromuscular junction. The benefits usually last only 3-6 months; thus, repeated injections are often required. The procedure, however, can be difficult if a patient's spasticity and pain prevents access to the muscles for injection or if a patient is anxious. Battlefield Acupuncture (BFA), a technique developed by Richard C. Niemtow, MD, PhD, MPH, in 2001, is a form of auricular acupuncture using a very specific sequence of gold Aiguille semipermanente needles inserted into the ear. BFA can be very effective for reducing pain quickly, with few potential side-effects. Cases: BFA was performed prior to Botulinum toxin A injections on 2 patients who had either pain limitations or anxiety limitations during prior Botulinum toxin A injections. Case 1 was a 70-year-old male veteran with painful, right upper-extremity spasticity with hand contractures. Case 2 was a 69-year-old male veteran with spasticity who had anxiety related to his fear of needles. Results: Application of BFA prior to Botulinum toxin A injections enabled the 2 patients who either had pain limitations or anxiety limitations to tolerate the toxin injections much better. Conclusions: BFA is a safe and effective treatment option for rapid pain reduction, enabling Botulinum toxin A to be administered more easily to patients who have had pain or anxiety during prior injections.</p>

<p>Taylor SL, Giannitrapani K, Ackland PE, Holliday J, Reddy KP, Drake DF, Federman DG, Kligler B. Challenges and Strategies for Implementing Battlefield Acupuncture in the Veterans Administration: A Qualitative Study of Provider Perspectives. Med Acupunct. 2018 Oct 1;30(5):252-261. doi: 10.1089/acu.2018.1286. Epub 2018 Oct 15. PubMed PMID: 30377461; PubMed Central PMCID: PMC6205764.</p>	<p>Objective: Battlefield Acupuncture (BFA) is an auricular needling protocol for pain. More than 1300 Veterans Health Administration (VHA) clinicians have been trained in BFA delivery. However, little is known about how well BFA has been implemented at the VHA. The aim of this research was to identify the challenges providers experience in implementing BFA and to look for any successful strategies used to overcome these challenges. Materials and Methods: Semistructured telephone interviews were conducted from June 2017 to January 2018, using an interview guide informed by the integrated Promoting Action on Research Implementation in Health Services framework to address several implementation domains: knowledge and attitudes about BFA; professional roles and training in BFA; organization of BFA delivery and resources to provide BFA; and implementation challenges and strategies to address challenges. The interviews were analyzed, using a grounded theory-informed approach. This research was conducted at 20 VHA facilities and involved 23 VHA BFA providers nationwide. Results: Nine main implementation themes were identified: (1) providers organizing BFA delivery in various ways; (2) insufficient time to provide BFA to meet patient demand; (3) beliefs and knowledge about BFA; (4) lack of BFA indication guidelines or effectiveness data; (5) self-efficacy; (6) time delay between training and practice; (7) limited access to resources; (8) key role of leadership and administrative buy-in, and (9) written consent an unwarranted documentation burden. Providers offered some possible strategies to address these issues. Conclusions: System- and provider-level challenges can impede BFA implementation. However, several providers discovered strategies to address some challenges that can be used within and outside the VHA, which, in turn, might improve access to this potentially promising pain-management intervention</p>
<p>Walker PH, Pock A, Ling CG, Kwon KN, Vaughan M. Battlefield acupuncture: Opening the door for acupuncture in Department of Defense/Veteran's Administration health care. Nurs Outlook. 2016 Sep-Oct;64(5):491-8. doi: 10.1016/j.outlook.2016.07.008. Epub 2016 Jul 20. PubMed PMID: 27601311.</p>	<p>Battlefield acupuncture is a unique auricular acupuncture procedure which is being used in a number of military medical facilities throughout the Department of Defense (DoD). It has been used with anecdotal published positive impact with warriors experiencing polytrauma, post-traumatic stress disorder, and traumatic brain injury. It has also been effectively used to treat warriors with muscle and back pain from carrying heavy combat equipment in austere environments. This article highlights the history within the DoD related to the need for nonpharmacologic/opioid pain management across the continuum of care from combat situations, during evacuation, and throughout recovery and rehabilitation. The article describes the history of auricular acupuncture and details implementation procedures. Training is necessary and partially funded through DoD and Veteran's Administration (VA) internal Joint Incentive Funds grants between the DoD and the VA for multidisciplinary teams as part of a larger initiative related to the recommendations from the DoD Army Surgeon General's Pain Management Task Force. Finally, Uniformed Services University of the Health Sciences School of Medicine and Graduate School of Nursing faculty members present how this interdisciplinary training is currently being integrated into both schools for physicians and advanced practice nurses at the Uniformed Services University of the Health Sciences. Current and future research challenges and progress related to the use of acupuncture are also presented</p>

Biofeedback	
Citation	Abstract
<p>Berry ME, Chapple IT, Ginsberg JP, Gleichauf KJ, Meyer JA, Nagpal ML. Non-pharmacological Intervention for Chronic Pain in Veterans: A Pilot Study of Heart Rate Variability Biofeedback. Glob Adv Health Med. 2014</p>	<p>OBJECTIVE: Chronic pain is an emotionally and physically debilitating form of pain that activates the body's stress response and over time can result in lowered heart rate variability (HRV) power, which is associated with reduced resiliency and lower self-regulatory capacity. This pilot project was intended to determine the effectiveness of HRV coherence biofeedback (HRVCB) as a pain and stress management intervention for veterans with chronic pain and to estimate the effect sizes. It was hypothesized that HRVCB will increase parasympathetic activity resulting in higher HRV coherence measured as power and decrease self-reported pain symptoms in chronic pain patients.</p> <p>STUDY DESIGN: Fourteen veterans receiving treatment for chronic pain were enrolled in the pre-post intervention study. They were randomly assigned, with 8 subjects enrolled in the treatment group and 6 in the control group. The treatment group received biofeedback intervention plus standard care, and the other group received standard care only. The treatment group received four HRVCB training sessions as the intervention.</p> <p>MEASURES: Pre-post measurements of HRV amplitude, HRV power spectrum variables, cardiac coherence, and self-ratings of perceived pain, stress, negative emotions, and physical activity limitation were made for both treatment and control groups.</p> <p>RESULTS: The mean pain severity for all subjects at baseline, using the self-scored Brief Pain Inventory (BPI), was 26.71 (SD=4.46; range=21-35) indicating a moderate to severe perceived pain level across the study subjects. There was no significant difference between the treatment and control groups at baseline on any of the measures. Post-HRVCB, the treatment group was significantly higher on coherence (P=.01) and lower (P=.02) on pain ratings than the control group. The treatment group showed marked and statistically significant (1-tailed) increases over the baseline in coherence ratio (191%, P=.04) and marked, significant (1-tailed) reduction in pain ratings (36%, P<.001), stress perception (16%, P=.02), negative emotions (49%, P<.001), and physical activity limitation (42%, P<.001). Significant between-group effects on all measures were found when pre-training values were used as covariates.</p> <p>CONCLUSIONS: HRVCB intervention was effective in increasing HRV coherence measured as power in the upper range of the LF band and reduced perceived pain, stress, negative emotions, and physical activity limitation in veterans suffering from chronic pain. HRVCB shows promise as an effective non-pharmacological intervention to support standard treatments for chronic pain.</p>

<p>Elbogen EB, Alsobrooks A, Battles S, Molloy K, Dennis PA, Beckham JC, McLean SA, Keith JR, Russoniello C. Mobile Neurofeedback for Pain Management in Veterans with TBI and PTSD. Pain Med. 2019 Nov 7. pii: pnz269.</p>	<p>OBJECTIVE: Chronic pain is common in military veterans with traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD). Neurofeedback, or electroencephalograph (EEG) biofeedback, has been associated with lower pain but requires frequent travel to a clinic. The current study examined feasibility and explored effectiveness of neurofeedback delivered with a portable EEG headset linked to an application on a mobile device.</p> <p>DESIGN: Open-label, single-arm clinical trial.</p> <p>SETTING: Home, outside of clinic.</p> <p>SUBJECTS: N = 41 veterans with chronic pain, TBI, and PTSD.</p> <p>METHOD: Veterans were instructed to perform "mobile neurofeedback" on their own for three months. Clinical research staff conducted two home visits and two phone calls to provide technical assistance and troubleshoot difficulties.</p> <p>RESULTS: N = 36 veterans returned for follow-up at three months (88% retention). During this time, subjects completed a mean of 33.09 neurofeedback sessions (10 minutes each). Analyses revealed that veterans reported lower pain intensity, pain interference, depression, PTSD symptoms, anger, sleep disturbance, and suicidal ideation after the three-month intervention compared with baseline. Comparing pain ratings before and after individual neurofeedback sessions, veterans reported reduced pain intensity 67% of the time immediately following mobile neurofeedback. There were no serious adverse events reported.</p> <p>CONCLUSIONS: This preliminary study found that veterans with chronic pain, TBI, and PTSD were able to use neurofeedback with mobile devices independently after modest training and support. While a double-blind randomized controlled trial is needed for confirmation, the results show promise of a portable, technology-based neuromodulatory approach for pain management with minimal side effects.</p>
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<p>Fino PC et al. BMC Neurol. (2017). Assessment and rehabilitation of central sensory impairments for balance in mTBI using auditory biofeedback: a randomized clinical trial.</p>	<p>BACKGROUND: Complaints of imbalance are common non-resolving signs in individuals with post-concussive syndrome. Yet, there is no consensus rehabilitation for non-resolving balance complaints following mild traumatic brain injury (mTBI). The heterogeneity of balance deficits and varied rates of recovery suggest varied etiologies and a need for interventions that address the underlying causes of poor balance function. Our central hypothesis is that most chronic balance deficits after mTBI result from impairments in central sensorimotor integration that may be helped by rehabilitation. Two studies are described to 1) characterize balance deficits in people with mTBI who have chronic, non-resolving balance deficits compared to healthy control subjects, and 2) determine the efficacy of an augmented vestibular rehabilitation program using auditory biofeedback to improve central sensorimotor integration, static and dynamic balance, and functional activity in patients with chronic mTBI.</p> <p>METHODS: Two studies are described. Study 1 is a cross-sectional study to take place jointly at Oregon Health and Science University and the VA Portland Health Care System. The study participants will be individuals with non-resolving complaints of balance following mTBI and age- and gender-matched controls who meet all inclusion criteria. The primary outcome will be measures of central sensorimotor integration derived from a novel central sensorimotor integration test. Study 2 is a randomized controlled intervention to take place at Oregon Health & Science University. In this study, participants from Study 1 with mTBI and abnormal central sensorimotor integration will be randomized into two rehabilitation interventions. The interventions will be 6 weeks of vestibular rehabilitation 1) with or 2) without the use of an auditory biofeedback device. The primary outcome measure is the daily activity of the participants measured using an inertial sensor.</p> <p>DISCUSSION: The results of these two studies will improve our understanding of the nature of balance deficits in people with mTBI by providing quantitative metrics of central sensorimotor integration, balance, and vestibular and ocular motor function. Study 2 will examine the potential for augmented rehabilitation interventions to improve central sensorimotor integration.</p>
<p>Freeman M, Ayers C, Kondo K, Noonan K, O’Neil M, Morasco B, Kansagara D. Guided Imagery, Biofeedback, and Hypnosis: A Map of the Evidence. Washington (DC): Department of Veterans Affairs (US); 2019 Feb.</p>	<p>The Veterans Health Administration (VHA) established the Integrative Health Coordinating Center (IHCC) with the Office of Patient Centered Care and Cultural Transformation (OPCC&CT) to aid in development and implementation of complementary and integrative health (CIH) strategies across the VHA. This topic was nominated by Dr. Ben Kligler, National Director of the Coordinating Center for Integrative Health (IHCC) and Laura Krejci, Associate Director of the Office of Patient Centered Care and Cultural Transformation (OPCC&CT). The purpose of this report is to provide a broad overview of the effectiveness of guided imagery, biofeedback, and hypnosis, and the health conditions for which these interventions have been examined in systematic reviews, in the form of evidence maps. The evidence maps will be used to guide and support decision-making about these treatment modalities in the VHA.</p>
<p>Gray SN. An Overview of the Use of Neurofeedback Biofeedback for the Treatment of Symptoms of Traumatic Brain Injury in Military and Civilian Populations. Med Acupunct. 2017 Aug 1;29(4):215-219. doi: 10.1089/acu.2017.1220. Review.</p>	<p>Background: Neurofeedback, a type of biofeedback, is an operant conditioning treatment that has been studied for use in the treatment of traumatic brain injury (TBI) in both civilian and military populations. In this approach, users are able to see or hear representations of data related to their own physiologic responses to triggers, such as stress or distraction, in real time and, with practice, learn to alter these responses in order to reduce symptoms and/or improve performance. Objective: This article provides a brief overview of the use of biofeedback, focusing on neurofeedback, for symptoms related to TBI, with applications for both civilian and military populations, and describes a pilot study that is currently underway looking at the effects of a commercial neurofeedback device on patients with mild-to-moderate TBIs. Conclusions: Although more research, including blinded randomized controlled studies, is needed on the use of neurofeedback for TBI, the literature suggests that this approach shows promise for treating some symptoms of TBI with this modality. With further advances in technology, including at-home use of neurofeedback devices, preliminary data suggests that TBI survivors may benefit from improved motivation for treatment and some reduction of symptoms related to attention, mood, and mindfulness, with the addition of neurofeedback to treatment.</p>

<p>Kizakevich PN, Eckhoff RP, Lewis GF, Davila MI, Hourani LL, Watkins R, Weimer B, Wills T, Morgan JK, Morgan T, Meleth S, Lewis A, Krzyzanowski MC, Ramirez D, Boyce M, Litavec SD, Lane ME, Strange LB. Biofeedback-Assisted Resilience Training for Traumatic and Operational Stress: Preliminary Analysis of a Self-Delivered Digital Health Methodology. JMIR Mhealth Uhealth. 2019 Sep 6;7(9):e12590</p>	<p>BACKGROUND: Psychological resilience is critical to minimize the health effects of traumatic events. Trauma may induce a chronic state of hyperarousal, resulting in problems such as anxiety, insomnia, or posttraumatic stress disorder. Mind-body practices, such as relaxation breathing and mindfulness meditation, help to reduce arousal and may reduce the likelihood of such psychological distress. To better understand resilience-building practices, we are conducting the Biofeedback-Assisted Resilience Training (BART) study to evaluate whether the practice of slow, paced breathing with or without heart rate variability biofeedback can be effectively learned via a smartphone app to enhance psychological resilience.</p> <p>OBJECTIVE: Our objective was to conduct a limited, interim review of user interactions and study data on use of the BART resilience training app and demonstrate analyses of real-time sensor-streaming data.</p> <p>METHODS: We developed the BART app to provide paced breathing resilience training, with or without heart rate variability biofeedback, via a self-managed 6-week protocol. The app receives streaming data from a Bluetooth-linked heart rate sensor and displays heart rate variability biofeedback to indicate movement between calmer and stressful states. To evaluate the app, a population of military personnel, veterans, and civilian first responders used the app for 6 weeks of resilience training. We analyzed app usage and heart rate variability measures during rest, cognitive stress, and paced breathing. Currently released for the BART research study, the BART app is being used to collect self-reported survey and heart rate sensor data for comparative evaluation of paced breathing relaxation training with and without heart rate variability biofeedback.</p> <p>RESULTS: To date, we have analyzed the results of 328 participants who began using the BART app for 6 weeks of stress relaxation training via a self-managed protocol. Of these, 207 (63.1%) followed the app-directed procedures and completed the training regimen. Our review of adherence to protocol and app-calculated heart rate variability measures indicated that the BART app acquired high-quality data for evaluating self-managed stress relaxation training programs.</p>
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<p>Kondo K, Noonan KM, Freeman M, Ayers C, Morasco BJ, Kansagara D. Efficacy of Biofeedback for Medical Conditions: an Evidence Map. J Gen Intern Med. 2019 Aug 14. doi: 10.1007/s11606-019-05215-z.</p>	<p>BACKGROUND: Biofeedback is increasingly used to treat clinical conditions in a wide range of settings; however, evidence supporting its use remains unclear. The purpose of this evidence map is to illustrate the conditions supported by controlled trials, those that are not, and those in need of more research.</p> <p>METHODS: We searched multiple data sources (MEDLINE, PsycINFO, CINAHL, Epistemonikos, and EBM Reviews through September 2018) for good-quality systematic reviews examining biofeedback for clinical conditions. We included the highest quality, most recent review representing each condition and included only controlled trials from those reviews. We relied on quality ratings reported in included reviews. Outcomes of interest were condition-specific, secondary, and global health outcomes, and harms. For each review, we computed confidence ratings and categorized reported findings as no effect, unclear, or insufficient; evidence of a potential positive effect; or evidence of a positive effect. We present our findings in the form of evidence maps.</p> <p>RESULTS: We included 16 good-quality systematic reviews examining biofeedback alone or as an adjunctive intervention. We found clear, consistent evidence across a large number of trials that biofeedback can reduce headache pain and can provide benefit as adjunctive therapy to men experiencing urinary incontinence after a prostatectomy. Consistent evidence across fewer trials suggests biofeedback may improve fecal incontinence and stroke recovery. There is insufficient evidence to draw conclusions about effects for most conditions including bruxism, labor pain, and Raynaud's. Biofeedback was not beneficial for urinary incontinence in women, nor for hypertension management, but these conclusions are limited by small sample sizes and methodologic limitations of these studies.</p> <p>DISCUSSION: Available evidence suggests that biofeedback is effective for improving urinary incontinence after prostatectomy and headache, and may provide benefit for fecal incontinence and balance and stroke recovery. Further controlled trials across a wide range of conditions are indicated.</p>
<p>Morland LA, Niehaus J, Taft C, Marx BP, Menez U, Mackintosh MA. Using a Mobile Application in the Management of Anger Problems Among Veterans: A Pilot Study. Mil Med. 2016 Sep;181(9):990-5. doi: 10.7205/MILMED-D-15-00293.</p>	<p>OBJECTIVE: This feasibility pilot study evaluated the usability of a mobile application (app), Remote Exercises for Learning Anger and Excitation Management (RELAX), as an adjunct to an anger management treatment delivered to Veterans.</p> <p>METHODS: Four Veterans completed pre- and post-treatment measures of anger, post-traumatic stress disorder, depression, interpersonal functioning, and app use.</p> <p>RESULTS: Descriptive results of clinical outcomes are provided. Qualitative data included Veterans' and therapists' feedback regarding the acceptability of the technology, satisfaction with the RELAX app, homework facilitation, and suggestions for improvement. Large reductions in anger, post-traumatic stress disorder and depression symptoms, and improvements in social functioning were evidenced post-treatment. Veterans reported that the RELAX app was helpful and appreciated its functionality.</p> <p>CONCLUSIONS: Our findings support using an app as an adjunct to traditional anger management.</p>

<p>Pyne JM, Constans JI, Nanney JT, Wiederhold MD, Gibson DP, Kimbrell T, Kramer TL, Pitcock JA, Han X, Williams DK, Chartrand D, Gevirtz RN, Spira J, Wiederhold BK, McCraty R, McCune TR. Heart Rate Variability and Cognitive Bias Feedback Interventions to Prevent Post-deployment PTSD: Results from a Randomized Controlled Trial. Mil Med. 2019 Jan 1;184(1-2):e124-e132. doi: 10.1093/milmed/usy171.</p>	<p>INTRODUCTION: There is a long history of pre-deployment PTSD prevention efforts in the military and effective pre-deployment strategies to prevent post-deployment PTSD are still needed.</p> <p>MATERIALS AND METHODS: This randomized controlled trial included three arms: heart rate variability biofeedback (HRVB), cognitive bias modification for interpretation (CBM-I), and control. The hypothesis was that pre-deployment resilience training would result in lower post-deployment PTSD symptoms compared with control. Army National Guard soldiers (n = 342) were enrolled in the Warriors Achieving Resilience (WAR) study and analyzed. The outcome was PTSD symptom severity using the PTSD Checklist - Military version (PCL) measured at pre-deployment, 3- and 12-month post-deployment. Due to the repeated measures for each participant and cluster randomization at the company level, generalized linear mixed models were used for the analysis. This study was approved by the Army Human Research Protection Office, Central Arkansas Veterans Healthcare System Institutional Review Board (IRB), and Southeast Louisiana Veterans Health Care System IRB.</p> <p>RESULTS: Overall, there was no significant intervention effect. However, there were significant intervention effects for subgroups of soldiers. For example, at 3-months post-deployment, the HRVB arm had significantly lower PCL scores than the control arm for soldiers with no previous combat zone exposure who were age 30 and older and for soldiers with previous combat zone exposure who were 45 and older (unadjusted effect size -0.97 and -1.03, respectively). A significant difference between the CBM-I and control arms was found for soldiers without previous combat zone exposure between ages 23 and 42 (unadjusted effect size -0.41). Similarly, at 12-months post-deployment, the HRVB arm had significantly lower PCL scores in older soldiers.</p> <p>CONCLUSION: Pre-deployment resilience training was acceptable and feasible and resulted in lower post-deployment PTSD symptom scores in subgroups of older soldiers compared with controls. Strengths of the study included cluster randomization at the company level, use of iPod device to deliver the resilience intervention throughout the deployment cycle, and minimal disruption of pre-deployment training by using self-paced resilience training. Weaknesses included self-report app use, study personnel not able to contact soldiers during deployment, and in general a low level of PTSD symptom severity throughout the study. In future studies, it would be important for the study team and/or military personnel implementing the resilience training to be in frequent contact with participants to ensure proper use of the resilience training apps.</p>
<p>Schuman DL, Killian MO. Pilot Study of a Single Session Heart Rate Variability Biofeedback Intervention on Veterans' Posttraumatic Stress Symptoms. Appl Psychophysiol Biofeedback. 2018 Sep 18. doi: 10.1007/s10484-018-9415-3. [Epub ahead of print] PubMed PMID: 30229543.</p>	<p>Veterans with posttraumatic stress symptoms exhibit reduced heart rate variability characteristic of autonomic nervous system dysregulation. Studies show heart rate variability biofeedback (HRVB) is effective in reducing posttraumatic stress symptoms by improving autonomic functioning. Participants in this pilot study were veterans of different war eras with military-related posttraumatic stress symptoms. The study aims were to examine the impact of a single session HRVB intervention on posttraumatic stress symptoms and heart rate variability, test persistence of effects, and determine if veterans would find the intervention acceptable. One group (n = 6) received training in diaphragmatic breathing and heart rate variability biofeedback, augmented by twice-daily practice using a smart phone and breath pacing app. A second group (n = 6) received only a single session of diaphragmatic breathing training. After 4 weeks, participants in the second group (n = 5) received the full intervention. HRVB significantly reduced global posttraumatic stress symptoms, whereas diaphragmatic breathing alone did not. Further, veterans found the approach acceptable, as demonstrated by a high degree of adherence with prescribed practice, low study attrition, and continued use over time. Results of this pilot study warrant further refinement of a protocol utilizing mHealth to treat posttraumatic stress symptoms in military populations.</p>

<p>Tan G, Rintala DH, Jensen MP, Fukui T, Smith D, Williams W. A randomized controlled trial of hypnosis compared with biofeedback for adults with chronic low back pain. Eur J Pain. 2015 Feb</p>	<p>BACKGROUND: Chronic low back pain (CLBP) is common and results in significant costs to individuals, families and society. Although some research supports the efficacy of hypnosis for CLBP, we know little about the minimum dose needed to produce meaningful benefits, the roles of home practice and hypnotizability on outcome, or the maintenance of treatment benefits beyond 3 months.</p> <p>METHODS: One hundred veterans with CLBP participated in a randomized, four-group design study. The groups were (1) an eight-session self-hypnosis training intervention without audio recordings for home practice; (2) an eight-session self-hypnosis training intervention with recordings; (3) a two-session self-hypnosis training intervention with recordings and brief weekly reminder telephone calls; and (4) an eight-session active (biofeedback) control intervention.</p> <p>RESULTS: Participants in all four groups reported significant pre- to post-treatment improvements in pain intensity, pain interference and sleep quality. The hypnosis groups combined reported significantly more pain intensity reduction than the control group. There was no significant difference among the three hypnosis conditions. Over half of the participants who received hypnosis reported clinically meaningful ($\geq 30\%$) reductions in pain intensity, and they maintained these benefits for at least 6 months after treatment. Neither hypnotizability nor amount of home practice was associated significantly with treatment outcome.</p> <p>CONCLUSIONS: The findings indicate that two sessions of self-hypnosis training with audio recordings for home practice may be as effective as eight sessions of hypnosis treatment. If replicated in other patient samples, the findings have important implications for the application of hypnosis treatment for chronic pain management.</p>
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Chiropractic Care

Citation	Abstract
<p>Chapman C, Bakkum BW. Chiropractic management of a US Army veteran with low back pain and piriformis syndrome complicated by an anatomical anomaly of the piriformis muscle: a case study. J Chiropr Med. 2012 Mar;11(1):24-9. doi: 10.1016/j.jcm.2011.06.011.</p>	<p>OBJECTIVE: The purpose of this article is to present the case of a patient with an anatomical anomaly of the piriformis muscle who had a piriformis syndrome and was managed with chiropractic care.</p> <p>CASE REPORT: A 32-year-old male patient presented to a chiropractic clinic with a chief complaint of low back pain that radiated into his right buttock, right posterior thigh, and right posterior calf. The complaint began 5 years prior as a result of injuries during Airborne School in the US Army resulting in a 60% disability rating from the Veterans Administration. Magnetic resonance imaging demonstrated a mildly decreased intradiscal T2 signal with shallow central subligamentous disk displacement and low-grade facet arthropathy at L5/S1, a hypolordotic lumbar curvature, and accessory superior bundles of the right piriformis muscle without morphologic magnetic resonance imaging evidence of piriformis syndrome.</p> <p>INTERVENTION AND OUTCOME: Chiropractic treatment included lumbar and sacral spinal manipulation with soft tissue massage to associated musculature and home exercise recommendations. Variations from routine care included proprioceptive neuromuscular facilitation stretches, electric muscle stimulation, acupressure point stimulation, Sacro Occipital Technique pelvic blocking, CranioSacral therapy, and an ergonomic evaluation.</p> <p>CONCLUSION: A patient with a piriformis anomaly with symptoms of low back pain and piriformis syndrome responded positively to conservative chiropractic care, although the underlying cause of the piriformis syndrome remained.</p>
<p>Corcoran KL, Dunn AS, Formolo LR, Beehler GP. Chiropractic Management for US Female Veterans With Low Back Pain: A Retrospective Study of Clinical Outcomes. J Manipulative Physiol Ther. 2017 Oct;40(8):573-579. doi: 10.1016/j.jmpt.2017.07.001. PubMed PMID: 29187308.</p>	<p>OBJECTIVE: The purpose of this study was to determine if female US veterans had clinically significant improvement in low back pain after chiropractic management.</p> <p>METHODS: This is a retrospective chart review of 70 courses of care for female veterans with a chief complaint of low back pain who received chiropractic management through the VA Western New York Healthcare System in Buffalo, New York. A paired t test was used to compare baseline and discharge outcomes for the Back Bournemouth Questionnaire. The minimum clinically important difference was set as a 30% improvement in the outcome measure from baseline to discharge.</p> <p>RESULTS: The average patient was 44.8 years old, overweight (body mass index 29.1 kg/m²), and white (86%). The mean number of chiropractic treatments was 7.9. Statistical significance was found for the Back Bournemouth Questionnaire outcomes. The mean raw score improvement was 12.4 points (P < .001), representing a 27.3% change from baseline with 47% of courses of care meeting or exceeding the minimum clinically important difference.</p> <p>CONCLUSION: For our sample of female veterans with low back pain, clinical outcomes from baseline to discharge improved under chiropractic care. Although further research is warranted, chiropractic care may be of value in contributing to the pain management needs of this unique patient population</p>

<p>Corcoran KL, Dunn AS, Green BN, Formolo LR, Beehler GP. Changes in female veterans' neck pain following chiropractic care at a hospital for veterans. Complement Ther Clin Pract. 2018 Feb;30:91-95. doi: 10.1016/j.ctcp.2017.12.013. Epub 2017 Dec 13. PubMed PMID: 29389486.</p>	<p>OBJECTIVE: To determine if U.S. female veterans had demonstrable improvements in neck pain after chiropractic management at a Veterans Affairs (VA) hospital.</p> <p>METHODS: This was a retrospective cross-sectional study of medical records from female veterans attending a VA chiropractic clinic for neck pain from 2009 to 2015. Paired t-tests were used to compare baseline and discharge numeric rating scale (NRS) and Neck Bournemouth Questionnaire (NBQ) scores with a minimum clinically important difference (MCID) set at a 30% change from baseline.</p> <p>RESULTS: Thirty-four veterans met the inclusion criteria and received a mean of 8.8 chiropractic treatments. For NRS, the mean score improvement was 2.7 (95%CI, 1.9-3.5, p < .001). For the NBQ, the mean score improvement was 13.7 (95%CI, 9.9-17.5, p < .001). For the MCID, the average percent improvement was 45% for the NRS and 38% for the NBQ.</p> <p>CONCLUSION: Female veterans with neck pain experienced a statistically and clinically significant reduction in NRS and NBQ scores.</p>
<p>Dougherty PE, Karuza J, Dunn AS, Savino D, Katz P. Spinal Manipulative Therapy for Chronic Lower Back Pain in Older Veterans: A Prospective, Randomized, Placebo-Controlled Trial. Geriatr Orthop Surg Rehabil. 2014 Dec</p>	<p>INTRODUCTION: Chronic lower back pain (CLBP) is problematic in older veterans. Spinal manipulative therapy (SMT) is commonly utilized for CLBP in older adults, yet there are few randomized placebo-controlled trials evaluating SMT.</p> <p>METHODS: The purpose of the study was to compare the effectiveness of SMT to a sham intervention on pain (Visual Analogue Scale, SF-36 pain subscale), disability (Oswestry Disability Index), and physical function (SF-36 subscale, Timed Up and Go) by performing a randomized placebo-controlled trial at 2 Veteran Affairs Clinics.</p> <p>RESULTS: Older veterans (≥ 65 years of age) who were naive to chiropractic were recruited. A total of 136 were included in the study with 69 being randomly assigned to SMT and 67 to sham intervention. Patients were treated 2 times per week for 4 weeks assessing outcomes at baseline, 5, and 12 weeks postbaseline. Both groups demonstrated significant decrease in pain and disability at 5 and 12 weeks. At 12 weeks, there was no significant difference in pain and a statistically significant decline in disability scores in the SMT group when compared to the sham intervention group. There were no significant differences in adverse events between the groups.</p> <p>CONCLUSIONS: The SMT did not result in greater improvement in pain when compared to our sham intervention; however, SMT did demonstrate a slightly greater improvement in disability at 12 weeks. The fact that patients in both groups showed improvements suggests the presence of a nonspecific therapeutic effect.</p>

<p>Dunn AS, Green BN, Formolo LR, Chicoine DR. Chiropractic management for veterans with neck pain: a retrospective study of clinical outcomes. J Manipulative Physiol Ther. 2011 Oct;34(8):533-8. doi: 10.1016/j.jmpt.2011.08.009. Epub 2011 Sep 9.</p>	<p>OBJECTIVE: The purpose of this study was to report demographic characteristics, chiropractic treatment methods and frequency, and clinical outcomes for chiropractic management of neck pain in a sample of veteran patients.</p> <p>METHODS: This is a retrospective case series of 54 veterans with a chief complaint of neck pain who received chiropractic care through a Veterans Health Administration medical center. Descriptive statistics and paired t tests were used with the numeric rating scale and Neck Bournemouth Questionnaire serving as the outcome measures. A minimum clinically important difference was set as 30% improvement from baseline for both outcomes.</p> <p>RESULTS: The mean number of chiropractic treatments was 8.7. For the numeric rating scale, the mean raw score improvement was 2.6 points, representing 43% change from baseline. For the Neck Bournemouth Questionnaire, the mean raw score improvement was 13.9 points, representing 33% change from baseline. For both measures, 36 (67%) patients met or exceeded the minimum clinically important difference.</p> <p>CONCLUSION: Mean chiropractic clinical outcomes were both statistically significant and clinically meaningful for this sample of veterans presenting with neck pain.</p>
<p>Dunn AS, Passmore SR, Burke J, Chicoine D. A cross-sectional analysis of clinical outcomes following chiropractic care in veterans with and without post-traumatic stress disorder. Mil Med. 2009 Jun;174(6):578-83.</p>	<p>This study was a cross-sectional analysis of clinical outcomes for 130 veteran patients with neck or low back complaints completing a course of care within the chiropractic clinic at the VA of Western New York in 2006. Multivariate analysis of variance (MANOVA) was utilized, comparing baseline and discharge scores for both the neck and low back regions and for those patients with and without post-traumatic stress disorder (PTSD). Patients with PTSD (n = 21) experienced significantly lower levels of score improvement than those without PTSD (n = 119) on self-reported outcome measures of neck and low back disability. These findings, coupled with the theorized relationships between PTSD and chronic pain, suggest that the success of conservative forms of management for veteran patients with musculoskeletal disorders may be limited by the presence of PTSD. Further research is warranted to examine the potential contributions of PTSD on chiropractic clinical outcomes with this unique patient population.</p>

<p>Dunn AS, Baylis S, Ryan D. <u>Chiropractic management of mechanical low back pain secondary to multiple-level lumbar spondylolisthesis in a United States Marine Corps veteran: a case report. J Chiropr Med. 2009 Sep;8(3):125-30. doi: 10.1016/j.jcm.2009.04.003.</u></p>	<p>OBJECTIVE: This case report describes the evaluation and conservative management of mechanical low back pain secondary to multiple-level lumbar spondylolysis with spondylolisthesis in a United States Marine Corps veteran within a Veterans Affairs Medical Center chiropractic clinic.</p> <p>CLINICAL FEATURES: The 43-year-old patient had a 20-year history of mechanical back pain secondary to an injury sustained during active military duty. He had intermittent radiation of numbness and tingling involving the right lower extremity distal to the knee. Radiographs of the lumbosacral region demonstrated a grade I spondylolisthesis of L3 in relation to L4 and a grade II spondylolisthesis of L4 in relation to L5 secondary to bilateral pars interarticularis defects. There was marked narrowing of the L4-5 disk space with associated subchondral sclerosis.</p> <p>INTERVENTION AND OUTCOME: A course of conservative management consisting of 10 treatments including lumbar flexion/distraction and activity modification was provided over an 8-week period. Despite the long-standing nature of the complaint and underlying multiple-level lumbar spondylolysis with spondylolisthesis, there was a 25% reduction in low back pain severity on the numeric rating scale and a 22% reduction in perceived disability related to low back pain on the Revised Oswestry Disability Questionnaire.</p> <p>CONCLUSIONS: Conservative management is considered to be the standard of care for spondylolysis and should be explored in its various forms for symptomatic low back pain patients who present without neurologic deficits and with spondylolisthesis below grade III. The response to treatment for the veteran patient in this case suggests that lumbar flexion/distraction may serve as a safe and effective component of conservative management of mechanical low back pain for some patients with spondylolysis and spondylolisthesis.</p>
<p>Flynn DM, McQuinn H, Fairchok A, Eaton LH, Langford DJ, Snow T, Doorenbos AZ. <u>Enhancing the success of functional restoration using complementary and integrative therapies: Protocol and challenges of a comparative effectiveness study in active duty service members with chronic pain. Contemp Clin Trials Commun. 2018</u></p>	<p>Chronic pain significantly impairs physical, psychological and social functioning. Among military populations, pain due to injuries sustained both on and off the battlefield is a leading cause of short and long-term disability. Improving the quality of pain care for active duty service members is a major priority of the Department of Defense. This article describes an ongoing comparative effectiveness study which aims to (1) evaluate the benefit of a multimodal complementary and integrative health (CIH) pain management program when added to standard rehabilitative care (SRC) prior to an intensive functional restoration (FR) program compared to SRC alone, and (2) identify factors that predict improvement in pain impact following treatment completion. Using a randomized controlled trial design, active duty service members with pain related to musculoskeletal injury are assigned to a 3-week course of either SRC or SRC combined with CIH therapies prior to beginning a 3-week course of FR. Outcomes are collected at baseline, at the end of stage 1 treatment, post-FR, and at 3- and 6-months post-FR. Outcome measures include provider-measured functional assessments and patient-reported assessment through the Pain Assessment Screening Tool and Outcomes Registry (PASTOR). The military health system provides a supportive environment for implementation of this research protocol. Challenges to conducting the study have included new technology systems at the study site, slower than projected enrollment, and program delivery issues. These challenges have been successfully managed and have not significantly impacted study participant enrollment and completion of study treatments.</p>

<p>Flynn D, Eaton LH, Langford DJ, Ieronimakis N, McQuinn H, Burney RO, Holmes SL, Doorenbos AZ. A SMART design to determine the optimal treatment of chronic pain among military personnel. Contemp Clin Trials. 2018 Oct;73:68-74. doi: 10.1016/j.cct.2018.08.008. Epub 2018 Aug 24.</p>	<p>Chronic pain is a leading cause of disability among active duty service members in the U.S. armed forces. Standard rehabilitative care and complementary and integrative health therapies are used for chronic pain rehabilitation. However, the optimal sequence and duration of these therapies has yet to be determined. This article describes a sequential multiple assignment randomized trial (SMART) protocol being used to identify the optimal components and sequence of standard rehabilitative care and complementary and integrative health therapies for reducing pain impact and improving other patient outcomes. Active duty service members referred to Madigan Army Medical Center for treatment of chronic pain are being recruited to the Determinants of the Optimal Dose and Sequence of Functional Restoration and Integrative Therapies study. Study participants are randomized to either standard rehabilitative care (physical and occupational therapy and psychoeducation) or complementary and integrative health therapies (chiropractic, acupuncture, yoga and psychoeducation). Those participants who do not respond to the first 3 weeks of treatment are randomized to receive an additional 3 weeks of either (1) the alternative treatment or (2) the first-stage treatment plus the alternative treatment. This study will also determine factors associated with treatment response that can support clinical decision making, such as baseline fitness, pain catastrophizing, kinesiophobia, post-traumatic stress, pain self-efficacy, and biological indicators. The information gained from this research will be applicable to all integrative chronic pain rehabilitation programs throughout the U.S. Department of Defense and the U.S. Department of Veterans Affairs, and the broader rehabilitation community.</p>
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<p>Goertz CM, Long CR, Vining RD, Pohlman KA, Walter J, Coulter I. Effect of Usual Medical Care Plus Chiropractic Care vs Usual Medical Care Alone on Pain and Disability Among US Service Members With Low Back Pain: A Comparative Effectiveness Clinical Trial. JAMA Netw Open. 2018 May 18;1(1):e180105. doi: 10.1001/jamanetworkopen.2018.0105.</p>	<p>Objective: To determine whether the addition of chiropractic care to usual medical care results in better pain relief and pain-related function when compared with usual medical care alone.</p> <p>Design, Setting, and Participants: A 3-site pragmatic comparative effectiveness clinical trial using adaptive allocation was conducted from September 28, 2012, to February 13, 2016, at 2 large military medical centers in major metropolitan areas and 1 smaller hospital at a military training site. Eligible participants were active-duty US service members aged 18 to 50 years with low back pain from a musculoskeletal source.</p> <p>Interventions: The intervention period was 6 weeks. Usual medical care included self-care, medications, physical therapy, and pain clinic referral. Chiropractic care included spinal manipulative therapy in the low back and adjacent regions and additional therapeutic procedures such as rehabilitative exercise, cryotherapy, superficial heat, and other manual therapies.</p> <p>Main Outcomes and Measures: Coprimary outcomes were low back pain intensity (Numerical Rating Scale; scores ranging from 0 [no low back pain] to 10 [worst possible low back pain]) and disability (Roland Morris Disability Questionnaire; scores ranging from 0-24, with higher scores indicating greater disability) at 6 weeks. Secondary outcomes included perceived improvement, satisfaction (Numerical Rating Scale; scores ranging from 0 [not at all satisfied] to 10 [extremely satisfied]), and medication use. The coprimary outcomes were modeled with linear mixed-effects regression over baseline and weeks 2, 4, 6, and 12.</p> <p>Results: Of the 806 screened patients who were recruited through either clinician referrals or self-referrals, 750 were enrolled (250 at each site). The mean (SD) participant age was 30.9 (8.7) years, 175 participants (23.3%) were female, and 243 participants (32.4%) were nonwhite. Statistically significant site × time × group interactions were found in all models. Adjusted mean differences in scores at week 6 were statistically significant in favor of usual medical care plus chiropractic care compared with usual medical care alone overall for low back pain intensity (mean difference, -1.1; 95% CI, -1.4 to -0.7), disability (mean difference, -2.2; 95% CI, -3.1 to -1.2), and satisfaction (mean difference, 2.5; 95% CI, 2.1 to 2.8) as well as at each site. Adjusted odd ratios at week 6 were also statistically significant in favor of usual medical care plus chiropractic care overall for perceived improvement (odds ratio = 0.18; 95% CI, 0.13-0.25) and self-reported pain medication use (odds ratio = 0.73; 95% CI, 0.54-0.97). No serious related adverse events were reported.</p> <p>Conclusions and Relevance: Chiropractic care, when added to usual medical care, resulted in moderate short-term improvements in low back pain intensity and disability in active-duty military personnel. This trial provides additional support for the inclusion of chiropractic care as a component of multidisciplinary health care for low back pain, as currently recommended in existing guidelines. However, study limitations illustrate that further research is needed to understand longer-term outcomes as well as how patient heterogeneity and intervention variations affect patient responses to chiropractic care.</p>
<p>Green BN, Johnson CD, Daniels CJ, Napuli JG, Gliedt JA, Paris DJ. Integration of Chiropractic Services in Military and Veteran Health Care Facilities: A Systematic Review of the Literature. J Evid Based Complementary Altern Med. 2016</p>	<p>This literature review examined studies that described practice, utilization, and policy of chiropractic services within military and veteran health care environments. A systematic search of Medline, CINAHL, and Index to Chiropractic Literature was performed from inception through April 2015. Thirty articles met inclusion criteria. Studies reporting utilization and policy show that chiropractic services are successfully implemented in various military and veteran health care settings and that integration varies by facility. Doctors of chiropractic that are integrated within military and veteran health care facilities manage common neurological, musculoskeletal, and other conditions; severe injuries obtained in combat; complex cases; and cases that include psychosocial factors. Chiropractors collaboratively manage patients with other providers and focus on reducing morbidity for veterans and rehabilitating military service members to full duty status. Patient satisfaction with chiropractic services is high. Preliminary findings show that chiropractic management of common conditions shows significant improvement.</p>

<p>Khorsan R, Cohen AB, Lisi AJ, Smith MM, Delevan D, Armstrong C, Mittman BS. Mixed-Methods Research in a Complex Multisite VA Health Services Study: Variations in the Implementation and Characteristics of Chiropractic Services in VA. Evid Based Complement Alternat Med. 2013;2013:701280. doi: 10.1155/2013/701280. Epub 2013 Dec 31.</p>	<p>Maximizing the quality and benefits of newly established chiropractic services represents an important policy and practice goal for the US Department of Veterans Affairs' healthcare system. Understanding the implementation process and characteristics of new chiropractic clinics and the determinants and consequences of these processes and characteristics is a critical first step in guiding quality improvement. This paper reports insights and lessons learned regarding the successful application of mixed methods research approaches—insights derived from a study of chiropractic clinic implementation and characteristics, Variations in the Implementation and Characteristics of Chiropractic Services in VA (VICCS). Challenges and solutions are presented in areas ranging from selection and recruitment of sites and participants to the collection and analysis of varied data sources. The VICCS study illustrates the importance of several factors in successful mixed-methods approaches, including (1) the importance of a formal, fully developed logic model to identify and link data sources, variables, and outcomes of interest to the study's analysis plan and its data collection instruments and codebook and (2) ensuring that data collection methods, including mixed-methods, match study aims. Overall, successful application of a mixed-methods approach requires careful planning, frequent trade-offs, and complex coding and analysis.</p>
<p>Lisi AJ, Brandt CA. Trends in the Use and Characteristics of Chiropractic Services in the Department of Veterans Affairs. J Manipulative Physiol Ther. 2016 Jun;39(5):381-6. doi: 10.1016/j.jmpt.2016.04.005. PubMed PMID: 27288324.</p>	<p>OBJECTIVES: The purpose of this study was to analyze national trends and key features of the Department of Veterans Affairs' (VA's) chiropractic service delivery and chiropractic provider workforce since their initial inception.</p> <p>METHODS: This was a serial cross-sectional analysis of the VA administrative data sampled from the first record of chiropractic services in VA through September 30, 2015. Data were obtained from VA's Corporate Data Warehouse and analyzed with descriptive statistics.</p> <p>RESULTS: From October 1, 2004, through September 30, 2015, the annual number of patients seen in VA chiropractic clinics increased from 4052 to 37349 (821.7%), and the annual number of chiropractic visits increased from 20072 to 159366 (693.9%). The typical VA chiropractic patient is male, is between the ages of 45 and 64, is seen for low back and/or neck conditions, and receives chiropractic spinal manipulation and evaluation and management services. The total number of VA chiropractic clinics grew from 27 to 65 (9.4% annually), and the number of chiropractor employees grew from 13 to 86 (21.3% annually). The typical VA chiropractor employee is a 45.9-year-old man, has worked in VA for 4.5 years, and receives annual compensation of \$97860. VA also purchased care from private sector chiropractors starting in 2000, growing to 159533 chiropractic visits for 19435 patients at a cost of \$11155654 annually.</p> <p>CONCLUSIONS: Use of chiropractic services and the chiropractic workforce in VA have grown substantially over more than a decade since their introduction.</p>

<p>Lisi AJ, Corcoran KL, DeRycke EC, Bastian LA, Becker WC, Edmond SN, Goertz CM, Goulet JL, Haskell SG, Higgins DM, Kaweck T, Kerns RD, Mattocks K, Ramsey C, Ruser CB, Brandt CA. Opioid Use Among Veterans of Recent Wars Receiving Veterans Affairs Chiropractic Care. Pain Med. 2018 Sep 1;19(suppl 1):S54-S60. doi: PubMed PMID: 30203014.</p>	<p>Objective: To examine patient sociodemographic and clinical characteristics associated with opioid use among Veterans of Operations Enduring Freedom/Iraqi Freedom/New Dawn (OEF/OIF/OND) who receive chiropractic care, and to explore the relationship between timing of a chiropractic visit and receipt of an opioid prescription.</p> <p>Methods: Cross-sectional analysis of administrative data on OEF/OIF/OND veterans who had at least one visit to a Veterans Affairs (VA) chiropractic clinic between 2004 and 2014. Opioid receipt was defined as at least one prescription within a window of 90 days before to 90 days after the index chiropractic clinic visit.</p> <p>Results: We identified 14,025 OEF/OIF/OND veterans with at least one chiropractic visit, and 4,396 (31.3%) of them also received one or more opioid prescriptions. Moderate/severe pain (odds ratio [OR] = 1.87, 95% confidence interval [CI] = 1.72-2.03), PTSD (OR = 1.55, 95% CI = 1.41-1.69), depression (OR = 1.40, 95% CI = 1.29-1.53), and current smoking (OR = 1.39, 95% CI = 1.26-1.52) were associated with a higher likelihood of receiving an opioid prescription. The percentage of veterans receiving opioid prescriptions was lower in each of the three 30-day time frames assessed after the index chiropractic visit than before.</p> <p>Conclusions: Nearly one-third of OEF/OIF/OND veterans receiving VA chiropractic services also received an opioid prescription, yet the frequency of opioid prescriptions was lower after the index chiropractic visit than before. Further study is warranted to assess the relationship between opioid use and chiropractic care.</p>
<p>Lisi AJ, Salsbury SA, Hawk C, Vining RD, Wallace RB, Branson R, Long CR, Burgo-Black AL, Goertz CM. Chiropractic Integrated Care Pathway for Low Back Pain in Veterans: Results of a Delphi Consensus Process. J Manipulative Physiol Ther. 2018 Feb;41(2):137-148. doi: 10.1016/j.jmpt.2017.10.001. PubMed PMID: 29482827; PubMed Central PMCID: PMC6103526.</p>	<p>OBJECTIVE: The purpose of this study was to develop an integrated care pathway for doctors of chiropractic, primary care providers, and mental health professionals who manage veterans with low back pain, with or without mental health comorbidity, within Department of Veterans Affairs health care facilities.</p> <p>METHODS: The research method used was a consensus process. A multidisciplinary investigative team reviewed clinical guidelines and Veterans Affairs pain and mental health initiatives to develop seed statements and care algorithms to guide chiropractic management and collaborative care of veterans with low back pain. A 5-member advisory committee approved initial recommendations. Veterans Affairs-based panelists (n = 58) evaluated the pathway via e-mail using a modified RAND/UCLA methodology. Consensus was defined as agreement by 80% of panelists.</p> <p>RESULTS: The modified Delphi process was conducted in July to December 2016. Most (93%) seed statements achieved consensus during the first round, with all statements reaching consensus after 2 rounds. The final care pathway addressed the topics of informed consent, clinical evaluation including history and examination, screening for red flags, documentation, diagnostic imaging, patient-reported outcomes, adverse event reporting, chiropractic treatment frequency and duration standards, tailored approaches to chiropractic care in veteran populations, and clinical presentation of common mental health conditions. Care algorithms outlined chiropractic case management and interprofessional collaboration and referrals between doctors of chiropractic and primary care and mental health providers.</p> <p>CONCLUSION: This study offers an integrative care pathway that includes chiropractic care for veterans with low back pain.</p>

<p>Lisi AJ, Khorsan R, Smith MM, Mittman BS. Variations in the implementation and characteristics of chiropractic services in VA. Med Care. 2014 Dec;52(12 Suppl 5):S97-104. doi: 10.1097/MLR.000000000000235.</p>	<p>BACKGROUND: In 2004, the US Department of Veterans Affairs expanded its delivery of chiropractic care by establishing onsite chiropractic clinics at select facilities across the country. Systematic information regarding the planning and implementation of these clinics and describing their features and performance is lacking.</p> <p>OBJECTIVES: To document the planning, implementation, key features and performance of VA chiropractic clinics, and to identify variations and their underlying causes and key consequences as well as their implications for policy, practice, and research on the introduction of new clinical services into integrated health care delivery systems.</p> <p>RESEARCH DESIGN, METHODS, AND SUBJECTS: Comparative case study of 7 clinics involving site visit-based and telephone-based interviews with 118 key stakeholders, including VA clinicians, clinical leaders and administrative staff, and selected external stakeholders, as well as reviews of key documents and administrative data on clinic performance and service delivery. Interviews were recorded, transcribed, and analyzed using a mixed inductive (exploratory) and deductive approach.</p> <p>RESULTS AND CONCLUSIONS: Interview data revealed considerable variations in clinic planning and implementation processes and clinic features, as well as perceptions of clinic performance and quality. Administrative data showed high variation in patterns of clinic patient care volume over time. A facility's initial willingness to establish a chiropractic clinic, along with a higher degree of perceived evidence-based and collegial attributes of the facility chiropractor, emerged as key factors associated with higher and more consistent delivery of chiropractic services and higher perceived quality of those services.</p>
<p>Lisi AJ. Management of Operation Iraqi Freedom and Operation Enduring Freedom veterans in a VeteransHealth Administration chiropractic clinic: a case series. J Rehabil Res Dev. 2010;47(1):1-6.</p>	<p>Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) veterans commonly seek care for musculoskeletal complaints in Veterans Health Administration (VHA) facilities. Chiropractic services for musculoskeletal conditions have recently been introduced to VHA. No reports have been published on chiropractic care for OIF/OEF veterans. This study was designed to describe elements of the processes and outcomes of care for OIF/OEF veterans in a VHA chiropractic clinic. A retrospective review of consecutive cases consulted to one VHA chiropractic clinic was conducted. Thirty-one cases were identified. Consultations originated in primary care and specialty clinics that commonly manage musculoskeletal conditions. Military traumatic injury and posttraumatic stress disorder were common. Adverse effects of treatment were mild and transitory. In 19 cases (61%), a pain decrease above the threshold for minimally important change was reported. This article is the first description of health services delivered to OIF/OEF veterans in a VHA chiropractic clinic. Chiropractic management was safe in these cases, and results support the hypothesis that such management may be effective in certain OIF/OIF veterans. A better understanding of the characteristics of these particular patients and the processes of care received in VHA chiropractic clinics is needed to improve the clinical care of these veterans.</p>

<p>Okamoto CS, Dunn AS, Green BN, Formolo LR, Chicoine D. Correlation of Body Composition and Low Back Pain Severity in a Cross-Section of US Veterans. J Manipulative Physiol Ther. 2017 Jun;40(5):358-364. doi: 10.1016/j.jmpt.2017.03.003. Epub 2017 May 26.</p>	<p>OBJECTIVE: Back pain is more prevalent in the obese, but whether back pain severity is directly correlated to obesity in veterans is unknown. We sought to determine if there was a correlation between body composition and low back pain severity in a sample of veterans. The hypothesis was that veterans with higher body mass index values would report higher low back pain severity scores.</p> <p>METHODS: This study was a retrospective chart review of 1768 veterans presenting to a Veterans Affairs chiropractic clinic with a chief complaint of low back pain between January 1, 2009 and December 31, 2014. Spearman's rho was used to test for correlation between body composition as measured by body mass index and low back pain severity as measured by the Back Bournemouth Questionnaire.</p> <p>RESULTS: On average, the sample was predominantly male (91%), older than 50, and overweight (36.5%) or obese (48.9%). There was no correlation between body mass index and Back Bournemouth Questionnaire scores, $r = .088$, $p < .001$.</p> <p>CONCLUSIONS: The majority of veterans with low back pain in this sample were either overweight or obese. There was no correlation between body composition and low back pain severity in this sample of veterans.</p>
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<p>Paige NM, Miake-Lye IM, Booth MS, Beroes JM, Mardian AS, Dougherty P, Branson R, Tang B, Morton SC, Shekelle PG. Association of Spinal Manipulative Therapy With Clinical Benefit and Harm for Acute Low Back Pain: Systematic Review and Meta-analysis. JAMA. 2017 Apr 11;317(14):1451-1460. doi: 10.1001/jama.2017.3086. Review. PubMed PMID: 28399251.</p>	<p>Importance: Acute low back pain is common and spinal manipulative therapy (SMT) is a treatment option. Randomized clinical trials (RCTs) and meta-analyses have reported different conclusions about the effectiveness of SMT.</p> <p>Objective: To systematically review studies of the effectiveness and harms of SMT for acute (≤ 6 weeks) low back pain.</p> <p>Data Sources: Search of MEDLINE, Cochrane Database of Systematic Reviews, EMBASE, and Current Nursing and Allied Health Literature from January 1, 2011, through February 6, 2017, as well as identified systematic reviews and RCTs, for RCTs of adults with low back pain treated in ambulatory settings with SMT compared with sham or alternative treatments, and that measured pain or function outcomes for up to 6 weeks. Observational studies were included to assess harms.</p> <p>Data Extraction and Synthesis: Data extraction was done in duplicate. Study quality was assessed using the Cochrane Back and Neck (CBN) Risk of Bias tool. This tool has 11 items in the following domains: randomization, concealment, baseline differences, blinding (patient), blinding (care provider [care provider is a specific quality metric used by the CBN Risk of Bias tool]), blinding (outcome), co-interventions, compliance, dropouts, timing, and intention to treat. Prior research has shown the CBN Risk of Bias tool identifies studies at an increased risk of bias using a threshold of 5 or 6 as a summary score. The evidence was assessed using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) criteria.</p> <p>Main Outcomes and Measures: Pain (measured by either the 100-mm visual analog scale, 11-point numeric rating scale, or other numeric pain scale), function (measured by the 24-point Roland Morris Disability Questionnaire or Oswestry Disability Index [range, 0-100]), or any harms measured within 6 weeks.</p> <p>Findings: Of 26 eligible RCTs identified, 15 RCTs (1711 patients) provided moderate-quality evidence that SMT has a statistically significant association with improvements in pain (pooled mean improvement in the 100-mm visual analog pain scale, -9.95 [95% CI, -15.6 to -4.3]). Twelve RCTs (1381 patients) produced moderate-quality evidence that SMT has a statistically significant association with improvements in function (pooled mean effect size, -0.39 [95% CI, -0.71 to -0.07]). Heterogeneity was not explained by type of clinician performing SMT, type of manipulation, study quality, or whether SMT was given alone or as part of a package of therapies. No RCT reported any serious adverse event. Minor transient adverse events such as increased pain, muscle stiffness, and headache were reported 50% to 67% of the time in large case series of patients treated with SMT.</p> <p>Conclusions and Relevance: Among patients with acute low back pain, spinal manipulative therapy was associated with modest improvements in pain and function at up to 6 weeks, with transient minor musculoskeletal harms. However, heterogeneity in study results was large.</p>
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<p>Roberts JA, Wolfe TM. Chiropractic management of a veteran with lower back pain associated with diffuse idiopathic skeletal hypertrophy and degenerative disk disease. J Chiropr Med. 2012 Dec;11(4):293-9. doi: 10.1016/j.jcm.2012.10.007.</p>	<p>OBJECTIVE: The purpose of this article is to report the response of chiropractic care of a geriatric veteran with degenerative disk disease and diffuse idiopathic skeletal hyperostosis.</p> <p>CLINICAL FEATURES: A 74-year-old man presented with low back pain (LBP) and loss of feeling in his lower extremities for 3 months. The LBP was of insidious onset with a 10/10 pain rating on the numeric pain scale (NPS) and history of degenerative disk disease and diffuse idiopathic skeletal hypertrophy. Oswestry questionnaire was 44% and health status questionnaire was 52%, which were below average for his age. The patient presented with antalgia and severe difficulty with ambulation and thus used a walker.</p> <p>INTERVENTION AND OUTCOME: Chiropractic care included Activator Methods protocol. Two weeks into treatment, he reported no back pain; and after 4 treatments, he was able to walk with a cane instead of a walker. The NPS decreased from a 10/10 to a 0/10, and his Revised Oswestry score decreased from 44/100 to 13.3/100. His Health Status Questionnaire score increased 25 points to 77/100, bringing him from below average for his age to above average for his age. Follow-up with the patient at approximately 1 year and 9 months showed an Oswestry score of 10/100 and a Health Status Questionnaire score of 67/100, still above average for his age.</p> <p>CONCLUSION: The findings in this case study showed that Activator-assisted spinal manipulative therapy had positive subjective and objective results for LBP and ambulation in a geriatric veteran with degenerative disk disease and diffuse idiopathic skeletal hyperostosis.</p>
<p>Taylor SL, Hoggatt KJ, Kligler B. Complementary and Integrated Health Approaches: What Do Veterans Use and Want. J Gen Intern Med. 2019 Jul;34(7):1192-1199. doi: 10.1007/s11606-019-04862-6. Epub 2019 Apr 22.</p>	<p>OBJECTIVES: Non-pharmacological treatment options for common conditions such as chronic pain, anxiety, and depression are being given increased consideration in healthcare, especially given the recent emphasis to address the opioid crisis. One set of non-pharmacological treatment options are evidence-based complementary and integrative health (CIH) approaches, such as yoga, acupuncture, and meditation. The Veterans Health Administration (VHA), the nation's largest healthcare system, has been at the forefront of implementing CIH approaches, given their patients' high prevalence of pain, anxiety, and depression. We aimed to conduct the first national survey of veterans' interest in and use of CIH approaches.</p> <p>METHODS: Using a large national convenience sample of veterans who regularly use the VHA, we conducted the first national survey of veterans' interest in, frequency of and reasons for use of, and satisfaction with 26 CIH approaches (n = 3346, 37% response rate) in July 2017.</p> <p>RESULTS: In the past year, 52% used any CIH approach, with 44% using massage therapy, 37% using chiropractic, 34% using mindfulness, 24% using other meditation, and 25% using yoga. For nine CIH approaches, pain and stress reduction/relaxation were the two most frequent reasons veterans gave for using them. Overall, 84% said they were interested in trying/learning more about at least one CIH approach, with about half being interested in six individual CIH approaches (e.g., massage therapy, chiropractic, acupuncture, acupressure, reflexology, and progressive relaxation). Veterans appeared to be much more likely to use each CIH approach outside the VHA vs. within the VHA.</p> <p>CONCLUSIONS: Veterans report relatively high past-year use of CIH approaches and many more report interest in CIH approaches. To address this gap between patients' level of interest in and use of CIH approaches, primary care providers might want to discuss evidence-based CIH options to their patients for relevant health conditions, given most CIH approaches are safe.</p>

<p>Vining R, Minkalis A, Long CR, Corber L, Franklin C, Gudavalli MR, Xia T, Goertz CM. Assessment of chiropractic care on strength, balance, and endurance in active-duty U.S. military personnel with low back pain: a protocol for a randomized controlled trial. <i>Trials</i>. 2018 Dec 5;19(1):671. doi: 10.1186/s13063-018-3041-5. PubMed PMID: 30518400; PubMed Central PMCID: PMC6280458.</p>	<p>BACKGROUND: Low back pain (LBP) is a common cause of disability among U.S. military personnel. Approximately 20% of all diagnoses resulting in disability discharges are linked to back-related conditions. Because LBP can negatively influence trunk muscle strength, balance, and endurance, the military readiness of active-duty military personnel with LBP is potentially compromised. Chiropractic care may facilitate the strengthening of trunk muscles, the alteration of sensory and motor signaling, and a reduction in pain sensitivity, which may contribute to improving strength, balance, and endurance for individuals with LBP. This trial will assess the effects of chiropractic care on strength, balance, and endurance for active-duty military personnel with LBP.</p> <p>METHODS/DESIGN: This randomized controlled trial will allocate 110 active-duty military service members aged 18-40 with non-surgical acute, subacute, or chronic LBP with pain severity of $\geq 2/10$ within the past 24 h. All study procedures are conducted at a single military treatment facility within the continental United States. Participants are recruited through recruitment materials approved by the institutional review board, such as posters and flyers, as well as through provider referrals. Group assignment occurs through computer-generated random allocation to either the study intervention (chiropractic care) or the control group (waiting list) for a 4-week period. Chiropractic care consists primarily of spinal manipulation at a frequency and duration determined by a chiropractic practitioner. Strength, balance, and endurance outcomes are obtained at baseline and after 4 weeks. The primary outcome is a change between baseline and 4 weeks of peak isometric strength, which is measured by pulling on a bimanual handle in a semi-squat position. Secondary outcomes include balance time during a single-leg standing test and trunk muscle endurance with the Biering-Sorensen test. Patient-reported outcomes include pain severity, disability measured with the Roland Morris Disability Questionnaire, symptom bothersomeness, PROMIS-29, Fear Avoidance Beliefs Questionnaire, expectations of care, physical activity, and global improvement.</p> <p>DISCUSSION: This trial may help inform further research on biological mechanisms related to manual therapies employed by chiropractic practitioners.</p>
<p>Vining RD, Shannon ZK, Salsbury SA, Corber L, Minkalis AL, Goertz CM. Development of a Clinical Decision Aid for Chiropractic Management of Common Conditions Causing Low Back Pain in Veterans: Results of a Consensus Process. <i>J Manipulative Physiol Ther</i>. 2019 Dec 18. pii: S0161-4754(18)30363-4.</p>	<p>OBJECTIVE: The purpose of this study was to develop a clinical decision aid for chiropractic management of common conditions causing low back pain (LBP) in veterans receiving treatment in US Veterans Affairs (VA) health care facilities.</p> <p>METHODS: A consensus study using an online, modified Delphi technique and Research Electronic Data Capture web application was conducted among VA doctors of chiropractic. Investigators reviewed the scientific literature pertaining to diagnosis and treatment of nonsurgical, neuromusculoskeletal LBP. Thirty seed statements summarizing evidence for chiropractic management, a graphical stepped management tool outlining diagnosis-informed treatment approaches, and support materials were then reviewed by an expert advisory committee. Email notifications invited 113 VA chiropractic clinicians to participate as Delphi panelists. Panelists rated the appropriateness of the seed statements and the stepped process on a 1-to-9 scale using the RAND/University of California, Los Angeles methodology. Statements were accepted when both the median rating and 80% of all ratings occurred within the highly appropriate range.</p> <p>RESULTS: Thirty-nine panelists (74% male) with a mean (standard deviation) age of 46 (11) years and clinical experience of 17 (11) years participated in the study. Accepted statements addressed included (1) essential components of chiropractic care, (2) treatments for conditions causing or contributing to LBP, (3) spinal manipulation mechanisms, (4) descriptions and mechanisms of commonly used chiropractic interventions, and (5) a graphical stepped clinical management tool.</p> <p>CONCLUSION: This study group produced a chiropractic clinical decision aid for LBP management, which can be used to support evidence-based care decisions for veterans with LBP.</p>

Guided Imagery	
Citation	Abstract
Freeman M, Ayers C, Kondo K, Noonan K, O'Neil M, Morasco B, Kansagara D. Guided Imagery, Biofeedback, and Hypnosis: A Map of the Evidence. Washington (DC): Department of Veterans Affairs (US); 2019 Feb.	<p>The Veterans Health Administration (VHA) established the Integrative Health Coordinating Center (IHCC) with the Office of Patient Centered Care and Cultural Transformation (OPCC&CT) to aid in development and implementation of complementary and integrative health (CIH) strategies across the VHA. This topic was nominated by Dr. Ben Kligler, National Director of the Coordinating Center for Integrative Health (IHCC) and Laura Krejci, Associate Director of the Office of Patient Centered Care and Cultural Transformation (OPCC&CT). The purpose of this report is to provide a broad overview of the effectiveness of guided imagery, biofeedback, and hypnosis, and the health conditions for which these interventions have been examined in systematic reviews, in the form of evidence maps. The evidence maps will be used to guide and support decision-making about these treatment modalities in the VHA.</p>

Clinical Hypnosis/Hypnotherapy

Citation	Abstract
Carmody TP, Duncan CL, Solkowitz SN, Huggins J, Simon JA. Hypnosis for Smoking Relapse Prevention: A Randomized Trial. Am J Clin Hypn. 2017 Oct;60(2):159-171. doi: 10.1080/00029157.2016.1261678.	<p>The purpose of this study was to determine whether hypnosis would be more effective than standard behavioral counseling in helping smokers to remain abstinent. A total of 140 current smokers were enrolled in a randomized controlled smoking cessation trial at an urban Veterans Affairs medical center. Participants (n = 102) who were able to quit for at least 3 days received either a hypnosis or behavioral relapse prevention intervention. Both relapse prevention interventions consisted of two 60 min face-to-face sessions and four 20 min follow-up phone calls (two phone calls per week). At 26 weeks, the validated point-prevalence quit rate was 35% for the hypnosis group and 42% for the behavioral counseling group (relative risk = 0.85; 95% confidence interval: 0.52-1.40). At 52 weeks, the validated quit rate was 29% for the hypnosis group and 28% for the behavioral group (relative risk = 1.03; 95% confidence interval: 0.56-1.91). It was concluded that hypnosis warrants further investigation as an intervention for facilitating maintenance of quitting.</p>
Eads B, Wark DM. Alert Hypnotic Inductions: Use in Treating Combat Post-Traumatic Stress Disorder. Am J Clin Hypn. 2015 Oct;58(2):159-70. doi: 10.1080/00029157.2014.979276.	<p>Alert hypnosis can be a valuable part of the treatment protocol for the resolution of post-traumatic stress disorder (PTSD). Research indicates that combat veterans with PTSD are more hypnotically susceptible than the general population. For that reason, it is hypothesized that they should be better able to use hypnosis in treatment. As opposed to the traditional modality, eyes-open alert hypnosis allows the patient to take advantage of hypnotic phenomena while participating responsibly in work, social life, and recreation. Three case studies are reported on combat veterans with PTSD who learned to overcome their symptoms using alert hypnosis.</p>
Freeman M, Ayers C, Kondo K, Noonan K, O'Neil M, Morasco B, Kansagara D. Guided Imagery, Biofeedback, and Hypnosis: A Map of the Evidence. Washington (DC): Department of Veterans Affairs (US); 2019 Feb.	<p>The Veterans Health Administration (VHA) established the Integrative Health Coordinating Center (IHCC) with the Office of Patient Centered Care and Cultural Transformation (OPCC&CT) to aid in development and implementation of complementary and integrative health (CIH) strategies across the VHA. This topic was nominated by Dr. Ben Kligler, National Director of the Coordinating Center for Integrative Health (IHCC) and Laura Krejci, Associate Director of the Office of Patient Centered Care and Cultural Transformation (OPCC&CT). The purpose of this report is to provide a broad overview of the effectiveness of guided imagery, biofeedback, and hypnosis, and the health conditions for which these interventions have been examined in systematic reviews, in the form of evidence maps. The evidence maps will be used to guide and support decision-making about these treatment modalities in the VHA.</p>
Grover MP et al. Am J Clin Hypn. (2018) The Association Between Mindfulness and Hypnotizability: Clinical and Theoretical Implications.	<p>Mindfulness-based interventions and hypnosis are efficacious treatments for addressing a large number of psychological and physical conditions, including chronic pain. However, there continues to be debate surrounding the relative uniqueness of the theorized mechanisms of these treatments-reflected by measures of mindfulness facets and hypnotizability-with some concern that there may be so much overlap as to make the mechanism constructs (and, therefore, the respective interventions) redundant. Given these considerations, the primary aim of the current study was to examine the degree of unique versus shared variance between two common measures of mindfulness facets and hypnotizability: the Five Facet Mindfulness Questionnaire and the Stanford Hypnotic Clinical Scale. A cross-sectional survey was conducted with a sample of (N = 154) veterans with heterogeneous chronic pain conditions. Bivariate Pearson correlations were used to examine the associations between the target scales. Results showed that the correlations between the Five Facet Mindfulness Questionnaire scales and Stanford Hypnotic Clinical Scale total score were uniformly weak, although significant negative correlations were found between mindfulness facets of observe and nonreact with hypnotizability (ps < 0.05). Thus, not only are the mindfulness and hypnotizability constructs unique, but when significantly associated, hypnotic suggestibility corresponds with a tendency to be less mindful. These findings have important implications for future research aimed toward matching patients to the treatment most likely to be of benefit, and suggest that matching patients on the basis of these theoretically derived "unique" moderators may hold potential.</p>

<p>Proescher EJ. Hypnotically facilitated exposure response prevention therapy for an OIF veteran with OCD. Am J Clin Hypn. 2010 Jul;53(1):19-26.</p>	<p>The highly stressful conditions of a war zone may exacerbate or trigger a wide variety of symptoms including Obsessive Compulsive Disorder (OCD) once a service member returns home. Service members and new veterans of the Iraq and Afghanistan wars present to treatment with multiple psychosocial concerns and co-morbid psychiatric conditions. Evidence-based treatments including exposure based therapies are commonly recommended for use with returning veterans. Although studies support the efficacy of Exposure Response Prevention (ERP) therapy for treating OCD, eligibility for these studies limits participation to subjects who self-report a well-defined, circumscribed complaint. This approach is not typical of clinic clients who, more often than not, report multiple psychological issues. The following individual case study demonstrates how integrating hypnosis facilitated the cognitive-behavioral ERP therapy and treatment for a patient suffering from OCD.</p>
<p>Stoelb BL, Jensen MP, Tackett MJ. Hypnotic analgesia for combat-related spinal cord injury pain: a case study. Am J Clin Hypn. 2009 Jan;51(3):273-80.</p>	<p>A U.S. Army soldier stationed in Iraq developed myriad pain problems after sustaining a high-level spinal cord injury (SCI) from a gunshot wound. These problems were negatively impacting his ability to participate fully in his physical rehabilitation and care. Ten sessions of self-hypnosis training were administered to the patient over a 5-week period to help him address these problems. Both the patient and his occupational therapist reported a substantial reduction in pain over the course of treatment, which allowed the patient to actively engage in his therapies. Six months post treatment, the patient reported continued use of the hypnosis strategies taught, which effectively reduced his experience of pain. This case study demonstrates the efficacy of hypnotic analgesia treatment for U.S. military veterans who are experiencing pain problems due to traumatic or combat-related SCIs.</p>
<p>Tan G, Rintala DH, Jensen MP, Fukui T, Smith D, Williams W. A randomized controlled trial of hypnosis compared with biofeedback for adults with chronic low back pain. Eur J Pain. 2015 Feb</p>	<p>BACKGROUND: Chronic low back pain (CLBP) is common and results in significant costs to individuals, families and society. Although some research supports the efficacy of hypnosis for CLBP, we know little about the minimum dose needed to produce meaningful benefits, the roles of home practice and hypnotizability on outcome, or the maintenance of treatment benefits beyond 3 months.</p> <p>METHODS: One hundred veterans with CLBP participated in a randomized, four-group design study. The groups were (1) an eight-session self-hypnosis training intervention without audio recordings for home practice; (2) an eight-session self-hypnosis training intervention with recordings; (3) a two-session self-hypnosis training intervention with recordings and brief weekly reminder telephone calls; and (4) an eight-session active (biofeedback) control intervention.</p> <p>RESULTS: Participants in all four groups reported significant pre- to post-treatment improvements in pain intensity, pain interference and sleep quality. The hypnosis groups combined reported significantly more pain intensity reduction than the control group. There was no significant difference among the three hypnosis conditions. Over half of the participants who received hypnosis reported clinically meaningful ($\geq 30\%$) reductions in pain intensity, and they maintained these benefits for at least 6 months after treatment. Neither hypnotizability nor amount of home practice was associated significantly with treatment outcome.</p> <p>CONCLUSIONS: The findings indicate that two sessions of self-hypnosis training with audio recordings for home practice may be as effective as eight sessions of hypnosis treatment. If replicated in other patient samples, the findings have important implications for the application of hypnosis treatment for chronic pain management.</p>

<p>Williams RM, Ehde DM, Day M, Turner AP, Hakimian S, Gertz K, Ciol M, McCall A, Kincaid C, Pettet MW, Patterson D, Suri P, Jensen MP. The chronic pain skills study: Protocol for a randomized controlled trial comparing hypnosis, mindfulness meditation and pain education in veterans. Contemp Clin Trials. 2020 Jan 8;105935. doi: 10.1016/j.cct.2020.105935.</p>	<p>OBJECTIVES: To describe the protocol of a randomized controlled trial to evaluate the effectiveness and mechanisms of three behavioral interventions.</p> <p>METHODS: Participants will include up to 343 Veterans with chronic pain due to a broad range of etiologies, randomly assigned to one of three 8-week manualized in-person group treatments: (1) Hypnosis (HYP), (2) Mindfulness Meditation (MM), or (3) Education Control (EDU).</p> <p>PROJECTED OUTCOMES: The primary aim of the study is to compare the effectiveness of HYP and MM to EDU on average pain intensity measured pre- and post-treatment. Additional study aims will explore the effectiveness of HYP and MM compared to EDU on secondary outcomes (i.e., pain interference, sleep quality, depression and anxiety), and the maintenance of effects at 3- and 6-months post-treatment. Participants will have electroencephalogram (EEG) assessments at pre- and post-treatment to determine if the power of specific brain oscillations moderate the effectiveness of HYP and MM (Study Aim 2) and examine brain oscillations as possible mediators of treatment effects (exploratory aim). Additional planned exploratory analyses will be performed to identify possible treatment mediators (i.e., pain acceptance, catastrophizing, mindfulness) and moderators (e.g., hypnotizability, treatment expectations, pain type, cognitive function).</p> <p>SETTING: The study treatments will be administered at a large Veterans Affairs Medical Center in the northwest United States. The treatments will be integrated within clinical infrastructure and delivered by licensed and credentialed health care professionals.</p>
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Massage Therapy (Therapeutic Massage)	
Citation	Abstract
<p>Collinge W, Kahn J, Soltysik R. Promoting reintegration of National Guard veterans and their partners using a self-directed program of integrative therapies: a pilot study. Mil Med. 2012 Dec;177(12):1477-85.</p>	<p>This article reports pilot data from phase I of a project to develop and evaluate a self-directed program of integrative therapies for National Guard personnel and significant relationship partners to support reintegration and resilience after return from Iraq or Afghanistan. Data are reported on 43 dyads. Intervention was an integrated multimedia package of guided meditative, contemplative, and relaxation exercises (CD) and instruction in simple massage techniques (DVD) to promote stress reduction and interpersonal connectedness. A repeated measures design with standardized instruments was used to establish stability of baseline levels of relevant mental health domains (day 1, day 30), followed by the intervention and assessments 4 and 8 weeks later. Significant improvements in standardized measures for post-traumatic stress disorder, depression, and self-compassion were seen in both veterans and partners; and in stress for partners. Weekly online reporting tracked utilization of guided exercises and massage. Veterans reported significant reductions in ratings of physical pain, physical tension, irritability, anxiety/worry, and depression after massage, and longitudinal analysis suggested declining baseline levels of tension and irritability. Qualitative data from focus groups and implications for continued development and a phase II trial are discussed.</p>
<p>Fletcher CE, Mitchinson AR, Trumble EL, Hinshaw DB, Dusek JA. Perceptions of other integrative health therapies by Veterans with pain who are receiving massage. J Rehabil Res Dev. 2016;53(1):117-26. doi: 10.1682/JRRD.2015.01.0015. PubMed PMID: 27004453; PubMed Central PMCID: PMC4829362.</p>	<p>Veterans are increasingly using complementary and integrative health (CIH) therapies to manage chronic pain and other troubling symptoms that significantly impair health and quality of life. The Department of Veterans Affairs (VA) is exploring ways to meet the demand for access to CIH, but little is known about Veterans' perceptions of the VA's efforts. To address this knowledge gap, we conducted interviews of 15 inpatients, 8 receiving palliative care, and 15 outpatients receiving CIH in the VA. Pain was the precipitating factor in all participants' experience. Participants were asked about their experience in the VA and their opinions about which therapies would most benefit other Veterans. Participants reported that massage was well-received and resulted in decreased pain, increased mobility, and decreased opioid use. Major challenges were the high ratio of patients to CIH providers, the difficulty in receiving CIH from fee-based CIH providers outside of the VA, cost issues, and the role of administrative decisions in the uneven deployment of CIH across the VA. If the VA is to meet its goal of offering personalized, proactive, patient-centered care nationwide then it must receive support from Congress while considering Veterans' goals and concerns to ensure that the expanded provision of CIH improves outcomes.</p>

<p>Haun JN, Ballistrea LM, Melillo C, Standifer M, Kip K, Paykel J, Murphy JL, Fletcher CE, Mitchinson A, Kozak L, Taylor SL, Glynn SM, Bair M. A Mobile and Web-Based Self-Directed Complementary and Integrative Health Program for Veterans and Their Partners (Mission Reconnect): Protocol for a Mixed-Methods Randomized Controlled Trial. JMIR Res Protoc. 2019 May 13;8(5):e13666. doi: 10.2196/13666.</p>	<p>BACKGROUND: Complementary and integrative health (CIH) is a viable solution to PTSD and chronic pain. Many veterans believe CIH can be performed only by licensed professionals in a health care setting. Health information technology can bring effective CIH to veterans and their partners.</p> <p>OBJECTIVE: This paper describes the rationale, design, and methods of the Mission Reconnect protocol to deliver mobile and Web-based complementary and integrative health programs to veterans and their partners (eg, spouse, significant other, caregiver, or family member).</p> <p>METHODS: This three-site, 4-year mixed-methods randomized controlled trial uses a wait-list control to determine the effects of mobile and Web-based CIH programs for veterans and their partners, or dyads. The study will use two arms (ie, treatment intervention arm and wait-list control arm) in a clinical sample of veterans with comorbid pain and posttraumatic stress disorder, and their partners. The study will evaluate the effectiveness and perceived value of the Mission Reconnect program in relation to physical and psychological symptoms, global health, and social outcomes.</p> <p>RESULTS: Funding for the study began in November 2018, and we are currently in the process of recruitment screening and data randomization for the study. Primary data collection will begin in May 2019 and continue through May 2021. Projected participants per site will be 76 partners/dyads, for a total of 456 study participants. Anticipated study results will be published in November 2022.</p> <p>CONCLUSIONS: This work highlights innovative delivery of CIH to veterans and their partners for treatment of posttraumatic stress disorder and chronic pain.</p>
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<p>Juberg M, Jerger KK, Allen KD, Dmitrieva NO, Keever T, Perlman AI. Pilot study of massage in veterans with knee osteoarthritis. J Altern Complement Med. 2015</p>	<p>OBJECTIVES: To (1) assess the feasibility and acceptability of Swedish massage among Department of Veterans Affairs (VA) health care users with knee osteoarthritis (OA) and (2) collect preliminary data on efficacy of Swedish massage in this patient group.</p> <p>DESIGN: Experimental pilot study.</p> <p>SETTING: Duke Integrative Medicine clinic and VA Medical Center, Durham, North Carolina.</p> <p>PATIENTS: Twenty-five veterans with symptomatic knee OA.</p> <p>INTERVENTIONS: Eight weekly 1-hour sessions of full-body Swedish massage.</p> <p>OUTCOME MEASURES: Primary: Western Ontario and McMaster University Osteoarthritis Index (WOMAC) and global pain (Visual Analog Scale [VAS]). Secondary: National Institutes of Health Patient Reported Outcomes Measurement Information System-Pain Interference Questionnaire 6b (PROMIS-PI 6b), 12-Item Short-Form Health Survey (SF-12 v1) and the EuroQol health status index (EQ-5D-5L), knee range of motion (ROM), and time to walk 50 feet.</p> <p>RESULTS: Study feasibility was established by a 92% retention rate with 99% of massage visits and 100% of research visits completed. Results showed significant improvements in self-reported OA-related pain, stiffness and function (30% improvement in Global WOMAC scores; $p=0.001$) and knee pain over the past 7 days (36% improvement in VAS score; $p<0.001$). PROMIS-PI, EQ-5D-5L, and physical composite score of the SF-12 also significantly improved ($p<0.01$ for all), while the mental composite score of the SF-12 and knee ROM showed trends toward significant improvement. Time to walk 50 feet did not significantly improve.</p> <p>CONCLUSIONS: Results of this pilot study support the feasibility and acceptability of Swedish massage among VA health care users as well as preliminary data suggesting its efficacy for reducing pain due to knee OA. If results are confirmed in a larger randomized trial, massage could be an important component of regular care for these patients.</p>
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<p>Kozak L, Vig E, Simons C, Eugenio E, Collinge W, Chapko M. A feasibility study of caregiver-provided massage as supportive care for Veterans with cancer. J Support Oncol. 2013 Sep;11(3):133-43.</p>	<p>PURPOSE: To assess the feasibility of using a multimedia program to teach caregivers of Veterans with cancer how to offer basic massage for supportive care at home.</p> <p>METHODS: Feasibility was assessed according to partner availability, compliance with watching training materials and practicing massage regularly, compliance with data collection; perceived study materials burden; clarity of instructional and other study materials. Pre- and post-massage changes in patients' symptom scores were measured using a numerical rate scale. A semistructured exit interview was answered by patient and caregiver at the end of the study.</p> <p>RESULTS: A total of 27 dyads were recruited. Veterans were 78% male. Forty-eight percent were diagnosed with hematologic malignancies (85%, advanced stage); 52% were diagnosed with solid tumors (64% advanced stage). Caregivers were 78% female; 81% were spouses. Out of the 27 pairs, 11 completed 8 weeks of data and practiced massage weekly. The majority of attrition (69%) was due to caregivers' burden. Caregivers reported instructional materials were clear, high quality, and easy to use. Patients were highly satisfied with receiving touch from their partners regularly. Post-massage symptom scores showed statistically significant decreases in pain, stress/anxiety, and fatigue. Perceived burden of data collection instruments was high, particularly for patients.</p> <p>CONCLUSION: It is feasible to use the TCC program to train caregivers of Veterans with cancer to offer massage for supportive care at home. Future studies should evaluate ways of providing support to caregivers, including offering massage to them, and easing the burden of data collection for patients.</p>
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<p>Miake-Lye I, Lee J, Lugar T, Taylor S, Shanman R, Beroes J, Shekelle P. Massage for Pain: An Evidence Map [Internet]. Washington (DC): Department of Veterans Affairs (US); 2016 Sep. Available From http://www.ncbi.nlm.nih.gov/books/NBK424144/PubMed PMID: 28211657.</p>	<p>INTRODUCTION: Given the widespread use of various massage therapies for pain, we conducted an evidence mapping process to determine the distribution of evidence available for various pain indications as well as different forms of massage therapy, identify gaps in evidence, and inform future research priorities. This mapping project provides a visual overview of the distribution of evidence for massage therapy for indications of pain, as well as an accompanying narrative that will help stakeholders interpret the state of evidence to inform policy and clinical decision-making.</p> <p>METHODS: We searched PubMed, Embase, and Cochrane for systematic reviews reporting pain outcomes for massage therapy. Abstracted data included: number of studies included in the review that report massage as the intervention and pain as an outcome; total number of studies included in the review; descriptions of the massage style, provider, co-interventions, duration, and comparators; pain type; main findings relevant to massage for pain; and whether the systematic review focused solely on massage as the intervention or included a variety of interventions, of which massage was one. Quality of each systematic review was assessed using the Assessing the Methodological Quality of Systematic Reviews (AMSTAR) criteria. We used a bubble plot to visually depict the number of included articles, pain indication, effect of massage for pain, and strength of findings for each included systematic review.</p> <p>RESULTS: We identified 31 systematic reviews, of which 21 were considered high-quality. Systematic reviews varied in the amount of detail they collected in describing the massage therapy. Some common massage types included Swedish massage, myofascial therapies, Shiatsu, Chinese traditional massage, Thai massage, slow stroke massage, and more general descriptions of massage. The most common type of pain included in systematic reviews was neck pain (n=6). Findings from high-quality systematic reviews describe potential benefits of massage for pain indications including labor, shoulder, neck, back, cancer, fibromyalgia, and temporomandibular disorder. However, no findings were rated as moderate- or high-strength.</p> <p>DISCUSSION: More research is needed to establish confidence in the effect of massage for pain. Primary studies often do not provide adequate details of the massage therapy provided, especially in the descriptions of provider type. Few primary studies of large samples with rigorous methods have been conducted, as noted by many of the systematic review authors included in this evidence map.</p>
<p>Mitchinson A, Fletcher CE, Kim HM, Montagnini M, Hinshaw DB. Integrating massage therapy within the palliative care of veterans with advanced illnesses: an outcome study. Am J Hosp Palliat Care. 2014 Feb;31(1):6-12. doi: 10.1177/1049909113476568. Epub 2013 Feb 18.</p>	<p>AIMS: To describe the integration of massage therapy into a palliative care service and to examine the relationship between massage and symptoms in patients with advanced illnesses.</p> <p>METHODS: Between April 1, 2009, and July 31, 2010, 153 patients received massage at the VA Ann Arbor Health Care System. Data on pain, anxiety, dyspnea, relaxation, and inner peace were collected pre and post massage. Diagnoses, chronic pain, and social support were also abstracted. Analysis of covariance was used to examine changes over time.</p> <p>RESULTS: All short-term changes in symptoms showed improvement and all were statistically significant. Pain intensity decreased by 1.65 (0-10 scale, P < .001), anxiety decreased by 1.52 (0-10 scale, P < .001), patients' sense of relaxation increased by 2.92 (0-10 scale, P < .001), and inner peace improved by 1.80 (0-10 scale, P < .001).</p> <p>CONCLUSION: Massage is a useful tool for improving symptom management and reducing suffering in palliative care patients.</p>

<p>Taylor SL, Hoggatt KJ, Kligler B. Complementary and Integrated Health Approaches: What Do Veterans Use and Want. J Gen Intern Med. 2019 Jul;34(7):1192-1199. doi: 10.1007/s11606-019-04862-6. Epub 2019 Apr 22.</p>	<p>OBJECTIVES: Non-pharmacological treatment options for common conditions such as chronic pain, anxiety, and depression are being given increased consideration in healthcare, especially given the recent emphasis to address the opioid crisis. One set of non-pharmacological treatment options are evidence-based complementary and integrative health (CIH) approaches, such as yoga, acupuncture, and meditation. The Veterans Health Administration (VHA), the nation's largest healthcare system, has been at the forefront of implementing CIH approaches, given their patients' high prevalence of pain, anxiety, and depression. We aimed to conduct the first national survey of veterans' interest in and use of CIH approaches.</p> <p>METHODS: Using a large national convenience sample of veterans who regularly use the VHA, we conducted the first national survey of veterans' interest in, frequency of and reasons for use of, and satisfaction with 26 CIH approaches (n = 3346, 37% response rate) in July 2017.</p> <p>RESULTS: In the past year, 52% used any CIH approach, with 44% using massage therapy, 37% using chiropractic, 34% using mindfulness, 24% using other meditation, and 25% using yoga. For nine CIH approaches, pain and stress reduction/relaxation were the two most frequent reasons veterans gave for using them. Overall, 84% said they were interested in trying/learning more about at least one CIH approach, with about half being interested in six individual CIH approaches (e.g., massage therapy, chiropractic, acupuncture, acupressure, reflexology, and progressive relaxation). Veterans appeared to be much more likely to use each CIH approach outside the VHA vs. within the VHA.</p> <p>CONCLUSIONS: Veterans report relatively high past-year use of CIH approaches and many more report interest in CIH approaches. To address this gap between patients' level of interest in and use of CIH approaches, primary care providers might want to discuss evidence-based CIH options to their patients for relevant health conditions, given most CIH approaches are safe.</p>
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Meditation	
Citation	Abstract
<p>Beck D, Cosco Holt L, Burkard J, Andrews T, Liu L, Heppner P, Bormann JE. Efficacy of the Mantram Repetition Program for Insomnia in Veterans With Posttraumatic Stress Disorder: A Naturalistic Study. ANS Adv Nurs Sci. 2017 Apr/Jun;40(2):E1-E12. doi: 10.1097/ANS.000000000000144.</p>	<p>Statistics show that more than 80% of Veterans mention posttraumatic stress disorder (PTSD)-related symptoms when seeking treatment. Sleep disturbances and nightmares are among the top 3 presenting problems. Current PTSD trauma-focused therapies generally do not improve sleep disturbances. The mantram repetition program (MRP), a mind-body-spiritual intervention, teaches a portable set of cognitive-spiritual skills for symptom management. The aim of this study was to evaluate the efficacy of the MRP on insomnia in Veterans with PTSD in a naturalistic, clinical setting. Results show that participation in the MRP significantly reduced insomnia, as well as decreased self-reported and clinician-assessed PTSD symptom burden.</p>
<p>Bormann JE, Oman D, Walter KH, Johnson BD. Mindful attention increases and mediates psychological outcomes following mantram repetition practice in veterans with posttraumatic stress disorder. Med Care. 2014 Dec;52(12 Suppl 5):S13-8. doi: 10.1097/MLR.000000000000200. PubMed PMID: 25397817</p>	<p>BACKGROUND: Several evidence-based treatments are available to veterans diagnosed with posttraumatic stress disorder (PTSD). However, not all veterans benefit from these treatments or prefer to engage in them.</p> <p>OBJECTIVES: The current study explored whether (1) a mantram repetition program (MRP) increased mindful attention among veterans with PTSD, (2) mindful attention mediated reduced PTSD symptom severity and enhanced psychological well-being, and (3) improvement in mindful attention was due to the frequency of mantram repetition practice.</p> <p>RESEARCH DESIGN: Data from a randomized controlled trial comparing MRP plus treatment as usual (MRP+TAU) or TAU were analyzed using hierarchical linear models.</p> <p>SUBJECTS: A total of 146 veterans with PTSD from military-related trauma were recruited from a Veterans Affairs outpatient PTSD clinic (71 MRP+TAU; 75 TAU).</p> <p>MEASURES: The Clinician Administered PTSD Scale (CAPS), PTSD Checklist (PCL), the Brief Symptom Inventory-18 depression subscale, Health Survey SF-12v2, and Mindfulness Attention Awareness Scale (MAAS) were used. Frequency of mantram repetition practice was measured using wrist-worn counters and daily logs.</p> <p>RESULTS: Intent-to-treat analyses indicated greater increases in mindful attention, as measured by the MAAS, for MRP+TAU as compared with TAU participants (P<0.01). Mindful attention gains mediated previously reported treatment effects on reduced PTSD symptoms (using both CAPS and PCL), reduced depression, and improved psychological well-being. Frequency of mantram repetition practice in turn mediated increased mindful attention.</p> <p>CONCLUSIONS: The MRP intervention and specifically, mantram practice, improved mindful attention in veterans with PTSD, yielding improved overall psychological well-being. MRP may be a beneficial adjunct to usual care in veterans with PTSD.</p>

<p>Bormann JE, Thorp SR, Smith E, Glickman M, Beck D, Plumb D, Zhao S, Ackland PE, Rodgers CS, Heppner P, Herz LR, Elwy AR. Individual Treatment of Posttraumatic Stress Disorder Using Mantram Repetition: A Randomized Clinical Trial. Am J Psychiatry. 2018 Oct 1;175(10):979-988. doi: 10.1176/appi.ajp.2018.17060611. Epub 2018 Jun 20. PubMed PMID: 29921143.</p>	<p>OBJECTIVE:: Previous studies suggest that group "mantram" (sacred word) repetition therapy, a non-trauma-focused complementary therapy for posttraumatic stress disorder (PTSD), may be an effective treatment for veterans. The authors compared individually delivered mantram repetition therapy and another non-trauma-focused treatment for PTSD.</p> <p>METHOD:: The study was a two-site, open-allocation, blinded-assessment randomized trial involving 173 veterans diagnosed with military-related PTSD from two Veterans Affairs outpatient clinics (January 2012 to March 2014). The mantram group (N=89) learned skills for silent mantram repetition, slowing thoughts, and one-pointed attention. The comparison group (N=84) received present-centered therapy, focusing on currently stressful events and problem-solving skills. Both treatments were delivered individually in eight weekly 1-hour sessions. The primary outcome measure was change in PTSD symptom severity, as measured by the Clinician-Administered PTSD Scale (CAPS) and by self-report. Secondary outcome measures included insomnia, depression, anger, spiritual well-being, mindfulness, and quality of life. Intent-to-treat analysis was conducted using linear mixed models.</p> <p>RESULTS:: The mantram group had significantly greater improvements in CAPS score than the present-centered therapy group, both at the posttreatment assessment (between-group difference across time, -9.98, 95% CI=-3.63, -16.00; d=0.49) and at the 2-month follow-up (between-group difference, -9.34, 95% CI=-1.50, -17.18; d=0.46). Self-reported PTSD symptom severity was also lower in the mantram group compared with the present-centered therapy group at the posttreatment assessment, but there was no difference at the 2-month follow-up. Significantly more participants in the mantram group (59%) than in the present-centered therapy group (40%) who completed the 2-month follow-up no longer met criteria for PTSD (p<0.04). However, the percentage of participants in the mantram group (75%) compared with participants in the present-centered therapy group (61%) who experienced clinically meaningful changes (≥10-point improvements) in CAPS score did not differ significantly between groups. Reductions in insomnia were significantly greater for participants in the mantram group at both posttreatment assessment and 2-month follow-up.</p> <p>CONCLUSIONS:: In a sample of veterans with PTSD, individually delivered mantram repetition therapy was generally more effective than present-centered therapy for reducing PTSD symptom severity and insomnia.</p>
<p>Bormann JE, Hurst S, Kelly A. Responses to Mantram Repetition Program from Veterans with posttraumatic stress disorder: a qualitative analysis. J Rehabil Res Dev. 2013</p>	<p>This study describes ways in which a Mantram Repetition Program (MRP) was used for managing posttraumatic stress disorder (PTSD) symptoms in 65 outpatient Veterans with PTSD. The MRP consisted of six weekly group sessions (90 min/wk) on how to (1) choose and use a mantram, (2) slow down thoughts and behaviors, and (3) develop one-pointed attention for emotional self-regulation. Critical incident research technique interviews were conducted at 3 mo postintervention as part of a larger randomized clinical trial. The setting was an academic-affiliated Department of Veterans Affairs hospital in southern California. Categorization and comparison of the types and frequency of incidents (i.e., triggering events) were collected. Participants reported a total of 268 triggering events. Content analysis of the outcomes resulted in 12 discreet categories, including relaxing and calming down, letting go of negative feelings, thinking clearly and rationally, diverting attention away from triggering events, focusing attention, refining mantram skills, dealing with sleep disturbances, coming back from flashbacks, slowing down, communicating thoughts and feelings more effectively, feeling in touch spiritually, and letting go of physical pain. The study shows that the MRP was helpful in managing a wide range of emotional reactions in Veterans with PTSD.</p>

<p>Buttner MM, Bormann JE, Weingart K, Andrews T, Ferguson M, Afari N. Multi-site evaluation of a complementary, spiritually-based intervention for Veterans: The Mantram Repetition Program. Complement Ther Clin Pract. 2016 Feb;22:74-9. doi: 10.1016/j.ctcp.2015.12.008. Epub 2015 Dec 19.</p>	<p>BACKGROUND: Mental and physical symptoms affect Veterans' quality of life. Despite available conventional treatments, an increasing number of Veterans are seeking complementary approaches to symptom management. Research on the Mantram Repetition Program (MRP), a spiritually-based intervention, has shown significant improvements in psychological distress and spiritual well-being in randomized trials. However, these findings have not been replicated in real-world settings.</p> <p>METHODS: In this naturalistic study, we analyzed outcomes from 273 Veterans who participated in MRP at six sites and explored outcomes based on facilitator training methods. Measures included satisfaction and symptoms of anxiety, depression, and somatization using the Brief Symptom Inventory-18; Functional Assessment of Chronic Illness Therapy-Spiritual Well-being questionnaire; and the Mindfulness Attention Awareness Scale.</p> <p>RESULTS: There were significant improvements in all outcomes (p's < .001) regardless of how facilitators were trained. Patient satisfaction was high.</p> <p>CONCLUSION: The MRP was disseminated successfully yielding improvements in psychological distress, spiritual well-being, and mindfulness.</p>
<p>Crawford JN, Talkovsky AM, Bormann JE, Lang AJ. Targeting hyperarousal: Mantram Repetition Program for PTSD in US veterans. Eur J Psychotraumatol. 2019 Sep 30;10(1):1665768. doi: 10.1080/20008198.2019.1665768.</p>	<p>Background: Hyperarousal appears to play an important role in the development and maintenance of posttraumatic stress disorder (PTSD) symptoms, but current evidence-based treatments appear to address this symptom type less effectively than the other symptom clusters. The Mantram Repetition Program (MRP) is a meditation-based intervention that has previously been shown to improve symptoms of posttraumatic stress disorder (PTSD) and may be especially helpful for hyperarousal. If MRP is an effective tool for decreasing this often treatment-resistant symptom cluster, it may become an important clinical tool. Objective: The goal of this secondary analysis was to examine the effect of the MRP on hyperarousal and other PTSD symptom clusters and to examine hyperarousal as a mediator of treatment response. Method: Secondary analyses were conducted on data from a randomized controlled trial in which Veterans with PTSD ($n = 173$) were assigned to the MRP or a non-specific psychotherapy control and assessed pre-treatment, post-treatment and 8 weeks after treatment completion. The impact of the interventions on PTSD symptom clusters was examined, and time-lagged hierarchical linear modelling was applied to examine alternative mediation models. Results: All PTSD symptom clusters improved in both treatments. MRP led to greater reductions in hyperarousal at post-treatment (Hedge's $g = 0.57$) and follow-up (Hedge's $g = 0.52$), and in numbing at post-treatment (Hedge's $g = 0.47$). Hyperarousal mediated reductions in the composite of the other PTSD symptom clusters. Although the reverse model was significant as well, the effect was weaker in this direction. Conclusion: Interventions focused on the management of hyperarousal may play an important role in recovery from PTSD. The MRP appears efficacious in reducing hyperarousal, and thereby impacting other PTSD symptom clusters, as one pathway to facilitating recovery.</p>
<p>Evans APB, Mascaro JS, Kohn JN, Dobrusin A, Darcher A, Starr SD, Craighead LW, Negi LT. Meditation Training for Emotional Numbing Symptoms Among Veterans with Post-Traumatic Stress Disorder. J Altern Complement Med. 2019</p>	<p>The aims of this study were (1) to examine the acceptability of CBCT (cognitively-based compassion training) among veterans who continued to report social disconnection and emotional numbing symptoms after completing empirically supported PTSD treatment and (2) to make preliminary estimates of the impact of CBCT on emotional numbing symptoms.</p>

<p>Elwy AR, Johnston JM, Bormann JE, Hull A, Taylor SL. A systematic scoping review of complementary and alternative medicine mind and body practices to improve the health of veterans and military personnel. Med Care. 2014 Dec;52(12 Suppl 5):S70-82. doi: 10.1097/MLR.000000000000228.</p>	<p>BACKGROUND: Meditation, imagery, acupuncture, and yoga are the most frequently offered mind and body practices in the Department of Veterans Affairs. Yet, the research on mind and body practices has been critiqued as being too limited in evidence and scope to inform clinical treatment.</p> <p>OBJECTIVES: We conducted a systematic scoping review of mind and body practices used with veterans or active duty military personnel to identify gaps in the literature and make recommendations for future primary research.</p> <p>RESEARCH DESIGN: Following systematic literature review methodology, we searched 5 databases using 27 different National Center for Complementary and Alternative Medicine-defined mind and body practices as text words, keywords, and MeSH terms through June 30, 2014. We also conducted handsearches of 4 previous reviews.</p> <p>SUBJECTS: Active duty military members or veterans 18 years or older participating in mind and body practice interventions globally.</p> <p>MEASURES: Data were extracted from studies meeting 5 inclusion criteria. The quality of randomized controlled trials (RCTs) was assessed using an existing checklist.</p> <p>RESULTS: Of 1819 studies identified, 89 interventions (50 RCTs) published between 1976 and 2014, conducted in 9 countries, using 152 different measures to assess 65 health and well-being outcomes met our inclusion criteria. Most interventions took place in the United States (n=78). Meditation practices (n=25), relaxation techniques including imagery (n=20), spinal manipulation including physical therapy (n=16), and acupuncture (n=11) were the most frequently studied practices. Methodological quality of most RCTs was rated poorly.</p> <p>CONCLUSIONS: Meditation and acupuncture practices are among the most frequently offered and studied mind and body practices. Future research should include yoga as it is currently understudied among veterans and military personnel. A repository of mind and body intervention outcome measures may further future research efforts, as would conducting pragmatic trials and more robust RCTs.</p>
<p>Gallegos AM, Crean HF, Pigeon WR, Heffner KL. Meditation and yoga for posttraumatic stress disorder: A meta-analytic review of randomized controlled trials. Clin Psychol Rev. 2017 Dec;58:115-124. doi: 10.1016/j.cpr.2017.10.004. Review. PubMed PMID: 29100863; PubMed Central PMCID: PMC5939561.</p>	<p>Posttraumatic stress disorder (PTSD) is a chronic and debilitating disorder that affects the lives of 7-8% of adults in the U.S. Although several interventions demonstrate clinical effectiveness for treating PTSD, many patients continue to have residual symptoms and ask for a variety of treatment options. Complementary health approaches, such as meditation and yoga, hold promise for treating symptoms of PTSD. This meta-analysis evaluates the effect size (ES) of yoga and meditation on PTSD outcomes in adult patients. We also examined whether the intervention type, PTSD outcome measure, study population, sample size, or control condition moderated the effects of complementary approaches on PTSD outcomes. The studies included were 19 randomized control trials with data on 1173 participants. A random effects model yielded a statistically significant ES in the small to medium range (ES=-0.39, p<0.001, 95% CI [-0.57, -0.22]). There were no appreciable differences between intervention types, study population, outcome measures, or control condition. There was, however, a marginally significant higher ES for sample size≤30 (ES=-0.78, k=5). These findings suggest that meditation and yoga are promising complementary approaches in the treatment of PTSD among adults and warrant further study.</p>

<p>Goldberg S, Zeliadt S, Hoggatt K, Simpson T, Fortney J, Taylor SL. Utilization and Perceived Effectiveness of Mindfulness Meditation in Veterans: Results from a National Survey. Mindfulness. Sep 2019; 1-10.</p>	<p>Objectives Complementary and integrative health (CIH) approaches are increasingly utilized in health care, and mindfulness meditation is one such evidence-based CIH practice. More information is needed about veterans' utilization of mindfulness to inform integration within the Veterans Health Administration (VHA).</p> <p>Methods This study involved secondary data analysis of a national survey to evaluate utilization and perceived effectiveness of mindfulness relative to other CIH approaches among military veterans. Military veterans (n = 1230) enrolled in VHA reported CIH utilization rates, reasons for use, perceived effectiveness, treatment barriers, and demographics.</p> <p>Results Approximately 18% of veterans reported using mindfulness meditation in the past year, exceeding the proportion using all other CIH approaches (p < .001), with the exception of massage and chiropractic care. Mindfulness was most commonly used for stress reduction and addressing symptoms of depression and anxiety. Among mindfulness users, veterans rated mindfulness with a mean score of 3.18 out of 5 (SD = 0.82) in terms of effectiveness, reflecting a response in the "somewhat helpful" to "moderately helpful" range. This was similar to ratings of other CIH approaches (mean = 3.20, p = .391). Of those who used mindfulness, nearly all (78%) reported only using it outside the VHA. Veterans identified not knowing if the VHA offered mindfulness as the most common reason for using mindfulness outside VHA.</p> <p>Conclusions In summary, veterans use mindfulness for a range of reasons and report receiving benefit from its use. Low awareness and potentially low availability of VHA's mindfulness programs need to be addressed to increase access.</p>
<p>Heffner KL et al. Psychol Trauma. (2016). Meditation programs for veterans with posttraumatic stress disorder: Aggregate findings from a multi-site evaluation. Psychol Trauma. 2016 May;8(3):365-74. doi: 10.1037/tra0000106. Epub 2016 Jan 11.</p>	<p>OBJECTIVE: Interest in meditation to manage posttraumatic stress disorder (PTSD) symptoms is increasing. Few studies have examined the effectiveness of meditation programs offered to Veterans within Department of Veterans Affairs (VA) mental health services. The current study addresses this gap using data from a multisite VA demonstration project.</p> <p>METHOD: Evaluation data collected at 6 VA sites (N = 391 Veterans) before and after a meditation program, and a treatment-as-usual (TAU) program, were examined here using random effects meta-analyses. Site-specific and aggregate between group effect sizes comparing meditation programs to TAU were determined for PTSD severity measured by clinical interview and self-report. Additional outcomes included experiential avoidance and mindfulness.</p> <p>RESULTS: In aggregate, analyses showed medium effect sizes for meditation programs compared to TAU for PTSD severity (clinical interview: effect size (ES) = -0.32; self-report: ES = -0.39). Similarly sized effects of meditation programs were found for overall mindfulness (ES = 0.41) and 1 specific aspect of mindfulness, nonreactivity to inner experience (ES = .37). Additional findings suggested meditation type and program completion differences each moderated program effects.</p> <p>CONCLUSIONS: VA-sponsored meditation programs show promise for reducing PTSD severity in Veterans receiving mental health services. Where meditation training fits within mental health services, and for whom programs will be of interest and effective, require further clarification. (PsycINFO Database Record</p>

<p>Herron RE, Rees B. The Transcendental Meditation Program's Impact on the Symptoms of Post-traumatic Stress Disorder of Veterans: An Uncontrolled Pilot Study. Mil Med. 2018 Jan 1;183(1-2):e144-e150. doi: 10.1093/milmed/usx059.</p>	<p>BACKGROUND: Current treatments for post-traumatic stress disorder (PTSD) are only partially effective. This study evaluated whether an extensively researched stress reduction method, the Transcendental Meditation (TM) technique, can reduce the PTSD symptoms of veterans. Previous research suggested that TM practice can decrease veterans' PTSD symptoms.</p> <p>METHODS: A one-group pretest-posttest design was used to evaluate the impact of TM practice on reducing PTSD symptoms. A convenience sample of 89 veterans completed PTSD Checklist-Civilian (PCL-5) questionnaires. Among those, 46 scored above 33, the threshold for provisional diagnosis of PTSD, and were included in this evaluation. The PCL-5 measured PTSD symptoms at baseline and 30 and 90 d after intervention. Regularity of TM practice was recorded. Paired sample t-tests were used to assess within-group changes from baseline to post-intervention periods. Analysis of variance was used to compare full-dose (two 20-min TM sessions per day) and half-dose (one 20-min TM session per day) groups.</p> <p>FINDINGS: After 1 mo of TM practice, all 46 veterans responded; their PCL-5 average decreased from 51.52 in the pre-intervention period to a post-intervention mean of 23.43, a decline of 28.09 points (-54.5%); standard deviation: 14.57; confidence interval: 23.76-32.41; and effect size: -1.93; $p < 0.0001$. The median PTSD scores declined from 52.5 to 22.5, a decrease of 30 points (-57%), while 40 veterans (87%) had clinically significant declines (>10 points) in PTSD symptoms, and 37 (80%) dropped below the clinical level (<33). At the 90 d posttest, 31 of the 46 responded and three more dropped below the 33 threshold. Intent-to-treat analyses revealed clinically and statistically significant effects. A dose-response effect suggested a causal relationship. The full-dose group exhibited larger mean declines in PTSD symptoms than the half-dose group. Averages of the 46 veterans' responses to 20 PCL-5 questions exhibited significant ($p < 0.0001$) declines from the pre-intervention period to the 30-d post-intervention assessment.</p> <p>DISCUSSION: Results indicated that TM practice reduced PTSD symptoms without re-experiencing trauma. Because of the magnitude of these results and dose-response effect, regression to the mean, spontaneous remission of symptoms, and placebo effects are unlikely explanations for the results. Major limitations were absence of random assignment and lack of a control group. Participants chose to start and continue TM practice and to complete PCL-5 questionnaires. Those who self-selected to enter this study may not be representative of all veterans who have PTSD. Those who did not complete follow-up questionnaires at 90 d may or may not have had the same results as those who responded. The design and sampling method affect the generalizability of the results to wider populations. When taking into account these results and all previous research on the TM technique in reducing psychological and physiological stress, the convergence of evidence suggests that TM practice may offer a promising adjunct or alternative method for treating PTSD. Because of the widely recognized need to identify effective new approaches for treating PTSD, randomized research with control groups is warranted to further investigate the effectiveness of TM practice as a treatment for PTSD.</p>
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<p>Hilton L, Maher AR, Colaiaco B, Apaydin E, Sorbero ME, Booth M, Shanman RM, Hempel S. Meditation for posttraumatic stress: Systematic review and meta-analysis. Psychol Trauma. 2017 Jul;9(4):453-460. doi: 10.1037/tra0000180. Epub 2016 Aug 18. Review. PubMed PMID: 27537781.</p>	<p>OBJECTIVE: We conducted a systematic review and meta-analysis that synthesized evidence from randomized controlled trials of meditation interventions to provide estimates of their efficacy and safety in treating adults diagnosed with posttraumatic stress disorder (PTSD). This review was based on an established protocol (PROSPERO: CRD42015025782) and is reported according to PRISMA guidelines. Outcomes of interest included PTSD symptoms, depression, anxiety, health-related quality of life, functional status, and adverse events.</p> <p>METHOD: Meta-analyses were conducted using the Hartung-Knapp-Sidik-Jonkman method for random-effects models. Quality of evidence was assessed using the Grade of Recommendations Assessment, Development, and Evaluation (GRADE) approach.</p> <p>RESULTS: In total, 10 trials on meditation interventions for PTSD with 643 participants met inclusion criteria. Across interventions, adjunctive meditation interventions of mindfulness-based stress reduction, yoga, and the mantram repetition program improve PTSD and depression symptoms compared with control groups, but the findings are based on low and moderate quality of evidence. Effects were positive but not statistically significant for quality of life and anxiety, and no studies addressed functional status. The variety of meditation intervention types, the short follow-up times, and the quality of studies limited analyses. No adverse events were reported in the included studies; only half of the studies reported on safety.</p> <p>CONCLUSIONS: Meditation appears to be effective for PTSD and depression symptoms, but in order to increase confidence in findings, more high-quality studies are needed on meditation as adjunctive treatment with PTSD-diagnosed participant samples large enough to detect statistical differences in outcomes. (PsycINFO Database Record</p>
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<p>Hilton LG, Libretto S, Xenakis L, Elfenbaum P, Boyd C, Zhang W, Clark AA. Evaluation of an Integrative Post-Traumatic Stress Disorder Treatment Program. J Altern Complement Med. 2019</p>	<p>Objectives: Post-traumatic stress disorder (PTSD) and combat-related stress can be refractory, pervasive, and have a devastating impact on those affected, their families, and society at large. Challenges dealing with symptoms may in turn make a servicemember more susceptible to problems, including alcohol abuse, interpersonal conflict, and occupational problems. An effective treatment strategy will address multifactorial issues by using a holistic multimodal approach. Back on Track is an intensive outpatient program utilizing a holistic philosophy and multimodal treatments to provide a whole systems approach for the treatment of combat-related stress reactions and PTSD in active duty servicemembers.</p> <p>Design/Setting/Subjects: An explanatory, sequential, mixed-methods program evaluation was conducted to assess the effectiveness of a PTSD and combat stress treatment program. Quantitative outcomes were collected and analyzed on 595 participants at pre- and postinterventions and 6-week follow-up and qualitative data were gathered through participant interviews.</p> <p>Intervention: The manualized program uses a multimodal, psychoeducational group therapy format with a holistic approach for treating combat stress, increasing resiliency, and assisting with reintegration. Rotating providers visit from other programs and services to deliver content in bio–psycho–social–spiritual domains, including didactic lectures on mindfulness and the relaxation response and daily sessions of yoga nidra and meditation.</p> <p>Outcome measures: The primary outcome measure was PTSD symptom severity assessed with the PTSD Checklist-Military Version (PCL-M). Secondary outcomes included self-efficacy, knowledge, use, and satisfaction. Quantitative data were contextualized with interview data.</p> <p>Results: Results demonstrated a highly statistically significant effect of the program when comparing within-subject PCL-M scores before and after program participation, signed rank S (N= 595) = -47,367, p < 0.001. This translates to a moderate effect size, Cohen’s d (N= 595) = -0.55, 95% confidence interval = -0.62 to -0.47, and a mean decrease of 7 points on the PCL-M at postintervention, demonstrating response to treatment. There were significant increases in knowledge and self-efficacy and high levels of satisfaction with the program overall, content, materials, and delivery.</p> <p>Conclusions: The treatment program has served *800 servicemembers since inception and has since expanded to five installations. The provision of whole systems care where the approach is holistic, multimodal, and multidisciplinary may be a way forward for the successful treatment of PTSD and other debilitating behavioral health conditions in military contexts and beyond.</p>
<p>Hull A, Reinhard M, McCarron K, Allen N, Jecmen MC, Akhter J, Duncan A, Soltes K. Acupuncture and meditation for military veterans: first steps of quality management and future program development. Glob Adv Health Med. 2014 Jul;3(4):27-31. doi: 10.7453/gahmj.2013.050.</p>	<p>Veterans of all war eras have a high rate of chronic disease, mental health disorders, and chronic multi-symptom illnesses (CMI).(1-3) Many veterans report symptoms that affect multiple biological systems as opposed to isolated disease states. Standard medical treatments often target isolated disease states such as headaches, insomnia, or back pain and at times may miss the more complex, multisystem dysfunction that has been documented in the veteran population. Research has shown that veterans have complex symptomatology involving physical, cognitive, psychological, and behavioral disturbances, such as difficult to diagnose pain patterns, irritable bowel syndrome, chronic fatigue, anxiety, depression, sleep disturbance, or neurocognitive dysfunction.(2-4) Meditation and acupuncture are each broad-spectrum treatments designed to target multiple biological systems simultaneously, and thus, may be well suited for these complex chronic illnesses. The emerging literature indicates that complementary and integrative medicine (CIM) approaches augment standard medical treatments to enhance positive outcomes for those with chronic disease, mental health disorders, and CMI.(5-12.).</p>

<p>Kang SS, Erbes CR, Lamberty GJ, Thuras P, Sponheim SR, Polusny MA, Moran AC, Van Voorhis AC, Lim KO. Transcendental meditation for veterans with post-traumatic stress disorder. Psychol Trauma. 2018 Nov;10(6):675-680. doi: 10.1037/tra0000346. Epub 2018 Jul 19.</p>	<p>OBJECTIVE: Transcendental Meditation (TM) is a mental technique using a mantra to facilitate meditation. TM has a potential for treating symptoms of posttraumatic stress disorder (PTSD), but its clinical efficacy remains to be clarified. This pilot study evaluated the acceptability, preliminary effectiveness, and neurophysiology of TM for veterans with PTSD.</p> <p>METHOD: Twenty-nine veterans (20.7% female) were recruited from a major medical center and enrolled in the study. TM instruction was provided by certified TM teachers from the Maharishi Foundation and consisted of 8 weeks of individual and group-based meditation instruction and practice. Outcomes were assessed at baseline, during treatment, posttreatment, and at 2-month follow-up, and included clinical interviews, self-report questionnaires, and electroencephalography (EEG) recorded during resting and meditation states.</p> <p>RESULTS: From baseline to posttreatment, participants reported reductions in PTSD symptoms, experiential avoidance, and depressive and somatic symptoms, as well as increases on measures of mindfulness and quality of life. Gains were either maintained or continued to improve through the 2-month follow-up. Compared to baseline, EEG spectral power increased in low-frequency bands (1-7 Hz) at posttreatment and follow-up and only during meditation states suggesting TM-specific changes in brain state associated with the intervention.</p> <p>CONCLUSIONS: TM appears to be an acceptable and effective treatment for veterans with PTSD that warrants further study regarding specific outcomes and beneficial changes in brain function. (PsycINFO Database Record (c) 2018 APA, all rights reserved).</p>
<p>Kearney DJ, Malte CA, McManus C, Martinez ME, Felleman B, Simpson TL. Loving-kindness meditation for posttraumatic stress disorder: a pilot study. J Trauma Stress. 2013</p>	<p>Loving-kindness meditation is a practice designed to enhance feelings of kindness and compassion for self and others. Loving-kindness meditation involves repetition of phrases of positive intention for self and others. We undertook an open pilot trial of loving-kindness meditation for veterans with posttraumatic stress disorder (PTSD). Measures of PTSD, depression, self-compassion, and mindfulness were obtained at baseline, after a 12-week loving-kindness meditation course, and 3 months later. Effect sizes were calculated from baseline to each follow-up point, and self-compassion was assessed as a mediator. Attendance was high; 74% attended 9-12 classes. Self-compassion increased with large effect sizes and mindfulness increased with medium to large effect sizes. A large effect size was found for PTSD symptoms at 3-month follow-up ($d = -0.89$), and a medium effect size was found for depression at 3-month follow-up ($d = -0.49$). There was evidence of mediation of reductions in PTSD symptoms and depression by enhanced self-compassion. Overall, loving-kindness meditation appeared safe and acceptable and was associated with reduced symptoms of PTSD and depression. Additional study of loving-kindness meditation for PTSD is warranted to determine whether the changes seen are due to the loving-kindness meditation intervention versus other influences, including concurrent receipt of other treatments.</p>

<p>Lang AJ, Malaktaris AL, Casmar P, Baca SA, Golshan S, Harrison T, Negi L. Compassion Meditation for Posttraumatic Stress Disorder in Veterans: A Randomized Proof of Concept Study. J Trauma Stress. 2019 Apr;32(2):299-309. doi: 10.1002/jts.22397. Epub 2019 Mar 31. PubMed PMID: 30929283.</p>	<p>There is considerable interest in developing complementary and integrative approaches for ameliorating posttraumatic stress disorder (PTSD). Compassion meditation (CM) and loving-kindness meditation appear to offer benefits to individuals with PTSD, including symptom reduction. The present study was a pilot randomized controlled trial of CM for PTSD in veterans. The CM condition, an adaptation of Cognitively-Based Compassion Training (CBCT®), consists of exercises to stabilize attention, develop present-moment awareness, and foster compassion. We compared CM to Veteran.calm (VC), which consists of psychoeducation about PTSD, rationale for relaxation, relaxation training, and sleep hygiene. Both conditions consist of 10 weekly 90-min group sessions with between-session practice assignments. A total of 28 veterans attended at least one session of the group intervention and completed pre- and posttreatment measures of PTSD severity and secondary outcomes as well as weekly measures of PTSD, depressive symptoms, and positive and negative emotions. Measures of treatment credibility, attendance, practice compliance, and satisfaction were administered to assess feasibility. A repeated measures analysis of variance revealed a more substantive reduction in PTSD symptoms in the CM condition than in the VC condition, between-group $d = -0.85$. Credibility, attendance, and satisfaction were similar across CM and VC conditions thus demonstrating the feasibility of CM and the appropriateness of VC as a comparison condition. The findings of this initial randomized pilot study provide rationale for future studies examining the efficacy and effectiveness of CM for veterans with PTSD.</p>
<p>Mathersul DC, Tang JS, Schulz-Heik RJ, Avery TJ, Seppälä EM, Bayley PJ. Study protocol for a non-inferiority randomised controlled trial of SKY breathing meditation versus cognitive processing therapy for PTSD among veterans. BMJ Open. 2019 Apr 3;9(4):e027150. doi: 10.1136/bmjopen-2018-027150.</p>	<p>INTRODUCTION: Post-traumatic stress disorder (PTSD) is a debilitating, highly prevalent condition. Current clinical practice guidelines recommend trauma-focused psychotherapy (eg, cognitive processing therapy; CPT) as the first-line treatment for PTSD. However, while these treatments show clinically meaningful symptom improvement, the majority of those who begin treatment retain a diagnosis of PTSD post-treatment. Perhaps for this reason, many individuals with PTSD have sought more holistic, mind-body, complementary and integrative health (CIH) interventions. However, there remains a paucity of high-quality, active controlled efficacy studies of CIH interventions for PTSD, which precludes their formal recommendation.</p> <p>METHODS AND ANALYSES: We present the protocol for an ongoing non-inferiority parallel group randomised controlled trial (RCT) comparing the efficacy of a breathing meditation intervention (Sudarshan Kriya Yoga [SKY]) to a recommended evidence-based psychotherapy (CPT) for PTSD among veterans. Assessors are blinded to treatment group. The primary outcome measure is the PTSD Checklist-Civilian Version and a combination of clinical, self-report, experimental and physiological outcome measures assess treatment-related changes across each of the four PTSD symptom clusters (re-experiencing, avoidance, negative cognitions or mood and hyperarousal/reactivity). Once the RCT is completed, analyses will use both an intent-to-treat (using the 'last observation carried forward' for missing data) and a per-protocol or 'treatment completers' procedure, which is the most rigorous approach to non-inferiority designs.</p> <p>ETHICS AND DISSEMINATION: To the best of our knowledge, this is this first non-inferiority RCT of SKY versus CPT for PTSD among veterans. The protocol is approved by the Stanford University Institutional Review Board. All participants provided written informed consent prior to participation. Results from this RCT will inform future studies including larger multi-site efficacy RCTs of SKY for PTSD and other mental health conditions, as well as exploration of cost-effectiveness and evaluation of implementation issues. Results will also inform evidence-based formal recommendations regarding CIH interventions for PTSD.</p>
<p>Nassif H, Chapman J, Sandbrink F et al. (2016) Mindfulness meditation and chronic pain management in Iraq and Afghanistan veterans with traumatic brain injury: A pilot study. Military Behavioral Health, 4:1, 82-89, DOI: 10.1080/21635781.2015.1119772</p>	<p>This study examined the effectiveness of iRest meditation for chronic pain in veterans with moderate traumatic brain injury (TBI). Veterans were randomly assigned to iRest (n = 4) or treatment as usual (n = 5) for eight weeks. Patient-reported pain intensity and interference were assessed at baseline, end point, and four-week follow-up. Veterans receiving iRest reported clinically meaningful reductions in pain intensity (23% to 42%) and pain interference (34% to 41%) for most outcome measures and time points. Effect sizes were large for pain interference ($g = 0.92-1.13$) and medium to large for intensity ($g = 0.37-0.61$). We conclude that iRest is a promising self-management approach for chronic pain in veterans with moderate TBI.</p>

<p>Nidich S, Mills PJ, Rainforth M, Heppner P, Schneider RH, Rosenthal NE, Salerno J, Gaylord-King C. Non-trauma-focused meditation versus exposure therapy in veterans with post-traumatic stress disorder: a randomised controlled trial. Lancet Psychiatry. 2018</p>	<p>BACKGROUND: Post-traumatic stress disorder (PTSD) is a complex and difficult-to-treat disorder, affecting 10-20% of military veterans. Previous research has raised the question of whether a non-trauma-focused treatment can be as effective as trauma exposure therapy in reducing PTSD symptoms. This study aimed to compare the non-trauma-focused practice of Transcendental Meditation (TM) with prolonged exposure therapy (PE) in a non-inferiority clinical trial, and to compare both therapies with a control of PTSD health education (HE).</p> <p>METHODS: We did a randomised controlled trial at the Department of Veterans Affairs San Diego Healthcare System in CA, USA. We included 203 veterans with a current diagnosis of PTSD resulting from active military service randomly assigned to a TM or PE group, or an active control group of HE, using stratified block randomisation. Each treatment provided 12 sessions over 12 weeks, with daily home practice. TM and HE were mainly given in a group setting and PE was given individually. The primary outcome was change in PTSD symptom severity over 3 months, assessed by the Clinician-Administered PTSD Scale (CAPS). Analysis was by intention to treat. We hypothesised that TM would show non-inferiority to PE in improvement of CAPS score ($\Delta=10$), with TM and PE superior to PTSD HE. This study is registered with ClinicalTrials.gov, number NCT01865123.</p> <p>FINDINGS: Between June 10, 2013, and Oct 7, 2016, 203 veterans were randomly assigned to an intervention group (68 to the TM group, 68 to the PE group, and 67 to the PTSD HE group). TM was significantly non-inferior to PE on change in CAPS score from baseline to 3-month post-test (difference between groups in mean change -5.9, 95% CI -14.3 to 2.4, $p=0.0002$). In standard superiority comparisons, significant reductions in CAPS scores were found for TM versus PTSD HE (-14.6 95% CI, -23.3 to -5.9, $p=0.0009$), and PE versus PTSD HE (-8.7 95% CI, -17.0 to -0.32, $p=0.041$). 61% of those receiving TM, 42% of those receiving PE, and 32% of those receiving HE showed clinically significant improvements on the CAPS score.</p> <p>INTERPRETATION: A non-trauma-focused-therapy, TM, might be a viable option for decreasing the severity of PTSD symptoms in veterans and represents an efficacious alternative for veterans who prefer not to receive or who do not respond to traditional exposure-based treatments of PTSD.</p>
<p>Rutledge T, Nidich S, Schneider RH, Mills PJ, Salerno J, Heppner P, Gomez MA, Gaylord-King C, Rainforth M. Design and rationale of a comparative effectiveness trial evaluating transcendental meditation against established therapies for PTSD. Contemp Clin Trials. 2014 Sep;39(1):50-6. doi: 10.1016/j.cct.2014.07.005. Epub 2014 Jul 25.</p>	<p>BACKGROUND: Although meditation therapies such as the Transcendental Meditation (TM) technique are commonly used to assist with stress and stress-related diseases, there remains a lack of rigorous clinical trial research establishing the relative efficacy of these treatments overall and for populations with psychiatric illness. This study uses a comparative effectiveness design to assess the relative benefits of TM to those obtained from a gold-standard cognitive behavioral therapy for posttraumatic stress disorder (PTSD) in a Veteran population.</p> <p>METHODS AND DESIGN: This paper describes the rationale and design of an in progress randomized controlled trial comparing TM to an established cognitive behavioral treatment - Prolonged Exposure (PE) - and an active control condition (health education [HE]) for PTSD. This trial will recruit 210 Veterans meeting DSM-IV criteria for PTSD, with testing conducted at 0 and 3 months for PTSD symptoms, depression, mood disturbance, quality of life, behavioral factors, and physiological/biochemical and gene expression mechanisms using validated measures. The study hypothesis is that TM will be noninferior to PE and superior to HE on changes in PTSD symptoms, using the Clinician Administered PTSD Scale (CAPS).</p> <p>DISCUSSION: The described study represents a methodologically rigorous protocol evaluating the benefits of TM for PTSD. The projected results will help to establish the overall efficacy of TM for PTSD among Veterans, identify bio-behavioral mechanisms through which TM and PE may improve PTSD symptoms, and will permit conclusions regarding the relative value of TM against currently established therapies for PTSD.</p>

<p>Seppälä EM, Nitschke JB, Tudorascu DL, Hayes A, Goldstein MR, Nguyen DT, Perlman D, Davidson RJ. Breathing-based meditation decreases posttraumatic stress disorder symptoms in U.S. military veterans: a randomized controlled longitudinal study.</p>	<p>Given the limited success of conventional treatments for veterans with posttraumatic stress disorder (PTSD), investigations of alternative approaches are warranted. We examined the effects of a breathing-based meditation intervention, Sudarshan Kriya yoga, on PTSD outcome variables in U.S. male veterans of the Iraq or Afghanistan war. We randomly assigned 21 veterans to an active (n = 11) or waitlist control (n = 10) group. Laboratory measures of eye-blink startle and respiration rate were obtained before and after the intervention, as were self-report symptom measures; the latter were also obtained 1 month and 1 year later. The active group showed reductions in PTSD scores, $d = 1.16$, 95% CI [0.20, 2.04], anxiety symptoms, and respiration rate, but the control group did not. Reductions in startle correlated with reductions in hyperarousal symptoms immediately postintervention ($r = .93$, $p < .001$) and at 1-year follow-up ($r = .77$, $p = .025$). This longitudinal intervention study suggests there may be clinical utility for Sudarshan Kriya yoga for PTSD.</p>
<p>Smeeding SJ, Bradshaw DH, Kumpfer K, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for chronic pain and stress-related depression, anxiety, and post-traumatic stress disorder. J Altern Complement Med. 2010 Aug;16(8):823-35. doi: 10.1089/acm.2009.0510. PubMed PMID: 20649442.</p>	<p>OBJECTIVES: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind-body skills.</p> <p>METHODS: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI < 19, n = 82), low depression (BDI < 19, n = 93), and absence of PTSD (n = 102) compared to veterans with high anxiety (BAI > or = 19, n = 77), high depression (BDI > 19, n = 67), and presence of PTSD (n = 63).</p> <p>RESULTS: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's $d = 0.52$), the high-depression group (Cohen's $d = 0.46$), and the PTSD group (Cohen's $d = 0.41$).</p> <p>CONCLUSIONS: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.</p>

<p>Taylor SL, Hoggatt KJ, Kligler B. Complementary and Integrated Health Approaches: What Do Veterans Use and Want. J Gen Intern Med. 2019 Jul;34(7):1192-1199. doi: 10.1007/s11606-019-04862-6. Epub 2019 Apr 22.</p>	<p>OBJECTIVES: Non-pharmacological treatment options for common conditions such as chronic pain, anxiety, and depression are being given increased consideration in healthcare, especially given the recent emphasis to address the opioid crisis. One set of non-pharmacological treatment options are evidence-based complementary and integrative health (CIH) approaches, such as yoga, acupuncture, and meditation. The Veterans Health Administration (VHA), the nation's largest healthcare system, has been at the forefront of implementing CIH approaches, given their patients' high prevalence of pain, anxiety, and depression. We aimed to conduct the first national survey of veterans' interest in and use of CIH approaches.</p> <p>METHODS: Using a large national convenience sample of veterans who regularly use the VHA, we conducted the first national survey of veterans' interest in, frequency of and reasons for use of, and satisfaction with 26 CIH approaches (n = 3346, 37% response rate) in July 2017.</p> <p>RESULTS: In the past year, 52% used any CIH approach, with 44% using massage therapy, 37% using chiropractic, 34% using mindfulness, 24% using other meditation, and 25% using yoga. For nine CIH approaches, pain and stress reduction/relaxation were the two most frequent reasons veterans gave for using them. Overall, 84% said they were interested in trying/learning more about at least one CIH approach, with about half being interested in six individual CIH approaches (e.g., massage therapy, chiropractic, acupuncture, acupressure, reflexology, and progressive relaxation). Veterans appeared to be much more likely to use each CIH approach outside the VHA vs. within the VHA.</p> <p>CONCLUSIONS: Veterans report relatively high past-year use of CIH approaches and many more report interest in CIH approaches. To address this gap between patients' level of interest in and use of CIH approaches, primary care providers might want to discuss evidence-based CIH options to their patients for relevant health conditions, given most CIH approaches are safe.</p>
<p>Wahbeh H, Goodrich E, Goy E, Oken BS. Mechanistic Pathways of Mindfulness Meditation in Combat Veterans With Posttraumatic Stress Disorder. J Clin Psychol. 2016</p>	<p>OBJECTIVE: This study's objective was to evaluate the effect of two common components of meditation (mindfulness and slow breathing) on potential mechanistic pathways.</p> <p>METHODS: A total of 102 combat veterans with posttraumatic stress disorder (PTSD) were randomized to (a) the body scan mindfulness meditation (MM), (b) slow breathing (SB) with a biofeedback device, (c) mindful awareness of the breath with an intention to slow the breath (MM+SB), or (d) sitting quietly (SQ). Participants had 6 weekly one-on-one sessions with 20 minutes of daily home practice. The mechanistic pathways and measures were as follows: (a) autonomic nervous system (hyperarousal symptoms, heart rate [HR], and heart rate variability [HRV]); (b) frontal cortex activity (attentional network task [ANT] conflict effect and event-related negativity and intrusive thoughts); and (c) hypothalamic-pituitary-adrenal axis (awakening cortisol). PTSD measures were also evaluated.</p> <p>RESULTS: Meditation participants had significant but modest within-group improvement in PTSD and related symptoms, although there were no effects between groups. Perceived impression of PTSD symptom improvement was greater in the meditation arms compared with controls. Resting respiration decreased in the meditation arms compared with SQ. For the mechanistic pathways, (a) subjective hyperarousal symptoms improved within-group (but not between groups) for MM, MM+SB, and SQ, while HR and HRV did not; (b) intrusive thoughts decreased in MM compared with MM+SB and SB, while the ANT measures did not change; and (c) MM had lower awakening cortisol within-group (but not between groups).</p> <p>CONCLUSION: Treatment effects were mostly specific to self-report rather than physiological measures. Continued research is needed to further evaluate mindfulness meditation's mechanism in people with PTSD.</p>

<p>Williams RM, Ehde DM, Day M, Turner AP, Hakimian S, Gertz K, Ciol M, McCall A, Kincaid C, Pettet MW, Patterson D, Suri P, Jensen MP. The chronic pain skills study: Protocol for a randomized controlled trial comparing hypnosis, mindfulness meditation and pain education in veterans. Contemp Clin Trials. 2020 Jan 8;105935. doi: 10.1016/j.cct.2020.105935.</p>	<p>OBJECTIVES: To describe the protocol of a randomized controlled trial to evaluate the effectiveness and mechanisms of three behavioral interventions.</p> <p>METHODS: Participants will include up to 343 Veterans with chronic pain due to a broad range of etiologies, randomly assigned to one of three 8-week manualized in-person group treatments: (1) Hypnosis (HYP), (2) Mindfulness Meditation (MM), or (3) Education Control (EDU).</p> <p>PROJECTED OUTCOMES: The primary aim of the study is to compare the effectiveness of HYP and MM to EDU on average pain intensity measured pre- and post-treatment. Additional study aims will explore the effectiveness of HYP and MM compared to EDU on secondary outcomes (i.e., pain interference, sleep quality, depression and anxiety), and the maintenance of effects at 3- and 6-months post-treatment. Participants will have electroencephalogram (EEG) assessments at pre- and post-treatment to determine if the power of specific brain oscillations moderate the effectiveness of HYP and MM (Study Aim 2) and examine brain oscillations as possible mediators of treatment effects (exploratory aim). Additional planned exploratory analyses will be performed to identify possible treatment mediators (i.e., pain acceptance, catastrophizing, mindfulness) and moderators (e.g., hypnotizability, treatment expectations, pain type, cognitive function).</p> <p>SETTING: The study treatments will be administered at a large Veterans Affairs Medical Center in the northwest United States. The treatments will be integrated within clinical infrastructure and delivered by licensed and credentialed health care professionals.</p>
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Mindfulness-based Stress Reduction (MBSR)	
Citation	Abstract
<p>Bremner JD, Mishra S, Campanella C, Shah M, Kasher N, Evans S, Fani N, Shah AJ, Reiff C, Davis LL, Vaccarino V, Carmody J. A Pilot Study of the Effects of Mindfulness-Based Stress Reduction on Post-traumatic Stress Disorder Symptoms and Brain Response to Traumatic Reminders of Combat in Operation Enduring Freedom/Operation Iraqi Freedom Combat Veterans with Post-traumatic Stress Disorder. Front Psychiatry. 2017 Aug 25;8:157.</p>	<p>OBJECTIVE: Brain imaging studies in patients with post-traumatic stress disorder (PTSD) have implicated a circuitry of brain regions including the medial prefrontal cortex, amygdala, hippocampus, parietal cortex, and insula. Pharmacological treatment studies have shown a reversal of medial prefrontal deficits in response to traumatic reminders. Mindfulness-based stress reduction (MBSR) is a promising non-pharmacologic approach to the treatment of anxiety and pain disorders. The purpose of this study was to assess the effects of MBSR on PTSD symptoms and brain response to traumatic reminders measured with positron-emission tomography (PET) in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) combat veterans with PTSD. We hypothesized that MBSR would show increased prefrontal response to stress and improved PTSD symptoms in veterans with PTSD.</p> <p>METHOD: Twenty-six OEF/OIF combat veterans with PTSD who had recently returned from a combat zone were block randomized to receive eight sessions of MBSR or present-centered group therapy (PCGT). PTSD patients underwent assessment of PTSD symptoms with the Clinician-Administered PTSD Scale (CAPS), mindfulness with the Five Factor Mindfulness Questionnaire (FFMQ) and brain imaging using PET in conjunction with exposure to neutral and Iraq combat-related slides and sound before and after treatment. Nine patients in the MBSR group and 8 in the PCGT group completed all study procedures.</p> <p>RESULTS: Post-traumatic stress disorder patients treated with MBSR (but not PCGT) had an improvement in PTSD symptoms measured with the CAPS that persisted for 6 months after treatment. MBSR also resulted in an increase in mindfulness measured with the FFMQ. MBSR-treated patients had increased anterior cingulate and inferior parietal lobule and decreased insula and precuneus function in response to traumatic reminders compared to the PCGT group.</p> <p>CONCLUSION: This study shows that MBSR is a safe and effective treatment for PTSD. Furthermore, MBSR treatment is associated with changes in brain regions that have been implicated in PTSD and are involved in extinction of fear responses to traumatic memories as well as regulation of the stress response.</p>

<p>DiNardo M, Saba S, Greco CM, Broyles L, Terhorst L, Chasens ER, Bair B, Charron-Prochownik D, Cohen S. A Mindful Approach to Diabetes Self-Management Education and Support for Veterans. Diabetes Educ. 2017 Dec;43(6):608-620. doi: 10.1177/0145721717738019. Epub 2017 Oct 27.</p>	<p>Purpose The purpose of this study is to determine feasibility, satisfaction, and preliminary effects of Mindful Stress Reduction in Diabetes Education (Mind-STRIDE), a mindfulness-based intervention for veterans. Methods The study used a single-group pretest-posttest repeated-measures design. The 90-minute Mind-STRIDE training, adapted from Mindfulness Based Stress Reduction (MBSR), was provided as the final component of a half-day diabetes self-management education class at a Veterans Affairs (VA) outpatient diabetes clinic. Following initial training, participants were asked to practice mindfulness at home for 10 minutes each day during the 3-month study. Study recruitment and retention were calculated as rates. Veteran and diabetes educator satisfaction were assessed by rating scales and open-ended comments. Psychosocial-behavioral and metabolic outcomes were assessed at baseline and 3 months after initial training. Bivariate correlations were performed to describe relationships between mindfulness and other outcome variables. Gain scores and Wilcoxon matched-pair signed rank tests were used to assess pre to post changes; Cohen's d was applied to estimate the magnitude of effects. Results Twenty-eight of 49 eligible veterans (57%) enrolled in the study. Of those, 11 veterans (39%) demonstrated participation in home practice, and 20 veterans (71%) completed the study. Overall, participants and diabetes educators were highly satisfied with the Mind-STRIDE intervention. Significant improvements were found in diabetes distress, diabetes self-efficacy, diabetes self-management behaviors, mindful-describing, and A1C. Conclusion Results suggest feasibility, satisfaction, and positive preliminary effects. Efficacy testing by randomized controlled trial with analysis of covariance structures is warranted.</p>
<p>Felleman B, Stewart D, Simpson T, Heppner P, Kearney D. Predictors of Depression and PTSD Treatment Response Among Veterans Participating in Mindfulness-Based Stress Reduction. Mindfulness, 2016, Volume 7, Number 4, Page 886</p>	<p>Posttraumatic stress disorder (PTSD) and depression are prevalent and often co-occur among veterans. There is growing interest in the effects of mindfulness-based interventions among veterans. This study examined PTSD and depression outcomes, and baseline predictors of response, among veterans who participated in mindfulness-based stress reduction (MBSR). Participants included 116 veterans with PTSD before and after MBSR. Multilevel modeling assessed baseline predictors of change in PTSD and depressive symptoms. There were clinically significant reductions in PTSD and depression symptoms posttreatment and at 4 months follow-up. For PTSD, effect sizes were in the medium range posttreatment ($d = -.63$) and at follow-up ($d = -.69$), and for depression posttreatment ($d = -.58$) and at follow-up ($d = -.70$). Baseline PTSD was a significant predictor of slope ($\beta = .03, p = .04$) on PTSD outcomes; higher baseline PTSD predicted greater rate of reduction in symptoms. For depression ($\beta = .04, p < .01$), those with severe or moderately severe depression exhibited the greatest rate of improvement. However, veterans with high symptom severity did remain symptomatic post-MBSR. These findings show preliminary support for MBSR in facilitating symptom reduction for veterans with severe PTSD and co-occurring depression.</p>
<p>Gallegos AM, Cross W, Pigeon WR. Mindfulness-based stress reduction for veterans exposed to military sexual trauma: rationale and implementation considerations. Mil Med. 2015 Jun;180(6):684-9. doi: 10.7205/MILMED-D-14-00448.</p>	<p>Military sexual trauma (MST) represents a significant public health concern among military personnel and Veterans and is associated with considerable morbidity and suicide risk. It is estimated that 22% of Veteran women and 1% of Veteran men experienced sexual assault or repeated, threatening sexual harassment during their military service. Exposure to traumatic stress has detrimental effects on emotion regulation, which refers to a set of strategies used to modulate different components of emotion at different points on the trajectory of an emotional response. Mindfulness-based interventions offer approaches to health that focus on mind and body practices that can help regulate the experience and expression of difficult emotions. Mindfulness-based stress reduction (MBSR) is an evidence-based therapy shown to be effective for depression, anxiety, and post-traumatic stress disorder. This article discusses the rationale for providing MBSR to Veterans who have been exposed to MST. The article also discusses ways to facilitate implementation of this practice in the U.S. Department of Veterans Affairs health care system. We address potential barriers to care and ways to facilitate implementation at the patient, provider, organization/local, and policy levels. MBSR is likely to be an important component of a comprehensive approach to care for Veterans exposed to MST.</p>

<p>Harding K, Simpson T, Kearney DJ. Reduced Symptoms of Post-traumatic Stress Disorder and Irritable Bowel Syndrome Following Mindfulness-Based Stress Reduction Among Veterans. J Altern Complement Med. 2018 Aug 30</p>	<p>OBJECTIVES: Post-traumatic stress disorder (PTSD) and irritable bowel syndrome (IBS) are highly comorbid conditions associated with reduced health-related quality of life. Comorbid prevalence is especially high among veterans, ranging from 23% to 51%, but there is limited research on integrative treatments.</p> <p>DESIGN: To improve treatment of comorbid PTSD and IBS, this study examined the impact of mindfulness-based stress reduction (MBSR) on symptom reduction and mindfulness skill building among veterans with this comorbidity. We hypothesized that veterans would report reduced trauma-related, gastrointestinal (GI) symptom-specific anxiety (GSA), and depression symptoms and greater mindfulness skills post-treatment. We also hypothesized that veterans who reported lower trauma-related GSA and depression symptoms, and reported greater mindfulness skills and MBSR session attendance would report lower irritable bowel symptoms post-treatment.</p> <p>SETTINGS/LOCATION: VA (Veterans Administration) Puget Sound Health Care System, Seattle, Washington.</p> <p>SUBJECTS: Participants were 55 veterans with PTSD and IBS.</p> <p>INTERVENTIONS: Veterans participated in an 8-week open trial of MBSR group.</p> <p>OUTCOME MEASURES: This study measured the impact of MBSR on PTSD, IBS, GSA, and depression symptoms as well as mindfulness skills.</p> <p>RESULTS: Veterans reported reduced trauma-related, irritable bowel, GSA, and depression symptoms and greater mindfulness skills immediately post-treatment. Trauma-related and depression symptom reduction were maintained 4 months post-treatment, but irritable bowel and GSA symptoms were nonsignificant. Lower baseline GSA predicted lower irritable bowel symptoms immediately post-treatment. At 4 months post-treatment, 77.50% met PTSD criteria and 40.38% met IBS criteria compared with 100% veteran comorbidity pretreatment.</p> <p>CONCLUSIONS: MBSR holds promise as a transdiagnostic intervention for individuals with comorbid trauma-related, depression, GSA, and irritable bowel symptoms, with maintenance of trauma-related and depression symptom improvement 4 months post-treatment.</p>
<p>Hempel S, Taylor SL, Marshall NJ, Miakel-Lye IM, Beroes JM, Shanman R, Solloway MR, Shekelle PG. Evidence Map of Mindfulness [Internet]. Washington (DC): Department of Veterans Affairs (US); 2014 Oct. Available From http://www.ncbi.nlm.nih.gov/books/NBK268640/PubMed PMID: 25577939.</p>	<p>This evidence map provides an overview of “mindfulness” intervention research and describes its volume and focus. It summarizes patient outcomes as reported in systematic reviews of randomized controlled trial evidence. We searched 10 electronic databases to February 2014, screened reviews of reviews, and consulted topic experts. We used a bubble plot as a visual overview of the distribution of evidence and synthesized results narratively in an executive summary. In total, 81 systematic reviews met inclusion criteria and the largest review included 109 mindfulness RCTs. Most research is available for general overviews on health benefits or psychological wellbeing. Reviews on chronic illness, depression, substance use, somatization, distress, and mental illness included 10 or more RCTs. Reviews suggest differential effects of mindfulness-based stress reduction (MBSR), mindfulness-based cognitive therapy (MBCT), and other mindfulness-based interventions, and definitions of “mindfulness-based” varied. The most consistent effect was reported for depression but published meta-analyses also indicated effects compared to passive control of MBSR on overall health, chronic illness, and psychological variables; MBCT for mental illness; and mindfulness interventions for somatization disorders. Limited evidence is also available for mindfulness interventions for pain, anxiety, and psychosis compared to passive control groups. More detail is provided for priority areas post-traumatic stress disorder, stress, depression, and wellness. The evidence map provides a broad overview (not detailed or definitive effectiveness evidence) over the existing research to help interpret the state of the evidence to inform policy and clinical decision making.</p>

<p>Kearney DJ, Simpson TL, Malte CA, Felleman B, Martinez ME, Hunt SC. Mindfulness-based Stress Reduction in Addition to Usual Care Is Associated with Improvements in Pain, Fatigue, and Cognitive Failures Among Veterans with Gulf War Illness. Am J Med. 2016 Feb</p>	<p>BACKGROUND: Many Gulf War I veterans report ongoing negative health consequences. The constellation of pain, fatigue, and concentration/memory disturbances is referred to as "Gulf War illness." Prior research suggests that mindfulness-based stress reduction may be beneficial for these symptoms, but mindfulness-based stress reduction has not been studied for veterans with Gulf War illness. The objective of this trial was to conduct a pilot study of mindfulness-based stress reduction for veterans with Gulf War illness.</p> <p>METHODS: Veterans (N = 55) with Gulf War illness were randomly assigned to treatment as usual plus mindfulness-based stress reduction or treatment as usual only. Mindfulness-based stress reduction was delivered in 8 weekly 2.5-hour sessions plus a single 7-hour weekend session. Pain, fatigue, and cognitive failures were the primary outcomes, assessed at baseline, after mindfulness-based stress reduction, and 6 months follow-up. Secondary outcomes included symptoms of posttraumatic stress disorder and depression.</p> <p>RESULTS: In intention-to-treat analyses, at 6-month follow-up, veterans randomized to mindfulness-based stress reduction plus treatment as usual reported greater reductions in pain ($f = 0.33$; $P = .049$), fatigue ($f = 0.32$; $P = .027$), and cognitive failures ($f = 0.40$; $P < .001$). Depressive symptoms showed a greater decline after mindfulness-based stress reduction ($f = 0.22$; $P = .050$) and at 6 months ($f = 0.27$; $P = .031$) relative to treatment as usual only. Veterans with posttraumatic stress disorder at baseline randomized to mindfulness-based stress reduction plus treatment as usual experienced significantly greater reductions in symptoms of posttraumatic stress disorder after mindfulness-based stress reduction ($f = 0.44$; $P = .005$) but not at 6 months follow-up ($f = 0.31$; $P = .082$).</p> <p>CONCLUSIONS: Mindfulness-based stress reduction in addition to treatment as usual is associated with significant improvements in self-reported symptoms of Gulf War illness, including pain, fatigue, cognitive failures, and depression.</p>
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<p>Martinez ME, Kearney DJ, Simpson T, Felleman BI, Bernardi N, Sayre G. Challenges to Enrollment and Participation in Mindfulness-Based Stress Reduction Among Veterans: A Qualitative Study. J Altern Complement Med. 2015 Jul;21(7):409-21. doi: 10.1089/acm.2014.0324. Epub 2015 May 28.</p>	<p>BACKGROUND: Mindfulness-Based Stress Reduction (MBSR) is associated with reduced depressive symptoms, quality of life improvements, behavioral activation, and increased acceptance among veterans. This study was conducted to increase the reach and impact of a veterans' MBSR program by identifying barriers to enrollment and participation to inform modifications in program delivery.</p> <p>OBJECTIVE: Verify or challenge suspected barriers, and identify previously unrecognized barriers, to enrollment and participation in MBSR among veterans.</p> <p>DESIGN: A retrospective qualitative analysis of semistructured interviews.</p> <p>SETTING/LOCATION: VA Puget Sound Health Care System (Seattle, WA).</p> <p>SUBJECTS: 68 interviewed, and 48 coded and analyzed before reaching saturation.</p> <p>APPROACH: Content analysis of semistructured interviews.</p> <p>RESULTS: Of the participants who enrolled, most (78%) completed the program and described MBSR positively. Veterans identified insufficient or inaccurate information, scheduling issues, and an aversion to groups as barriers to enrollment. Participants who discontinued the program cited logistics (e.g., scheduling and medical issues), negative reactions to instructors or group members, difficulty understanding the MBSR practice purposes, and struggling to find time for the practices as barriers to completion. Other challenges (cohort dynamics, teacher impact on group structure and focus, instructor lack of military service, and physical and psychological challenges) did not impede participation; we interpreted these as growth-facilitating challenges. Common conditions among veterans (chronic pain, posttraumatic stress disorder, and depression) were not described as barriers to enrollment or completion.</p> <p>CONCLUSIONS: Women-only MBSR groups and tele-health MBSR groups could improve accessibility to MBSR for veterans by addressing barriers such as commute anxiety, time restrictions, and an aversion to mixed gender groups among women. Educating MBSR teachers about veteran culture and health challenges faced by veterans, adding psychoeducation materials that relate mindfulness practice to conditions common among veterans, and improving visual aids for mindful movement exercises in the workbook could better accommodate veterans who participate in MBSR.</p>
<p>Pigeon W, Allen C, Possemato K, Bergen-Cico D, Treatman S. Feasibility and Acceptability of a Brief Mindfulness Program for Veterans in Primary Care with Posttraumatic Stress Disorder. Mindfulness. 2015, Volume 6, Number 5, Page 986</p>	<p>Mindfulness-based stress reduction programs have improved psychological health for clinical populations including veterans with posttraumatic stress disorder (PTSD). Veterans with PTSD who seek services in Department of Veterans Affairs primary care are especially in need of brief treatments that can alleviate PTSD symptoms. A clinical demonstration project was carried out to assess the feasibility and acceptability of a brief mindfulness program consisting of four weekly 1.5-h class sessions. Veterans enrolled in primary care with diagnostic or subthreshold PTSD were recruited. The brief mindfulness intervention was feasible to deliver, and veterans were generally satisfied with the program. Despite good retention once a class session was attended, a large number of veterans provided a variety of reasons for not attending the program at all. Veteran feedback that can be addressed to improve the brief mindfulness program is discussed, including enhancing initial attendance.</p>

<p>Polusny MA, Erbes CR, Thuras P, Moran A, Lamberty GJ, Collins RC, Rodman JL, Lim KO. Mindfulness-Based Stress Reduction for Posttraumatic Stress Disorder Among Veterans: A Randomized Clinical Trial. JAMA. 2015 Aug 4;314(5):456-65. doi: 10.1001/jama.2015.8361. PubMed PMID: 26241597.</p>	<p>IMPORTANCE: Mindfulness-based interventions may be acceptable to veterans who have poor adherence to existing evidence-based treatments for posttraumatic stress disorder (PTSD).</p> <p>OBJECTIVE: To compare mindfulness-based stress reduction with present-centered group therapy for treatment of PTSD.</p> <p>DESIGN, SETTING, AND PARTICIPANTS: Randomized clinical trial of 116 veterans with PTSD recruited at the Minneapolis Veterans Affairs Medical Center from March 2012 to December 2013. Outcomes were assessed before, during, and after treatment and at 2-month follow-up. Data collection was completed on April 22, 2014.</p> <p>INTERVENTIONS: Participants were randomly assigned to receive mindfulness-based stress reduction therapy (n = 58), consisting of 9 sessions (8 weekly 2.5-hour group sessions and a daylong retreat) focused on teaching patients to attend to the present moment in a nonjudgmental, accepting manner; or present-centered group therapy (n = 58), an active-control condition consisting of 9 weekly 1.5-hour group sessions focused on current life problems.</p> <p>MAIN OUTCOMES AND MEASURES: The primary outcome, change in PTSD symptom severity over time, was assessed using the PTSD Checklist (range, 17-85; higher scores indicate greater severity; reduction of 10 or more considered a minimal clinically important difference) at baseline and weeks 3, 6, 9, and 17. Secondary outcomes included PTSD diagnosis and symptom severity assessed by independent evaluators using the Clinician-Administered PTSD Scale along with improvements in depressive symptoms, quality of life, and mindfulness.</p> <p>RESULTS: Participants in the mindfulness-based stress reduction group demonstrated greater improvement in self-reported PTSD symptom severity during treatment (change in mean PTSD Checklist scores from 63.6 to 55.7 vs 58.8 to 55.8 with present-centered group therapy; between-group difference, 4.95; 95% CI, 1.92-7.99; P=.002) and at 2-month follow-up (change in mean scores from 63.6 to 54.4 vs 58.8 to 56.0, respectively; difference, 6.44; 95% CI, 3.34-9.53, P < .001). Although participants in the mindfulness-based stress reduction group were more likely to show clinically significant improvement in self-reported PTSD symptom severity (48.9% vs 28.1% with present-centered group therapy; difference, 20.9%; 95% CI, 2.2%-39.5%; P = .03) at 2-month follow-up, they were no more likely to have loss of PTSD diagnosis (53.3% vs 47.3%, respectively; difference, 6.0%; 95% CI, -14.1% to 26.2%; P = .55).</p> <p>CONCLUSIONS AND RELEVANCE: Among veterans with PTSD, mindfulness-based stress reduction therapy, compared with present-centered group therapy, resulted in a greater decrease in PTSD symptom severity. However, the magnitude of the average improvement suggests a modest effect</p>
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<p>Schure MB, Simpson TL, Martinez M, Sayre G, Kearney DJ. Mindfulness-Based Processes of Healing for Veterans with Post-Traumatic Stress Disorder. J Altern Complement Med. 2018 Nov;24(11):1063-1068. doi: 10.1089/acm.2017.0404. Epub 2018 May 7.</p>	<p>OBJECTIVE: U.S. veterans are at increased risk of developing post-traumatic stress disorder (PTSD). Prior studies suggest a benefit of mindfulness-based stress reduction (MBSR) for PTSD, but the mechanisms through which MBSR reduces PTSD symptoms and improves functional status have received limited empirical inquiry. This study used a qualitative approach to better understand how training in mindfulness affects veterans with PTSD.</p> <p>DESIGN: Qualitative study using semistructured in-depth interviews following participation in an MBSR intervention.</p> <p>SETTING: Outpatient.</p> <p>INTERVENTION: Eight-week MBSR program.</p> <p>OUTCOME MEASURE: Participants' narratives of their experiences from participation in the program.</p> <p>RESULTS: Interviews were completed with 15 veterans. Analyses identified six core aspects of participants' MBSR experience related to PTSD: dealing with the past, staying in the present, acceptance of adversity, breathing through stress, relaxation, and openness to self and others. Participants described specific aspects of a holistic mindfulness experience, which appeared to activate introspection and curiosity about their PTSD symptoms. Veterans with PTSD described a number of pathways by which mindfulness practice may help to ameliorate PTSD.</p>
<p>Serpa JG, Taylor SL, Tillisch K. Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. Med Care. 2014 Dec;52(12 Suppl 5):S19-24. doi: 10.1097/MLR.000000000000202. PubMed PMID: 25397818.</p>	<p>INTRODUCTION: Anxiety, depression, and pain are major problems among veterans, despite the availability of standard medical options within the Veterans Health Administration. Complementary and alternative approaches for these symptoms have been shown to be appealing to veterans. One such complementary and alternative approach is mindfulness-based stress reduction (MBSR), a brief course that teaches mindfulness meditation with demonstrated benefits for mood disorders and pain.</p> <p>METHODS: We prospectively collected data on MBSR's effectiveness among 79 veterans at an urban Veterans Health Administration medical facility. The MBSR course had 9 weekly sessions that included seated and walking meditations, gentle yoga, body scans, and discussions of pain, stress, and mindfulness. Pre-MBSR and post-MBSR questionnaires investigating pain, anxiety, depression, suicidal ideation, and physical and mental health functioning were obtained and compared for individuals. We also conducted a mediation analysis to determine whether changes in mindfulness were related to changes in the other outcomes.</p> <p>RESULTS: Significant reductions in anxiety, depression, and suicidal ideation were observed after MBSR training. Mental health functioning scores were improved. Also, mindfulness interacted with other outcomes such that increases in mindfulness were related to improvements in anxiety, depression, and mental health functionality. Pain intensity and physical health functionality did not show improvements.</p> <p>DISCUSSION: This naturalistic study in veterans shows that completing an MBSR program can improve symptoms of anxiety and depression, in addition to reducing suicidal ideations, all of which are of critical importance to the overall health of the patients.</p>

<p>Stephenson KR et al. Changes in Mindfulness and Posttraumatic Stress Disorder Symptoms Among Veterans Enrolled in Mindfulness-Based Stress Reduction. Clin Psychol. (2017)</p>	<p>OBJECTIVES: The current study assessed associations between changes in 5 facets of mindfulness (Acting With Awareness, Observing, Describing, Non-Reactivity, and Nonjudgment) and changes in 4 posttraumatic stress disorder (PTSD) symptom clusters (Re-Experiencing, Avoidance, Emotional Numbing, and Hyperarousal symptoms) among veterans participating in mindfulness-based stress reduction (MBSR).</p> <p>METHOD: Secondary analyses were performed with a combined data set consisting of 2 published and 2 unpublished trials of MBSR conducted at a large Veterans Affairs hospital. The combined sample included 113 veterans enrolled in MBSR who screened positive for PTSD and completed measures of mindfulness and PTSD symptoms before and after the 8-week intervention.</p> <p>RESULTS: Increases in mindfulness were significantly associated with reduced PTSD symptoms. Increases in Acting With Awareness and Non-Reactivity were the facets of mindfulness most strongly and consistently associated with reduced PTSD symptoms. Increases in mindfulness were most strongly related to decreases in Hyperarousal and Emotional Numbing.</p> <p>CONCLUSIONS: These results extend previous research, provide preliminary support for changes in mindfulness as a viable mechanism of treatment, and have a number of potential practical and theoretical implications.</p>
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Mindfulness (other than MBSR)	
Citation	Abstract
<p>Bormann JE, Oman D, Walter KH, Johnson BD. Mindful attention increases and mediates psychological outcomes following mantram repetition practice in veterans with posttraumatic stress disorder. Med Care. 2014 Dec;52(12 Suppl 5):S13-8. doi: 10.1097/MLR.000000000000200. PubMed PMID: 25397817.</p>	<p>BACKGROUND: Several evidence-based treatments are available to veterans diagnosed with posttraumatic stress disorder (PTSD). However, not all veterans benefit from these treatments or prefer to engage in them.</p> <p>OBJECTIVES: The current study explored whether (1) a mantram repetition program (MRP) increased mindful attention among veterans with PTSD, (2) mindful attention mediated reduced PTSD symptom severity and enhanced psychological well-being, and (3) improvement in mindful attention was due to the frequency of mantram repetition practice.</p> <p>RESEARCH DESIGN: Data from a randomized controlled trial comparing MRP plus treatment as usual (MRP+TAU) or TAU were analyzed using hierarchical linear models.</p> <p>SUBJECTS: A total of 146 veterans with PTSD from military-related trauma were recruited from a Veterans Affairs outpatient PTSD clinic (71 MRP+TAU; 75 TAU).</p> <p>MEASURES: The Clinician Administered PTSD Scale (CAPS), PTSD Checklist (PCL), the Brief Symptom Inventory-18 depression subscale, Health Survey SF-12v2, and Mindfulness Attention Awareness Scale (MAAS) were used. Frequency of mantram repetition practice was measured using wrist-worn counters and daily logs.</p> <p>RESULTS: Intent-to-treat analyses indicated greater increases in mindful attention, as measured by the MAAS, for MRP+TAU as compared with TAU participants (P<0.01). Mindful attention gains mediated previously reported treatment effects on reduced PTSD symptoms (using both CAPS and PCL), reduced depression, and improved psychological well-being. Frequency of mantram repetition practice in turn mediated increased mindful attention.</p> <p>CONCLUSIONS: The MRP intervention and specifically, mantram practice, improved mindful attention in veterans with PTSD, yielding improved overall psychological well-being. MRP may be a beneficial adjunct to usual care in veterans with PTSD</p>
<p>Bravo AJ, Witkiewitz K, Kelley ML, Redman JC. Prevalence of Mental Health Problems and Willingness to Participate in a Mindfulness Treatment: An Examination among Veterans Injured in Combat. Mindfulness (N Y). 2019 May</p>	<p>Numerous studies have demonstrated that combat-exposed military veterans are at risk for numerous psychiatric disorders and rates of comorbid mental health and substance use disorders are high. Veterans wounded in combat are a particularly high-risk group of military veterans, however treatment services are often underutilized among this group and it is unclear whether an online treatment program that targets emotional and physical distress (including mental health symptoms and substance use disorders) would be appealing to Veterans wounded in combat. The goal of the current study was to conduct formative research on whether veterans wounded in combat would be interested in an online mindfulness-based treatment to help them cope with emotional and physical discomfort. We recruited Veterans from Combat Wounded Coalition (n = 163; 74.2% non-Hispanic White; 95.7% male) to complete an online survey of mental health and substance use disorder symptoms and willingness to participate in mindfulness treatment. The majority of participants reported significant mental health symptoms and indicated that they would be willing to participate in mindfulness treatment, either at the VA (54.0%) or online (59.5%). Those with problems in multiple health domains and lower self-compassion were significantly more likely to express interest in treatment and likely to represent a very high need group of veterans. The development of a mindfulness-based treatment for this group of individuals could be very helpful in reducing mental health symptoms and improving quality of life among wounded warriors.</p>

<p>Colgan DD, Wahbeh H, Pleet M, Besler K, Christopher M. A Qualitative Study of Mindfulness Among Veterans With Posttraumatic Stress Disorder: Practices Differentially Affect Symptoms, Aspects of Well-Being, and Potential Mechanisms of Action. J Evid Based Complementary Altern Med. 2017.</p>	<p>This qualitative study explored and compared the subjective experiences of 102 veterans with posttraumatic stress disorder (PTSD) who were randomly assigned to 1 of 4 arms: (a) body scan, (b) mindful breathing, (c) slow breathing, or (d) sitting quietly. Qualitative data were obtained via semistructured interviews following the intervention and analyzed using conventional content analysis. The percentage of participants within each intervention who endorsed a specific theme was calculated. Two-proportion z tests were then calculated to determine if the differences among themes endorsed in specific groups were statistically significant. Six core themes emerged from analysis of participant responses across the 4 groups: (a) enhanced present moment awareness, (b) increased nonreactivity, (c) increased nonjudgmental acceptance, (d) decreased physiological arousal and stress reactivity, (e) increased active coping skills, and (f) greater relaxation. More participants in the mindfulness intervention groups reported improvement in PTSD symptoms when compared to participants in non-mindfulness groups. Different types of intervention targeted different symptoms and aspects of well-being. Furthermore, type of intervention may have also differentially targeted potential mechanisms of action. This article highlights the importance of employing both quantitative and qualitative research methods when investigating the dynamic process of mindfulness and may inform how practices can be tailored to the needs of the veteran with PTSD.</p>
<p>Cosio D, Swaroop S. The Use of Mind-body Medicine in Chronic Pain Management: Differential Trends and Session-by-Session Changes in Anxiety. J Pain Manag Med. 2016 Mar</p>	<p>The evidence to date suggests that the use of mind-body medicine in chronic pain management can improve physical and psychological symptoms. However, past research evidence has largely relied on global measures of distress at pre- and post-intervention. Even though it is plausible that reported anxiety occurs in the context of pain, there is also evidence to suggest a reciprocal relationship. Thus, the purpose of the current study was to determine the differential impact that mind-body medical interventions have on anxiety among Veterans with chronic, non-cancer pain. The current study utilized multiple, repeated assessments of anxiety to better understand changes made over time between two mind-body interventions (Acceptance and Commitment Therapy (ACT) and Cognitive Behavioral Therapy (CBT)) used for chronic pain management. Ninety-six Veterans elected to participate in either intervention following the completion of a pain health education program at a Midwestern VA Medical Center between November 3, 2009-November 4, 2010. A 2 × 7 repeated measures multivariate analyses of variance indicated significantly lower levels of global distress by the end of both the ACT and CBT interventions. Trend analysis revealed differential patterns of change in levels of anxiety over time. Helmert contrast analyses found several modules of ACT were statistically different than the overall mean of previous sessions. Implications related to timing and patterns of change for the interventions are discussed.</p>
<p>Cushing RE, Braun KL. Mind-Body Therapy for Military Veterans with Post-Traumatic Stress Disorder: A Systematic Review. J Altern Complement Med. 2018 Feb;24(2):106-114. doi: 10.1089/acm.2017.0176. Epub 2017 Sep 7. Review. PubMed PMID: 28880607.</p>	<p>OBJECTIVE: About one-third of service members returning from post-9/11 deployment in Afghanistan and Iraq report combat-related mental health conditions, but many do not seek conventional treatment. Mind-body therapies have been offered as alternative approaches to decreasing post-traumatic stress disorder (PTSD), but no review of studies with veterans of post-9/11 operations was found. The objective of this study was to fill that gap.</p> <p>DESIGN: A systematic literature review was conducted following the preferred items for systematic reviews and meta-analyses (PRISMA) guidelines. PubMed MeSH terms were used to capture articles reporting on the military population (veteran and veterans) with PTSD who received a portable mind-body intervention (e.g., mindfulness, mind-body therapy, and yoga). PubMed/MEDLINE and PsycINFO were searched. Studies were included if participants were a mixed group of war veterans, as long as some post-9/11 veterans were included. In addition, participants must have had a diagnosis of PTSD or subthreshold PTSD, and the PTSD must have been attributable to combat, rather than another event, such as sexual trauma or natural disaster.</p> <p>RESULTS: Of 175 records identified, 15 met inclusion criteria. Studies reported on seated or gentle yoga that included breath work, meditation, mantra repetition, or breathing exercises. For 14 of the 15 studies, study retention was 70% or higher. Overall, studies reported significant improvements in PTSD symptoms in participants in these interventions. Although each study included post-9/11 veterans, about 85% of participants were from other conflicts, predominantly Vietnam.</p>

<p>Dahm KA, Meyer EC, Neff KD, Kimbrel NA, Gulliver SB, Morissette SB. Mindfulness, Self-Compassion, Posttraumatic Stress Disorder Symptoms, and Functional Disability in U.S. Iraq and Afghanistan War Veterans. J Trauma Stress. 2015 Oct;28(5):460-4. doi: 10.1002/jts.22045. Epub 2015 Oct 1.</p>	<p>Mindfulness and self-compassion are overlapping, but distinct constructs that characterize how people relate to emotional distress. Both are associated with posttraumatic stress disorder (PTSD) and may be related to functional disability. Although self-compassion includes mindful awareness of emotional distress, it is a broader construct that also includes being kind and supportive to oneself and viewing suffering as part of the shared human experience--a potentially powerful way of dealing with distressing situations. We examined the association of mindfulness and self-compassion with PTSD symptom severity and functional disability in 115 trauma-exposed U.S. Iraq/Afghanistan war veterans. Mindfulness and self-compassion were each uniquely, negatively associated with PTSD symptom severity. After accounting for mindfulness, self-compassion accounted for unique variance in PTSD symptom severity ($f(2) = .25$; medium ES). After accounting for PTSD symptom severity, mindfulness and self-compassion were each uniquely negatively associated with functional disability. The combined association of mindfulness and self-compassion with disability over and above PTSD was large ($f(2) = .41$). After accounting for mindfulness, self-compassion accounted for unique variance in disability ($f(2) = .13$; small ES). These findings suggest that interventions aimed at increasing mindfulness and self-compassion could potentially decrease functional disability in returning veterans with PTSD symptoms.</p>
<p>Goldberg S, Zeliadt S, Hoggatt K, Simpson T, Fortney J, Taylor SL. Utilization and Perceived Effectiveness of Mindfulness Meditation in Veterans: Results from a National Survey. Mindfulness. Sep 2019; 1-10.</p>	<p>Objectives Complementary and integrative health (CIH) approaches are increasingly utilized in health care, and mindfulness meditation is one such evidence-based CIH practice. More information is needed about veterans' utilization of mindfulness to inform integration within the Veterans Health Administration (VHA).</p> <p>Methods This study involved secondary data analysis of a national survey to evaluate utilization and perceived effectiveness of mindfulness relative to other CIH approaches among military veterans. Military veterans (n = 1230) enrolled in VHA reported CIH utilization rates, reasons for use, perceived effectiveness, treatment barriers, and demographics.</p> <p>Results Approximately 18% of veterans reported using mindfulness meditation in the past year, exceeding the proportion using all other CIH approaches ($p < .001$), with the exception of massage and chiropractic care. Mindfulness was most commonly used for stress reduction and addressing symptoms of depression and anxiety. Among mindfulness users, veterans rated mindfulness with a mean score of 3.18 out of 5 (SD = 0.82) in terms of effectiveness, reflecting a response in the "somewhat helpful" to "moderately helpful" range. This was similar to ratings of other CIH approaches (mean = 3.20, $p = .391$). Of those who used mindfulness, nearly all (78%) reported only using it outside the VHA. Veterans identified not knowing if the VHA offered mindfulness as the most common reason for using mindfulness outside VHA.</p> <p>Conclusions In summary, veterans use mindfulness for a range of reasons and report receiving benefit from its use. Low awareness and potentially low availability of VHA's mindfulness programs need to be addressed to increase access.</p>

<p>Goldstein LA, Mehling WE, Metzler TJ, Cohen BE, Barnes DE, Choucroun GJ, Silver A, Talbot LS, Maguen S, Hlavin JA, Chesney MA, Neylan TC. Veterans Group Exercise: A randomized pilot trial of an Integrative Exercise program for veterans with posttraumatic stress. J Affect Disord. 2018 Feb;227:345-352.</p>	<p>BACKGROUND: Posttraumatic stress disorder (PTSD) is prevalent among military veterans and is associated with significant negative health outcomes. However, stigma and other barriers to care prevent many veterans from pursuing traditional mental health treatment. We developed a group-based Integrative Exercise (IE) program combining aerobic and resistance exercise, which is familiar to veterans, with mindfulness-based practices suited to veterans with PTSD. This study aimed to evaluate the effects of IE on PTSD symptom severity and quality of life, as well as assess the feasibility and acceptability of IE.</p> <p>METHODS: Veterans (N = 47) were randomized to either IE or waitlist control (WL). Veterans in IE were asked to attend three 1-h group exercise sessions for 12 weeks.</p> <p>RESULTS: Compared with WL, veterans randomized to IE demonstrated a greater reduction in PTSD symptom severity (d = -.90), a greater improvement in psychological quality of life (d = .53) and a smaller relative improvement in physical quality of life (d = .30) Veterans' ratings of IE indicated high feasibility and acceptability.</p> <p>LIMITATIONS: The sample was relatively small and recruited from one site. The comparison condition was an inactive control.</p> <p>CONCLUSIONS: This initial study suggests that IE is an innovative approach to treating veterans with symptoms of PTSD that reduces symptoms of posttraumatic stress and improves psychological quality of life. This approach to recovery may expand the reach of PTSD treatment into non-traditional settings and to veterans who may prefer a familiar activity, such as exercise, over medication or psychotherapy.</p>
<p>Held P, Owens GP, Monroe JR, Chard KM. Increased Mindfulness Skills as Predictors of Reduced Trauma-Related Guilt in Treatment-Seeking Veterans. J Trauma Stress. 2017 Aug;30(4):425-431. doi: 10.1002/jts.22209. Epub 2017 Jul 25.</p>	<p>The present study examined the predictive role of increased self-reported mindfulness skills on reduced trauma-related guilt in a sample of veterans over the course of residential treatment for posttraumatic stress disorder (PTSD; N = 128). The residential treatment consisted of seven weeks of intensive cognitive processing therapy (CPT) for PTSD, as well as additional psychoeducational groups, including seven sessions on mindfulness skills. Increased mindfulness skills describing, acting with awareness, and accepting without judgment were significantly associated with reductions in trauma-related guilt over the course of treatment. Increases in the ability to act with awareness and accept without judgment were significantly associated with reductions in global guilt, R2 = .26, guilt distress, R2 = .23, guilt cognitions, R2 = .23, and lack of justification, R2 = .11. An increase in the ability to accept without judgment was the only self-reported mindfulness skill that was associated with reductions in hindsight bias, $\beta = -.34$ and wrongdoing, $\beta = -.44$. Increases in self-reported mindfulness skills explained 15.1 to 24.1% of the variance in reductions in trauma-related guilt, suggesting that mindfulness skills may play a key role in reducing the experience of trauma-related guilt during psychotherapy. Our results provide preliminary support for the use of mindfulness groups as an adjunct to traditional evidence-based treatments aimed at reducing trauma-related guilt, though this claim needs to be tested further using experimental designs.</p>

<p>Hempel S, Taylor SL, Marshall NJ, Miake-Lye IM, Beroes JM, Shanman R, Solloway MR, Shekelle PG. Evidence Map of Mindfulness [Internet]. Washington (DC): Department of Veterans Affairs (US); 2014 Oct. Available From http://www.ncbi.nlm.nih.gov/books/NBK268640/PubMed PMID: 25577939.</p>	<p>This evidence map provides an overview of “mindfulness” intervention research and describes its volume and focus. It summarizes patient outcomes as reported in systematic reviews of randomized controlled trial evidence. We searched 10 electronic databases to February 2014, screened reviews of reviews, and consulted topic experts. We used a bubble plot as a visual overview of the distribution of evidence and synthesized results narratively in an executive summary. In total, 81 systematic reviews met inclusion criteria and the largest review included 109 mindfulness RCTs. Most research is available for general overviews on health benefits or psychological wellbeing. Reviews on chronic illness, depression, substance use, somatization, distress, and mental illness included 10 or more RCTs. Reviews suggest differential effects of mindfulness-based stress reduction (MBSR), mindfulness-based cognitive therapy (MBCT), and other mindfulness-based interventions, and definitions of “mindfulness-based” varied. The most consistent effect was reported for depression but published meta-analyses also indicated effects compared to passive control of MBSR on overall health, chronic illness, and psychological variables; MBCT for mental illness; and mindfulness interventions for somatization disorders. Limited evidence is also available for mindfulness interventions for pain, anxiety, and psychosis compared to passive control groups. More detail is provided for priority areas post-traumatic stress disorder, stress, depression, and wellness. The evidence map provides a broad overview (not detailed or definitive effectiveness evidence) over the existing research to help interpret the state of the evidence to inform policy and clinical decision making.</p>
<p>King AP, Block SR, Sripada RK, Rauch S, Giardino N, Favorite T, Angstadt M, Kessler D, Welsh R, Liberzon I. ALTERED DEFAULT MODE NETWORK (DMN) RESTING STATE FUNCTIONAL CONNECTIVITY FOLLOWING A MINDFULNESS-BASED EXPOSURE THERAPY FOR POSTTRAUMATIC STRESS DISORDER (PTSD) IN COMBAT VETERANS OF AFGHANISTAN AND IRAQ. <i>Depress Anxiety</i>. 2016</p>	<p>BACKGROUND: Recent studies suggest that mindfulness may be an effective component for posttraumatic stress disorder (PTSD) treatment. Mindfulness involves practice in volitional shifting of attention from "mind wandering" to present-moment attention to sensations, and cultivating acceptance. We examined potential neural correlates of mindfulness training using a novel group therapy (mindfulness-based exposure therapy (MBET)) in combat veterans with PTSD deployed to Afghanistan (OEF) and/or Iraq (OIF).</p> <p>METHODS: Twenty-three male OEF/OIF combat veterans with PTSD were treated with a mindfulness-based intervention (N = 14) or an active control group therapy (present-centered group therapy (PCGT), N = 9). Pre-post therapy functional magnetic resonance imaging (fMRI, 3 T) examined resting-state functional connectivity (rsFC) in default mode network (DMN) using posterior cingulate cortex (PCC) and ventral medial prefrontal cortex (vmPFC) seeds, and salience network (SN) with anatomical amygdala seeds. PTSD symptoms were assessed at pre- and posttherapy with Clinician Administered PTSD Scale (CAPS).</p> <p>RESULTS: Patients treated with MBET had reduced PTSD symptoms (effect size $d = 0.92$) but effect was not significantly different from PCGT ($d = 0.46$). Increased DMN rsFC (PCC seed) with dorsolateral prefrontal cortex (DLPFC) regions and dorsal anterior cingulate cortex (ACC) regions associated with executive control was seen following MBET. A group \times time interaction found MBET showed increased connectivity with DLPFC and dorsal ACC following therapy; PCC-DLPFC connectivity was correlated with improvement in PTSD avoidant and hyperarousal symptoms.</p> <p>CONCLUSIONS: Increased connectivity between DMN and executive control regions following mindfulness training could underlie increased capacity for volitional shifting of attention. The increased PCC-DLPFC rsFC following MBET was related to PTSD symptom improvement, pointing to a potential therapeutic mechanism of mindfulness-based therapies.</p>

<p>Kopacz MS, Connery AL, Bishop TM, Bryan CJ, Drescher KD, Currier JM, Pigeon WR. Moral injury: A new challenge for complementary and alternative medicine. Complement Ther Med. 2016 Feb;24:29-33. doi: 10.1016/j.ctim.2015.11.003. Epub 2015 Nov 27.</p>	<p>Abstract</p> <p>Moral injury represents an emerging clinical construct recognized as a source of morbidity in current and former military personnel. Finding effective ways to support those affected by moral injury remains a challenge for both biomedical and complementary and alternative medicine. This paper introduces the concept of moral injury and suggests two complementary and alternative medicine, pastoral care and mindfulness, which may prove useful in supporting military personnel thought to be dealing with moral injury. Research strategies for developing an evidence-base for applying these, and other, complementary and alternative medicine modalities to moral injury are discussed.</p>
<p>Marchand WR, Klinger W, Block K, VerMerris S, Herrmann TS, Johnson C, Paradiso N, Scott M, Yabko B. Mindfulness Training plus Nature Exposure for Veterans with Psychiatric and Substance Use Disorders: A Model Intervention. Int J Environ Res Public Health. 2019 Nov 27;16(23).</p>	<p>There is a need to develop novel complementary interventions aimed at enhancing treatment engagement and/or response for veterans with psychiatric and substance use disorders. There is evidence that both mindfulness training and nature exposure (MT/NE) may be beneficial for this population and that combining the two approaches into one intervention might result in synergistic benefit. However, to date, the MT/NE concept has not been tested. This article reports a pilot feasibility and acceptability study of MT/NE which was, in this case, provided via recreational sailing. The primary aim of this project was to develop a model intervention and evaluation process that could be used for future studies of MT/NE interventions using a variety of methods of nature exposure (e.g., hiking, skiing, mountain biking). Results indicate preliminary evidence that it is feasible to utilize MT/NE interventions for the population studied and that the MT/NE model described can serve as a template for future investigations. Further, there were significant pre- to post-intervention decreases in state anxiety, as well as increases in trait mindfulness. Three psychological instruments were identified that might be used in future studies to evaluate MT/NE outcomes. Results from this project provide a model MT/NE intervention template along with evaluation metrics for use in future studies.</p>
<p>Marchand WR, Yabko B, Herrmann T, Curtis H, Lackner R. Treatment Engagement and Outcomes of Mindfulness-Based Cognitive Therapy for Veterans with Psychiatric Disorders. J Altern Complement Med. 2019</p>	<p>Objectives: The aim of this study was to evaluate utilization and outcomes of mindfulness-based cognitive therapy (MBCT) provided to veterans with psychiatric disorders. Design: Retrospective chart review. Settings: Veterans Administration Medical Center (VAMC). Subjects: Ninety-eight veterans with psychiatric illness who were enrolled in an MBCT class between May of 2012 and January of 2016. Subjects were predominately white (95%), male (81%), and >50 years old (74%). The most common psychiatric conditions were any mood disorder (82%) and post-traumatic stress disorder (54%). Intervention: Eight-week MBCT class. Outcome measures: Session attendance and pre- to postintervention changes in numbers of emergency department (ED) visits and psychiatric hospitalizations. Results: The average number of sessions attended was 4.87 of 8 and only 16% were present for all sessions. Veteran demographic variables did not predict the number of MBCT sessions attended. However, both greater numbers of pre-MBCT ED visits ($p = 0.004$) and psychiatric admissions ($p = 0.031$) were associated with attending fewer sessions. Among patients who experienced at least one pre- or post-treatment psychiatric admission in the 2 years pre- or postintervention ($N = 26, 27\%$), there was a significant reduction in psychiatric admissions from pre to post ($p = 0.002$). There was no significant change in ED visits ($p = 0.535$). Conclusions: MBCT may be challenging to implement for veterans with psychiatric illness in, at least some, outpatient VAMC settings due to a high attrition rate. Possible mediation approaches include development of methods to screen for high dropout risk and/or development of shorter mindfulness-based interventions (MBIs) and/or coupling MBIs with pleasurable activities. The finding of a significant decrease in psychiatric hospitalizations from pre- to post-MBCT suggests that prospective studies are warranted utilizing MBCT for veterans at high risk for psychiatric hospitalization.</p>

<p>Mehling WE, Chesney MA, Metzler TJ, Goldstein LA, Maguen S, Geronimo C, Agcaoili G, Barnes DE, Hlavin JA, Neylan TC. A 12-week integrative exercise program improves self-reported mindfulness and interoceptive awareness in war veterans with posttraumatic stress symptoms.</p>	<p>OBJECTIVE: Innovative approaches to the treatment of war-related posttraumatic stress disorder (PTSD) are needed. We report on secondary psychological outcomes of a randomized controlled trial of integrative exercise (IE) using aerobic and resistance exercise with mindfulness-based principles and yoga. We expected-in parallel to observed improvements in PTSD intensity and quality of life-improvements in mindfulness, interoceptive bodily awareness, and positive states of mind.</p> <p>METHOD: A total of 47 war veterans with PTSD were randomized to 12-week IE versus waitlist. Changes in mindfulness, interoceptive awareness, and states of mind were assessed by self-report standard measures.</p> <p>RESULTS: Large effect sizes for the intervention were observed on Five-Facet Mindfulness Questionnaire Non-Reactivity ($d = .85$), Multidimensional Assessment of Interoceptive Awareness Body Listening ($d = .80$), and Self-Regulation ($d = 1.05$).</p> <p>CONCLUSION: In a randomized controlled trial of a 12-week IE program for war veterans with PTSD, we saw significant improvements in mindfulness, interoceptive bodily awareness, and positive states of mind compared to a waitlist.</p>
<p>Meyer EC, Frankfurt SB, Kimbrel NA, DeBeer BB, Gulliver SB, Morrisette SB. The influence of mindfulness, self-compassion, psychological flexibility, and posttraumatic stress disorder on disability and quality of life over time in war veterans. J Clin Psychol. 2018 Jul;74(7):1272-1280. doi: 10.1002/jclp.22596. Epub 2018 Feb 28.</p>	<p>OBJECTIVES: Posttraumatic stress disorder (PTSD) strongly predicts greater disability and lower quality of life (QOL). Mindfulness-based and other third-wave behavior therapy interventions improve well-being by enhancing mindfulness, self-compassion, and psychological flexibility. We hypothesized that these mechanisms of therapeutic change would comprise a single latent factor that would predict disability and QOL after accounting for PTSD symptom severity.</p> <p>METHOD: Iraq and Afghanistan war veterans ($N = 117$) completed a study of predictors of successful reintegration. Principal axis factor analysis tested whether mindfulness, self-compassion, and psychological flexibility comprised a single latent factor. Hierarchical regression tested whether this factor predicted disability and QOL 1 year later.</p> <p>RESULTS: Mindfulness, self-compassion, and psychological flexibility comprised a single factor that predicted disability and QOL after accounting for PTSD symptom severity. PTSD symptoms remained a significant predictor of disability but not QOL.</p> <p>CONCLUSIONS: Targeting these mechanisms may help veterans achieve functional recovery, even in the presence of PTSD symptoms.</p>

<p>Nakamura Y, Lipschitz DL, Donaldson GW, Kida Y, Williams SL, Landward R, Glover DW, West G, Tuteja AK. Investigating Clinical Benefits of a Novel Sleep-Focused Mind-Body Program on Gulf War Illness Symptoms: A Randomized Controlled Trial. Psychosom Med. 2017 Jul/Aug;79(6):706-718</p>	<p>OBJECTIVE: Mind-Body Bridging (MBB) has been shown to be effective for improving disturbed sleep. In this prospective randomized controlled trial, we evaluated the efficacy of sleep-focused MBB compared with sleep education control (SED) for improving sleep in previously deployed Gulf War veterans.</p> <p>METHODS: US military service members with sleep and physical health complaints who were deployed in 1990-1991 were randomized to receive three weekly sessions of either MBB (n = 33) or SED (n = 27) between 2012 and 2015. The primary outcome of Medical Outcomes Study Sleep Scale was completed at baseline, weekly during treatment, postintervention, and 3-month follow-up. Secondary outcome measures for posttraumatic stress disorder, depression, fatigue, quality of life, symptom severity, and mindfulness were completed at baseline, postintervention and 3-month follow-up. Salivary samples were collected at five time points per day at each visit for cortisol and α-amylase assessment. Clinician-administered assessments of sleep and co-occurring conditions were conducted at baseline and postintervention.</p> <p>RESULTS: MBB was significantly more efficacious than SED in reducing disturbed sleep at follow-up ($F(1,180.54) = 4.04, p = .046$). In addition, self-reported posttraumatic stress disorder ($F(1,56.42) = 4.50, p = .038$) for the treatment effect, depression ($F(1,93.70) = 4.44, p = .038$), and fatigue symptoms ($F(1,68.58) = 3.90, p = .050$) at follow-up improved in MBB compared with those in SED. Consistently higher percentages of veterans in MBB reported improvements of sleep, pain, and composite sleep/general co-occurring symptoms at the postclinical evaluation, as compared with veterans in SED. Finally, the mean waking level of salivary α-amylase in the MBB declined to a greater extent than that in the SED, at follow-up ($F(1,88.99) = 3.78, p = .055$), whereas no effects were found on cortisol.</p> <p>CONCLUSIONS: Sleep-focused MBB can improve sleep and possibly also co-occurring symptoms in Gulf War veterans.</p>
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<p>Nassif TH, Start AR, Toblin RL, Adler AB. Self-reported mindfulness and soldier health following a combat deployment. Psychol Trauma. 2019 May;11(4):466-474. doi: 10.1037/tra0000413. Epub 2018 Nov 5.</p>	<p>OBJECTIVE: Combat exposure has been linked to health-related challenges associated with postcombat adjustment, including mental health symptoms, behavior-related problems, physical pain, and functional impairment. Mindfulness, or acceptance of the present moment without reactivity or judgment, may be associated with better mental health following a combat deployment. This study examined whether self-reported mindfulness predicted soldier health outcomes over the course of the postdeployment period.</p> <p>METHOD: U.S. soldiers (n = 627) were surveyed 4 months after a deployment to Afghanistan (T1) and again 3 months later (T2). Mindfulness was assessed using the nonreactivity to inner experience subscale of the Five-Facet Mindfulness Questionnaire. Hierarchical linear regressions examined how mindfulness (T1) moderated the impact of combat exposure (T1) on outcomes at T2.</p> <p>RESULTS: Controlling for rank, the interaction between combat exposure and mindfulness significantly predicted posttraumatic stress disorder (PTSD) symptoms, depression symptoms, risk-taking behaviors, pain symptoms, and functional impairment. The interaction term explained 1% to 2% of the variance in these health outcomes. Simple slopes analyses revealed that combat exposure was associated with more PTSD symptoms, depression symptoms, risk-taking behaviors, pain symptoms, and functional impairment when soldiers reported low levels of mindfulness. There was no effect for alcohol misuse, sleep difficulties, or aggressive behaviors.</p> <p>CONCLUSIONS: Nonreactivity to inner experience may mitigate the detrimental effects of high-levels of combat exposure on both mental and physical health outcomes. These findings indicate that mindfulness strategies such as nonreactivity may be particularly useful for employees facing potentially traumatic stressors in a high-risk occupational context. (PsycINFO Database Record (c) 2019 APA, all rights reserved).</p>
<p>Possemato K, Bergen-Cico D, Treatman S, Allen C, Wade M, Pigeon W. A Randomized Clinical Trial of Primary Care Brief Mindfulness Training for Veterans with PTSD. J Clin Psychol. 2016 Mar;72(3):179-93. doi: 10.1002/jclp.22241. Epub 2015 Nov 27.</p>	<p>OBJECTIVES: Primary care (PC) patients typically do not receive adequate posttraumatic stress disorder (PTSD) treatment. This study tested if a brief mindfulness training (BMT) offered in PC can decrease PTSD severity.</p> <p>METHOD: VA PC patients with PTSD (N = 62) were recruited for a randomized clinical trial comparing PCBMT with PC treatment as usual. PCBMT is a 4-session program adapted from mindfulness-based stress reduction.</p> <p>RESULTS: PTSD severity decreased in both conditions, although PCBMT completers reported significantly larger decreases in PTSD and depression from pre- to posttreatment and maintained gains at the 8-week follow-up compared with the control group. Exploratory analyses revealed that the describing, nonjudging, and acting with awareness facets of mindfulness may account for decreases in PTSD.</p> <p>CONCLUSION: Our data support preliminary efficacy of BMT for Veterans with PTSD. Whether PCBMT facilitates engagement into, or improves outcomes of, full-length empirically supported treatment for PTSD remains to be evaluated.</p>

<p>Price CJ, McBride B, Hyerle L, Kivlahan DR. Mindful awareness in body-oriented therapy for female veterans with post-traumatic stress disorder taking prescription analgesics for chronic pain: a feasibility study. <i>Altern Ther Health Med.</i> 2007</p>	<p>CONTEXT: Preliminary studies of body therapy for women in trauma recovery suggest positive results but are not specific to women with post-traumatic stress disorder (PTSD) and chronic pain.</p> <p>OBJECTIVE AND PARTICIPANTS: To examine the feasibility and acceptability of body-oriented therapy for female veterans with PTSD and chronic pain taking prescription analgesics.</p> <p>DESIGN AND SETTING: A 2-group, randomized, repeated-measures design was employed. Female veterans (N=14) were recruited from a Veterans Affairs (VA) healthcare system in the Northwest United States (VA Puget Sound Health Care System, Seattle, Washington). Participants were assigned to either treatment as usual (TAU) or treatment as usual and 8 weekly individual body-oriented therapy sessions (mindful awareness in body-oriented therapy group).</p> <p>MEASURES: Written questionnaires and interviews were used to assess intervention acceptability; reliable and valid measures were administered at 3 time points to evaluate measurement acceptability and performance; and within-treatment process measures and a participant post-intervention questionnaire assessed treatment fidelity.</p> <p>INTERVENTION: A body-oriented therapy protocol, "Mindful Awareness in Body-oriented Therapy" (MABT) was used. This is a mind-body approach that incorporates massage, mindfulness, and the emotional processing of psychotherapy.</p> <p>RESULTS: Over 10 weeks of recruitment, 31 women expressed interest in study participation. The primary reason for exclusion was the lack of prescription analgesic use for chronic pain. Study participants adhered to study procedures, and 100% attended at least 7 of 8 sessions; all completed in-person post-treatment assessment. Written questionnaires about intervention experience suggest increased tools for pain relief/relaxation, increased body/mind connection, and increased trust/safety. Ten of 14 responded to mailed 3-month follow-up. The response-to-process measures indicated the feasibility of implementing the manualized protocol and point to the need for longer sessions and a longer intervention period with this population.</p>
<p>Rice VJ, Liu B, Schroeder PJ. Impact of In-Person and Virtual World Mindfulness Training on Symptoms of Post-Traumatic Stress Disorder and Attention Deficit and Hyperactivity Disorder. <i>Mil Med.</i> 2018 Mar 1;183(suppl 1):413-420. doi: 10.1093/milmed/usx227. PMID: 29635610</p>	<p>Mindfulness meditation training has been shown to reduce stress and improve short-term memory for military personnel. However, no studies have investigated the effects of in-person and virtual world (VW) mindfulness training on Post-Traumatic Stress Disorder (PTSD) or Attention Deficit Hyperactivity Disorder (ADHD) symptoms. In this study, U.S. military active duty service members and veterans were pseudo-randomized into two mindfulness training groups: in-person (IP) and online via a VW, and a wait-list control group. Volunteers answered a demographic questionnaire, and completed the PTSD Checklist-Military Version (PCL-M) and ADHD Current Symptoms Scale before and after training. The results showed practical and clinically relevant reductions in PTSD symptoms, particular for the IP group, but did not show statistical relevance with hypothesis testing. Results also showed post-training reductions in ADHD symptoms for both IP and VW groups, but no change for the control group. To investigate the effects of initial ADHD symptoms, IP and VW groups were combined into a single Mindfulness Training group. Those with high-initial ADHD symptoms attending training showed improvements, but the control group did not. These results expand research on the mindfulness training, and suggest that IP mindfulness training, rather than VW training, may be of greater benefit for those with PTSD symptoms, while either delivery system appears adequate for reducing attentional symptoms.</p>

<p>Smeeding SJ, Bradshaw DH, Kumpfer K, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for chronic pain and stress-related depression, anxiety, and post-traumatic stress disorder. J Altern Complement Med. 2010</p>	<p>OBJECTIVES: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind-body skills.</p> <p>METHODS: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI < 19, n = 82), low depression (BDI < 19, n = 93), and absence of PTSD (n = 102) compared to veterans with high anxiety (BAI > or = 19, n = 77), high depression (BDI > 19, n = 67), and presence of PTSD (n = 63).</p> <p>RESULTS: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's d = 0.52), the high-depression group (Cohen's d = 0.46), and the PTSD group (Cohen's d = 0.41).</p> <p>CONCLUSIONS: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.</p>
<p>Stanton MV, Matsuura J, Fairchild JK, Lohnberg JA, Bayley PJ. Mindfulness as a Weight Loss Treatment for Veterans. Front Nutr. 2016 Aug 15;3:30. doi: 10.3389/fnut.2016.00030. eCollection 2016.</p>	<p>Despite substantial evidence for their effectiveness in treating disordered eating and obesity, mindfulness-based treatments have not been broadly implemented among Veterans. A number of reviews have reported mindfulness to be beneficial in promoting healthy eating behaviors and weight loss among non-Veteran samples. We discuss this approach in the context of the Veterans Affairs system, the largest integrated healthcare provider in the U.S. and in the context of Veterans, among whom obesity is at epidemic proportions. In this article, we discuss what is known about treating obesity using a mindfulness approach, mindfulness interventions for Veterans, a new pilot mindfulness-based weight loss program designed for Veterans, and future directions for this type of obesity treatment in Veterans. We conclude that this population may be uniquely poised to benefit from mindfulness-based treatments.</p>

[Wheeler, M.S., Glass, C.R., Arnkoff, D.B. et al. The Effect of Mindfulness and Acupuncture on Psychological Health in Veterans: an Exploratory Study. Mindfulness \(2018\) 9: 564. https://doi.org/10.1007/s12671-017-0798-7](https://doi.org/10.1007/s12671-017-0798-7)

iRest Yoga Nidra® is a guided mindfulness approach that encourages relaxation, focused attention, experience of joy, observation of opposite feelings and emotions, non-judgment, and integration of these principles into daily life. iRest was developed for the military population, but the research on its effectiveness is in its infancy. This exploratory study examined the effectiveness of iRest in combination with acupuncture compared to acupuncture alone in improving psychological health in Veterans. The combined treatment yielded significant psychological benefit in depression, psychological symptom severity, depression or tension due to pain, and emotional interference with life activities, while the acupuncture-only treatment did not. Although both conditions showed significant decreases in perceived stress, the effect size for the treatment group was medium to large compared to a small effect size for those receiving acupuncture only. The combined treatment condition, iRest plus acupuncture, also demonstrated clinically meaningful change, with significant decreases in the number of Veterans meeting criteria for mild, moderate, and severe depression. Finally, the combined treatment was equally beneficial independent of factors such as age, gender, or race. Given the pervasiveness of psychological distress and depression in the Veteran population and the efficiency with which these group treatments can be provided, these findings lend preliminary support for the extension of complementary and integrative health offerings including iRest and acupuncture into more Veterans Administration hospitals across the country to improve military mental health. Indeed, the encouraging results of this exploratory study underscore the importance of expanded research on iRest and acupuncture for the treatment of psychological health.

Tai Chi/Qi gong

Citation	Abstract
<p>Bolton RE, Fix GM, VanDeusen Lukas C, Elwy AR, Bokhour BG. Biopsychosocial benefits of movement-based complementary and integrative health therapies for patients with chronic conditions. Chronic Illn. 2018 Jan 1;1742395318782377. doi: 10.1177/1742395318782377. [Epub ahead of print] PubMed PMID: 29914264.</p>	<p>Objectives Complementary and integrative health practices are growing in popularity, including use of movement-based therapies such as yoga, tai-chi, and qigong. Movement-based therapies are beneficial for a range of health conditions and are used more frequently by individuals with chronic illness. Yet little is known about how patients with chronic conditions characterize the health benefits of movement-based therapies. Methods We conducted focus groups with 31 patients enrolled in yoga and qigong programs for chronic conditions at two VA medical centers. Transcripts were analyzed using conventional content analysis with codes developed inductively from the data. Participants' descriptions of health benefits were then mapped to Engel's biopsychosocial model. Results Participants described improvements in all biopsychosocial realms, including improved physical and mental health, reduced opiate and psychotropic use, enhanced emotional well-being, and better social relationships. Changes were attributed to physical improvements, development of coping skills, and increased self-awareness. Discussion Patients with chronic illnesses in our sample reported multiple benefits from participation in movement-based therapies, including in physical, mental, and social health realms. Providers treating patients with complex comorbidities may consider referrals to movement-based therapy programs to address multiple concerns simultaneously, particularly among patients seeking alternatives to medication or adjunctive to an opiate reduction strategy.</p>
<p>Gaddy MA. Implementation of an integrative medicine treatment program at a Veterans Health Administration residential mental health facility. Psychol Serv. 2018</p>	<p>A 4-week interdisciplinary integrative medicine program was recently added to the core treatment offerings for veterans participating in the Mental Health Residential Rehabilitation Program at the Dwight D. Eisenhower Veterans Affairs Medical Center. The new integrative medicine program teaches veterans about using meditative practices, nutrition, creative expression, tai chi, hatha yoga, sensory and breathing techniques, and lifestyle changes to enhance well-being. The groups are run by professionals from a variety of disciplines including recreation therapy, art therapy, occupational therapy, psychology, and nutrition. For the first 42 veterans to complete the program, the Short Form 12-item Health Survey was administered before and after participation in the integrative medicine program to assess the potential effectiveness of the program in enhancing physical and psychological well-being. In addition, a brief semistructured interview was used to assess veteran opinions about the program. Results suggest that the program was well received and that both physical and mental health scores improved from before to after treatment in this sample of veterans with complex behavioral health concerns. (PsycINFO Database Record (c) 2018 APA, all rights reserved).</p>
<p>Hempel S, Taylor SL, Solloway MR, Miake-Lye IM, Beroes JM, Shanman R, Shekelle PG. Evidence Map of Tai Chi [Internet]. Washington (DC): Department of Veterans Affairs (US); 2014 Sep.</p>	<p>This evidence map provides an overview of Tai Chi research and describes its volume and focus. It combines a systematic review of systematic reviews with a scoping review for the VA priority areas pain, posttraumatic stress disorder, and fall prevention. The evidence map summarizes patient outcomes reported in reviews of studies in patients practicing Tai Chi for health-related indications. We searched PubMed, DARE, the Cochrane Library of Systematic Reviews, the Campbell Collaboration database, AMED, CINAHL, PsycInfo, Scopus, Web of Science, and PROSPERO; screened reviews of reviews; and consulted with topic experts. We used a bubble plot to graphically display the research field and summarized results narratively in an executive summary. Tai Chi has been investigated as a treatment for a number of clinical indications. The systematic review identified 107 systematic reviews. Reviews addressing general health effects, psychological wellbeing, or interventions in older adults included between 31 and 51 randomized controlled trials (RCTs). The topic areas balance, hypertension, falls, quality of life, cognitive performance, and vestibulopathy have also been the focus of research; included reviews identified 10 or more pertinent RCTs per topic. Statistically significant effects across existing studies were reported for hypertension, falls outside of institutions, cognitive performance, osteoarthritis, chronic obstructive pulmonary disease, pain, balance confidence, depression, and muscle strength. However, review authors cautioned that firm conclusions cannot be drawn due to methodological limitations in the original studies and/or an insufficient number of research studies.</p>

<p>Niles BL, Mori DL, Polizzi CP, Pless Kaiser A, Ledoux AM, Wang C. Feasibility, qualitative findings and satisfaction of a brief Tai Chi mind-body programme for veterans with post-traumatic stress symptoms. BMJ Open. 2016 Nov 29;6(11):e012464. doi: 10.1136/bmjopen-2016-012464. PubMed PMID: 27899398; PubMed Central PMCID: PMC5168527.</p>	<p>OBJECTIVE: To examine feasibility, qualitative feedback and satisfaction associated with a 4-session introduction to Tai Chi for veterans with post-traumatic stress symptoms.</p> <p>DESIGN: We observed and reported recruitment and retention rates, participant characteristics, adherence, and satisfaction across 2 cohorts. We also examined qualitative feedback provided by questionnaires, focus groups and individual interviews.</p> <p>MAIN OUTCOME MEASURES: Rates of recruitment and retention, focus group and individual feedback interviews, self-reported satisfaction.</p> <p>PARTICIPANTS: 17 veterans with post-traumatic stress symptoms.</p> <p>RESULTS: Almost 90% (17/19) of those eligible following the telephone screen enrolled in the programme. Three-quarters (76.4%) of the participants attended at least 3 of the 4 Tai Chi sessions. Qualitative data analysis revealed themes indicating favourable impressions of the Tai Chi sessions. In addition, participants reported feeling very engaged during the sessions, and found Tai Chi to be helpful for managing distressing symptoms (ie, intrusive thoughts, concentration difficulties, physiological arousal). Participants also reported high satisfaction: 93.8% endorsed being very or mostly satisfied with the programme. All participants (100%) indicated that they would like to participate in future Tai Chi programmes and would recommend it to a friend.</p> <p>CONCLUSIONS: Tai Chi appears to be feasible and safe for veterans with symptoms of post-traumatic stress disorder (PTSD), is perceived to be beneficial and is associated with high rates of satisfaction. This study highlights the need for future investigation of Tai Chi as a novel intervention to address symptoms of PTSD.</p>
<p>Reb AM, Saum NS, Murphy DA, Breckenridge-Sproat ST, Su X, Bormann JE. Qigong in Injured Military Service Members. J Holist Nurs. 2017 Mar;35(1):10-24.</p>	<p>BACKGROUND: Wounded, ill, and injured (WII) Military Service members experience significant stress and are at risk for developing chronic conditions including posttraumatic stress disorder and depression. Qigong, a meditative movement practice, may positively affect their ability to engage in successful rehabilitation.</p> <p>PURPOSE: We assessed the feasibility of Qigong practice in WII Service members returning from combat; effects on stress, sleep, and somatic symptoms; satisfaction; and participants' experience with the practice.</p> <p>DESIGN: Single-group, pre- and posttest, mixed methods approach.</p> <p>METHOD: Twenty-six WII were enrolled. The program was designed to include 20 classes over 10 weeks. Participants completed self-report questionnaires, practice logs, and an exit interview.</p> <p>FINDINGS: Average attendance was 8.14 classes (SD = 4.9); mean engagement was 5.7 (SD = 3.5) weeks. Participants endorsed a high level of satisfaction with the practice. Qualitative themes included coping with stress; feeling more resilient and empowered; improvement in symptoms including sleep and physical function; and factors affecting practice. Participant-reported facilitators included accessibility and portability of the practice; barriers included scheduling conflicts and personal challenges. Participants recommended offering shorter programs with flexible scheduling options, increasing program awareness, and including significant others in future classes.</p> <p>CONCLUSION: Qigong was safe, portable, and easily adapted for WII Service members.</p>

<p>Reid KF, Bannuru RR, Wang C, Mori DL, Niles BL. The Effects of Tai Chi Mind-Body Approach on the Mechanisms of Gulf War Illness: an Umbrella Review. Integr Med Res. 2019</p>	<p>Gulf War illness (GWI) is a chronic and multisymptom disorder affecting military veterans deployed to the 1991 Persian Gulf War. It is characterized by a range of acute and chronic symptoms, including but not limited to, fatigue, sleep disturbances, psychological problems, cognitive deficits, widespread pain, and respiratory and gastrointestinal difficulties. The prevalence of many of these chronic symptoms affecting Gulf War veterans occur at markedly elevated rates compared to nondeployed contemporary veterans. To date, no effective treatments for GWI have been identified. The overarching goal of this umbrella review was to critically evaluate the evidence for the potential of Tai Chi mind-body exercise to benefit and alleviate GWI symptomology. Based on the most prevalent GWI chronic symptoms and case definitions established by the Centers for Disease Control and Prevention and the Kansas Gulf War Veterans Health Initiative Program, we reviewed and summarized the evidence from 7 published systematic reviews and meta-analyses. Our findings suggest that Tai Chi may have the potential for distinct therapeutic benefits on the major prevalent symptoms of GWI. Future clinical trials are warranted to examine the feasibility, efficacy, durability and potential mechanisms of Tai Chi for improving health outcomes and relieving symptomology in GWI.</p>
<p>Solloway MR, Taylor SL, Shekelle PG, Miake-Lye IM, Beroes JM, Shanman RM, Hempel S. An evidence map of the effect of Tai Chi on health outcomes. Syst Rev. 2016 Jul 27;5(1):126. doi: 10.1186/s13643-016-0300-y. PubMed PMID: 27460789; PubMed Central PMCID: PMC4962385.</p>	<p>BACKGROUND: This evidence map describes the volume and focus of Tai Chi research reporting health outcomes. Originally developed as a martial art, Tai Chi is typically taught as a series of slow, low-impact movements that integrate the breath, mind, and physical activity to achieve greater awareness and a sense of well-being.</p> <p>METHODS: The evidence map is based on a systematic review of systematic reviews. We searched 11 electronic databases from inception to February 2014, screened reviews of reviews, and consulted with topic experts. We used a bubble plot to graphically display clinical topics, literature size, number of reviews, and a broad estimate of effectiveness.</p> <p>RESULTS: The map is based on 107 systematic reviews. Two thirds of the reviews were published in the last five years. The topics with the largest number of published randomized controlled trials (RCTs) were general health benefits (51 RCTs), psychological well-being (37 RCTs), interventions for older adults (31 RCTs), balance (27 RCTs), hypertension (18 RCTs), fall prevention (15 RCTs), and cognitive performance (11 RCTs). The map identified a number of areas with evidence of a potentially positive treatment effect on patient outcomes, including Tai Chi for hypertension, fall prevention outside of institutions, cognitive performance, osteoarthritis, depression, chronic obstructive pulmonary disease, pain, balance confidence, and muscle strength. However, identified reviews cautioned that firm conclusions cannot be drawn due to methodological limitations in the original studies and/or an insufficient number of existing research studies.</p> <p>CONCLUSIONS: Tai Chi has been applied in diverse clinical areas, and for a number of these, systematic reviews have indicated promising results. The evidence map provides a visual overview of Tai Chi research volume and content.</p>

<p>Tate LM et al. Increasing the availability of Tai Chi to veterans through a training of trainers course. Nurs Forum.(2019)</p>	<p>PURPOSE: The purpose of this nurse-led project was to increase the number of interprofessional Tai Chi instructors for veterans through a 5-week (32 hours) training of trainers (ToT) course led by a Tai Chi master trainer.</p> <p>METHODS: This project was designed to evaluate the effectiveness of using the ToT model to increase the availability of Tai Chi to veterans. To understand how well the ToT course met learners' needs, a two-phase course evaluation was conducted.</p> <p>RESULTS: Fifteen interprofessional employees enrolled in and completed the course. Most learners were white (67%) females (67%) with a median age of 50 years. All agreed that the training provided the skills, materials, and confidence to lead Tai Chi classes. Most (93%) indicated experiencing positive health benefits from the training and none experienced any negative effects. The 3-month follow-up evaluation indicated that 10 (67%) were teaching veterans in individual or group classes with two others assisting. Twelve instructors taught more than 150 veterans.</p> <p>CONCLUSIONS: Overall, learners evaluated this ToT course positively and indicated their needs were met and felt prepared to teach Tai Chi despite being inexperienced. The course was a success with 80% of new instructors teaching or coteaching Tai Chi to veterans.</p>
<p>Yost TL, Taylor AG. Qigong as a novel intervention for service members with mild traumatic brain injury. 2013</p>	<p>PURPOSE: To describe the experience of internal qigong practice in service members diagnosed with mild traumatic brain injury (mTBI).</p> <p>THEORETICAL FRAMEWORK: The study used qualitative descriptive phenomenological methods originally described by Husserl and later refined by Giorgi.</p> <p>METHODOLOGY: Participants were interviewed about their experiences while learning qigong to determine their level of interest, benefits, and/or adverse effects; ease of learning/performing the routine; and any barriers to practice.</p> <p>SAMPLE: Six service members with mTBI receiving outpatient neurorehabilitation at the Defense and Veterans Brain Injury Center-Charlottesville Rehabilitation Center.</p> <p>INTERVENTION: Participants learned Reflective Exercise Qigong, a form of qigong developed specifically to require less complex movement and balance than most forms of qigong, making it ideal for those with potential coordination and balance issues.</p> <p>DATA COLLECTION: Semistructured interviews took place after four weeks of formal qigong instruction, then again after the subjects completed eight weeks. Interview data were analyzed with phenomenological methods described by Giorgi.</p> <p>RESULTS: Four themes emerged from the interview data: "the physical experience of qigong," "regaining control," "no pain, a lot of gain," and "barriers to qigong practice." Participants offered examples of how qigong enabled them to control refractory symptoms after mTBI while decreasing reliance on pharmacotherapy. All agreed that qigong was uniquely conducive to the disciplined mindset of military service members and that the simplicity of Reflective Exercise qigong, compared with similar modalities such as tai chi and yoga, was well suited to individuals with decreased balance, cognition, and memory related to mTBI.</p>

Yoga

Citation	Abstract
Avery T, Blasey C, Rosen C, Bayley P. Psychological Flexibility and Set-Shifting Among Veterans Participating in a Yoga Program: A Pilot Study. Mil Med. 2018 Nov 1;183(11-12):e359-e363.	<p>INTRODUCTION: Trauma-focused psychotherapies do not meet the needs of all veterans. Yoga shows some potential in reducing stress and perhaps even PTSD in veterans, although little is understood about the mechanisms of action. This study identifies preliminary correlates of change in PTSD and perceived stress for veterans participating in yoga.</p> <p>MATERIALS AND METHODS: Nine veterans (seven males and two females) were recruited from an existing clinical yoga program and observed over 16 wk. Severity of PTSD symptoms (PCL-5) and perceived stress (PSS-10) were collected at baseline and weeks 4, 6, 8, and 16. Psychological flexibility (AAQ-II) and set-shifting (ratio of trail making test A to B) were collected at baseline and at week 6. Subjects attended yoga sessions freely, ranging from 1 to 23 classes over the 16 weeks. The Stanford University Institutional Review Board approved this research protocol.</p> <p>RESULTS: Self-reported PTSD symptoms significantly reduced while perceived stress did not. Lower baseline set-shifting predicted greater improvements in PTSD between baseline and 4 weeks; early improvements in set-shifting predicted overall reduction in PTSD. Greater psychological flexibility was associated with lower PTSD and perceived stress; more yoga practice, before and during the study, was associated with greater psychological flexibility. Other predictors were not supported.</p> <p>CONCLUSIONS: In a small uncontrolled sample, psychological flexibility and set-shifting predicted changes in PTSD symptoms in veterans participating in a clinical yoga program, which supports findings from prior research. Future research should include an active comparison group and record frequency of yoga practiced outside formal sessions.</p>
Baker MR, Tessier JM, Meyer HB, Sones AC, Sachinvala N, Ames D. Yoga-Based Classes for Veterans With Severe Mental Illness: Development, Dissemination, and Assessment. Fed Pract. 2015 Oct;32(10):19-25.	<p>There is growing interest in developing a holistic and integrative approach for the treatment of severe mental illnesses (SMI), such as schizophrenia, major depression, posttraumatic stress disorder (PTSD), and anxiety disorders. Western medicine has traditionally focused on the direct treatment of symptoms and separated the management of physical and mental health, but increasing attention is being given to complementary and alternative medicine (CAM) for patients with SMI. Throughout 8 weeks of yoga-based wellness classes, veterans were assessed for perceived benefits, pain, stress, and biological, psychological, social, and spiritual wellness.</p>
Bolton RE, Fix GM, VanDeusen Lukas C, Elwy AR, Bokhour BG. Biopsychosocial benefits of movement-based complementary and integrative health therapies for patients with chronic conditions. Chronic Illn. 2018 Jan 1;1742395318782377. doi: 10.1177/1742395318782377. [Epub ahead of print] PubMed PMID: 29914264.	<p>Objectives Complementary and integrative health practices are growing in popularity, including use of movement-based therapies such as yoga, tai-chi, and qigong. Movement-based therapies are beneficial for a range of health conditions and are used more frequently by individuals with chronic illness. Yet little is known about how patients with chronic conditions characterize the health benefits of movement-based therapies. Methods We conducted focus groups with 31 patients enrolled in yoga and qigong programs for chronic conditions at two VA medical centers. Transcripts were analyzed using conventional content analysis with codes developed inductively from the data. Participants' descriptions of health benefits were then mapped to Engel's biopsychosocial model. Results Participants described improvements in all biopsychosocial realms, including improved physical and mental health, reduced opiate and psychotropic use, enhanced emotional well-being, and better social relationships. Changes were attributed to physical improvements, development of coping skills, and increased self-awareness. Discussion Patients with chronic illnesses in our sample reported multiple benefits from participation in movement-based therapies, including in physical, mental, and social health realms. Providers treating patients with complex comorbidities may consider referrals to movement-based therapy programs to address multiple concerns simultaneously, particularly among patients seeking alternatives to medication or adjunctive to an opiate reduction strategy.</p>

<p>Coeytaux RR, McDuffie J, Goode A, Cassel S, Porter WD, Sharma P, Meleth S, Minnella H, Nagi A, Williams JW Jr. Evidence Map of Yoga for High-Impact Conditions Affecting Veterans [Internet]. Washington (DC): Department of Veterans Affairs (US); 2014 Aug.</p>	<p>Patient-centered care supports the active involvement of patients and their families in the decision-making process between options for treatment. Part of this mission is to identify, develop, and implement new practices and approaches that are found to be effective in promoting the transformation to a patient-centered model and improved patient care. Complementary and alternative medicine (CAM) strategies such as yoga are widely available in the private sector, and some Veterans would like access to these strategies through the Veterans Affairs (VA) system. Determining the state of evidence on the benefits and harms of yoga and other CAM modalities is a priority for the Veterans Health Administration (VHA). To fulfill the joint research needs of the Office of Patient Centered Care and the Field Advisory Committee on Complementary and Alternative Medicine, and to help VA leadership determine the most appropriate guidelines/policy for the implementation of CAM therapies within the VA, the Evidence-based Synthesis Program Coordinating Center proposed a CAM evidence mapping project to evaluate the existing evidence on yoga for common clinical conditions in Veterans.</p>
<p>Combs MA, Critchfield EA, Soble JR. Relax while you rehabilitate: A pilot study integrating a novel, yoga-based mindfulness group intervention into a residential military brain injury rehabilitation program. Rehabil Psychol. 2018 May;63(2):182-193. doi: 10.1037/rep0000179. Epub 2018 Mar 12.</p>	<p>OBJECTIVE: This preliminary, pilot study assessed the effectiveness of a group-based, mindfulness intervention in a residential, rehabilitation setting with specific focus on assessing participants' self-report of perceived benefit of the intervention on overall health, pain, sleep, mood/anxiety, attention, and self-awareness, as well as implementing modifications needed for successful intervention application among a diverse, clinical military population.</p> <p>METHOD/DESIGN: Participants were 19 veterans and active duty service members with a history of traumatic brain injury (TBI; 63% severe) who completed a mindfulness-based group intervention during inpatient admission at a Veterans Affairs Polytrauma Transitional Rehabilitation Program (PTRP). Mindfulness and yoga skills were taught in a required, weekly group incorporated into participants' rehabilitation schedule. Opinions and attitudes about mindfulness, as well as pertinent self-report outcome measures, were obtained pre- and postgroup participation.</p> <p>RESULTS: Results suggested that participation in the group was positively associated with individuals' self-reported belief about the benefit of mindfulness in the areas of overall health, physical health, mood, focus, and self-awareness. The more groups attended, the more positive the participants' beliefs about potential impact on overall health and mood became, even while controlling for length of rehabilitation stay. Additionally, several specific group modifications relevant to this population (e.g., physical/environmental modifications, repetition, ignoring/reorienting) were implemented to support successful participation.</p> <p>CONCLUSIONS/IMPLICATIONS: These preliminary and exploratory findings suggest that it may be worthwhile for psychologists, clinicians, and other health care providers working with a mixed TBI population, and more specifically a military population with TBI, to consider introducing mindfulness skills as part of multidisciplinary rehabilitation.</p>
<p>Cushing RE, Braun KL, Alden C-Jayt SW, Katz AR. Military-Tailored Yoga for Veterans with Post-traumatic Stress Disorder. Mil Med. 2018 May 1;183(5-6):e223-e231. doi: 10.1093/milmed/usx071. PubMed PMID: 29415222; PubMed Central PMCID: PMC6086130.</p>	<p>Among veterans of post-9/11 conflicts, estimates of post-traumatic stress disorder (PTSD) range from 9% shortly after returning from deployment to 31% a year after deployment. Clinical and pharmaceutically based treatments are underutilized. This could be due to concerns related to lost duty days, as well as PTSD patients' fears of stigma of having a mental health condition. Yoga has been shown to reduce PTSD symptoms in the civilian population, but few studies have tested the impact of yoga on veterans of post-9/11 conflicts. The purpose of this study is to test the impact of yoga on post-9/11 veterans diagnosed with PTSD.</p>

<p>Cushing RE, Braun KL, Alden S. A Qualitative Study Exploring Yoga in Veterans with PTSD Symptoms. Int J Yoga Therap. 2018 Nov</p>	<p>Quantitative studies of yoga have reported reduced posttraumatic stress disorder (PTSD) symptoms in veterans, but little is known about how and why veterans are attracted to and stick with a yoga practice. Guided by the Health Belief Model, this study examined veterans' perceptions of the benefits, barriers, and motivations to continue practicing trauma-sensitive yoga. Interviews were conducted with nine individuals, five of whom completed a 6-week trauma-sensitive yoga intervention designed for veterans and four who did not complete the intervention. Transcripts were analyzed for themes. The benefits identified by veterans were finding mental stillness, body awareness, and social connection. The barriers were perceptions that yoga is socially unacceptable, especially for men, and physically unchallenging. Understanding these benefits and barriers can help to make yoga more attractive to service members and veterans. For example, medical personnel can refer service members and veterans to yoga not only for PTSD symptoms, but also to address back pain and to reduce isolation. Access to male yoga instructors, especially those who are themselves service members or veterans, could be expanded, and classes could be integrated into physical activity routines required of active-duty personnel. Promotional materials can feature male service members and veterans with captions related to yoga as a way to increase resiliency, self-sufficiency, and physical and mental mission readiness. Findings from this study can help the Department of Defense and the Veterans Health Administration implement yoga as an adjunct or alternative treatment for veterans with PTSD symptoms.</p>
<p>Duan-Porter W, Coeytaux RR, McDuffie JR, Goode AP, Sharma P, Mennella H, Nagi A, Williams JW Jr. Evidence Map of Yoga for Depression, Anxiety, and Posttraumatic Stress Disorder. J Phys Act Health. 2016 Mar;13(3):281-8. doi: 10.1123/jpah.2015-0027. PubMed PMID: 26181774.</p>	<p>BACKGROUND: This study describes evidence of yoga's effectiveness for depressive disorders, general anxiety disorder (GAD), panic disorder (PD), and posttraumatic stress disorder (PTSD) in adults. We also address adverse events associated with yoga.</p> <p>METHODS: We searched multiple electronic databases for systematic reviews (SRs) published between 2008 and July 2014, randomized controlled trials (RCTs) not identified in eligible SRs, and ongoing RCTs registered with ClinicalTrials.gov.</p> <p>RESULTS: We identified 1 SR on depression, 1 for adverse events, and 3 addressing multiple conditions. The high-quality depression SR included 12 RCTs (n = 619) that showed improved short-term depressive symptoms (standardized mean difference, -0.69, 95% confidence interval, -0.99 to -0.39), but there was substantial variability (I² = 86%) and a high risk of bias for 9 studies. Three SRs addressing multiple conditions identified 4 nonrandomized studies (n = 174) for GAD/PD and 1 RCT (n = 8) and 2 nonrandomized studies (n = 22) for PTSD. We separately found 1 RCT (n = 13) for GAD and 2 RCTs (n = 102) for PTSD. Collectively, these studies were inconclusive for the effectiveness of yoga in treating GAD/PD and PTSD. The high-quality SR for adverse events included 37 primary reports (n = 76) in which inversion postures were most often implicated. We found 5 ongoing trials (3 for PTSD).</p> <p>CONCLUSIONS: Yoga may improve short-term depressive symptoms, but evidence for GAD, PD, and PTSD remain inconclusive.</p>

<p>Fletcher CE, Mitchinson AR, Trumble EL, Hinshaw DB, Dusek JA. Perceptions of providers and administrators in the Veterans Health Administration regarding complementary and alternative medicine. Med Care. 2014</p>	<p>BACKGROUND: The integration of complementary and alternative medicine (CAM) therapies into a large organization such as the Veterans Health Administration (VHA) requires cultural change and deliberate planning to ensure feasibility and buy-in from staff and patients. At present, there is limited knowledge of VHA patient care providers' and administrators' viewpoints regarding CAM therapies and their implementation.</p> <p>OBJECTIVES: Our purpose was to qualitatively examine knowledge, attitudes, perceived value and perceived barriers, and/or facilitators to CAM program implementation among VHA providers and administrators at a large VHA facility.</p> <p>RESEARCH DESIGN: We are reporting the qualitative interview portion of a mixed-methods study.</p> <p>SUBJECTS: Twenty-eight participants (patient care providers or administrators) were purposely chosen to represent a spectrum of positions and services. Participants' experience with and exposure to CAM therapies varied.</p> <p>MEASURES: Individual interviews were conducted using a semi-structured format and were digitally recorded, transcribed, and coded for themes.</p> <p>RESULTS: Recurrent themes included: a range of knowledge about CAM; benefits for patients and staff; and factors that can be facilitators or barriers including evidence-based practice or perceived lack thereof, prevailing culture, leadership at all levels, and lack of position descriptions for CAM therapists. Participants rated massage, meditation, acupuncture, and yoga as priorities for promotion across the VHA.</p> <p>CONCLUSIONS: Despite perceived challenges, providers and administrators recognized the value of CAM and potential for expansion of CAM within the VHA. Interview results could inform the process of incorporating CAM into a plan for meeting VHA Strategic Goal One of personalized, proactive, patient-driven health care across the VHA.</p>
<p>Flynn DM, McQuinn H, Fairchok A, Eaton LH, Langford DJ, Snow T, Doorenbos AZ. Enhancing the success of functional restoration using complementary and integrative therapies: Protocol and challenges of a comparative effectiveness study in active duty service members with chronic pain. Contemp Clin Trials Commun. 2018</p>	<p>Chronic pain significantly impairs physical, psychological and social functioning. Among military populations, pain due to injuries sustained both on and off the battlefield is a leading cause of short and long-term disability. Improving the quality of pain care for active duty service members is a major priority of the Department of Defense. This article describes an ongoing comparative effectiveness study which aims to (1) evaluate the benefit of a multimodal complementary and integrative health (CIH) pain management program when added to standard rehabilitative care (SRC) prior to an intensive functional restoration (FR) program compared to SRC alone, and (2) identify factors that predict improvement in pain impact following treatment completion. Using a randomized controlled trial design, active duty service members with pain related to musculoskeletal injury are assigned to a 3-week course of either SRC or SRC combined with CIH therapies prior to beginning a 3-week course of FR. Outcomes are collected at baseline, at the end of stage 1 treatment, post-FR, and at 3- and 6-months post-FR. Outcome measures include provider-measured functional assessments and patient-reported assessment through the Pain Assessment Screening Tool and Outcomes Registry (PASTOR). The military health system provides a supportive environment for implementation of this research protocol. Challenges to conducting the study have included new technology systems at the study site, slower than projected enrollment, and program delivery issues. These challenges have been successfully managed and have not significantly impacted study participant enrollment and completion of study treatments.</p>

<p>Gaddy MA. Implementation of an integrative medicine treatment program at a Veterans Health Administration residential mental health facility. Psychol Serv. 2018</p>	<p>A 4-week interdisciplinary integrative medicine program was recently added to the core treatment offerings for veterans participating in the Mental Health Residential Rehabilitation Program at the Dwight D. Eisenhower Veterans Affairs Medical Center. The new integrative medicine program teaches veterans about using meditative practices, nutrition, creative expression, tai chi, hatha yoga, sensory and breathing techniques, and lifestyle changes to enhance well-being. The groups are run by professionals from a variety of disciplines including recreation therapy, art therapy, occupational therapy, psychology, and nutrition. For the first 42 veterans to complete the program, the Short Form 12-item Health Survey was administered before and after participation in the integrative medicine program to assess the potential effectiveness of the program in enhancing physical and psychological well-being. In addition, a brief semistructured interview was used to assess veteran opinions about the program. Results suggest that the program was well received and that both physical and mental health scores improved from before to after treatment in this sample of veterans with complex behavioral health concerns. (PsycINFO Database Record (c) 2018 APA, all rights reserved).</p>
<p>Gallegos AM, Crean HF, Pigeon WR, Heffner KL. Meditation and yoga for posttraumatic stress disorder: A meta-analytic review of randomized controlled trials. Clin Psychol Rev. 2017 Dec;58:115-124. doi: 10.1016/j.cpr.2017.10.004. Review. PubMed PMID: 29100863; PubMed Central PMCID: PMC5939561.</p>	<p>Posttraumatic stress disorder (PTSD) is a chronic and debilitating disorder that affects the lives of 7-8% of adults in the U.S. Although several interventions demonstrate clinical effectiveness for treating PTSD, many patients continue to have residual symptoms and ask for a variety of treatment options. Complementary health approaches, such as meditation and yoga, hold promise for treating symptoms of PTSD. This meta-analysis evaluates the effect size (ES) of yoga and meditation on PTSD outcomes in adult patients. We also examined whether the intervention type, PTSD outcome measure, study population, sample size, or control condition moderated the effects of complementary approaches on PTSD outcomes. The studies included were 19 randomized control trials with data on 1173 participants. A random effects model yielded a statistically significant ES in the small to medium range (ES=-0.39, p<0.001, 95% CI [-0.57, -0.22]). There were no appreciable differences between intervention types, study population, outcome measures, or control condition. There was, however, a marginally significant higher ES for sample size≤30 (ES=-0.78, k=5). These findings suggest that meditation and yoga are promising complementary approaches in the treatment of PTSD among adults and warrant further study.</p>

<p>Goode AP, Coeytaux RR, McDuffie J, Duan Porter W, Sharma P, Mennella H, Nagi A, Williams JW Jr. An evidence map of yoga for low back pain. Complement Ther Med. 2016 Apr;25:170-7. doi: 10.1016/j.ctim.2016.02.016. Review. PubMed PMID: 27062965.</p>	<p>OBJECTIVE: Yoga is being increasingly studied as a treatment strategy for a variety of different clinical conditions, including low back pain (LBP). We set out to conduct an evidence map of yoga for the treatment, prevention and recurrence of acute or chronic low back pain (cLBP).</p> <p>METHODS: We searched Medline, Cochrane Database of Systematic Reviews, EMBASE, Allied and Complementary Medicine Database and ClinicalTrials.gov for randomized controlled trials (RCT), systematic reviews or planned studies on the treatment or prevention of acute back pain or cLBP. Two independent reviewers screened papers for inclusion, extracted data and assessed the quality of included studies.</p> <p>RESULTS: Three eligible systematic reviews were identified that included 10 RCTs (n=956) that evaluated yoga for non-specific cLBP. We did not identify additional RCTs beyond those included in the systematic reviews. Our search of ClinicalTrials.gov identified one small (n=10) unpublished trial and one large (n=320) planned clinical trial. The most recent good quality systematic review indicated significant effects for short- and long-term pain reduction (n=6 trials; standardized mean difference [SMD] -0.48; 95% CI, -0.65 to -0.31; I(2)=0% and n=5; SMD -0.33; 95% CI, -0.59 to -0.07; I(2)=48%, respectively). Long-term effects for back specific disability were also identified (n=5; SMD -0.35; 95% CI, -0.55 to -0.15; I(2)=20%). No studies were identified evaluating yoga for prevention or treatment of acute LBP.</p> <p>CONCLUSION: Evidence suggests benefit of yoga in midlife adults with non-specific cLBP for short- and long-term pain and back-specific disability, but the effects of yoga for health-related quality of life, well- being and acute LBP are uncertain. Without additional studies, further systematic reviews are unlikely to be informative.</p>
<p>Groessl EJ, Liu L, Chang DG, Wetherell JL, Bormann JE, Atkinson JH, Baxi S, Schmalz L. Yoga for Military Veterans with Chronic Low Back Pain: A Randomized Clinical Trial. Am J Prev Med. 2017 Nov;53(5):599-608. doi: 10.1016/j.amepre.2017.05.019. Epub 2017 Jul 20. PubMed PMID: 28735778; PubMed Central PMCID: PMC6399016.</p>	<p>Introduction: Chronic low back pain (cLBP) is prevalent, especially among military veterans. Many cLBP treatment options have limited benefits and are accompanied by side effects. Major efforts to reduce opioid use and embrace nonpharmacological pain treatments have resulted. Research with community cLBP patients indicates that yoga can improve health outcomes and has few side effects. The benefits of yoga among military veterans were examined.</p> <p>Design: Participants were randomized to either yoga or delayed yoga treatment in 2013–2015. Outcomes were assessed at baseline, 6 weeks, 12 weeks, and 6 months. Intention-to-treat analyses occurred in 2016.</p> <p>Results: Participant characteristics were mean age 53 years, 26% were female, 35% were unemployed or disabled, and mean back pain duration was 15 years. Improvements in Roland Morris Disability Questionnaire scores did not differ between the two groups at 12 weeks, but yoga participants had greater reductions in Roland Morris Disability Questionnaire scores than delayed treatment participants at 6 months (2.48 (95% CI 4.08, 0.87)). Yoga participants improved more on pain intensity at 12 weeks and at 6 months. Opioid medication use declined among all participants, but group differences were not found.</p> <p>Conclusions: Yoga improved health outcomes among veterans despite evidence they had fewer resources, worse health, and more challenges attending yoga sessions than community samples studied previously. The magnitude of pain intensity decline was small, but occurred in the context of reduced opioid use. The findings support wider implementation of yoga programs for veterans.</p>

<p>Groessl EJ, Liu L, Schmalzl L, Chang DG, McCarthy A, Chun WI, Sinclair C, Bormann JE. Secondary Outcomes from a Randomized Controlled Trial of Yoga for Veterans with Chronic Low-Back Pain. Int J Yoga Therap. 2019 Sep 11. doi: 10.17761/2020-D-19-00036. [Epub ahead of print]</p>	<p>Chronic low-back pain (cLBP) is a prevalent condition, and rates are higher among military veterans. cLBP is a persistent condition, and treatment options have either modest effects or a significant risk of side-effects, which has led to recent efforts to explore mind-body intervention options and reduce opioid medication use. Prior studies of yoga for cLBP in community samples, and the main results of a recent trial with military veterans, indicate that yoga can reduce back-related disability and pain intensity. Secondary outcomes from the trial of yoga with military veterans are presented here. In the study, 150 military veterans (Veterans Administration patients) with cLBP were randomized to either yoga or a delayed-treatment group receiving usual care between 2013 and 2015. Assessments occurred at baseline, 6 weeks, 12 weeks, and 6 months. Intent-to-treat analyses were conducted. Yoga classes lasting 60 minutes each were offered twice weekly for 12 weeks. Yoga sessions consisted of physical postures, movement, focused attention, and breathing techniques. Home practice guided by a manual was strongly recommended. The primary outcome measure was Roland-Morris Disability Questionnaire scores after 12 weeks. Secondary outcomes included pain intensity, pain interference, depression, fatigue, quality of life, self-efficacy, and medication usage. Yoga participants improved more than delayed-treatment participants on pain interference, fatigue, quality of life, and self-efficacy at 12 weeks and/or 6 months. Yoga participants had greater improvements across a number of important secondary health outcomes compared to controls. Benefits emerged despite some veterans facing challenges with attending yoga sessions in person. The findings support wider implementation of yoga programs for veterans, with attention to increasing accessibility of yoga programs in this population.</p>
<p>Groessl EJ, Maiya M, Elwy AR, Riley KE, Sarkin AJ, Eisen SV, Braun T, Gutierrez L, Kidane L, Park CL. The Essential Properties of Yoga Questionnaire: Development and Methods. Int J Yoga Therap. 2015;25(1):51-9. doi: 10.17761/1531-2054-25.1.51. PubMed PMID: 26667289.</p>	<p>Yoga interventions have considerable heterogeneity, are multi-dimensional, and may impact health in different ways. However, most research reports regarding the effects of yoga on health and wellbeing do not adequately describe the components of the yoga interventions being used. Thus, drawing comparisons across studies or understanding the relative effects of specific aspects of a yoga intervention are rarely possible. To address this problem, we created the Essential Properties of Yoga Questionnaire (EPYQ) Project, an NCCAM-funded set of studies to develop a translational tool for yoga researchers. Here we describe the methods and developmental processes used in the EPYQ Project in detail. The project consists of four main phases. Phase I was designed to gain a comprehensive understanding of the relevant aspects of yoga by conducting a comprehensive systematic literature review and conducting focus groups with stakeholders including a wide variety of yoga teachers and students. In Phase II, a pool of potential questionnaire items was developed for the prototypic questionnaire using information from Phase I. Cognitive interviews were conducted with the preliminary EPYQ items to assess the perceived clarity, meaning, and importance of each item. In Phase III, the prototypic questionnaire was administered to two large samples of yoga students and instructors. Military personnel and veterans who practiced or taught yoga (n = 329) were recruited to participate. Factor analysis and item response theory were used to identify factors and select the final questionnaire items. Phase IV is ongoing and will collect reliability and validity data on the final instrument. Results are expected to be available in 2016. The EPYQ will provide an objective tool for describing the amount of various components of yoga interventions, eventually allowing researchers to link specific yoga components to health benefits, and facilitating the design of yoga interventions for specific health conditions.</p>

<p>Groessl EJ, Weingart KR, Johnson N, Baxi S. The benefits of yoga for women veterans with chronic low back pain. J Altern Complement Med. 2012 Sep;18(9):832-8. doi: 10.1089/acm.2010.0657. Epub 2012 Jul 19.</p>	<p>OBJECTIVES: Chronic low back (CLBP) pain is prevalent among military veterans and often leads to functional limitations, psychologic symptoms, lower quality of life, and higher health care costs. An increasing proportion of U.S. veterans are women, and women veterans may have different health care needs than men veterans. The purpose of this study was to assess the impact of a yoga intervention on women and men with CLBP.</p> <p>SUBJECTS/SETTING/INTERVENTION: VA patients with CLBP were referred by primary care providers to a clinical yoga program.</p> <p>DESIGN: Research participants completed a brief battery of questionnaires before their first yoga class and again 10 weeks later in a single-group, pre-post study design.</p> <p>OUTCOME MEASURES: Questionnaires included measures of pain (Pain Severity Scale), depression (CESD-10), energy/fatigue, and health-related quality of life (SF-12). Yoga attendance and home practice of yoga were also measured. Repeated-measures analysis of variance was used to analyze group differences over time while controlling for baseline differences.</p> <p>RESULTS: The 53 participants who completed both assessments had a mean age of 53 years, and were well educated, 41% nonwhite, 49% married, and had varying employment status. Women participants had significantly larger decreases in depression ($p=0.046$) and pain "on average" ($p=0.050$), and larger increases in energy ($p=0.034$) and SF-12 Mental Health ($p=0.044$) than men who participated. The groups did not differ significantly on yoga attendance or home practice of yoga.</p> <p>CONCLUSIONS: These results suggest that women veterans may benefit more than men veterans from yoga interventions for chronic back pain. Conclusions are tentative because of the small sample size and quasi-experimental study design. A more rigorous study is being designed to answer these research questions more definitively.</p>
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<p>Highland KB, et al. Benefits of the Restorative Exercise and Strength Training for Operational Resilience and Excellence Yoga Program for Chronic Low Back Pain in Service Members: A Pilot Randomized Controlled Trial. Arch Phys Med Rehabil. 2018 Jan;99(1):91-98. doi: 10.1016/j.apmr.2017.08.473. Epub 2017 Sep 14.</p>	<p>OBJECTIVE: To examine the feasibility and preliminary effectiveness of an individualized yoga program.</p> <p>DESIGN: Pilot randomized controlled trial.</p> <p>SETTING: Military medical center.</p> <p>PARTICIPANTS: Patients (N=68) with chronic low back pain.</p> <p>INTERVENTIONS: Restorative Exercise and Strength Training for Operational Resilience and Excellence (RESTORE) program (9-12 individual yoga sessions) or treatment as usual (control) for an 8-week period.</p> <p>MAIN OUTCOME MEASURES: The primary outcome was past 24-hour pain (Defense & Veterans Pain Rating Scale 2.0). Secondary outcomes included disability (Roland-Morris Disability Questionnaire) and physical functioning and symptom burden (Patient-Reported Outcomes Measurement Information System-29 subscales). Assessment occurred at baseline, week 4, week 8, 3-month follow-up, and 6-month follow-up. Exploratory outcomes included the proportion of participants in each group reporting clinically meaningful changes at 3- and 6-month follow-ups.</p> <p>RESULTS: Generalized linear mixed models with sequential Bonferroni-adjusted pairwise significance tests and chi-square analyses examined longitudinal outcomes. Secondary outcome significance tests were Bonferroni adjusted for multiple outcomes. The RESTORE group reported improved pain compared with the control group. Secondary outcomes did not retain significance after Bonferroni adjustments for multiple outcomes, although a higher proportion of RESTORE participants reported clinically meaningful changes in all outcomes at 3-month follow-up and in symptom burden at 6-month follow-up.</p> <p>CONCLUSIONS: RESTORE may be a viable nonpharmacological treatment for low back pain with minimal side effects, and research efforts are needed to compare the effectiveness of RESTORE delivery formats (eg, group vs individual) with that of other treatment modalities.</p>
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<p>Hilton LG, Libretto S, Xenakis L, Elfenbaum P, Boyd C, Zhang W, Clark AA. Evaluation of an Integrative Post-Traumatic Stress Disorder Treatment Program. J Altern Complement Med. 2019</p>	<p>Objectives: Post-traumatic stress disorder (PTSD) and combat-related stress can be refractory, pervasive, and have a devastating impact on those affected, their families, and society at large. Challenges dealing with symptoms may in turn make a servicemember more susceptible to problems, including alcohol abuse, interpersonal conflict, and occupational problems. An effective treatment strategy will address multifactorial issues by using a holistic multimodal approach. Back on Track is an intensive outpatient program utilizing a holistic philosophy and multimodal treatments to provide a whole systems approach for the treatment of combat-related stress reactions and PTSD in active duty servicemembers.</p> <p>Design/Setting/Subjects: An explanatory, sequential, mixed-methods program evaluation was conducted to assess the effectiveness of a PTSD and combat stress treatment program. Quantitative outcomes were collected and analyzed on 595 participants at pre- and postinterventions and 6-week follow-up and qualitative data were gathered through participant interviews.</p> <p>Intervention: The manualized program uses a multimodal, psychoeducational group therapy format with a holistic approach for treating combat stress, increasing resiliency, and assisting with reintegration. Rotating providers visit from other programs and services to deliver content in bio-psycho-social-spiritual domains, including didactic lectures on mindfulness and the relaxation response and daily sessions of yoga nidra and meditation.</p> <p>Outcome measures: The primary outcome measure was PTSD symptom severity assessed with the PTSD Checklist-Military Version (PCL-M). Secondary outcomes included self-efficacy, knowledge, use, and satisfaction. Quantitative data were contextualized with interview data.</p> <p>Results: Results demonstrated a highly statistically significant effect of the program when comparing within-subject PCL-M scores before and after program participation, signed rank S (N= 595) = -47,367, p < 0.001. This translates to a moderate effect size, Cohen's d (N= 595) = -0.55, 95% confidence interval = -0.62 to -0.47, and a mean decrease of 7 points on the PCL-M at postintervention, demonstrating response to treatment. There were significant increases in knowledge and self-efficacy and high levels of satisfaction with the program overall, content, materials, and delivery.</p> <p>Conclusions: The treatment program has served *800 servicemembers since inception and has since expanded to five installations. The provision of whole systems care where the approach is holistic, multimodal, and multidisciplinary may be a way forward for the successful treatment of PTSD and other debilitating behavioral health conditions in military contexts and beyond.</p>
<p>Hull A, Holliday SB, Eickhoff C, Rose-Boyce M, Sullivan P, Reinhard M. The Integrative Health and Wellness Program: Development and Use of a Complementary and Alternative Medicine Clinic for Veterans. Altern Ther Health Med. 2015 Nov-Dec;21(6):12-21. PubMed PMID: 26567446.</p>	<p>Context: A movement exists within the Veterans Health Administration (VHA) toward incorporating complementary and alternative medicine (CAM) as an integrative complement to care for veterans. The Integrative Health and Wellness (IHW) Program is a comprehensive CAM clinic offering services such as integrative restoration (iRest) yoga nidra, individual acupuncture, group auricular acupuncture, chair yoga, qigong, and integrative health education. Objectives: The current study intended to detail the development of the CAM program, its use, and the characteristics of the program's participants. Design: Using a prospective cohort design, this pilot study tracked service use and aspects of physical and mental health for veterans enrolled in the program. Participants: During the first year, the IHW Program received 740 consults from hospital clinics; 325 veterans enrolled in the program; and 226 veterans consented to participate in the pilot study. Outcome Measures: Outcome measures included data from self-report questionnaires and electronic medical records. Results: Veterans enrolled in the program reported clinically significant depression, stress, insomnia, and pain-related interference in daily activities and deficits in health-related quality of life. Regarding use of the program services, individual acupuncture showed the greatest participation by veterans, followed by group auricular acupuncture and iRest yoga nidra. Of the 226 veterans who enrolled in the program and consented to participate in this study, 165 (73.01%) participated in >1 services in the first year of programming. Broadly speaking, enrollment in services appeared to be associated with gender and service branch but not with age or symptom severity. Conclusions: Results have assisted with a strategic planning process for the IHW Program and have implications for expansion of CAM services within the VHA..</p>

<p>Hurst S, Maiya M, Casteel D, Sarkin AJ, Libretto S, Elwy AR, Park CL, Groessler EJ. Yoga therapy for military personnel and veterans: Qualitative perspectives of yoga students and instructors. Complement Ther Med. 2018 Oct;40:222-229. doi: 10.1016/j.ctim.2017.10.008. Epub 2017 Nov 8. PubMed PMID: 30219455.</p>	<p>OBJECTIVE: Millions of military personnel and veterans live with chronic mental and physical health conditions that often do not respond well to pharmacological treatments. Serious side effects and lack of treatment response have led to widespread efforts to study and promote non-pharmacological and behavioral health treatments for many chronic health conditions. Yoga is an increasingly popular mind-body intervention that has growing research support for its efficacy and safety. Our objective was to explore the attitudes, perspectives, and preferences of military personnel and veterans toward yoga as a therapeutic modality, thus providing needed information for designing and promoting yoga interventions for this population.</p> <p>METHODS: Participants included 24 individuals with yoga experience and current or past military service and 12 instructors who have taught yoga for military personnel and/or veterans. A semi-structured set of questions guided interviews with each participant.</p> <p>RESULTS: Five themes emerged from the interviews: (1) mental health benefits experienced from yoga practice; (2) physical health benefits experienced from yoga practice; (3) important yoga elements and conditions that support effective practice; (4) facilitators for engaging military in yoga practice; and (5) challenges and barriers to yoga practice for military.</p> <p>CONCLUSIONS: The study highlights consistent reports of mental and physical benefits of yoga practice, ongoing stigma resulting in the need for combatting and demystifying yoga and other complementary and integrative health (CIH) practices, the importance of designing interventions to address the unique mental health issues and perspectives of this population, and the importance of efforts by military leadership to bring CIH to military personnel and veterans. Rigorous research addressing these findings, along with further research on the efficacy and effectiveness of yoga interventions for treating various conditions are needed.</p>
<p>Justice L, Brems C. Bridging Body and Mind: Case Series of a 10-Week Trauma-Informed Yoga Protocol for Veterans. Int J Yoga Therap. 2019 Apr 8; doi: 10.17761/D-17-2019-00029. [Epub ahead of print] PubMed PMID: 30958711.</p>	<p>This case series explored the feasibility and preliminary efficacy of therapeutic yoga as a complementary form of treatment for combat-related trauma. The series recruited for and implemented a 10-week Trauma-Informed Yoga protocol for veterans in an interprofessional community health treatment setting. Participants were enrolled in a series of 90-minute therapeutic yoga classes adapted to be trauma-informed. Feasibility was measured by recruitment, retention, and level of participation in the study. Preliminary efficacy was explored via the Posttraumatic Stress Disorder Checklist, Scale of Body Connection, PROMIS-29, PROMIS Alcohol Use, PROMIS Substance Use, Difficulties in Emotional Regulation Scale, and Self-Compassion Scale-Short Form. All measures were administered at baseline, week 5, week 10, and at a 5-week follow-up. A qualitative Feasibility Questionnaire was administered weekly and at the 5-week follow-up to assess barriers and motivators for home practice and to collect feedback about session content. Recruitment challenges resulted in only seven interested individuals. Four participants (three males, one female) were successfully enrolled in the study after seven phone screenings and five in-person interviews. The four enrolled clients had a 100% follow-up retention rate, reported no adverse events, and on average participated in 85% of classes. Clinically significant enhancements were observed on trauma- and body connection-related scales for three participants from baseline to follow-up. Qualitative data revealed that motivators to practice include in-session philosophical discussions based on psychological themes; breathwork; mindfulness; and physical, social, work/academic, and mental health impact. Barriers included motivation, time, and location. Important themes emerged related to cultural considerations for veterans. Although this 10-week trauma-informed protocol faced challenges to recruitment, retention and participation were high. Efficacy measures yielded promising results for reducing reducing trauma-related symptoms.</p>

<p>King K, Gosian J, Doherty K, Chapman J, Chapman J, Walsh C, Pokaski Azar J, Pokaski Azar J, Danhauer SC, Moyo J.. Implementing yoga therapy adapted for older veterans who are cancer survivors. Int J Yoga Therap. 2014;24:87-96.</p>	<p>OBJECTIVES: This goal of this paper is to describe the reach, application, and effectiveness of an 8-week yoga therapy protocol with older cancer survivors within a Veterans Health Administration setting.</p> <p>METHODS: To document the reach of this intervention, recruitment efforts, attendance, and practice rates were tracked. To explore the application of the protocol to this population, physical therapy preassessment and observations by the yoga therapist were recorded to ascertain necessary pose modifications. Effectiveness was measured through pre- and post-course structured interviews, tracking self-reported symptoms of combat-related posttraumatic stress disorder, depression, anxiety, fatigue, insomnia, and pain.</p> <p>RESULTS: Regarding reach, 15% of eligible veterans (n = 14) enrolled, participated in 3-16 classes (M±SD = 11.64±3.39), and practiced at home for 0-56 days (M±SD = 26.36±17.87). Participants were primarily Caucasian (n = 13), male (n = 13), ranged in age from 55 to 78 years (M±SD = 65.64±5.15), and had multiple medical problems. During application, substantial individualized modifications to the yoga therapy protocol were necessary. Effectiveness of the intervention was mixed. During post-course interviews, participants reported a variety of qualitative benefits. Notably, the majority of participants reported that breathing and relaxation techniques were the most useful to learn. Group comparisons of mean pre- and post-course scores on standardized measures showed no significant differences.</p> <p>CONCLUSIONS: A minority of older veterans express an interest in yoga, but those who do have high rates of class attendance and home practice. Careful physical pre-assessment and attentive therapists are required to undertake the adaptations required by participants with multiple comorbidities. The effectiveness of yoga in this setting requires additional study.</p>
<p>Libby DJI, Reddy F, Pilver CE, Desai RA. The use of yoga in specialized VA PTSD treatment programs. Int J Yoga Therap. 2012;(22):79-87.</p>	<p>BACKGROUND: Posttraumatic stress disorder (PTSD) is a chronic, debilitating anxiety disorder that is highly prevalent among U.S. military veterans. Yoga, defined to include physical postures (asana) and mindfulness and meditation, is being increasingly used as an adjunctive treatment for PTSD and other psychological disorders. No research or administrative data have detailed the use of these services in Department of Veterans Affairs' (VA) 170 PTSD treatment programs.</p> <p>METHODS: One hundred twenty-five program coordinators or designated staff completed an 81-item survey of their program's use of complementary and alternative medicine modalities in the past year. This report describes data from a subset of 30 questions used to assess the prevalence, nature, and context of the use of yoga, mindfulness, and meditation other than mindfulness practices.</p> <p>RESULTS: Results revealed that these practices are widely offered in VA specialized PTSD treatment programs and that there is great variability in the context and nature of how they are delivered.</p> <p>CONCLUSIONS: Understanding how yoga is used by these programs may inform ongoing efforts to define and distinguish yoga therapy as a respected therapeutic discipline and to create patient-centered care models that mindfully fulfill the unmet needs of individuals with mental health issues, including veterans with PTSD.</p>

<p>Martin EC, Dick AM, Scioli-Salter ER, Mitchell KS. Impact of a Yoga Intervention on Physical Activity, Self-Efficacy, and Motivation in Women with PTSD Symptoms. J Altern Complement Med. 2015 Jun;21(6):327-32. doi: 10.1089/acm.2014.0389. Epub 2015 May 14.</p>	<p>BACKGROUND: Studies using yoga have demonstrated initial efficacy for treating symptoms across anxiety disorders, including posttraumatic stress disorder.</p> <p>OBJECTIVE: Understanding how interventions influence participants' physical activity and what determinants affect continued physical activity behavior change is important because maintenance of the behavior may be critical to continued mental health gains and symptom reduction.</p> <p>METHODS: This study investigated change in physical activity and possible psychological mechanisms of physical activity behavior change, including self-efficacy and regulatory motivation, in a randomized controlled trial of yoga for women with post-traumatic stress disorder symptoms (n=38).</p> <p>RESULTS: Growth curve modeling results showed no significant changes in physical activity or self-efficacy for either group, whereas external motivation decreased significantly in the yoga group but not in the control group.</p> <p>CONCLUSIONS: Investigators of future yoga interventions may want to focus on increasing self-efficacy and internal regulatory motivation, so that physical activity and resultant symptom relief can be maintained.</p>
<p>Mathersul DC, Mahoney LA, Bayley PJ. Tele-yoga for Chronic Pain: Current Status and Future Directions. Glob Adv Health Med. 2018 Apr 2;7:2164956118766011. doi: 10.1177/2164956118766011. eCollection 2018. PubMed PMID: 29637012; PubMed Central PMCID: PMC5888810.</p>	<p>Pain is a pervasive, debilitating disorder that is resistant to long-term pharmacological interventions. Although psychological therapies such as cognitive behavior therapy demonstrate moderate efficacy, many individuals continue to have ongoing difficulties following treatment. There is a current trend to establish complementary and integrative health interventions for chronic pain, for which yoga has been found to have exciting potential. Nevertheless, an important consideration within the field is accessibility to adequate care. Telehealth can be used to provide real-time interactive video conferencing leading to increased access to health care for individuals located remotely or who otherwise have difficulty accessing services, perhaps through issues of mobility or proximity of adequate services. This article assesses the current status and feasibility of implementing tele-yoga for chronic pain. Methodological limitations and recommendations for future research are discussed.</p>
<p>Mehling WE, Chesney MA, Metzler TJ, Goldstein LA, Maguen S, Geronimo C, Agcaoili G, Barnes DE, Hlavin JA, Neylan TC. A 12-week integrative exercise program improves self-reported mindfulness and interoceptive awareness in war veterans with posttraumatic stress symptoms. J Clin Psychol. 2018 Apr;74(4):554-565. doi: 10.1002/jclp.22549.</p>	<p>OBJECTIVE: Innovative approaches to the treatment of war-related posttraumatic stress disorder (PTSD) are needed. We report on secondary psychological outcomes of a randomized controlled trial of integrative exercise (IE) using aerobic and resistance exercise with mindfulness-based principles and yoga. We expected-in parallel to observed improvements in PTSD intensity and quality of life-improvements in mindfulness, interoceptive bodily awareness, and positive states of mind.</p> <p>METHOD: A total of 47 war veterans with PTSD were randomized to 12-week IE versus waitlist. Changes in mindfulness, interoceptive awareness, and states of mind were assessed by self-report standard measures.</p> <p>RESULTS: Large effect sizes for the intervention were observed on Five-Facet Mindfulness Questionnaire Non-Reactivity (d = .85), Multidimensional Assessment of Interoceptive Awareness Body Listening (d = .80), and Self-Regulation (d = 1.05).</p> <p>CONCLUSION: In a randomized controlled trial of a 12-week IE program for war veterans with PTSD, we saw significant improvements in mindfulness, interoceptive bodily awareness, and positive states of mind compared to a waitlist.</p>

<p>Nolan CR. Bending without breaking: A narrative review of trauma-sensitive yoga for women with PTSD. Complement Ther Clin Pract. 2016 Aug;24:32-40. doi: 10.1016/j.ctcp.2016.05.006. Epub 2016 May 8. Review.</p>	<p>OBJECTIVE: The purpose of this review is to evaluate the peer-reviewed empirical evidence on the use of Trauma-Sensitive Yoga (TSY) for the treatment of women with post-traumatic stress disorder (PTSD): specifically interpersonal trauma such as intimate partner violence. To date, no such review has been conducted.</p> <p>METHODS: Articles meeting study inclusionary criteria were identified through electronic database searches. A total of five studies (N = 5) were selected and reviewed. These studies included two randomized controlled trials (RCT), one follow-up of an RCT, one quasi-experimental study, and one qualitative study.</p> <p>RESULTS: There is tentative evidence to support the efficacy of TSY in reducing PTSD, depression, and anxiety symptomatology for women with PTSD; there is also tentative evidence confirming the feasibility of implementing TSY as an adjunctive mental health intervention, particularly for individuals who are non-responsive to cognitive-based psychotherapies. The qualitative findings speak to a number of benefits of yoga practice stimulated by TSY participation centering on the phenomenon of peaceful embodiment.</p> <p>CONCLUSIONS: Replication of these results using larger and more diverse samples and rigorous study designs by independent researchers would add credibility to these findings and contribute to the growing body of knowledge on TSY. Additionally, there is a dearth of studies on this nascent form of therapeutic yoga. Therefore, further research is needed to explore the potential efficacy of TSY with other types of trauma, populations, and settings.</p>
<p>Pence PG, Katz LS, Huffman C, Cojucar G. Delivering Integrative Restoration-Yoga Nidra Meditation (iRest®) to Women with Sexual Trauma at a Veteran's Medical Center: A Pilot Study. Int J Yoga Therap. 2014</p>	<p>OBJECTIVE: This pilot study examines iRest, a form of guided mindfulness meditation, and its ability to reduce symptoms associated with sexual trauma, including military sexual trauma (MST), in a sample of women seeking psychotherapy services at a Department of Veterans Affairs (VA) medical center.</p> <p>METHODS: 90-minute sessions were held 19 times, twice a week for 10 weeks, except for the week with a holiday. Participants completed self-report measures Brief Symptom Inventory-18 (BSI), Posttraumatic Cognitions Inventory (PTCI), and the Post-traumatic Stress Disorder Check List (PCL) pre- and post-treatment. Sixteen women were recruited: 15 enrolled, 5 dropped due to transportation issues, and 10 completed the protocol.</p> <p>RESULTS: Completers reported significant decreases in symptoms of posttraumatic stress disorder (PCL, $t(9) = 3.17, p < 0.01, d = 0.66$), negative thoughts of self-blame (PTCI $t(9) = 2.96, p < 0.05, d = 0.52$), and depression (BSI, $t(9) = 2.33, p < 0.05, d = 0.64$). Participants also offered verbal reports of decreased body tension, improved quality of sleep, improved ability to handle intrusive thoughts, improved ability to manage stress, and an increased feeling of joy. Participants also enthusiastically endorsed the class and stated they would take it again and recommend it to others.</p> <p>CONCLUSIONS: This small pilot study showed promising results for delivering iRest to women with sexual trauma in a VA medical center. Further research is warranted.</p>

<p>Reddy S, Dick AM, Gerber MR, Mitchell K. The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. J Altern Complement Med. 2014 Oct;20(10):750-6. doi: 10.1089/acm.2014.0014. Epub 2014 Sep 11. PubMed PMID: 25211372; PubMed Central PMCID: PMC4195227</p>	<p>BACKGROUND: Individuals with posttraumatic stress disorder (PTSD) often exhibit high-risk substance use behaviors. Complementary and alternative therapies are increasingly used for mental health disorders, although evidence is sparse.</p> <p>OBJECTIVES: Investigate the effect of a yoga intervention on alcohol and drug abuse behaviors in women with PTSD. Secondary outcomes include changes in PTSD symptom perception and management and initiation of evidence-based therapies.</p> <p>MATERIALS AND METHODS: The current investigation analyzed data from a pilot randomized controlled trial comparing a 12-session yoga intervention with an assessment control for women age 18 to 65 years with PTSD. The Alcohol Use Disorder Identification Test (AUDIT) and Drug Use Disorder Identification Test (DUDIT) were administered at baseline, after the intervention, and a 1-month follow-up. Linear mixed models were used to test the significance of the change in AUDIT and DUDIT scores over time. Treatment-seeking questions were compared by using Fisher exact tests.</p> <p>RESULTS: The mean AUDIT and DUDIT scores decreased in the yoga group; in the control group, mean AUDIT score increased while mean DUDIT score remained stable. In the linear mixed models, the change in AUDIT and DUDIT scores over time did not differ significantly by group. Most yoga group participants reported a reduction in symptoms and improved symptom management. All participants expressed interest in psychotherapy for PTSD, although only two participants, both in the yoga group, initiated therapy.</p> <p>CONCLUSIONS: Results from this pilot study suggest that a specialized yoga therapy may play a role in attenuating the symptoms of PTSD, reducing risk of alcohol and drug use, and promoting interest in evidence-based psychotherapy. Further research is needed to confirm and evaluate the strength of these effects.</p>
<p>Reinhardt KM, Noggle Taylor JJ, Johnston J, Zameer A, Cheema S, Khalsa SBS. Kripalu Yoga for Military Veterans With PTSD: A Randomized Trial. J Clin Psychol. 2018 Jan;74(1):93-108.</p>	<p>OBJECTIVES: This randomized controlled trial of yoga for military veterans and active duty personnel with posttraumatic stress disorder (PTSD) evaluated the efficacy of a 10-week yoga intervention on PTSD.</p> <p>METHOD: Fifty-one participants were randomized into yoga or no-treatment assessment-only control groups. Primary outcome measures included questionnaires and the Clinician Administered PTSD Scale.</p> <p>RESULTS: Both yoga (n = 9) and control (n = 6) participants showed significant decreases in reexperiencing symptoms, with no significant between-group differences. Secondary within-group analyses of a self-selected wait-list yoga group (n = 7) showed significant reductions in PTSD symptoms after yoga participation, in contrast to their control group participation. Consistent with current literature regarding high rates of PTSD treatment dropout for veterans, this study faced challenges retaining participants across conditions.</p> <p>CONCLUSION: These results are consistent with recent literature indicating that yoga may have potential as a PTSD therapy in a veteran or military population. However, additional larger sample size trials are necessary to confirm this conclusion.</p>

<p>Saper RB, Lemaster CM, Elwy AR, Paris R, Herman PM, Plumb DN, Sherman KJ, Groessl EJ, Lynch S, Wang S, Weinberg J. Yoga versus education for Veterans with chronic low back pain: study protocol for a randomized controlled trial. <i>Trials</i>. 2016 Apr 29;17(1):224. doi: 10.1186/s13063-016-1321-5. PubMed PMID: 27129472; PubMed Central PMCID: PMC4850721.</p>	<p>BACKGROUND: Chronic low back pain is the most frequent pain condition in Veterans and causes substantial suffering, decreased functional capacity, and lower quality of life. Symptoms of post-traumatic stress, depression, and mild traumatic brain injury are highly prevalent in Veterans with back pain. Yoga for low back pain has been demonstrated to be effective for civilians in randomized controlled trials. However, it is unknown if results from previously published trials generalize to military populations.</p> <p>METHODS/DESIGN: This study is a parallel randomized controlled trial comparing yoga to education for 120 Veterans with chronic low back pain. Participants are Veterans ≥18 years old with low back pain present on at least half the days in the past six months and a self-reported average pain intensity in the previous week of ≥4 on a 0-10 scale. The 24-week study has an initial 12-week intervention period, where participants are randomized equally into (1) a standardized weekly group yoga class with home practice or (2) education delivered with a self-care book. Primary outcome measures are change at 12 weeks in low back pain intensity measured by the Defense and Veterans Pain Rating Scale (0-10) and back-related function using the 23-point Roland Morris Disability Questionnaire. In the subsequent 12-week follow-up period, yoga participants are encouraged to continue home yoga practice and education participants continue following recommendations from the book. Qualitative interviews with Veterans in the yoga group and their partners explore the impact of chronic low back pain and yoga on family relationships. We also assess cost-effectiveness from three perspectives: the Veteran, the Veterans Health Administration, and society using electronic medical records, self-reported cost data, and study records.</p> <p>DISCUSSION: This study will help determine if yoga can become an effective treatment for Veterans with chronic low back pain and psychological comorbidities.</p>
<p>Schulz-Heik RJ, Meyer H, Mahoney L, Stanton MV, Cho RH, Moore-Downing DP, Avery TJ, Lazzeroni LC, Varni JM, Collery LM, Bayley PJ. Results from a clinical yoga program for veterans: yoga via telehealth provides comparable satisfaction and health improvements to in-person yoga. <i>BMC Complement Altern Med</i>. 2017 Apr 4;17(1):198. doi: 10.1186/s12906-017-1705-4. PubMed PMID: 28376861; PubMed Central PMCID: PMC5381127.</p>	<p>BACKGROUND: Yoga is increasingly popular, though little data regarding its implementation in healthcare settings is available. Similarly, telehealth is being utilized more frequently to increase access to healthcare; however we know of no research on the acceptability or effectiveness of yoga delivered through telehealth. Therefore, we evaluated the feasibility, acceptability, and patient-reported effectiveness of a clinical yoga program at a Veterans Affairs Medical Center and assessed whether these outcomes differed between those participating in-person and those participating via telehealth.</p> <p>METHODS: Veterans who attended a yoga class at the VA Palo Alto Health Care System were invited to complete an anonymous program evaluation survey.</p> <p>RESULTS: 64 Veterans completed the survey. Participants reported high satisfaction with the classes and the instructors. More than 80% of participants who endorsed a problem with pain, energy level, depression, or anxiety reported improvement in these symptoms. Those who participated via telehealth did not differ from those who participated in-person in any measure of satisfaction, overall improvement (p = .40), or improvement in any of 16 specific health problems.</p> <p>CONCLUSIONS: Delivering yoga to a wide range of patients within a healthcare setting appears to be feasible and acceptable, both when delivered in-person and via telehealth. Patients in this clinical yoga program reported high levels of satisfaction and improvement in multiple problem areas. This preliminary evidence for the effectiveness of a clinical yoga program complements prior evidence for the efficacy of yoga and supports the use of yoga in healthcare settings.</p>

<p>Staples JK, Hamilton MF, Uddo M. A yoga program for the symptoms of post-traumatic stress disorder in veterans. Mil Med. 2013 Aug;178(8):854-60. doi: 10.7205/MILMED-D-12-00536.</p>	<p>The purpose of this pilot study was to evaluate the feasibility and effectiveness of a yoga program as an adjunctive therapy for improving post-traumatic stress disorder (PTSD) symptoms in Veterans with military-related PTSD. Veterans (n = 12) participated in a 6 week yoga intervention held twice a week. There was significant improvement in PTSD hyperarousal symptoms and overall sleep quality as well as daytime dysfunction related to sleep. There were no significant improvements in the total PTSD, anger, or quality of life outcome scores. These results suggest that this yoga program may be an effective adjunctive therapy for improving hyperarousal symptoms of PTSD including sleep quality. This study demonstrates that the yoga program is acceptable, feasible, and that there is good adherence in a Veteran population.</p>
<p>Taylor SL, Hoggatt KJ, Kligler B. Complementary and Integrated Health Approaches: What Do Veterans Use and Want. J Gen Intern Med. 2019 Jul;34(7):1192-1199. doi: 10.1007/s11606-019-04862-6. Epub 2019 Apr 22.</p>	<p>OBJECTIVES: Non-pharmacological treatment options for common conditions such as chronic pain, anxiety, and depression are being given increased consideration in healthcare, especially given the recent emphasis to address the opioid crisis. One set of non-pharmacological treatment options are evidence-based complementary and integrative health (CIH) approaches, such as yoga, acupuncture, and meditation. The Veterans Health Administration (VHA), the nation's largest healthcare system, has been at the forefront of implementing CIH approaches, given their patients' high prevalence of pain, anxiety, and depression. We aimed to conduct the first national survey of veterans' interest in and use of CIH approaches.</p> <p>METHODS: Using a large national convenience sample of veterans who regularly use the VHA, we conducted the first national survey of veterans' interest in, frequency of and reasons for use of, and satisfaction with 26 CIH approaches (n = 3346, 37% response rate) in July 2017.</p> <p>RESULTS: In the past year, 52% used any CIH approach, with 44% using massage therapy, 37% using chiropractic, 34% using mindfulness, 24% using other meditation, and 25% using yoga. For nine CIH approaches, pain and stress reduction/relaxation were the two most frequent reasons veterans gave for using them. Overall, 84% said they were interested in trying/learning more about at least one CIH approach, with about half being interested in six individual CIH approaches (e.g., massage therapy, chiropractic, acupuncture, acupressure, reflexology, and progressive relaxation). Veterans appeared to be much more likely to use each CIH approach outside the VHA vs. within the VHA.</p> <p>CONCLUSIONS: Veterans report relatively high past-year use of CIH approaches and many more report interest in CIH approaches. To address this gap between patients' level of interest in and use of CIH approaches, primary care providers might want to discuss evidence-based CIH options to their patients for relevant health conditions, given most CIH approaches are safe.</p>
<p>Walker J 3rd, Pacik D. Controlled Rhythmic Yogic Breathing as Complementary Treatment for Post-Traumatic Stress Disorder in Military Veterans: A Case Series. Med Acupunct. 2017 Aug 1;29(4):232-238. doi: 10.1089/acu.2017.1215.</p>	<p>Background: Post-traumatic stress disorder (PTSD) is a cluster of symptoms in which a person persistently relives a traumatic event, through recurring thoughts, nightmares, and flashbacks for at least 1 month or more. There are various behavioral and medical treatment options for PTSD. Mind-body techniques, such as biofeedback and breathing-based stress reduction, have shown some promise in the treatment of PTSD symptoms. The purpose of this case series was to examine controlled yogic breathing as a complementary treatment of PTSD in military veterans. A retrospective review was performed from 2012 to 2016 in 3 cases, and participant demographics, member statements, and PTSD Checklist-Military Version (PCL-M) scores, pre-and-post course, were extracted. Cases: Three military veterans with PTSD participated in a standardized 5-day course designed to teach them controlled rhythmic yogic breathing exercises. Results: Subjectively, all 3 participants reported a decrease in PTSD symptoms after the course. Objectively, all 3 participants had a reduction in their overall PCL-M scores after the course. Among all 3 participants, there were score decreases in the Avoidance and Increased Arousal categories. The most dramatic improvement occurred in the participant with the most severe symptoms. Conclusions: Controlled yogic breathing, specifically Sudarshan Kriya (SKY), appeared to reduce the symptoms of PTSD in 3 veterans of the Armed Services.</p>

<p>Zalta AK, Held P, Smith DL, Klassen BJ, Lofgreen AM, Normand PS, Brennan MB, Rydberg TS, Boley RA, Pollack MH, Karnik NS. Evaluating patterns and predictors of symptom change during a three-week intensive outpatient treatment for veterans with PTSD. BMC Psychiatry. 2018 Jul 27;18(1):242. doi: 10.1186/s12888-018-1816-6.</p>	<p>BACKGROUND: Intensive delivery of evidence-based treatment for posttraumatic stress disorder (PTSD) is becoming increasingly popular for overcoming barriers to treatment for veterans. Understanding how and for whom these intensive treatments work is critical for optimizing their dissemination. The goals of the current study were to evaluate patterns of PTSD and depression symptom change over the course of a 3-week cohort-based intensive outpatient program (IOP) for veterans with PTSD, examine changes in posttraumatic cognitions as a predictor of treatment response, and determine whether patterns of treatment outcome or predictors of treatment outcome differed by sex and cohort type (combat versus military sexual trauma [MST]).</p> <p>METHOD: One-hundred ninety-one veterans (19 cohorts: 12 combat-PTSD cohorts, 7 MST-PTSD cohorts) completed a 3-week intensive outpatient program for PTSD comprised of daily group and individual Cognitive Processing Therapy (CPT), mindfulness, yoga, and psychoeducation. Measures of PTSD symptoms, depression symptoms, and posttraumatic cognitions were collected before the intervention, after the intervention, and approximately every other day during the intervention.</p> <p>RESULTS: Pre-post analyses for completers (N = 176; 92.1% of sample) revealed large reductions in PTSD (d = 1.12 for past month symptoms and d = 1.40 for past week symptoms) and depression symptoms (d = 1.04 for past 2 weeks). Combat cohorts saw a greater reduction in PTSD symptoms over time relative to MST cohorts. Reduction in posttraumatic cognitions over time significantly predicted decreases in PTSD and depression symptom scores, which remained robust to adjustment for autocorrelation.</p> <p>CONCLUSION: Intensive treatment programs are a promising approach for delivering evidence-based interventions to produce rapid treatment response and high rates of retention. Reductions in posttraumatic cognitions appear to be an important predictor of response to intensive treatment. Further research is needed to explore differences in intensive treatment response for veterans with combat exposure versus MST.</p>
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Citation	Abstract
<p>Abdelfatah MM, Beacham MC, Freedman M, Tillmann HL. Can Battlefield Acupuncture Improve Colonoscopy Experience? Med Acupunct. 2018 Oct 1;30(5):279-281. doi: 10.1089/acu.2018.1289. Epub 2018 Oct 15.</p>	<p>Background: Currently, patients undergoing colonoscopy receive sedation, but pain management with acupuncture could be a safer alternative. Cases: This article describes 3 cases for which Battlefield Acupuncture was applied during colonoscopy to avoid using opioids for sedation. One case was a patient with a life-threatening morphine allergy, and 2 other cases avoided sedation completely. Results: Pain was reduced in all 3 cases to allow completion of colonoscopies without sedation. In Case 2, the patient also gained relief of preexisting mild joint pain. Conclusions: More data are needed, so potentially more patients can indeed avoid morphine/benzodiazepam-based sedation by use of acupuncture to make colonoscopies safer and more pleasant.</p>
<p>Ashrafioun L, Allen KD, Pigeon WR. Utilization of complementary and integrative health services and opioid therapy by patients receiving Veterans Health Administration pain care. Complement Ther Med. 2018 Aug;39:8-13. doi: 10.1016/j.ctim.2018.05.008. Epub 2018 May 18. PubMed PMID: 30012396</p>	<p>OBJECTIVES: The aims of the current study were to characterize veterans who used a complementary and integrative health (CIH) service in the Veterans Health Administration (VHA) and to assess the extent to which using a CIH-related service was associated with receiving an opioid analgesic prescription following the initiation of specialty pain service, a time at which higher intensity care is needed for patients experiencing greater psychiatric and medical complexity.</p> <p>DESIGN: This study utilized a retrospective cohort design of veterans using specialty pain services. The index visit was defined as the first specialty pain visit in Fiscal Years 2012-2015. Demographics, opioid analgesic prescriptions, psychiatric disorder diagnoses, medical comorbidity, pain severity scores, and pain conditions were extracted from VHA administrative data.</p> <p>SETTING: The cohort was comprised of veterans who had at least one visit with a specialty pain service as identified by a billing code.</p> <p>MAIN OUTCOME MEASURES: The main outcome measures were use of a CIH-related service in the 365 days prior to the index visit and opioid analgesic prescription within 365 days after the index visit. Adjusted logistic regression analyses accounted for key covariate and potential confounding variables.</p> <p>RESULTS: Use of CIH-related services was relatively low across the cohort (1.9%). Veterans who used a CIH-related service in the 365 days prior to the index visit were more likely to be female, be younger, have less medical comorbidity, have less severe pain, and were less likely to have received an opioid prescription in the 365 days prior to the index visit. After accounting for key covariates and potential confounders, veterans who used a CIH-related service were less likely to receive an opioid analgesic prescription in the 365 days following the index visit.</p> <p>CONCLUSION: CIH-related services were not commonly used among Veterans initiating specialty pain services. Engaging in CIH-related services prior to specialty pain services is associated with decreased opioid analgesic and non-opioid analgesic prescriptions.</p>

<p>Bastian LA, Heapy A, Becker WC, Sandbrink F, Atkins D, Kerns RD. Understanding Pain and Pain Treatment for Veterans: Responding to the Federal Pain Research Strategy. Pain Med. 2018 Sep 1;19(suppl 1):S1-S4. doi: 10.1093/pm/psy143. No abstract available</p>	<p>The Veterans Health Administration (VHA) is the largest integrated health system in the United States, providing care for some 9 million veterans annually at more than 1,700 sites across all 50 states, Puerto Rico, and other territories. With a research appropriation of \$722 million in 2018 and over 20 years of electronic health record data, the VHA serves as critical laboratory for studying and improving care for common health conditions. One of the most important of these is chronic pain, both for its effect on function and disability and for its contributions to an epidemic of opioid use in the United States. Chronic pain is reported by more than one-third of veterans in our care [1]. This and other factors have made the VHA a fertile ground for pain research: a national opioid safety initiative has reduced overall opioid use; the VHA is ahead of other systems in offering nonopioid alternatives for pain; with a global budget, it can support new models for pain care without worrying about reimbursement patterns; and the VHA is part of an interagency federal strategy for pain research.</p>
<p>Berry ME, Chapple IT, Ginsberg JP, Gleichauf KJ, Meyer JA, Nagpal ML. Non-pharmacological Intervention for Chronic Pain in Veterans: A Pilot Study of Heart Rate Variability Biofeedback. Glob Adv Health Med. 2014</p>	<p>OBJECTIVE: Chronic pain is an emotionally and physically debilitating form of pain that activates the body's stress response and over time can result in lowered heart rate variability (HRV) power, which is associated with reduced resiliency and lower self-regulatory capacity. This pilot project was intended to determine the effectiveness of HRV coherence biofeedback (HRVCB) as a pain and stress management intervention for veterans with chronic pain and to estimate the effect sizes. It was hypothesized that HRVCB will increase parasympathetic activity resulting in higher HRV coherence measured as power and decrease self-reported pain symptoms in chronic pain patients.</p> <p>STUDY DESIGN: Fourteen veterans receiving treatment for chronic pain were enrolled in the pre-post intervention study. They were randomly assigned, with 8 subjects enrolled in the treatment group and 6 in the control group. The treatment group received biofeedback intervention plus standard care, and the other group received standard care only. The treatment group received four HRVCB training sessions as the intervention.</p> <p>MEASURES: Pre-post measurements of HRV amplitude, HRV power spectrum variables, cardiac coherence, and self-ratings of perceived pain, stress, negative emotions, and physical activity limitation were made for both treatment and control groups.</p> <p>RESULTS: The mean pain severity for all subjects at baseline, using the self-scored Brief Pain Inventory (BPI), was 26.71 (SD=4.46; range=21-35) indicating a moderate to severe perceived pain level across the study subjects. There was no significant difference between the treatment and control groups at baseline on any of the measures. Post-HRVCB, the treatment group was significantly higher on coherence (P=.01) and lower (P=.02) on pain ratings than the control group. The treatment group showed marked and statistically significant (1-tailed) increases over the baseline in coherence ratio (191%, P=.04) and marked, significant (1-tailed) reduction in pain ratings (36%, P<.001), stress perception (16%, P=.02), negative emotions (49%, P<.001), and physical activity limitation (42%, P<.001). Significant between-group effects on all measures were found when pre-training values were used as covariates.</p> <p>CONCLUSIONS: HRVCB intervention was effective in increasing HRV coherence measured as power in the upper range of the LF band and reduced perceived pain, stress, negative emotions, and physical activity limitation in veterans suffering from chronic pain. HRVCB shows promise as an effective non-pharmacological intervention to support standard treatments for chronic pain.</p>

<p>Bolton RE, Fix GM, VanDeusen Lukas C, Elwy AR, Bokhour BG. Biopsychosocial benefits of movement-based complementary and integrative health therapies for patients with chronic conditions. Chronic Illn. 2018 Jan 1;1742395318782377. doi: 10.1177/1742395318782377. [Epub ahead of print]</p>	<p>Objectives Complementary and integrative health practices are growing in popularity, including use of movement-based therapies such as yoga, tai-chi, and qigong. Movement-based therapies are beneficial for a range of health conditions and are used more frequently by individuals with chronic illness. Yet little is known about how patients with chronic conditions characterize the health benefits of movement-based therapies. Methods We conducted focus groups with 31 patients enrolled in yoga and qigong programs for chronic conditions at two VA medical centers. Transcripts were analyzed using conventional content analysis with codes developed inductively from the data. Participants' descriptions of health benefits were then mapped to Engel's biopsychosocial model. Results Participants described improvements in all biopsychosocial realms, including improved physical and mental health, reduced opiate and psychotropic use, enhanced emotional well-being, and better social relationships. Changes were attributed to physical improvements, development of coping skills, and increased self-awareness. Discussion Patients with chronic illnesses in our sample reported multiple benefits from participation in movement-based therapies, including in physical, mental, and social health realms. Providers treating patients with complex comorbidities may consider referrals to movement-based therapy programs to address multiple concerns simultaneously, particularly among patients seeking alternatives to medication or adjunctive to an opiate reduction strategy.</p>
<p>Boyd H. The Integrative Therapy Nurse: A Valuable Player in Symptom Management. Am J Nurs. 2018 Nov;118(11):64-69. doi: 10.1097/01.NAJ.0000547679.76699.49.</p>	<p>With the support of colleagues and hospital management, the author, an RN with board certification in therapeutic massage and bodywork, developed and implemented the role of the integrative therapy nurse on the spinal cord injury and disorders unit at the Minneapolis Veterans Affairs Medical Center. The goal of this initiative was to provide patients with additional nonpharmacologic options for addressing their symptoms through the creation of an integrative therapy nurse role within the existing interdisciplinary team of physicians, NPs, psychologists, registered dietitians, physical therapists, occupational therapists, speech pathologists, and staff nurses. This article outlines the process of creating this role, discusses implications for practice, and reports the outcomes of three years of its implementation. The outcomes of decreased pain and increased relaxation among the veterans who participated in this initiative warrant its further expansion to additional clinical settings.</p>
<p>Chapman C, Bakkum BW. Chiropractic management of a US Army veteran with low back pain and piriformis syndrome complicated by an anatomical anomaly of the piriformis muscle: a case study. J Chiropr Med. 2012 Mar;11(1):24-9. doi: 10.1016/j.jcm.2011.06.011.</p>	<p>OBJECTIVE: The purpose of this article is to present the case of a patient with an anatomical anomaly of the piriformis muscle who had a piriformis syndrome and was managed with chiropractic care.</p> <p>CASE REPORT: A 32-year-old male patient presented to a chiropractic clinic with a chief complaint of low back pain that radiated into his right buttock, right posterior thigh, and right posterior calf. The complaint began 5 years prior as a result of injuries during Airborne School in the US Army resulting in a 60% disability rating from the Veterans Administration. Magnetic resonance imaging demonstrated a mildly decreased intradiscal T2 signal with shallow central subligamentous disk displacement and low-grade facet arthropathy at L5/S1, a hypolordotic lumbar curvature, and accessory superior bundles of the right piriformis muscle without morphologic magnetic resonance imaging evidence of piriformis syndrome.</p> <p>INTERVENTION AND OUTCOME: Chiropractic treatment included lumbar and sacral spinal manipulation with soft tissue massage to associated musculature and home exercise recommendations. Variations from routine care included proprioceptive neuromuscular facilitation stretches, electric muscle stimulation, acupressure point stimulation, Sacro Occipital Technique pelvic blocking, CranioSacral therapy, and an ergonomic evaluation.</p> <p>CONCLUSION: A patient with a piriformis anomaly with symptoms of low back pain and piriformis syndrome responded positively to conservative chiropractic care, although the underlying cause of the piriformis syndrome remained.</p>

<p>Chester JE, Rownecki M, Van Doren W, Helmer DA. Progression of intervention-focused research for Gulf War illness. Mil Med Res. 2019 Oct 18;6(1):31.</p>	<p>The Persian Gulf War of 1990 to 1991 involved the deployment of nearly 700,000 American troops to the Middle East. Deployment-related exposures to toxic substances such as pesticides, nerve agents, pyridostigmine bromide (PB), smoke from burning oil wells, and petrochemicals may have contributed to medical illness in as many as 250,000 of those American troops. The cluster of chronic symptoms, now referred to as Gulf War Illness (GWI), has been studied by many researchers over the past two decades. Although over \$500 million has been spent on GWI research, to date, no cures or condition-specific treatments have been discovered, and the exact pathophysiology remains elusive. Using the 2007 National Institute of Health (NIH) Roadmap for Medical Research model as a reference framework, we reviewed studies of interventions involving GWI patients to assess the progress of treatment-related GWI research. All GWI clinical trial studies reviewed involved investigations of existing interventions that have shown efficacy in other diseases with analogous symptoms. After reviewing the published and ongoing registered clinical trials for cognitive-behavioral therapy, exercise therapy, acupuncture, coenzyme Q10, mifepristone, and carnosine in GWI patients, we identified only four treatments (cognitive-behavioral therapy, exercise therapy, CoQ10, and mifepristone) that have progressed beyond a phase II trial. We conclude that progress in the scientific study of therapies for GWI has not followed the NIH Roadmap for Medical Research model. Establishment of a standard case definition, prioritized GWI research funding for the characterization of the pathophysiology of the condition, and rapid replication and adaptation of early phase, single site clinical trials could substantially advance research progress and treatment discovery for this condition.</p>
<p>Collinge W, Kahn J, Soltysik R. Promoting reintegration of National Guard veterans and their partners using a self-directed program of integrative therapies: a pilot study. Mil Med. 2012 Dec;177(12):1477-85.</p>	<p>This article reports pilot data from phase I of a project to develop and evaluate a self-directed program of integrative therapies for National Guard personnel and significant relationship partners to support reintegration and resilience after return from Iraq or Afghanistan. Data are reported on 43 dyads. Intervention was an integrated multimedia package of guided meditative, contemplative, and relaxation exercises (CD) and instruction in simple massage techniques (DVD) to promote stress reduction and interpersonal connectedness. A repeated measures design with standardized instruments was used to establish stability of baseline levels of relevant mental health domains (day 1, day 30), followed by the intervention and assessments 4 and 8 weeks later. Significant improvements in standardized measures for post-traumatic stress disorder, depression, and self-compassion were seen in both veterans and partners; and in stress for partners. Weekly online reporting tracked utilization of guided exercises and massage. Veterans reported significant reductions in ratings of physical pain, physical tension, irritability, anxiety/worry, and depression after massage, and longitudinal analysis suggested declining baseline levels of tension and irritability. Qualitative data from focus groups and implications for continued development and a phase II trial are discussed.</p>

<p>Conboy L, Gerke T, Hsu KY, St John M, Goldstein M, Schnyer R. The Effectiveness of Individualized Acupuncture Protocols in the Treatment of Gulf War Illness: A Pragmatic Randomized Clinical Trial. PLoS One. 2016 Mar 31;11(3):e0149161. doi: 10.1371/journal.pone.0149161. eCollection 2016.</p>	<p>BACKGROUND: Gulf War Illness is a Complex Medical Illness characterized by multiple symptoms, including fatigue, sleep and mood disturbances, cognitive dysfunction, and musculoskeletal pain affecting veterans of the first Gulf War. No standard of care treatment exists.</p> <p>METHODS: This pragmatic Randomized Clinical Trial tested the effects of individualized acupuncture treatments offered in extant acupuncture practices in the community; practitioners had at least 5 years of experience plus additional training provided by the study. Veterans with diagnosed symptoms of Gulf War Illness were randomized to either six months of biweekly acupuncture treatments (group 1, n = 52) or 2 months of waitlist followed by weekly acupuncture treatments (group 2, n = 52). Measurements were taken at baseline, 2, 4 and 6 months. The primary outcome is the SF-36 physical component scale score (SF-36P) and the secondary outcome is the McGill Pain scale.</p> <p>RESULTS: Of the 104 subjects who underwent randomization, 85 completed the protocol (82%). A clinically and statistically significant average improvement of 9.4 points (p = 0.03) in the SF-36P was observed for group 1 at month 6 compared to group 2, adjusting for baseline pain. The secondary outcome of McGill pain index produced similar results; at 6 months, group 1 was estimated to experience a reduction of approximately 3.6 points (p = 0.04) compared to group 2.</p> <p>CONCLUSIONS: Individualized acupuncture treatment of sufficient dose appears to offer significant relief of physical disability and pain for veterans with Gulf War Illness. This work was supported by the Office of the Assistant Secretary of Defense for Health Affairs through the Gulf War Illness Research Program under Award No. W81XWH-09-2-0064. Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the Department of Defense.</p>
<p>Corcoran KL, Dunn AS, Formolo LR, Beehler GP. Chiropractic Management for US Female Veterans With Low Back Pain: A Retrospective Study of Clinical Outcomes. J Manipulative Physiol Ther. 2017 Oct;40(8):573-579. doi: 10.1016/j.jmpt.2017.07.001. PubMed PMID: 29187308.</p>	<p>OBJECTIVE: The purpose of this study was to determine if female US veterans had clinically significant improvement in low back pain after chiropractic management.</p> <p>METHODS: This is a retrospective chart review of 70 courses of care for female veterans with a chief complaint of low back pain who received chiropractic management through the VA Western New York Healthcare System in Buffalo, New York. A paired t test was used to compare baseline and discharge outcomes for the Back Bournemouth Questionnaire. The minimum clinically important difference was set as a 30% improvement in the outcome measure from baseline to discharge.</p> <p>RESULTS: The average patient was 44.8 years old, overweight (body mass index 29.1 kg/m²), and white (86%). The mean number of chiropractic treatments was 7.9. Statistical significance was found for the Back Bournemouth Questionnaire outcomes. The mean raw score improvement was 12.4 points (P < .001), representing a 27.3% change from baseline with 47% of courses of care meeting or exceeding the minimum clinically important difference.</p> <p>CONCLUSION: For our sample of female veterans with low back pain, clinical outcomes from baseline to discharge improved under chiropractic care. Although further research is warranted, chiropractic care may be of value in contributing to the pain management needs of this unique patient population</p>

<p>Corcoran KL, Dunn AS, Green BN, Formolo LR, Beehler GP. Changes in female veterans' neck pain following chiropractic care at a hospital for veterans. Complement Ther Clin Pract. 2018 Feb;30:91-95. doi: 10.1016/j.ctcp.2017.12.013. Epub 2017 Dec 13. PubMed PMID: 29389486.</p>	<p>OBJECTIVE: To determine if U.S. female veterans had demonstrable improvements in neck pain after chiropractic management at a Veterans Affairs (VA) hospital.</p> <p>METHODS: This was a retrospective cross-sectional study of medical records from female veterans attending a VA chiropractic clinic for neck pain from 2009 to 2015. Paired t-tests were used to compare baseline and discharge numeric rating scale (NRS) and Neck Bournemouth Questionnaire (NBQ) scores with a minimum clinically important difference (MCID) set at a 30% change from baseline.</p> <p>RESULTS: Thirty-four veterans met the inclusion criteria and received a mean of 8.8 chiropractic treatments. For NRS, the mean score improvement was 2.7 (95%CI, 1.9-3.5, $p < .001$). For the NBQ, the mean score improvement was 13.7 (95%CI, 9.9-17.5, $p < .001$). For the MCID, the average percent improvement was 45% for the NRS and 38% for the NBQ.</p> <p>CONCLUSION: Female veterans with neck pain experienced a statistically and clinically significant reduction in NRS and NBQ scores.</p>
<p>Cosio D, Lin EH. Effects of a pain education program in Complementary and Alternative Medicine treatment utilization at a VA medical center. Complement Ther Med. 2015 Jun;23(3):413-22. doi: 10.1016/j.ctim.2015.04.005. Epub 2015 Apr 28.</p>	<p>BACKGROUND: Past studies have shown that U.S. Veterans are consumers of CAM. However, more than 75% of Veteran non-users report they would utilize these treatment options if made available. Thus, Veterans may not be fully aware of the CAM options currently available to them in the current U.S. VA health care system.</p> <p>OBJECTIVES: The current study tested the hypothesis that Veterans would report an increase in CAM utilization after completing a formal pain education program in a VA medical center.</p> <p>DESIGN: The study used a quasi-experimental, one-group, pre/post-test design.</p> <p>SETTING: Midwestern, U.S. VA Medical Center.</p> <p>PARTICIPANTS: The responses from 103 Veterans who elected to participate in the program and the assessment measures were included in the outcome analyses.</p> <p>INTERVENTION: "Pain Education School" is a 12-week, educational program that is open to all Veterans and their families. It is a comprehensive program that introduces patients to 23 different disciplines at the VA Medical Center that deal with chronic, non-cancer pain.</p> <p>MAIN OUTCOME MEASURES: An adaptation of the Complementary and Alternative Medicine Questionnaire(©), SECTION A: Use of Alternative Health Care Providers.</p> <p>RESULTS: There was a significant difference found in overall utilization of CAM after completing the pain education program. The most utilized CAM modality was the chiropractor; the least utilized were hypnosis and aromatherapy.</p> <p>CONCLUSIONS: Not all health care systems or providers may have access to an education-focused, professionally driven program as an amenity. However, lessons can be learned from this study in terms of what pain providers may be able to accomplish in their practice.</p>

<p>Crawford P, Penzien DB, Coeytaux R. Reduction in Pain Medication Prescriptions and Self-Reported Outcomes Associated with Acupuncture in a Military Patient Population. Med Acupunct. 2017 Aug 1;29(4):229-231. doi: 10.1089/acu.2017.1234. PubMed PMID: 28874924; PubMed Central PMCID: PMC5580367</p>	<p>Background: Acupuncture is being offered to patients as part of routine medical care in selected military bases in the United States. There is little published information about the clinical outcomes associated with acupuncture in these clinical settings. Objective: The goal of this research was to assess clinical outcomes observed among adult patients who received acupuncture treatments at a United States Air Force medical center. Materials and Methods: This retrospective chart review was performed at the Nellis Family Medicine Residency in the Mike O'Callaghan Military Medical Center at Nellis Air Force Base in Las Vegas, NV. The charts were from 172 consecutive patients who had at least 4 acupuncture treatments within 1 year. The main outcome measures were prescriptions for opioid medications, muscle relaxants, benzodiazepines, and nonsteroidal anti-inflammatory drugs (NSAIDs) in the 60 days prior to the first acupuncture session and in the corresponding 60 days 1 year later; and Measure Yourself Medical Outcome Profile (MYMOP2) values for symptoms, ability to perform activities, and quality of life. Results: Opioid prescriptions decreased by 45%, muscle relaxants by 34%, NSAIDs by 42%, and benzodiazepines by 14%. MYMOP2 values decreased 3.50-3.11 ($P < 0.002$) for question 1, 4.18-3.46 ($P < 0.00001$) for question 3, and 2.73-2.43 ($P < 0.006$) for question 4. Conclusions: In this military patient population, the number of opioid prescriptions decreased and patients reported improved symptom control, ability to function, and sense of well-being after receiving courses of acupuncture by their primary care physicians.</p>
<p>Dahlhamer J, Lucas J, Zelaya C, Nahin R, Mackey S, DeBar L, Kerns R, Von Korff M, Porter L, Helmick C. Prevalence of Chronic Pain and High-Impact Chronic Pain Among Adults - United States, 2016. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6146950/</p>	<p>Chronic pain, one of the most common reasons adults seek medical care (1), has been linked to restrictions in mobility and daily activities (2,3), dependence on opioids (4), anxiety and depression (2), and poor perceived health or reduced quality of life (2,3). Population-based estimates of chronic pain among U.S. adults range from 11% to 40% (5), with considerable population subgroup variation. As a result, the 2016 National Pain Strategy called for more precise prevalence estimates of chronic pain and high-impact chronic pain (i.e., chronic pain that frequently limits life or work activities) to reliably establish the prevalence of chronic pain and aid in the development and implementation of population-wide pain interventions (5). National estimates of high-impact chronic pain can help differentiate persons with limitations in major life domains, including work, social, recreational, and self-care activities from those who maintain normal life activities despite chronic pain, providing a better understanding of the population in need of pain services. To estimate the prevalence of chronic pain and high-impact chronic pain in the United States, CDC analyzed 2016 National Health Interview Survey (NHIS) data. An estimated 20.4% (50.0 million) of U.S. adults had chronic pain and 8.0% of U.S. adults (19.6 million) had high-impact chronic pain, with higher prevalences of both chronic pain and high-impact chronic pain reported among women, older adults, previously but not currently employed adults, adults living in poverty, adults with public health insurance, and rural residents. These findings could be used to target pain management interventions.</p>
<p>Denneson LM, Corson K, Dobscha SK. Complementary and alternative medicine use among veterans with chronic noncancer pain. J Rehabil Res Dev. 2011;48(9):1119-28.</p>	<p>We describe prior use and willingness to try complementary and alternative medicine (CAM) among 401 veterans experiencing chronic noncancer pain and explore differences between CAM users and nonusers. Participants in a randomized controlled trial of a collaborative intervention for chronic pain from five Department of Veterans Affairs (VA) primary care clinics self-reported prior use and willingness to try chiropractic care, massage therapy, herbal medicines, and acupuncture. Prior CAM users were compared with nonusers on demographic characteristics, pain-related clinical characteristics, disease burden, and treatment satisfaction. A majority of veterans ($n = 327$, 82%) reported prior use of at least one CAM modality, and nearly all ($n = 399$, 99%) were willing to try CAM treatment for pain. Chiropractic care was the least preferred option, whereas massage therapy was the most preferred (75% and 96%, respectively). CAM users were less likely to have service-connection disabilities (54% vs 68%; chi square = 4.64, $p = 0.03$) and reported having spent a larger percentage of their lives in pain (26% vs 20%; $Z = 1.40$, $p = 0.04$) than nonusers. We detected few differences between veterans who had tried CAM and those who had not, suggesting that CAM may have broad appeal among veterans with chronic pain. Implications for VA policy and practice and for clinicians treating veterans with chronic pain are discussed.</p>

<p>Donaldson MT, Polusny MA, MacLehose RF, Goldsmith ES, Hagel Campbell EM, Miron LR, Thuras PD, Krebs EE. Patterns of conventional and complementary non-pharmacological health practice use by US military veterans: a cross-sectional latent class analysis. BMC Complement Altern Med. 2018 Sep 5;18(1):246. doi: 10.1186/s12906-018-2313-7.</p>	<p>BACKGROUND: Non-pharmacological therapies and practices are commonly used for both health maintenance and management of chronic disease. Patterns and reasons for use of health practices may identify clinically meaningful subgroups of users. The objectives of this study were to identify classes of self-reported use of conventional and complementary non-pharmacological health practices using latent class analysis and estimate associations of participant characteristics with class membership.</p> <p>METHODS: A mailed survey (October 2015 to September 2016) of Minnesota National Guard Veterans from a longitudinal cohort (n = 1850) assessed current pain, self-reported overall health, mental health, substance use, personality traits, and health practice use. We developed the Health Practices Inventory, a self-report instrument assessing use of 19 common conventional and complementary non-pharmacological health-related practices. Latent class analysis was used to identify subgroups of health practice users, based on responses to the HPI. Participants were assigned to their maximum-likelihood class, which was used as the outcome in multinomial logistic regression to examine associations of participant characteristics with latent class membership.</p> <p>RESULTS: Half of the sample used non-pharmacological health practices. Six classes of users were identified. "Low use" (50%) had low rates of health practice use. "Exercise" (23%) had high exercise use. "Psychotherapy" (6%) had high use of psychotherapy and support groups. "Manual therapies" (12%) had high use of chiropractic, physical therapy, and massage. "Mindfulness" (5%) had high use of mindfulness and relaxation practice. "Multimodal" (4%) had high use of most practices. Use of manual therapies (chiropractic, acupuncture, physical therapy, massage) was associated with chronic pain and female sex. Characteristics that predict use patterns varied by class. Use of self-directed practices (e.g., aerobic exercise, yoga) was associated with the personality trait of absorption (openness to experience). Use of psychotherapy was associated with higher rates of psychological distress.</p> <p>CONCLUSIONS: These observed patterns of use of non-pharmacological health practices show that functionally similar practices are being used together and suggest a meaningful classification of health practices based on self-directed/active and practitioner-delivered. Notably, there is considerable overlap in users of complementary and conventional practices.</p>
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<p>Dougherty PE, Karuza J, Dunn AS, Savino D, Katz P. Spinal Manipulative Therapy for Chronic Lower Back Pain in Older Veterans: A Prospective, Randomized, Placebo-Controlled Trial. Geriatr Orthop Surg Rehabil. 2014 Dec</p>	<p>INTRODUCTION: Chronic lower back pain (CLBP) is problematic in older veterans. Spinal manipulative therapy (SMT) is commonly utilized for CLBP in older adults, yet there are few randomized placebo-controlled trials evaluating SMT.</p> <p>METHODS: The purpose of the study was to compare the effectiveness of SMT to a sham intervention on pain (Visual Analogue Scale, SF-36 pain subscale), disability (Oswestry Disability Index), and physical function (SF-36 subscale, Timed Up and Go) by performing a randomized placebo-controlled trial at 2 Veteran Affairs Clinics.</p> <p>RESULTS: Older veterans (≥ 65 years of age) who were naive to chiropractic were recruited. A total of 136 were included in the study with 69 being randomly assigned to SMT and 67 to sham intervention. Patients were treated 2 times per week for 4 weeks assessing outcomes at baseline, 5, and 12 weeks postbaseline. Both groups demonstrated significant decrease in pain and disability at 5 and 12 weeks. At 12 weeks, there was no significant difference in pain and a statistically significant decline in disability scores in the SMT group when compared to the sham intervention group. There were no significant differences in adverse events between the groups.</p> <p>CONCLUSIONS: The SMT did not result in greater improvement in pain when compared to our sham intervention; however, SMT did demonstrate a slightly greater improvement in disability at 12 weeks. The fact that patients in both groups showed improvements suggests the presence of a nonspecific therapeutic effect.</p>
<p>Dougherty PE, Karuza J, Savino D, Katz P. Evaluation of a modified clinical prediction rule for use with spinal manipulative therapy in patients with chronic low back pain: a randomized clinical trial. Chiropr Man Therap. 2014 Nov 18;22(1):41. doi: 10.1186/s12998-014-0041-8. eCollection 2014.</p>	<p>BACKGROUND: Spinal Manipulative Therapy (SMT) and Active Exercise Therapy (AET) have both demonstrated efficacy in the treatment of Chronic Lower Back Pain (CLBP). A Clinical Prediction Rule (CPR) for responsiveness to SMT has been validated in a heterogeneous lower back pain population; however there is a need to evaluate this CPR specifically for patients with CLBP, which is a significant source of disability.</p> <p>METHODS: We conducted a randomized controlled trial (RCT) in Veteran Affairs and civilian outpatient clinics evaluating a modification of the original CPR (mCPR) in CLBP, eliminating acute low back pain and altering the specific types of SMT to improve generalizability. We enrolled and followed 181 patients with CLBP from 2007 to 2010. Patients were randomized by status on the mCPR to undergo either SMT or AET twice a week for four weeks. Providers and statisticians were blinded as to mCPR status. We collected outcome measures at 5, 12 and 24-weeks post baseline. We tested our study hypotheses by a general linear model repeated measures procedure following a univariate analysis of covariance approach. Outcome measures included, Visual Analogue Scale, Bodily pain subscale of SF-36 and the Oswestry Disability Index, Patient Satisfaction and Patient Expectation.</p> <p>RESULTS: Of the 89 AET patients, 69 (78%) completed the study and of the 92 SMT patients, 76 (83%) completed the study. As hypothesized, we found main effects of time where the SMT and AET groups showed significant improvements in pain and disability from baseline. There were no differences in treatment outcomes between groups in response to the treatment, given the lack of significant treatment x time interactions. The mCPR x treatment x time interactions were not significant. The differences in outcomes between treatment groups were the same for positive and negative on the mCPR groups, thus our second hypothesis was not supported.</p> <p>CONCLUSIONS: We found no evidence that a modification of the original CPR can be used to discriminate CLBP patients that would benefit more from SMT. Further studies are needed to further clarify the patient characteristics that moderate treatment responsiveness to specific interventions for CLBP.</p>

<p>Driscoll MA, Higgins D, Shamaskin-Garroway A, Burger A, Buta E, Goulet JL, Heapy A, Kerns RD, Brandt CA, Haskell SG. Examining Gender as a Correlate of Self-Reported Pain Treatment Use Among Recent Service Veterans with Deployment-Related Musculoskeletal Disorders. Pain Med. 2017 Sep 1;18(9):1767-1777. doi: 10.1093/pm/pnx023.</p>	<p>OBJECTIVE: Women veterans with chronic pain utilize health care with greater frequency than their male counterparts. However, little is known about gender differences in the use of specialty pain care in this population. This investigation examined gender differences in self-reported use of opioids, interventional pain treatments, rehabilitation therapies, and complementary and integrative health (CIH) services for chronic pain treatment both within and outside of the Veterans Health Administration in a sample of veterans who served in support of recent conflicts.</p> <p>METHODS: Participants included 325 veterans (54% women) who completed a baseline survey as part of the Women Veterans Cohort Study and reported deployment-related musculoskeletal conditions and chronic pain. Measures included self-reported use of pain treatment modalities, pain severity, self-rated health, access to specialty care, disability status, and presence of a mental health condition.</p> <p>RESULTS: Men were more likely to report a persistent deployment-related musculoskeletal condition but were no more likely than women to report chronic pain. Overall, 21% of the sample reported using opioids, 27% used interventional strategies, 59% used rehabilitation therapies, and 57% used CIH services. No significant gender differences in use of any pain treatment modality were observed.</p> <p>CONCLUSIONS: Use of pain specialty services was common among men and women, particularly rehabilitative and CIH services. There were no gender differences in the self-reported use of different modalities. These results are inconsistent with documented gender differences in pain care. They encourage further examination of gender differences in preferences and other individual difference variables as predictors of specialty pain care utilization.</p>
<p>Dunn AS, Baylis S, Ryan D. Chiropractic management of mechanical low back pain secondary to multiple-level lumbar spondylolysis with spondylolisthesis in a United States Marine Corps veteran: a case report. J Chiropr Med. 2009 Sep;8(3):125-30. doi: 10.1016/j.jcm.2009.04.003.</p>	<p>OBJECTIVE: This case report describes the evaluation and conservative management of mechanical low back pain secondary to multiple-level lumbar spondylolysis with spondylolisthesis in a United States Marine Corps veteran within a Veterans Affairs Medical Center chiropractic clinic.</p> <p>CLINICAL FEATURES: The 43-year-old patient had a 20-year history of mechanical back pain secondary to an injury sustained during active military duty. He had intermittent radiation of numbness and tingling involving the right lower extremity distal to the knee. Radiographs of the lumbosacral region demonstrated a grade I spondylolisthesis of L3 in relation to L4 and a grade II spondylolisthesis of L4 in relation to L5 secondary to bilateral pars interarticularis defects. There was marked narrowing of the L4-5 disk space with associated subchondral sclerosis.</p> <p>INTERVENTION AND OUTCOME: A course of conservative management consisting of 10 treatments including lumbar flexion/distraction and activity modification was provided over an 8-week period. Despite the long-standing nature of the complaint and underlying multiple-level lumbar spondylolysis with spondylolisthesis, there was a 25% reduction in low back pain severity on the numeric rating scale and a 22% reduction in perceived disability related to low back pain on the Revised Oswestry Disability Questionnaire.</p> <p>CONCLUSIONS: Conservative management is considered to be the standard of care for spondylolysis and should be explored in its various forms for symptomatic low back pain patients who present without neurologic deficits and with spondylolisthesis below grade III. The response to treatment for the veteran patient in this case suggests that lumbar flexion/distraction may serve as a safe and effective component of conservative management of mechanical low back pain for some patients with spondylolysis and spondylolisthesis.</p>

<p>Dunn AS, Green BN, Formolo LR, Chicoine DR. Chiropractic management for veterans with neck pain: a retrospective study of clinical outcomes. J Manipulative Physiol Ther. 2011 Oct;34(8):533-8. doi: 10.1016/j.jmpt.2011.08.009. Epub 2011 Sep 9.</p>	<p>OBJECTIVE: The purpose of this study was to report demographic characteristics, chiropractic treatment methods and frequency, and clinical outcomes for chiropractic management of neck pain in a sample of veteran patients.</p> <p>METHODS: This is a retrospective case series of 54 veterans with a chief complaint of neck pain who received chiropractic care through a Veterans Health Administration medical center. Descriptive statistics and paired t tests were used with the numeric rating scale and Neck Bournemouth Questionnaire serving as the outcome measures. A minimum clinically important difference was set as 30% improvement from baseline for both outcomes.</p> <p>RESULTS: The mean number of chiropractic treatments was 8.7. For the numeric rating scale, the mean raw score improvement was 2.6 points, representing 43% change from baseline. For the Neck Bournemouth Questionnaire, the mean raw score improvement was 13.9 points, representing 33% change from baseline. For both measures, 36 (67%) patients met or exceeded the minimum clinically important difference.</p> <p>CONCLUSION: Mean chiropractic clinical outcomes were both statistically significant and clinically meaningful for this sample of veterans presenting with neck pain.</p>
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<p>Edmond SN, Becker WC, Driscoll MA, Decker SE, Higgins DM, Mattocks KM, Kerns RD, Haskell SG. Use of Non-Pharmacological Pain Treatment Modalities Among Veterans with Chronic Pain: Results from a Cross-Sectional Survey. J Gen Intern Med. 2018 May;33(Suppl 1):54-60. doi: 10.1007/s11606-018-4322-0.</p>	<p>BACKGROUND: Despite strong evidence for the effectiveness of non-pharmacological pain treatment modalities (NPMs), little is known about the prevalence or correlates of NPM use.</p> <p>OBJECTIVE: This study examined rates and correlates of NPM use in a sample of veterans who served during recent conflicts.</p> <p>DESIGN: We examined rates and demographic and clinical correlates of self-reported NPM use (operationalized as psychological/behavioral therapies, exercise/movement therapies, and manual therapies). We calculated descriptive statistics and examined bivariate associations and multivariable associations using logistic regression.</p> <p>PARTICIPANTS: Participants were 460 veterans endorsing pain lasting ≥ 3 months who completed the baseline survey of the Women Veterans Cohort Study (response rate 7.7%).</p> <p>MAIN MEASURES: Outcome was self-reported use of NPMs in the past 12 months.</p> <p>KEY RESULTS: Veterans were 33.76 years old (SD = 10.72), 56.3% female, and 80.2% White. Regarding NPM use, 22.6% reported using psychological/behavioral, 50.9% used exercise/movement and 51.7% used manual therapies. Veterans with a college degree (vs. no degree; OR = 2.51, 95% CI = 1.46, 4.30, $p = 0.001$) or those with worse mental health symptoms (OR = 2.88, 95% CI = 2.11, 3.93, $p < 0.001$) were more likely to use psychological/behavioral therapies. Veterans who were female (OR = 0.63, 95% CI = 0.43, 0.93, $p = 0.02$) or who used non-opioid pain medications (OR = 1.82, 95% CI = 1.146, 2.84, $p = 0.009$) were more likely to use exercise/movement therapies. Veterans who were non-White (OR = 0.57, 95% CI = 0.5, 0.94, $p = 0.03$), with greater educational attainment (OR = 2.11, 95% CI = 1.42, 3.15, $p < 0.001$), or who used non-opioid pain medication (OR = 1.71, 95% CI = 1.09, 2.68, $p = 0.02$) were more likely to use manual therapies.</p> <p>CONCLUSIONS: Results identified demographic and clinical characteristics among different NPMs, which may indicate differences in veteran treatment preferences or provider referral patterns. Further study of provider referral patterns and veteran treatment preferences is needed to inform interventions to increase NPM utilization. Research is also needed to identify demographic and clinical correlates of clinical outcomes related to NPM use.</p>
<p>Eskander JP, Beakley BD, Zhang S, Paetzold J, Sharma B, Kaye AD, Sharma S. A Multimodal Approach to Pain Management for Patients with Chronic Back Pain: Outcome Measures at 1 Year. Curr Pain Headache Rep. 2019 Jul 8;23(8):54.</p>	<p>PURPOSE OF REVIEW: The purpose of this study is to evaluate the effectiveness of a multimodal approach to treating chronic low back pain.</p> <p>RECENT FINDINGS: Chronic non-cancer-related back pain is often a frustrating and poorly managed problem for patients. It poses a significant public health issue worsened by the widespread use of narcotics. In 2016, the CDC released guidelines with noticeably more strict recommendations on prescription of narcotics for pain. Veterans at an interventional pain clinic presenting with chronic back pain refractory to medical and to surgical care were enrolled in an 8-week interdisciplinary pain management program. Pain scores were significantly reduced 1 year after completion of the program. Patients in this study benefitted from lower and sustained pain scores, a reduction in emergency room, and urgent care clinic visits, as well as generally high satisfaction with the interdisciplinary program.</p>

<p>Evans EA, Herman PM, Washington DL, Lorenz KA, Yuan A, Upchurch DM, Marshall N, Hamilton AB, Taylor SL. Gender Differences in Use of Complementary and Integrative Health by U.S. Military Veterans with Chronic Musculoskeletal Pain. Womens Health Issues. 2018</p>	<p>AIMS: The Veterans Health Administration promotes evidence-based complementary and integrative health (CIH) therapies as nonpharmacologic approaches for chronic pain. We aimed to examine CIH use by gender among veterans with chronic musculoskeletal pain, and variations in gender differences by race/ethnicity and age.</p> <p>METHODS: We conducted a secondary analysis of electronic health records provided by all women (n = 79,537) and men (n = 389,269) veterans age 18 to 54 years with chronic musculoskeletal pain who received Veterans Health Administration-provided care between 2010 and 2013. Using gender-stratified multivariate binary logistic regression, we examined predictors of CIH use, tested a race/ethnicity-by-age interaction term, and conducted pairwise comparisons of predicted probabilities.</p> <p>RESULTS: Among veterans with chronic musculoskeletal pain, more women than men use CIH (36% vs. 26%), with rates ranging from 25% to 42% among women and 15% to 29% among men, depending on race/ethnicity and age. Among women, patients under age 44 who were Hispanic, White, or patients of other race/ethnicities are similarly likely to use CIH; in contrast, Black women, regardless of age, are least likely to use CIH. Among men, White and Black patients, and especially Black men under age 44, are less likely to use CIH than men of Hispanic or other racial/ethnic identities.</p> <p>CONCLUSIONS: Women veteran patients with chronic musculoskeletal pain are more likely than men to use CIH therapies, with variations in CIH use rates by race/ethnicity and age. Tailoring CIH therapy engagement efforts to be sensitive to gender, race/ethnicity, and age could reduce differential CIH use and thereby help to diminish existing health disparities among veterans.</p>
<p>Fan AY, Miller DW, Bolash B, Bauer M, McDonald J, Faggert S, He H, Li YM, Matecki A, Camardella L, Koppelman MH, Stone JAM, Meade L, Pang J. Acupuncture's Role in Solving the Opioid Epidemic: Evidence, Cost-Effectiveness, and Care Availability for Acupuncture as a Primary, Non-Pharmacologic Method for Pain Relief and Management-White Paper 2017. J Integr Med. 2017 Nov;15(6):411-425. doi: 10.1016/S2095-4964(17)60378-9. PubMed PMID: 29103410.</p>	<p>The United States (U.S.) is facing a national opioid epidemic, and medical systems are in need of non-pharmacologic strategies that can be employed to decrease the public's opioid dependence. Acupuncture has emerged as a powerful, evidence-based, safe, cost-effective, and available treatment modality suitable to meeting this need. Acupuncture has been shown to be effective for the management of numerous types of pain conditions, and mechanisms of action for acupuncture have been described and are understandable from biomedical, physiologic perspectives. Further, acupuncture's cost-effectiveness can dramatically decrease health care expenditures, both from the standpoint of treating acute pain and through avoiding addiction to opioids that requires costly care, destroys quality of life, and can lead to fatal overdose. Numerous federal regulatory agencies have advised or mandated that healthcare systems and providers offer non-pharmacologic treatment options for pain. Acupuncture stands out as the most evidence-based, immediately available choice to fulfil these calls. Acupuncture can safely, easily, and cost-effectively be incorporated into hospital settings as diverse as the emergency department, labor and delivery suites, and neonatal intensive care units to treat a variety of commonly seen pain conditions. Acupuncture is already being successfully and meaningfully utilized by the Veterans Administration and various branches of the U.S. Military, in some studies demonstrably decreasing the volume of opioids prescribed when included in care.</p>

<p>Federman DG, Zeliadt SB, Thomas ER, Carbone GF Jr, Taylor SL. Battlefield Acupuncture in the Veterans Health Administration: Effectiveness in Individual and Group Settings for Pain and Pain Comorbidities. Med Acupunct. 2018 Oct 1;30(5):273-278. doi: 10.1089/acu.2018.1296. Epub 2018 Oct 15. PubMed PMID: 30377463; PubMed Central PMCID: PMC6205767.</p>	<p>Objective: The Department of Veterans Affairs trained primary-care providers to deliver Battlefield Acupuncture (BFA), a subset of auricular acupuncture, to patients. However, little is known about BFA effectiveness in group or individual sessions or repeated administrations versus singular use. The aim of this study was to examine the use and effectiveness of BFA for back pain and four pain-comorbid conditions in group and individual sessions at a large Veterans Affairs (VA) medical center.</p> <p>Materials and Methods: This cross-sectional study was conducted at the West Haven VA Medical Center, in West Haven CT. Between October 2016 and December 2017, 284 veterans with pain received BFA. The BFA was administered in group clinics or in individual encounters. The Defense and Veterans Pain Rating Scale was used to assess self-reported pain immediately before and after each BFA administration. Results: Over the study period, an average of 57 (range: 50–66) new patients per month received BFA. Of 753 total patient encounters, an immediate decrease in self-reported pain occurred in 616 (82.0%) patients, no change occurred in 73 (9.7%) patients, and an increase occurred in 62 (8.3%) patients. Decreases in pain were common in the group and individual settings, even in patients with originally high pain scores, and the effectiveness remained with repeated uses.</p> <p>Conclusions: BFA can be effective for immediate relief of pain—whether the BFA is administered in a group or individual setting—for the overwhelming majority of veterans and, as such, holds promise as a nonpharmacologic pain-management intervention.</p>
<p>Federman DG, Radhakrishnan K, Gabriel L, Poulin LM, Kravetz JD. Group Battlefield Acupuncture in Primary Care for Veterans with Pain. South Med J. 2018 Oct;111(10):619-624. doi: 10.14423/SMJ.0000000000000877. PubMed PMID: 30285269.</p>	<p>Abstract</p> <p>OBJECTIVE:</p> <p>To obtain preliminary data on the short- and intermediate-term effects of battlefield acupuncture (BFA) on self-reported pain intensity in a relatively large cohort of veterans to assess whether a more comprehensive clinical trial evaluation is warranted.</p> <p>METHODS:</p> <p>The treatment, in an outpatient group setting, consisted of up to five auricular semipermanent needles inserted into each ear at prespecified points. Efficacy of treatment was measured by self-reported pain, using the Defense and Veterans Pain Rating Scale, just before treatment and at posttreatment days 0, 1, 7, and 30.</p> <p>RESULTS:</p> <p>A total of 112 patients attended the group clinics. The mean pretreatment pain score was 6.8, with an immediate postprocedure decrease of 2.4 points. The proportion of patients reporting decreased pain was 88.4%, 80.7%, 52.4%, and 51% at posttreatment days 0, 1, 7, and 30, respectively.</p> <p>CONCLUSIONS:</p> <p>The short- and intermediate-term beneficial effect of BFA on chronic pain is clinically meaningful. The large proportion of patients reporting decreased pain even 30 days after treatment suggests that the long-term effect of BFA merits further investigation.</p>

<p>Federman DG, Poulin LM, Ruser CB, Kravetz JD. Implementation of shared medical appointments to offer battlefield acupuncture efficiently to veterans with pain. Acupunct Med. 2018 Apr;36(2):124-126. doi: 10.1136/acupmed-2016-011315. Epub 2017 Jun 19. PubMed PMID: 28630048.</p>	<p>Background The use of prescription opioids in the treatment of pain has increased notably over recent decades. With this increase, dramatic unintended consequences have arisen. Rates of death from prescribed opioids increased fourfold between 2000 and 2014. Integrative care has been suggested as a potentially safer alternative to opioids in the treatment of chronic non-cancer pain and acupuncture has been shown to be an effective treatment for chronic pain. Battlefield acupuncture (BFA), an easily learnt subset of auricular acupuncture, has been proposed to treat a variety of painful disorders in active military members and veterans. Patients undergo insertion of five auricular semi-permanent (ASP) needles to the following traditional ear acupuncture points bilaterally: Cingulate Gyrus, Thalamus, Omega 2, Point Zero and Shenmen. While other investigators have evaluated models for integrating medical acupuncture into practice,⁵ to our knowledge, there has been no evaluation of how to incorporate BFA efficiently into a busy primary care (PC) practice. Since shared medical appointments (SMA) have been shown to be helpful in chronic disease management and may decrease healthcare utilisation, we developed an SMA approach to deliver BFA in the setting of a US Department of Veterans Affairs (VA) PC practice.</p>
<p>Fletcher CE, Mitchinson AR, Trumble EL, Hinshaw DB, Dusek JA. Perceptions of other integrative health therapies by Veterans with pain who are receiving massage. J Rehabil Res Dev. 2016;53(1):117-26. doi: 10.1682/JRRD.2015.01.0015. PubMed PMID: 27004453; PubMed Central PMCID: PMC4829362.</p>	<p>Veterans are increasingly using complementary and integrative health (CIH) therapies to manage chronic pain and other troubling symptoms that significantly impair health and quality of life. The Department of Veterans Affairs (VA) is exploring ways to meet the demand for access to CIH, but little is known about Veterans' perceptions of the VA's efforts. To address this knowledge gap, we conducted interviews of 15 inpatients, 8 receiving palliative care, and 15 outpatients receiving CIH in the VA. Pain was the precipitating factor in all participants' experience. Participants were asked about their experience in the VA and their opinions about which therapies would most benefit other Veterans. Participants reported that massage was well-received and resulted in decreased pain, increased mobility, and decreased opioid use. Major challenges were the high ratio of patients to CIH providers, the difficulty in receiving CIH from fee-based CIH providers outside of the VA, cost issues, and the role of administrative decisions in the uneven deployment of CIH across the VA. If the VA is to meet its goal of offering personalized, proactive, patient-centered care nationwide then it must receive support from Congress while considering Veterans' goals and concerns to ensure that the expanded provision of CIH improves outcomes.</p>
<p>Flynn DM, McQuinn H, Fairchok A, Eaton LH, Langford DJ, Snow T, Doorenbos AZ. Enhancing the success of functional restoration using complementary and integrative therapies: Protocol and challenges of a comparative effectiveness study in active duty service members with chronic pain. Contemp Clin Trials Commun. 2018</p>	<p>Chronic pain significantly impairs physical, psychological and social functioning. Among military populations, pain due to injuries sustained both on and off the battlefield is a leading cause of short and long-term disability. Improving the quality of pain care for active duty service members is a major priority of the Department of Defense. This article describes an ongoing comparative effectiveness study which aims to (1) evaluate the benefit of a multimodal complementary and integrative health (CIH) pain management program when added to standard rehabilitative care (SRC) prior to an intensive functional restoration (FR) program compared to SRC alone, and (2) identify factors that predict improvement in pain impact following treatment completion. Using a randomized controlled trial design, active duty service members with pain related to musculoskeletal injury are assigned to a 3-week course of either SRC or SRC combined with CIH therapies prior to beginning a 3-week course of FR. Outcomes are collected at baseline, at the end of stage 1 treatment, post-FR, and at 3- and 6-months post-FR. Outcome measures include provider-measured functional assessments and patient-reported assessment through the Pain Assessment Screening Tool and Outcomes Registry (PASTOR). The military health system provides a supportive environment for implementation of this research protocol. Challenges to conducting the study have included new technology systems at the study site, slower than projected enrollment, and program delivery issues. These challenges have been successfully managed and have not significantly impacted study participant enrollment and completion of study treatments.</p>

<p>Flynn D, Eaton LH, Langford DJ, Ieronimakis N, McQuinn H, Burney RO, Holmes SL, Doorenbos AZ. A SMART design to determine the optimal treatment of chronic pain among military personnel. Contemp Clin Trials. 2018 Oct;73:68-74. doi: 10.1016/j.cct.2018.08.008. Epub 2018 Aug 24.</p>	<p>Chronic pain is a leading cause of disability among active duty service members in the U.S. armed forces. Standard rehabilitative care and complementary and integrative health therapies are used for chronic pain rehabilitation. However, the optimal sequence and duration of these therapies has yet to be determined. This article describes a sequential multiple assignment randomized trial (SMART) protocol being used to identify the optimal components and sequence of standard rehabilitative care and complementary and integrative health therapies for reducing pain impact and improving other patient outcomes. Active duty service members referred to Madigan Army Medical Center for treatment of chronic pain are being recruited to the Determinants of the Optimal Dose and Sequence of Functional Restoration and Integrative Therapies study. Study participants are randomized to either standard rehabilitative care (physical and occupational therapy and psychoeducation) or complementary and integrative health therapies (chiropractic, acupuncture, yoga and psychoeducation). Those participants who do not respond to the first 3 weeks of treatment are randomized to receive an additional 3 weeks of either (1) the alternative treatment or (2) the first-stage treatment plus the alternative treatment. This study will also determine factors associated with treatment response that can support clinical decision making, such as baseline fitness, pain catastrophizing, kinesiphobia, post-traumatic stress, pain self-efficacy, and biological indicators. The information gained from this research will be applicable to all integrative chronic pain rehabilitation programs throughout the U.S. Department of Defense and the U.S. Department of Veterans Affairs, and the broader rehabilitation community.</p>
<p>Gellad WF, Good CB, Shulkin DJ. Addressing the Opioid Epidemic in the United States: Lessons From the Department of Veterans Affairs. JAMA Intern Med. 2017 May 1;177(5):611-612. doi: 10.1001/jamainternmed.2017.0147. PubMed PMID: 28288245.</p>	<p>Over the past 15 years, more than 165 000 people in the United States have died from overdoses related to prescription opioids,¹ and millions more have suffered adverse consequences. The misuse and abuse of prescription opioids have contributed to a precipitous increase in heroin and fentanyl overdoses. Patients treated in the health care system of the Department of Veterans Affairs (VA) are part of this epidemic. Chronic pain impacts half of veterans using the VA, complicated by high rates of psychiatric comorbidities such as substance use disorder and posttraumatic stress disorder.⁴ In 2009, the VA established a national office to coordinate and improve pain management practices, and in 2011, developed standardized metrics for opioid use across the system. Nonetheless, by 2012, nearly 25% of veterans receiving outpatient care in the VA were receiving an opioid.</p>
<p>Giannitrapani K, Holliday J, Miake-Lye I, Hempel S, Taylor SL. Synthesizing the Strength of the Evidence of Complementary and Integrative Health Therapies for Pain. Pain Med. 2019 May 9. pii: pnz068. doi: 10.1093/pm/pnz068. [Epub ahead of print]</p>	<p>OBJECTIVE: Pain and opioid use are highly prevalent, leading for calls to include nonpharmacological options in pain management, including complementary and integrative health (CIH) therapies. More than 2,000 randomized controlled trials (RCTs) and many systematic reviews have been conducted on CIH therapies, making it difficult to easily understand what type of CIH therapy might be effective for what type of pain. Here we synthesize the strength of the evidence for four types of CIH therapies on pain: acupuncture, therapeutic massage, mindfulness techniques, and tai chi.</p> <p>DESIGN: We conducted searches of English-language systematic reviews and RCTs in 11 electronic databases and previously published reviews for each type of CIH. To synthesize that large body of literature, we then created an "evidence map," or a visual display, of the literature size and broad estimates of effectiveness for pain.</p> <p>RESULTS: Many systematic reviews met our inclusion criteria: acupuncture (86), massage (38), mindfulness techniques (11), and tai chi (21). The evidence for acupuncture was strongest, and largest for headache and chronic pain. Mindfulness, massage, and tai chi have statistically significant positive effects on some types of pain. However, firm conclusions cannot be drawn for many types of pain due to methodological limitations or lack of RCTs.</p> <p>CONCLUSIONS: There is sufficient strength of evidence for acupuncture for various types of pain. Individual studies indicate that tai chi, mindfulness, and massage may be promising for multiple types of chronic pain. Additional sufficiently powered RCTs are warranted to indicate tai chi, mindfulness, and massage for other types of pain.</p>

<p>Giannitrapani K, McCaa M, Haverfield M, Kerns RD, Timko C, Dobscha S, Lorenz K. Veteran Experiences Seeking Non-pharmacologic Approaches for Pain. Mil Med. 2018 Nov 1;183(11-12):e628-e634. doi: 10.1093/milmed/usy018. PubMed PMID: 29590422.</p>	<p>Introduction: Pain is a longstanding and growing concern among US military veterans. Although many individuals rely on medications, a growing body of literature supports the use of complementary non-pharmacologic approaches when treating pain. Our objective is to characterize veteran experiences with and barriers to accessing alternatives to medication (e.g., non-pharmacologic treatments or non-pharmacologic approaches) for pain in primary care.</p> <p>Materials and Methods: Data for this qualitative analysis were collected as part of the Effective Screening for Pain (ESP) study (2012-2017), a national randomized controlled trial of pain screening and assessment methods. This study was approved by the Veterans Affairs (VA) Central IRB and veteran participants signed written informed consent. We recruited a convenience sample of US military veterans in four primary care clinics and conducted semi-structured interviews (25-65 min) elucidating veteran experiences with assessment and management of pain in VA Healthcare Systems. We completed interviews with 36 veterans, including 7 females and 29 males, from three VA health care systems. They ranged in age from 28 to 94 yr and had pain intensity ratings ranging from 0 to 9 on the "pain now" numeric rating scale at the time of the interviews. We analyzed interview transcripts using constant comparison and produced mutually agreed upon themes.</p> <p>Results: Veteran experiences with and barriers to accessing complementary non-pharmacologic approaches for pain clustered into five main themes: communication with provider about complementary approaches ("one of the best things the VA has ever given me was pain education and it was through my occupational therapist"), care coordination ("I have friends that go to small clinic in [area A] and I still see them down in [facility in area B] and they're going through headaches upon headaches in trying to get their information to their primary care docs"), veteran expectations about pain experience ("I think as a society we have shifted the focus to if this doctor doesn't relieve me of my pain I will find someone who does"), veteran knowledge and beliefs about various complementary non-pharmacologic approaches ("how many people know that tai chi will help with pain?... Probably none. I saw them doing tai chi down here at the VA clinic and the only reason I knew about it was because I saw it being done"), and access ("the only physical therapy I ever did... it helped...but it was a two-and-a-half-hour drive to get there three times a week... I can't do this"). Specific access barriers included local availability, time, distance, scheduling flexibility, enrollment, and reimbursement.</p> <p>Conclusion: The veterans in this qualitative study expressed interest in using non-pharmacologic approaches to manage pain, but voiced complex multi-level barriers. Limitations of our study include that interviews were conducted only in five clinics and with seven female veterans. These limitations are minimized in that the clinics covered are diverse ranging to include urban, suburban, and rural residents. Future implementation efforts can learn from the veterans' voice to appropriately target veteran concerns and achieve more patient-centered pain care.</p>
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<p>Goertz CM, Long CR, Vining RD, Pohlman KA, Walter J, Coulter I. Effect of Usual Medical Care Plus Chiropractic Care vs Usual Medical Care Alone on Pain and Disability Among US Service Members With Low Back Pain: A Comparative Effectiveness Clinical Trial. JAMA Netw Open. 2018 May 18;1(1):e180105. doi: 10.1001/jamanetworkopen.2018.0105.</p>	<p>OBJECTIVE: To determine whether the addition of chiropractic care to usual medical care results in better pain relief and pain-related function when compared with usual medical care alone.</p> <p>DESIGN, SETTING, AND PARTICIPANTS: A 3-site pragmatic comparative effectiveness clinical trial using adaptive allocation was conducted from September 28, 2012, to February 13, 2016, at 2 large military medical centers in major metropolitan areas and 1 smaller hospital at a military training site. Eligible participants were active-duty US service members aged 18 to 50 years with low back pain from a musculoskeletal source.</p> <p>INTERVENTIONS: The intervention period was 6 weeks. Usual medical care included self-care, medications, physical therapy, and pain clinic referral. Chiropractic care included spinal manipulative therapy in the low back and adjacent regions and additional therapeutic procedures such as rehabilitative exercise, cryotherapy, superficial heat, and other manual therapies.</p> <p>MAIN OUTCOMES AND MEASURES: Coprimary outcomes were low back pain intensity (Numerical Rating Scale; scores ranging from 0 [no low back pain] to 10 [worst possible low back pain]) and disability (Roland Morris Disability Questionnaire; scores ranging from 0-24, with higher scores indicating greater disability) at 6 weeks. Secondary outcomes included perceived improvement, satisfaction (Numerical Rating Scale; scores ranging from 0 [not at all satisfied] to 10 [extremely satisfied]), and medication use. The coprimary outcomes were modeled with linear mixed-effects regression over baseline and weeks 2, 4, 6, and 12.</p> <p>RESULTS: Of the 806 screened patients who were recruited through either clinician referrals or self-referrals, 750 were enrolled (250 at each site). The mean (SD) participant age was 30.9 (8.7) years, 175 participants (23.3%) were female, and 243 participants (32.4%) were nonwhite. Statistically significant site × time × group interactions were found in all models. Adjusted mean differences in scores at week 6 were statistically significant in favor of usual medical care plus chiropractic care compared with usual medical care alone overall for low back pain intensity (mean difference, -1.1; 95% CI, -1.4 to -0.7), disability (mean difference, -2.2; 95% CI, -3.1 to -1.2), and satisfaction (mean difference, 2.5; 95% CI, 2.1 to 2.8) as well as at each site. Adjusted odd ratios at week 6 were also statistically significant in favor of usual medical care plus chiropractic care overall for perceived improvement (odds ratio = 0.18; 95% CI, 0.13-0.25) and self-reported pain medication use (odds ratio = 0.73; 95% CI, 0.54-0.97). No serious related adverse events were reported.</p> <p>CONCLUSIONS AND RELEVANCE: Chiropractic care, when added to usual medical care, resulted in moderate short-term improvements in low back pain intensity and disability in active-duty military personnel. This trial provides additional support for the inclusion of chiropractic care as a component of multidisciplinary health care for low back pain, as currently recommended in existing guidelines. However, study limitations illustrate that further research is needed to understand longer-term outcomes as well as how patient heterogeneity and intervention variations affect patient responses to chiropractic care.</p>
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<p>Goldstein JN, Ibrahim SA, Frankel ES, Mao JJ. Race, Pain, and Beliefs Associated with Interest in Complementary and Alternative Medicine among Inner City Veterans. Pain Med. 2015 Aug;16(8):1467-74. doi: 10.1111/pme.12756. Epub 2015 Jun 10.</p>	<p>OBJECTIVE: To investigate the prevalence and determinants of complementary and alternative medicine (CAM) interest level among a racially diverse cohort of inner city veterans who receive primary care at the VA Medical Center.</p> <p>DESIGN: Cross-sectional survey study</p> <p>SETTING: Philadelphia VA Medical Center</p> <p>SUBJECTS: Primary care patients (n = 258)</p> <p>METHODS: Interest in CAM was measured using a single item question. Patient treatment beliefs were assessed using validated instruments. We evaluated factors associated with patient interest in CAM using a multivariate logistic regression model.</p> <p>RESULTS: In this sample of 258 inner city primary care VA patients, interest in CAM was high 80% (n = 206). Interest in CAM was strongly associated with African American race [adjusted odds ratio (AOR) 2.19, 95% Confidence Interval (CI) 1.05-4.60, P = 0.037], higher levels of education (AOR 4.33, 95% CI 1.80-10.40, P = 0.001), presence of moderate to severe pain (AOR 2.02, 95% CI 1.02-4.78, P = 0.043), and expectations of benefit from CAM use (AOR 1.21, 95% CI 1.06-1.36, P = 0.004).</p> <p>CONCLUSIONS: CAM approaches have broad appeal within this inner city cohort of veterans, particularly among African Americans, those that experience pain and those that expect greater benefit from CAM. These findings may inform the development of patient-centered integrative pain management for veterans.</p>
<p>Goode AP, Coeytaux RR, McDuffie J, Duan-Porter W, Sharma P, Mennella H, Nagi A, Williams JW Jr. An evidence map of yoga for low back pain. Complement Ther Med. 2016 Apr;25:170-7. doi: 10.1016/j.ctim.2016.02.016. Review. PubMed PMID: 27062965.</p>	<p>OBJECTIVE: Yoga is being increasingly studied as a treatment strategy for a variety of different clinical conditions, including low back pain (LBP). We set out to conduct an evidence map of yoga for the treatment, prevention and recurrence of acute or chronic low back pain (cLBP).</p> <p>METHODS: We searched Medline, Cochrane Database of Systematic Reviews, EMBASE, Allied and Complementary Medicine Database and ClinicalTrials.gov for randomized controlled trials (RCT), systematic reviews or planned studies on the treatment or prevention of acute back pain or cLBP. Two independent reviewers screened papers for inclusion, extracted data and assessed the quality of included studies.</p> <p>RESULTS: Three eligible systematic reviews were identified that included 10 RCTs (n=956) that evaluated yoga for non-specific cLBP. We did not identify additional RCTs beyond those included in the systematic reviews. Our search of ClinicalTrials.gov identified one small (n=10) unpublished trial and one large (n=320) planned clinical trial. The most recent good quality systematic review indicated significant effects for short- and long-term pain reduction (n=6 trials; standardized mean difference [SMD] -0.48; 95% CI, -0.65 to -0.31; I(2)=0% and n=5; SMD -0.33; 95% CI, -0.59 to -0.07; I(2)=48%, respectively). Long-term effects for back specific disability were also identified (n=5; SMD -0.35; 95% CI, -0.55 to -0.15; I(2)=20%). No studies were identified evaluating yoga for prevention or treatment of acute LBP.</p> <p>CONCLUSION: Evidence suggests benefit of yoga in midlife adults with non-specific cLBP for short- and long-term pain and back-specific disability, but the effects of yoga for health-related quality of life, well- being and acute LBP are uncertain. Without additional studies, further systematic reviews are unlikely to be informative.</p>

<p>Groessl EJ, Liu L, Chang DG, Wetherell JL, Bormann JE, Atkinson JH, Baxi S, Schmalzl L. Yoga for Military Veterans with Chronic Low Back Pain: A Randomized Clinical Trial. Am J Prev Med. 2017 Nov;53(5):599-608. doi: 10.1016/j.amepre.2017.05.019. Epub 2017 Jul 20. PubMed PMID: 28735778; PubMed Central PMCID: PMC6399016.</p>	<p>Introduction: Chronic low back pain (cLBP) is prevalent, especially among military veterans. Many cLBP treatment options have limited benefits and are accompanied by side effects. Major efforts to reduce opioid use and embrace nonpharmacological pain treatments have resulted. Research with community cLBP patients indicates that yoga can improve health outcomes and has few side effects. The benefits of yoga among military veterans were examined.</p> <p>Design: Participants were randomized to either yoga or delayed yoga treatment in 2013–2015. Outcomes were assessed at baseline, 6 weeks, 12 weeks, and 6 months. Intention-to-treat analyses occurred in 2016.</p> <p>Results: Participant characteristics were mean age 53 years, 26% were female, 35% were unemployed or disabled, and mean back pain duration was 15 years. Improvements in Roland Morris Disability Questionnaire scores did not differ between the two groups at 12 weeks, but yoga participants had greater reductions in Roland Morris Disability Questionnaire scores than delayed treatment participants at 6 months 2.48 (95% CI¼ 4.08, 0.87). Yoga participants improved more on pain intensity at 12 weeks and at 6 months. Opioid medication use declined among all participants, but group differences were not found.</p> <p>Conclusions: Yoga improved health outcomes among veterans despite evidence they had fewer resources, worse health, and more challenges attending yoga sessions than community samples studied previously. The magnitude of pain intensity decline was small, but occurred in the context of reduced opioid use. The findings support wider implementation of yoga programs for veterans.</p>
<p>Groessl EJ, Liu L, Schmalzl L, Chang DG, McCarthy A, Chun WI, Sinclair C, Bormann JE. Secondary Outcomes from a Randomized Controlled Trial of Yoga for Veterans with Chronic Low-Back Pain. Int J Yoga Therap. 2019 Sep 11. doi: 10.17761/2020-D-19-00036. [Epub ahead of print]</p>	<p>Chronic low-back pain (cLBP) is a prevalent condition, and rates are higher among military veterans. cLBP is a persistent condition, and treatment options have either modest effects or a significant risk of side-effects, which has led to recent efforts to explore mind-body intervention options and reduce opioid medication use. Prior studies of yoga for cLBP in community samples, and the main results of a recent trial with military veterans, indicate that yoga can reduce back-related disability and pain intensity. Secondary outcomes from the trial of yoga with military veterans are presented here. In the study, 150 military veterans (Veterans Administration patients) with cLBP were randomized to either yoga or a delayed-treatment group receiving usual care between 2013 and 2015. Assessments occurred at baseline, 6 weeks, 12 weeks, and 6 months. Intent-to-treat analyses were conducted. Yoga classes lasting 60 minutes each were offered twice weekly for 12 weeks. Yoga sessions consisted of physical postures, movement, focused attention, and breathing techniques. Home practice guided by a manual was strongly recommended. The primary outcome measure was Roland-Morris Disability Questionnaire scores after 12 weeks. Secondary outcomes included pain intensity, pain interference, depression, fatigue, quality of life, self-efficacy, and medication usage. Yoga participants improved more than delayed-treatment participants on pain interference, fatigue, quality of life, and self-efficacy at 12 weeks and/or 6 months. Yoga participants had greater improvements across a number of important secondary health outcomes compared to controls. Benefits emerged despite some veterans facing challenges with attending yoga sessions in person. The findings support wider implementation of yoga programs for veterans, with attention to increasing accessibility of yoga programs in this population.</p>

<p>Groessler EJ, Weingart KR, Johnson N, Baxi S. The benefits of yoga for women veterans with chronic low back pain. J Altern Complement Med. 2012 Sep;18(9):832-8. doi: 10.1089/acm.2010.0657. Epub 2012 Jul 19.</p>	<p>OBJECTIVES: Chronic low back (CLBP) pain is prevalent among military veterans and often leads to functional limitations, psychologic symptoms, lower quality of life, and higher health care costs. An increasing proportion of U.S. veterans are women, and women veterans may have different health care needs than men veterans. The purpose of this study was to assess the impact of a yoga intervention on women and men with CLBP. SUBJECTS/SETTING/INTERVENTION: VA patients with CLBP were referred by primary care providers to a clinical yoga program.</p> <p>DESIGN: Research participants completed a brief battery of questionnaires before their first yoga class and again 10 weeks later in a single-group, pre-post study design.</p> <p>OUTCOME MEASURES: Questionnaires included measures of pain (Pain Severity Scale), depression (CESD-10), energy/fatigue, and health-related quality of life (SF-12). Yoga attendance and home practice of yoga were also measured. Repeated-measures analysis of variance was used to analyze group differences over time while controlling for baseline differences.</p> <p>RESULTS: The 53 participants who completed both assessments had a mean age of 53 years, and were well educated, 41% nonwhite, 49% married, and had varying employment status. Women participants had significantly larger decreases in depression ($p=0.046$) and pain "on average" ($p=0.050$), and larger increases in energy ($p=0.034$) and SF-12 Mental Health ($p=0.044$) than men who participated. The groups did not differ significantly on yoga attendance or home practice of yoga.</p> <p>CONCLUSIONS: These results suggest that women veterans may benefit more than men veterans from yoga interventions for chronic back pain. Conclusions are tentative because of the small sample size and quasi-experimental study design. A more rigorous study is being designed to answer these research questions more definitively.</p>
<p>Grover MP et al. Am J Clin Hypn. (2018) The Association Between Mindfulness and Hypnotizability: Clinical and Theoretical Implications.</p>	<p>Mindfulness-based interventions and hypnosis are efficacious treatments for addressing a large number of psychological and physical conditions, including chronic pain. However, there continues to be debate surrounding the relative uniqueness of the theorized mechanisms of these treatments-reflected by measures of mindfulness facets and hypnotizability-with some concern that there may be so much overlap as to make the mechanism constructs (and, therefore, the respective interventions) redundant. Given these considerations, the primary aim of the current study was to examine the degree of unique versus shared variance between two common measures of mindfulness facets and hypnotizability: the Five Facet Mindfulness Questionnaire and the Stanford Hypnotic Clinical Scale. A cross-sectional survey was conducted with a sample of ($N = 154$) veterans with heterogeneous chronic pain conditions. Bivariate Pearson correlations were used to examine the associations between the target scales. Results showed that the correlations between the Five Facet Mindfulness Questionnaire scales and Stanford Hypnotic Clinical Scale total score were uniformly weak, although significant negative correlations were found between mindfulness facets of observe and nonreact with hypnotizability ($ps < 0.05$). Thus, not only are the mindfulness and hypnotizability constructs unique, but when significantly associated, hypnotic suggestibility corresponds with a tendency to be less mindful. These findings have important implications for future research aimed toward matching patients to the treatment most likely to be of benefit, and suggest that matching patients on the basis of these theoretically derived "unique" moderators may hold potential.</p>

<p>Guthrie RM, Chorba R. Physical Therapy Treatment Of Chronic Neck Pain A Discussion And Case Study: Using Dry Needling And Battlefield Acupuncture. J Spec Oper Med. 2016 Spring;16(1):1-5.</p>	<p>PURPOSE: Chronic mechanical neck pain can have a complex clinical presentation and is often difficult to treat. This case study illustrates a successful physical therapy treatment approach using dry needling and auricular acupuncture techniques.</p> <p>CASE REPORT: A 51-year-old active-duty, male US Marine was treated by a physical therapist in a direct-access military clinic for chronic neck pain poorly responsive to previous physical therapy, pharmacologic, and surgical interventions. Needling techniques were combined with standard physical therapy interventions to address the comprehensive needs of the patient. Within five treatments, the patient reported reduced pain levels from 8-9/10 to 0-2/10, improved sleep quality, and increased function with daily activities. Over several months, the patient reduced multiple medication use by greater than 85%. The effects of treatment were lasting, and the patient accomplished a successful transition to an independent maintenance program.</p> <p>CONCLUSION: Needling techniques have the potential to expedite favorable physical therapy outcomes for active-duty service members suffering from chronic mechanical and degenerative neck pain. The dramatic improvements observed in this case warrant additional exploration of treatment efficacy and delineation of best practices in the delivery of these techniques.</p>
<p>Halpin SN, Huang WH, Perkins MM. Comparisons between Body Needle Acupuncture, Auricular Acupuncture, and Auricular Magnet Therapy Given to Veterans Suffering from Chronic Pain.</p>	<p>No known research has investigated patients' attitudes toward different acupuncture techniques, including those that require less training to administer and potentially could be made more widely available in order to meet the growing demand for acupuncture. The aim of this study was to determine attitudes toward and expectations regarding three different types of acupuncture. The cohort included all patients (n=114) who received acupuncture treatment at the Atlanta Veterans Affairs Medical Center between May 2012 and May 2014. The patients were mailed questionnaires. Patients who agreed to be contacted by phone also participated in semi-structured telephone interviews. The respondents to the mailed surveys (n=72) varied in their demographics and attitudes toward experiences with different types of acupuncture. Of these, a subset of respondents also completed semi-structured telephone interviews (n=45). Thematic analysis of the data revealed three key themes, including (1) perceived time commitment versus return on investment; (2) anxiety, pain, and fear of needles; and (3) the importance of the patient/clinician relationship. Findings showed that the quality of the patient/clinician relationship was a critical factor that shaped the respondents' attitudes toward the different treatment options and also influenced satisfaction with treatment. Patients who were disinclined toward needles and those who wanted longer-lasting pain relief were more likely to endorse auricular magnet therapy.</p>

<p>Han L, Goulet JL, Skanderson M, Bathulapalli H, Luther SL, Kerns RD, Brandt CA. Evaluation of Complementary and Integrative Health Approaches Among US Veterans with Musculoskeletal Pain Using Propensity Score Methods. Pain Med. 2018 Mar 23. doi: 10.1093/pm/pny027. [Epub ahead of print] PubMed PMID: 29584926.</p>	<p>Objectives: To examine the treatment effectiveness of complementary and integrative health approaches (CIH) on chronic pain using Propensity Score (PS) methods.</p> <p>Design, Settings, and Participants: A retrospective cohort of 309,277 veterans with chronic musculoskeletal pain assessed over three years after initial diagnosis.</p> <p>Methods: CIH exposure was defined as one or more clinical visits for massage, acupuncture, or chiropractic care. The treatment effect of CIH on self-rated pain intensity was examined using a longitudinal model. PS-matching and inverse probability of treatment weighting (IPTW) were used to account for potential selection and confounding biases.</p> <p>Results: At baseline, veterans with (7,621) and without (301,656) CIH exposure differed significantly in 21 out of 35 covariates. During the follow-up period, on average CIH recipients had 0.83 (95% confidence interval [CI] = 0.77 to 0.89) points higher pain intensity ratings (range = 0-10) than nonrecipients. This apparent unfavorable effect size was reduced to 0.37 (95% CI = 0.28 to 0.45) after PS matching, 0.36 (95% CI = 0.29 to 0.44) with IPTW on the treated (IPTW-T) weighting, and diminished to null when integrating IPTW-T with PS matching (0.004, 95% CI = -0.09 to 0.10).</p> <p>Conclusions: PS-based causal methods successfully eliminated baseline difference between exposure groups in all measured covariates, yet they did not detect a significant difference in the self-rated pain intensity outcome between veterans who received CIHs and those who did not during the follow-up period.</p>
<p>Herman PM, Yuan AH, Cefalu MS, Chu K, Zeng Q, Marshall N, Lorenz KA, Taylor SL. The use of complementary and integrative health approaches for chronic musculoskeletal pain in younger US Veterans: An economic evaluation. PLoS One. 2019 Jun 5</p>	<p>OBJECTIVES: To estimate the cost-effectiveness to the US Veterans Health Administration (VA) of the use of complementary and integrative health (CIH) approaches by younger Veterans with chronic musculoskeletal disorder (MSD) pain.</p> <p>PERSPECTIVE: VA healthcare system.</p> <p>METHODS: We used a propensity score-adjusted hierarchical linear modeling (HLM), and 2010-2013 VA administrative data to estimate differences in VA healthcare costs, pain intensity (0-10 numerical rating scale), and opioid use between CIH users and nonusers. We identified CIH use in Veterans' medical records through Current Procedural Terminology, VA workload tracking, and provider-type codes.</p> <p>RESULTS: We identified 30,634 younger Veterans with chronic MSD pain as using CIH and 195,424 with no CIH use. CIH users differed from nonusers across all baseline covariates except the Charlson comorbidity index. They also differed on annual pre-CIH-start healthcare costs (\$10,729 versus \$5,818), pain (4.33 versus 3.76), and opioid use (66.6% versus 54.0%). The HLM results indicated lower annual healthcare costs (-\$637; 95% CI: -\$1,023, -\$247), lower pain (-0.34; -0.40, -0.27), and slightly higher (less than a percentage point) opioid use (0.8; 0.6, 0.9) for CIH users in the year after CIH start. Sensitivity analyses indicated similar results for three most-used CIH approaches (acupuncture, chiropractic care, and massage), but higher costs for those with eight or more CIH visits.</p> <p>CONCLUSIONS: On average CIH use appears associated with lower healthcare costs and pain and slightly higher opioid use in this population of younger Veterans with chronic musculoskeletal pain. Given the VA's growing interest in the use of CIH, further, more detailed analyses of its impacts are warranted.</p>

<p>Highland KB, et al. Benefits of the Restorative Exercise and Strength Training for Operational Resilience and Excellence Yoga Program for Chronic Low Back Pain in Service Members: A Pilot Randomized Controlled Trial. Arch Phys Med Rehabil. 2018 Jan;99(1):91-98. doi: 10.1016/j.apmr.2017.08.473. Epub 2017 Sep 14.</p>	<p>OBJECTIVE: To examine the feasibility and preliminary effectiveness of an individualized yoga program.</p> <p>DESIGN: Pilot randomized controlled trial.</p> <p>SETTING: Military medical center.</p> <p>PARTICIPANTS: Patients (N=68) with chronic low back pain.</p> <p>INTERVENTIONS: Restorative Exercise and Strength Training for Operational Resilience and Excellence (RESTORE) program (9-12 individual yoga sessions) or treatment as usual (control) for an 8-week period.</p> <p>MAIN OUTCOME MEASURES: The primary outcome was past 24-hour pain (Defense & Veterans Pain Rating Scale 2.0). Secondary outcomes included disability (Roland-Morris Disability Questionnaire) and physical functioning and symptom burden (Patient-Reported Outcomes Measurement Information System-29 subscales). Assessment occurred at baseline, week 4, week 8, 3-month follow-up, and 6-month follow-up. Exploratory outcomes included the proportion of participants in each group reporting clinically meaningful changes at 3- and 6-month follow-ups.</p> <p>RESULTS: Generalized linear mixed models with sequential Bonferroni-adjusted pairwise significance tests and chi-square analyses examined longitudinal outcomes. Secondary outcome significance tests were Bonferroni adjusted for multiple outcomes. The RESTORE group reported improved pain compared with the control group. Secondary outcomes did not retain significance after Bonferroni adjustments for multiple outcomes, although a higher proportion of RESTORE participants reported clinically meaningful changes in all outcomes at 3-month follow-up and in symptom burden at 6-month follow-up.</p> <p>CONCLUSIONS: RESTORE may be a viable nonpharmacological treatment for low back pain with minimal side effects, and research efforts are needed to compare the effectiveness of RESTORE delivery formats (eg, group vs individual) with that of other treatment modalities.</p>
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<p>Holliday SB, Hull A, Lockwood C, Eickhoff C, Sullivan P, Reinhard M. Physical health, mental health, and utilization of complementary and alternative medicine services among Gulf War veterans. Med Care. 2014 Dec;52(12 Suppl 5):S39-44. doi: 10.1097/MLR.000000000000223.</p>	<p>BACKGROUND: Gulf War veterans represent a unique subset of the veteran population. It has been challenging to identify interventions that result in improvements in physical and mental health for this population. Recently, there has been recognition of a potential role for complementary and alternative medicine (CAM) interventions.</p> <p>OBJECTIVES: This paper examines the characteristics of Gulf War and non-Gulf War veterans referred to a CAM clinic, and explores the utilization of services by this population.</p> <p>METHOD AND SUBJECTS: Participants included 226 veterans enrolled in a CAM clinic at a Veterans Affairs medical center, 42 of whom were Gulf War veterans. Self-report measures of physical/mental health were administered, and service utilization was obtained from participants' medical records for a 6-month period.</p> <p>RESULTS: Gulf War veterans enrolled in the program reported more severe physical and mental health symptoms than non-Gulf War veterans. However, examining only veterans who participated in services in the 6 months following enrollment, the 2 groups reported similar symptom severity. Both groups were similar in their attendance of individual acupuncture and iRest yoga nidra, although Gulf War veterans attended fewer sessions of group acupuncture.</p> <p>CONCLUSIONS: Although Gulf War veterans who enroll in a CAM program may have more severe symptoms than non-Gulf War veterans, those who actually participate in services are similar to non-Gulf War veterans on these measures. These groups also differ in their pattern of service utilization. Future research should explore the reasons for these differences, and to identify ways to promote treatment engagement with this population.</p>
<p>Huang W, Halpin SN, Perkins MM. A case series of auricular acupuncture in a veteran's population using a revised auricular mapping diagnostic paradigm (RAMP-uP). Complement Ther Med. 2016 Aug;27:130-6. doi: 10.1016/j.ctim.2016.06.002. Epub 2016 Jun 24.</p>	<p>OBJECTIVES: To evaluate clinical effects of auricular acupuncture treatments for pain based on a revised auricular mapping and diagnostic paradigm (RAMP-uP).</p> <p>DESIGN: Retrospective chart review.</p> <p>SETTING: A major US Veterans Affairs Medical Centre located in the Southeastern United States.</p> <p>MAIN OUTCOME MEASURES: Pain and efficacy rating scores based on visual analogue scales during each clinical visit. Duration of acupuncture treatment effects based on clinic notes documentation.</p> <p>RESULTS: Patients' average pain score decreased by almost 60% ($p < 0.0001$). The treatment effects lasted 1-3 months (47%). The overall efficacy reported by most patients was helpful (83.6%).</p> <p>CONCLUSION: The observed clinical effects of auricular acupuncture based on RAMP-uP are promising. Further research is needed to assess its feasibility to generalize and generate clinical effects in randomized controlled clinical trials.</p>

<p>Jonas WB, Bellanti DM, Paat CF, Boyd CC, Duncan A, Price A, Zhang W, French LM, Chae H. A Randomized Exploratory Study to Evaluate Two Acupuncture Methods for the Treatment of Headaches Associated with Traumatic Brain Injury. Med Acupunct. 2016 Jun 1;28(3):113-130.</p>	<p>Background: Headaches are prevalent among Service members with traumatic brain injury (TBI); 80% report chronic or recurrent headache. Evidence for nonpharmacologic treatments, such as acupuncture, are needed. Objective: The aim of this research was to determine if two types of acupuncture (auricular acupuncture [AA] and traditional Chinese acupuncture [TCA]) were feasible and more effective than usual care (UC) alone for TBI-related headache. Materials and Methods:Design: This was a three-armed, parallel, randomized exploratory study. Setting: The research took place at three military treatment facilities in the Washington, DC, metropolitan area. Patients: The subjects were previously deployed Service members (18-69 years old) with mild-to-moderate TBI and headaches. Intervention: The interventions explored were UC alone or with the addition of AA or TCA. Outcome Measures: The primary outcome was the Headache Impact Test (HIT). Secondary outcomes were the Numerical Rating Scale (NRS), Pittsburgh Sleep Quality Index, Post-Traumatic Stress Checklist, Symptom Checklist-90-R, Medical Outcome Study Quality of Life (QoL), Beck Depression Inventory, State-Trait Anxiety Inventory, the Automated Neuropsychological Assessment Metrics, and expectancy of outcome and acupuncture efficacy. Results: Mean HIT scores decreased in the AA and TCA groups but increased slightly in the UC-only group from baseline to week 6 [AA, -10.2% (-6.4 points); TCA, -4.6% (-2.9 points); UC, +0.8% (+0.6 points)]. Both acupuncture groups had sizable decreases in NRS (Pain Best), compared to UC (TCA versus UC: P = 0.0008, d = 1.70; AA versus UC: P = 0.0127, d = 1.6). No statistically significant results were found for any other secondary outcome measures. Conclusions: Both AA and TCA improved headache-related QoL more than UC did in Service members with TBI.</p>
<p>Juberg M, Jerger KK, Allen KD, Dmitrieva NO, Keever T, Perlman AI. Pilot study of massage in veterans with knee osteoarthritis. J Altern Complement Med. 2015</p>	<p>OBJECTIVES: To (1) assess the feasibility and acceptability of Swedish massage among Department of Veterans Affairs (VA) health care users with knee osteoarthritis (OA) and (2) collect preliminary data on efficacy of Swedish massage in this patient group.</p> <p>DESIGN: Experimental pilot study.</p> <p>SETTING: Duke Integrative Medicine clinic and VA Medical Center, Durham, North Carolina.</p> <p>PATIENTS: Twenty-five veterans with symptomatic knee OA.</p> <p>INTERVENTIONS: Eight weekly 1-hour sessions of full-body Swedish massage.</p> <p>OUTCOME MEASURES: Primary: Western Ontario and McMaster University Osteoarthritis Index (WOMAC) and global pain (Visual Analog Scale [VAS]). Secondary: National Institutes of Health Patient Reported Outcomes Measurement Information System-Pain Interference Questionnaire 6b (PROMIS-PI 6b), 12-Item Short-Form Health Survey (SF-12 v1) and the EuroQol health status index (EQ-5D-5L), knee range of motion (ROM), and time to walk 50 feet.</p> <p>RESULTS: Study feasibility was established by a 92% retention rate with 99% of massage visits and 100% of research visits completed. Results showed significant improvements in self-reported OA-related pain, stiffness and function (30% improvement in Global WOMAC scores; p=0.001) and knee pain over the past 7 days (36% improvement in VAS score; p<0.001). PROMIS-PI, EQ-5D-5L, and physical composite score of the SF-12 also significantly improved (p<0.01 for all), while the mental composite score of the SF-12 and knee ROM showed trends toward significant improvement. Time to walk 50 feet did not significantly improve.</p> <p>CONCLUSIONS: Results of this pilot study support the feasibility and acceptability of Swedish massage among VA health care users as well as preliminary data suggesting its efficacy for reducing pain due to knee OA. If results are confirmed in a larger randomized trial, massage could be an important component of regular care for these patients.</p>

<p>Kearney DJ, Simpson TL, Malte CA, Felleman B, Martinez ME, Hunt SC. Mindfulness-based Stress Reduction in Addition to Usual Care Is Associated with Improvements in Pain, Fatigue, and Cognitive Failures Among Veterans with Gulf War Illness. Am J Med. 2016 Feb;129(2):204-14.</p>	<p>BACKGROUND: Many Gulf War I veterans report ongoing negative health consequences. The constellation of pain, fatigue, and concentration/memory disturbances is referred to as "Gulf War illness." Prior research suggests that mindfulness-based stress reduction may be beneficial for these symptoms, but mindfulness-based stress reduction has not been studied for veterans with Gulf War illness. The objective of this trial was to conduct a pilot study of mindfulness-based stress reduction for veterans with Gulf War illness.</p> <p>METHODS: Veterans (N = 55) with Gulf War illness were randomly assigned to treatment as usual plus mindfulness-based stress reduction or treatment as usual only. Mindfulness-based stress reduction was delivered in 8 weekly 2.5-hour sessions plus a single 7-hour weekend session. Pain, fatigue, and cognitive failures were the primary outcomes, assessed at baseline, after mindfulness-based stress reduction, and 6 months follow-up. Secondary outcomes included symptoms of posttraumatic stress disorder and depression.</p> <p>RESULTS: In intention-to-treat analyses, at 6-month follow-up, veterans randomized to mindfulness-based stress reduction plus treatment as usual reported greater reductions in pain (f = 0.33; P = .049), fatigue (f = 0.32; P = .027), and cognitive failures (f = 0.40; P < .001). Depressive symptoms showed a greater decline after mindfulness-based stress reduction (f = 0.22; P = .050) and at 6 months (f = 0.27; P = .031) relative to treatment as usual only. Veterans with posttraumatic stress disorder at baseline randomized to mindfulness-based stress reduction plus treatment as usual experienced significantly greater reductions in symptoms of posttraumatic stress disorder after mindfulness-based stress reduction (f = 0.44; P = .005) but not at 6 months follow-up (f = 0.31; P = .082).</p> <p>CONCLUSIONS: Mindfulness-based stress reduction in addition to treatment as usual is associated with significant improvements in self-reported symptoms of Gulf War illness, including pain, fatigue, cognitive failures, and depression.</p>
<p>Kerns RD, Dobscha SK. Pain among veterans returning from deployment in Iraq and Afghanistan: update on the Veterans Health Administration Pain Research Program. Pain Med. 2009 Oct;10(7):1161-4. doi: 10.1111/j.1526-4637.2009.00722.x. PubMed PMID: 19818026.</p>	<p>Excerpt In November 1998, the former Undersecretary for Health for the Department of Veterans Affairs (VA), Dr. Kenneth Kizer, launched the Veterans Health Administration (VHA) National Pain Management Strategy establishing pain management as a national priority. The overall objective of the national strategy is to develop a comprehensive, multicultural, integrated, system-wide approach to pain management that reduces pain and suffering and improves quality of life for veterans experiencing acute and chronic pain associated with a wide range of injuries and illnesses, including terminal illness. Among the key elements of the strategy, a need to “expand basic and applied research on management of acute and chronic pain, emphasizing conditions that are most prevalent among Veterans,” was articulated.</p>

<p>King CH et al. J Holist Nurs. (2016). Exploring Self-Reported Benefits of Auricular Acupuncture Among Veterans With Posttraumatic Stress Disorder.</p>	<p>PURPOSE: Auricular acupuncture treatments are becoming increasingly available within military treatment facilities, resulting in an expansion of nonpharmacologic treatment options available to veterans with posttraumatic stress disorder (PTSD). This study aimed to explore the self-reported benefits of auricular acupuncture treatments for veterans living with PTSD.</p> <p>DESIGN: A qualitative research methodology, thematic content analysis, was used to analyze data.</p> <p>METHOD: Seventeen active duty veterans with PTSD provided written comments to describe their experiences and perceptions after receiving a standardized auricular acupuncture regimen for a 3-week period as part of a pilot feasibility study.</p> <p>FINDINGS: A variety of symptoms experienced by veterans with PTSD were improved after receiving auricular acupuncture treatments. Additionally, veterans with PTSD were extremely receptive to auricular acupuncture treatments. Four themes emerged from the data: (1) improved sleep quality, (2) increased relaxation, (3) decreased pain, and (4) veterans liked/loved the auricular acupuncture treatments.</p> <p>CONCLUSIONS: Veterans with PTSD reported numerous benefits following auricular acupuncture treatments. These treatments may facilitate healing and recovery for veterans with combat-related PTSD, although further investigations are warranted into the mechanisms of action for auricular acupuncture in this population.</p>
<p>King K, Gosian J, Doherty K, Chapman J, Chapman J, Walsh C, Pokaski Azar J, Pokaski Azar J, Danhauer SC, Moye J., Implementing yoga therapy adapted for older veterans who are cancer survivors. Int J Yoga Therap. 2014;24:87-96.</p>	<p>OBJECTIVES: This goal of this paper is to describe the reach, application, and effectiveness of an 8-week yoga therapy protocol with older cancer survivors within a Veterans Health Administration setting.</p> <p>METHODS: To document the reach of this intervention, recruitment efforts, attendance, and practice rates were tracked. To explore the application of the protocol to this population, physical therapy preassessment and observations by the yoga therapist were recorded to ascertain necessary pose modifications. Effectiveness was measured through pre- and post-course structured interviews, tracking self-reported symptoms of combat-related posttraumatic stress disorder, depression, anxiety, fatigue, insomnia, and pain.</p> <p>RESULTS: Regarding reach, 15% of eligible veterans (n = 14) enrolled, participated in 3-16 classes (M±SD = 11.64±3.39), and practiced at home for 0-56 days (M±SD = 26.36±17.87). Participants were primarily Caucasian (n = 13), male (n = 13), ranged in age from 55 to 78 years (M±SD = 65.64±5.15), and had multiple medical problems. During application, substantial individualized modifications to the yoga therapy protocol were necessary. Effectiveness of the intervention was mixed. During post-course interviews, participants reported a variety of qualitative benefits. Notably, the majority of participants reported that breathing and relaxation techniques were the most useful to learn. Group comparisons of mean pre- and post-course scores on standardized measures showed no significant differences.</p> <p>CONCLUSIONS: A minority of older veterans express an interest in yoga, but those who do have high rates of class attendance and home practice. Careful physical pre-assessment and attentive therapists are required to undertake the adaptations required by participants with multiple comorbidities. The effectiveness of yoga in this setting requires additional study.</p>

<p>Kligler B, Bair MJ, Banerjee R, DeBar L, Ezeji-Okoye S, Lisi A, Murphy JL, Sandbrink F, Cherkin DC. Clinical Policy Recommendations from the VHA State-of-the-Art Conference on Non-Pharmacological Approaches to Chronic Musculoskeletal Pain. J Gen Intern Med. 2018 May;33(Suppl 1):16-23. doi: 10.1007/s11606-018-4323-z. PubMed PMID: 29633133; PubMed Central PMCID: PMC5902342.</p>	<p>As a large national healthcare system, Veterans Health Administration (VHA) is ideally suited to build on its work to date and develop a safe, evidence-based, and comprehensive approach to the care of chronic musculoskeletal pain conditions that de-emphasizes opioid use and emphasizes non-pharmacological strategies. The VHA Office of Health Services Research and Development (HSR&D) held a state-of-the-art (SOTA) conference titled "Non-pharmacological Approaches to Chronic Musculoskeletal Pain Management" in November 2016. Goals of the conference were (1) to establish consensus on the current state of evidence regarding non-pharmacological approaches to chronic musculoskeletal pain to inform VHA policy in this area and (2) to begin to identify priorities for the future VHA research agenda. Workgroups were established and asked to reach consensus recommendations on clinical and research priorities for the following treatment strategies: psychological/behavioral therapies, exercise/movement therapies, manual therapies, and models for delivering multimodal pain care. Participants in the SOTA identified nine non-pharmacological therapies with sufficient evidence to be implemented across the VHA system as part of pain care. Participants further recommended that effective integration of these non-pharmacological approaches across the VHA and especially into VHA primary care, pain care, and mental health settings should be a priority, and that these treatments should be offered early in the course of pain treatment and delivered in a team-based, multimodal treatment setting concurrently with active self-care and self-management approaches. In addition, we recommend that VHA leadership and policy makers systematically address the barriers to implementation of these approaches by expanding opportunities for clinician and veteran education on the effectiveness of these strategies; supporting and funding further research to determine optimal dosage, duration, sequencing, combination, and frequency of treatment; emphasizing multimodal care with rigorous evaluation grounded in team-based approaches to test integrated models of delivery and stepped-care approaches; and working to address socioeconomic and cultural barriers to veterans' access to non-pharmacological approaches.</p>
<p>Lisi AJ, Salsbury SA, Hawk C, Vining RD, Wallace RB, Branson R, Long CR, Burgo-Black AL, Goertz CM. Chiropractic Integrated Care Pathway for Low Back Pain in Veterans: Results of a Delphi Consensus Process. J Manipulative Physiol Ther. 2018 Feb;41(2):137-148. doi: 10.1016/j.jmpt.2017.10.001. PubMed PMID: 29482827; PubMed Central PMCID: PMC6103526.</p>	<p>OBJECTIVE: The purpose of this study was to develop an integrated care pathway for doctors of chiropractic, primary care providers, and mental health professionals who manage veterans with low back pain, with or without mental health comorbidity, within Department of Veterans Affairs health care facilities.</p> <p>METHODS: The research method used was a consensus process. A multidisciplinary investigative team reviewed clinical guidelines and Veterans Affairs pain and mental health initiatives to develop seed statements and care algorithms to guide chiropractic management and collaborative care of veterans with low back pain. A 5-member advisory committee approved initial recommendations. Veterans Affairs-based panelists (n = 58) evaluated the pathway via e-mail using a modified RAND/UCLA methodology. Consensus was defined as agreement by 80% of panelists.</p> <p>RESULTS: The modified Delphi process was conducted in July to December 2016. Most (93%) seed statements achieved consensus during the first round, with all statements reaching consensus after 2 rounds. The final care pathway addressed the topics of informed consent, clinical evaluation including history and examination, screening for red flags, documentation, diagnostic imaging, patient-reported outcomes, adverse event reporting, chiropractic treatment frequency and duration standards, tailored approaches to chiropractic care in veteran populations, and clinical presentation of common mental health conditions. Care algorithms outlined chiropractic case management and interprofessional collaboration and referrals between doctors of chiropractic and primary care and mental health providers.</p> <p>CONCLUSION: This study offers an integrative care pathway that includes chiropractic care for veterans with low back pain.</p>

<p>Lisi AJ. Management of Operation Iraqi Freedom and Operation Enduring Freedom veterans in a VeteransHealth Administration chiropractic clinic: a case series. J Rehabil Res Dev. 2010;47(1):1-6.</p>	<p>Operation Iraqi Freedom/Operation Enduring Freedom (OIF/OEF) veterans commonly seek care for musculoskeletal complaints in Veterans Health Administration (VHA) facilities. Chiropractic services for musculoskeletal conditions have recently been introduced to VHA. No reports have been published on chiropractic care for OIF/OEF veterans. This study was designed to describe elements of the processes and outcomes of care for OIF/OEF veterans in a VHA chiropractic clinic. A retrospective review of consecutive cases consulted to one VHA chiropractic clinic was conducted. Thirty-one cases were identified. Consultations originated in primary care and specialty clinics that commonly manage musculoskeletal conditions. Military traumatic injury and posttraumatic stress disorder were common. Adverse effects of treatment were mild and transitory. In 19 cases (61%), a pain decrease above the threshold for minimally important change was reported. This article is the first description of health services delivered to OIF/OEF veterans in a VHA chiropractic clinic. Chiropractic management was safe in these cases, and results support the hypothesis that such management may be effective in certain OIF/OIF veterans. A better understanding of the characteristics of these particular patients and the processes of care received in VHA chiropractic clinics is needed to improve the clinical care of these veterans.</p>
<p>Lisi AJ, Corcoran KL, DeRycke EC, Bastian LA, Becker WC, Edmond SN, Goertz CM, Goulet JL, Haskell SG, Higgins DM, Kaweck T, Kerns RD, Mattocks K, Ramsey C, Ruser CB, Brandt CA. Opioid Use Among Veterans of Recent Wars Receiving Veterans Affairs Chiropractic Care. Pain Med. 2018 Sep 1;19(suppl 1):S54-S60. doi: PubMed PMID: 30203014.</p>	<p>Objective: To examine patient sociodemographic and clinical characteristics associated with opioid use among Veterans of Operations Enduring Freedom/Iraqi Freedom/New Dawn (OEF/OIF/OND) who receive chiropractic care, and to explore the relationship between timing of a chiropractic visit and receipt of an opioid prescription.</p> <p>Methods: Cross-sectional analysis of administrative data on OEF/OIF/OND veterans who had at least one visit to a Veterans Affairs (VA) chiropractic clinic between 2004 and 2014. Opioid receipt was defined as at least one prescription within a window of 90 days before to 90 days after the index chiropractic clinic visit.</p> <p>Results: We identified 14,025 OEF/OIF/OND veterans with at least one chiropractic visit, and 4,396 (31.3%) of them also received one or more opioid prescriptions. Moderate/severe pain (odds ratio [OR] = 1.87, 95% confidence interval [CI] = 1.72-2.03), PTSD (OR = 1.55, 95% CI = 1.41-1.69), depression (OR = 1.40, 95% CI = 1.29-1.53), and current smoking (OR = 1.39, 95% CI = 1.26-1.52) were associated with a higher likelihood of receiving an opioid prescription. The percentage of veterans receiving opioid prescriptions was lower in each of the three 30-day time frames assessed after the index chiropractic visit than before.</p> <p>Conclusions: Nearly one-third of OEF/OIF/OND veterans receiving VA chiropractic services also received an opioid prescription, yet the frequency of opioid prescriptions was lower after the index chiropractic visit than before. Further study is warranted to assess the relationship between opioid use and chiropractic care.</p>
<p>Mathersul DC, Mahoney LA, Bayley PJ. Tele yoga for Chronic Pain: Current Status and Future Directions. Glob Adv Health Med. 2018 Apr 2;7:2164956118766011. doi: 10.1177/2164956118766011. eCollection 2018. PubMed PMID: 29637012; PubMed Central PMCID: PMC5888810.</p>	<p>Pain is a pervasive, debilitating disorder that is resistant to long-term pharmacological interventions. Although psychological therapies such as cognitive behavior therapy demonstrate moderate efficacy, many individuals continue to have ongoing difficulties following treatment. There is a current trend to establish complementary and integrative health interventions for chronic pain, for which yoga has been found to have exciting potential. Nevertheless, an important consideration within the field is accessibility to adequate care. Telehealth can be used to provide real-time interactive video conferencing leading to increased access to health care for individuals located remotely or who otherwise have difficulty accessing services, perhaps through issues of mobility or proximity of adequate services. This article assesses the current status and feasibility of implementing tele-yoga for chronic pain. Methodological limitations and recommendations for future research are discussed.</p>

<p>McCulloch Gallagher R, Sandbrink F. The Socioeconomic Burden of Pain From War. Am J Public Health. 2018 Nov 29:e1-e5. doi: 10.2105/AJPH.2018.304744. [Epub ahead of print]</p>	<p>War's burden on the health and well-being of combatants, civilians, and societies is well documented. Although the examination of soldiers' injuries in modern combat is both detailed and comprehensive, less is known about war-related injuries to civilians and refugees, including victims of torture. The societal burden of war-related disabilities persists for decades in war's aftermath. The complex injuries of combat survivors, including multiple pain conditions and neuropsychiatric comorbidities, challenge health care systems to reorganize care to meet these survivors' special needs. We use the case study method to illustrate the change in pain management strategies for injured combat survivors in one national health system, the US Department of Veterans Affairs (VA). The care of veterans' disabling injuries suffered in Vietnam contrasts with the care resulting from the VA's congressional mandate to design and implement a pain management policy that provides effective pain management to veterans injured in the recent Middle East conflicts. The outcomes-driven, patient-centric Stepped Care Model of biopsychosocial pain management requires system-wide patient education, clinician training, social networking, and administrative monitoring. Societies are encouraged to develop their health care system's capacity to effectively respond to the victims of warfare, including combatants and refugees.</p>
<p>Meerwijk EL, Larson MJ, Schmidt EM, Adams RS, Bauer MR, Ritter GA, Buckenmaier C 3rd, Harris AHS. Nonpharmacological Treatment of Army Service Members with Chronic Pain Is Associated with Fewer Adverse Outcomes After Transition to the Veterans Health Administration. J Gen Intern Med. 2019 Oct 28. doi: 10.1007/s11606-019-05450-4.</p>	<p>BACKGROUND: Potential protective effects of nonpharmacological treatments (NPT) against long-term pain-related adverse outcomes have not been examined.</p> <p>OBJECTIVE: To compare active duty U.S. Army service members with chronic pain who did/did not receive NPT in the Military Health System (MHS) and describe the association between receiving NPT and adverse outcomes after transitioning to the Veterans Health Administration (VHA).</p> <p>DESIGN AND PARTICIPANTS: A longitudinal cohort study of active duty Army service members whose MHS healthcare records indicated presence of chronic pain after an index deployment to Iraq or Afghanistan in the years 2008-2014 (N = 142,539). Propensity score-weighted multivariable Cox proportional hazard models tested for differences in adverse outcomes between the NPT group and No-NPT group.</p> <p>EXPOSURES: NPT received in the MHS included acupuncture/dry needling, biofeedback, chiropractic care, massage, exercise therapy, cold laser therapy, osteopathic spinal manipulation, transcutaneous electrical nerve stimulation and other electrical manipulation, ultrasonography, superficial heat treatment, traction, and lumbar supports.</p> <p>MAIN MEASURES: Primary outcomes were propensity score-weighted proportional hazards for the following adverse outcomes: (a) diagnoses of alcohol and/or drug disorders; (b) poisoning with opioids, related narcotics, barbiturates, or sedatives; (c) suicide ideation; and (d) self-inflicted injuries including suicide attempts. Outcomes were determined based on ICD-9 and ICD-10 diagnoses recorded in VHA healthcare records from the start of utilization until fiscal year 2018.</p> <p>KEY RESULTS: The propensity score-weighted proportional hazards for the NPT group compared to the No-NPT group were 0.92 (95% CI 0.90-0.94, P < 0.001) for alcohol and/or drug use disorders; 0.65 (95% CI 0.51-0.83, P < 0.001) for accidental poisoning with opioids, related narcotics, barbiturates, or sedatives; 0.88 (95% CI 0.84-0.91, P < 0.001) for suicide ideation; and 0.83 (95% CI 0.77-0.90, P < 0.001) for self-inflicted injuries including suicide attempts.</p> <p>CONCLUSIONS: NPT provided in the MHS to service members with chronic pain may reduce risk of long-term adverse outcomes.</p>

<p>Miake-Lye I, Lee J, Lugar T, Taylor S, Shanman R, Beroes J, Shekelle P. <i>Massage for Pain: An Evidence Map</i> [Internet]. Washington (DC): Department of Veterans Affairs (US); 2016 Sep. Available From http://www.ncbi.nlm.nih.gov/books/NBK424144/PubMed PMID: 28211657.</p>	<p>INTRODUCTION: Given the widespread use of various massage therapies for pain, we conducted an evidence mapping process to determine the distribution of evidence available for various pain indications as well as different forms of massage therapy, identify gaps in evidence, and inform future research priorities. This mapping project provides a visual overview of the distribution of evidence for massage therapy for indications of pain, as well as an accompanying narrative that will help stakeholders interpret the state of evidence to inform policy and clinical decision-making.</p> <p>METHODS: We searched PubMed, Embase, and Cochrane for systematic reviews reporting pain outcomes for massage therapy. Abstracted data included: number of studies included in the review that report massage as the intervention and pain as an outcome; total number of studies included in the review; descriptions of the massage style, provider, co-interventions, duration, and comparators; pain type; main findings relevant to massage for pain; and whether the systematic review focused solely on massage as the intervention or included a variety of interventions, of which massage was one. Quality of each systematic review was assessed using the Assessing the Methodological Quality of Systematic Reviews (AMSTAR) criteria. We used a bubble plot to visually depict the number of included articles, pain indication, effect of massage for pain, and strength of findings for each included systematic review.</p> <p>RESULTS: We identified 31 systematic reviews, of which 21 were considered high-quality. Systematic reviews varied in the amount of detail they collected in describing the massage therapy. Some common massage types included Swedish massage, myofascial therapies, Shiatsu, Chinese traditional massage, Thai massage, slow stroke massage, and more general descriptions of massage. The most common type of pain included in systematic reviews was neck pain (n=6). Findings from high-quality systematic reviews describe potential benefits of massage for pain indications including labor, shoulder, neck, back, cancer, fibromyalgia, and temporomandibular disorder. However, no findings were rated as moderate- or high-strength.</p> <p>DISCUSSION: More research is needed to establish confidence in the effect of massage for pain. Primary studies often do not provide adequate details of the massage therapy provided, especially in the descriptions of provider type. Few primary studies of large samples with rigorous methods have been conducted, as noted by many of the systematic review authors included in this evidence map.</p>
<p>Mitchinson A, Fletcher CE, Kim HM, Montagnini M, Hinshaw DB. <i>Integrating massage therapy within the palliative care of veterans with advanced illnesses: an outcome study. Am J Hosp Palliat Care.</i> 2014 Feb;31(1):6-12. doi: 10.1177/1049909113476568. Epub 2013 Feb 18.</p>	<p>AIMS: To describe the integration of massage therapy into a palliative care service and to examine the relationship between massage and symptoms in patients with advanced illnesses.</p> <p>METHODS: Between April 1, 2009, and July 31, 2010, 153 patients received massage at the VA Ann Arbor Health Care System. Data on pain, anxiety, dyspnea, relaxation, and inner peace were collected pre and post massage. Diagnoses, chronic pain, and social support were also abstracted. Analysis of covariance was used to examine changes over time.</p> <p>RESULTS: All short-term changes in symptoms showed improvement and all were statistically significant. Pain intensity decreased by 1.65 (0-10 scale, P < .001), anxiety decreased by 1.52 (0-10 scale, P < .001), patients' sense of relaxation increased by 2.92 (0-10 scale, P < .001), and inner peace improved by 1.80 (0-10 scale, P < .001).</p> <p>CONCLUSION: Massage is a useful tool for improving symptom management and reducing suffering in palliative care patients.</p>

<p>Nassif H, Chapman J, Sandbrink F et al. (2016) Mindfulness meditation and chronic pain management in Iraq and Afghanistan veterans with traumatic brain injury: A pilot study. Military Behavioral Health, 4:1, 82-89, DOI: 10.1080/21635781.2015.1119772</p>	<p>This study examined the effectiveness of iRest meditation for chronic pain in veterans with moderate traumatic brain injury (TBI). Veterans were randomly assigned to iRest (n = 4) or treatment as usual (n = 5) for eight weeks. Patient-reported pain intensity and interference were assessed at baseline, end point, and four-week follow-up. Veterans receiving iRest reported clinically meaningful reductions in pain intensity (23% to 42%) and pain interference (34% to 41%) for most outcome measures and time points. Effect sizes were large for pain interference (g = 0.92–1.13) and medium to large for intensity (g = 0.37–0.61). We conclude that iRest is a promising self-management approach for chronic pain in veterans with moderate TBI.</p>
<p>Okamoto CS, Dunn AS, Green BN, Formolo LR, Chicoine D. Correlation of Body Composition and Low Back Pain Severity in a Cross-Section of US Veterans. J Manipulative Physiol Ther. 2017 Jun;40(5):358-364. doi: 10.1016/j.jmpt.2017.03.003. Epub 2017 May 26.</p>	<p>OBJECTIVE: Back pain is more prevalent in the obese, but whether back pain severity is directly correlated to obesity in veterans is unknown. We sought to determine if there was a correlation between body composition and low back pain severity in a sample of veterans. The hypothesis was that veterans with higher body mass index values would report higher low back pain severity scores.</p> <p>METHODS: This study was a retrospective chart review of 1768 veterans presenting to a Veterans Affairs chiropractic clinic with a chief complaint of low back pain between January 1, 2009 and December 31, 2014. Spearman's rho was used to test for correlation between body composition as measured by body mass index and low back pain severity as measured by the Back Bournemouth Questionnaire.</p> <p>RESULTS: On average, the sample was predominantly male (91%), older than 50, and overweight (36.5%) or obese (48.9%). There was no correlation between body mass index and Back Bournemouth Questionnaire scores, $r = .088$, $p < .001$.</p> <p>CONCLUSIONS: The majority of veterans with low back pain in this sample were either overweight or obese. There was no correlation between body composition and low back pain severity in this sample of veterans.</p>

<p>Paige NM, Miake-Lye IM, Booth MS, Beroes JM, Mardian AS, Dougherty P, Branson R, Tang B, Morton SC, Shekelle PG. Association of Spinal Manipulative Therapy With Clinical Benefit and Harm for Acute Low Back Pain: Systematic Review and Meta-analysis. JAMA. 2017 Apr 11;317(14):1451-1460. doi: 10.1001/jama.2017.3086. Review. PubMed PMID: 28399251.</p>	<p>Importance: Acute low back pain is common and spinal manipulative therapy (SMT) is a treatment option. Randomized clinical trials (RCTs) and meta-analyses have reported different conclusions about the effectiveness of SMT.</p> <p>Objective: To systematically review studies of the effectiveness and harms of SMT for acute (≤ 6 weeks) low back pain.</p> <p>Data Sources: Search of MEDLINE, Cochrane Database of Systematic Reviews, EMBASE, and Current Nursing and Allied Health Literature from January 1, 2011, through February 6, 2017, as well as identified systematic reviews and RCTs, for RCTs of adults with low back pain treated in ambulatory settings with SMT compared with sham or alternative treatments, and that measured pain or function outcomes for up to 6 weeks. Observational studies were included to assess harms.</p> <p>Data Extraction and Synthesis: Data extraction was done in duplicate. Study quality was assessed using the Cochrane Back and Neck (CBN) Risk of Bias tool. This tool has 11 items in the following domains: randomization, concealment, baseline differences, blinding (patient), blinding (care provider [care provider is a specific quality metric used by the CBN Risk of Bias tool]), blinding (outcome), co-interventions, compliance, dropouts, timing, and intention to treat. Prior research has shown the CBN Risk of Bias tool identifies studies at an increased risk of bias using a threshold of 5 or 6 as a summary score. The evidence was assessed using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) criteria.</p> <p>Findings: Of 26 eligible RCTs identified, 15 RCTs (1711 patients) provided moderate-quality evidence that SMT has a statistically significant association with improvements in pain (pooled mean improvement in the 100-mm visual analog pain scale, -9.95 [95% CI, -15.6 to -4.3]). Twelve RCTs (1381 patients) produced moderate-quality evidence that SMT has a statistically significant association with improvements in function (pooled mean effect size, -0.39 [95% CI, -0.71 to -0.07]). Heterogeneity was not explained by type of clinician performing SMT, type of manipulation, study quality, or whether SMT was given alone or as part of a package of therapies. No RCT reported any serious adverse event. Minor transient adverse events such as increased pain, muscle stiffness, and headache were reported 50% to 67% of the time in large case series of patients treated with SMT.</p> <p>Conclusions and Relevance: Among patients with acute low back pain, spinal manipulative therapy was associated with modest improvements in pain and function at up to 6 weeks, with transient minor musculoskeletal harms. However, heterogeneity in study results was large.</p>
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<p>Polomano RC, Galloway KT, Kent ML, Brandon-Edwards H, Kwon KN, Morales C, Buckenmaier C' 3rd. Psychometric Testing of the Defense and Veterans Pain Rating Scale (DVPRS): A New Pain Scale for Military Population. Pain Med. 2016 Aug;17(8):1505-19. doi: 10.1093/pm/pnw105. Epub 2016 Jun 6. PubMed PMID: 27272528.</p>	<p>OBJECTIVE: The Defense and Veterans Pain Rating Scale (DVPRS 2.0) is a pain assessment tool that utilizes a numerical rating scale enhanced by functional word descriptors, color coding, and pictorial facial expressions matched to pain levels. Four supplemental questions measure how much pain interferes with usual activity and sleep, and affects mood and contributes to stress.</p> <p>METHODS: Psychometric testing was performed on a revised DVPRS 2.0 using data from 307 active duty service members and Veterans experiencing acute or chronic pain. A new set of facial representations designating pain levels was tested.</p> <p>RESULTS: Results demonstrated acceptable internal consistency reliability (Cronbach's alpha = 0.871) and test-retest reliability (r = 0.637 to r = 0.774) for the five items. Excellent interrater agreement was established for correctly ordering faces depicting pain levels and aligning them on the pain intensity scale (Kendall's coefficient of concordance, W = 0.95 and 0.959, respectively). Construct validity was supported by an exploratory principal component factor analysis and known groups validity testing. Most participants, 70.9%, felt that the DVPRS was superior to other pain rating scales.</p> <p>CONCLUSION: The DVPRS 2.0 is a reliable and valid instrument that provides standard language and metrics to communicate pain and related outcomes.</p>
<p>Reid KF, Bannuru RR, Wang C, Mori DL, Niles BL. The Effects of Tai Chi Mind-Body Approach on the Mechanisms of Gulf War Illness: an Umbrella Review. Integr Med Res. 2019</p>	<p>Gulf War illness (GWI) is a chronic and multisymptom disorder affecting military veterans deployed to the 1991 Persian Gulf War. It is characterized by a range of acute and chronic symptoms, including but not limited to, fatigue, sleep disturbances, psychological problems, cognitive deficits, widespread pain, and respiratory and gastrointestinal difficulties. The prevalence of many of these chronic symptoms affecting Gulf War veterans occur at markedly elevated rates compared to nondeployed contemporary veterans. To date, no effective treatments for GWI have been identified. The overarching goal of this umbrella review was to critically evaluate the evidence for the potential of Tai Chi mind-body exercise to benefit and alleviate GWI symptomology. Based on the most prevalent GWI chronic symptoms and case definitions established by the Centers for Disease Control and Prevention and the Kansas Gulf War Veterans Health Initiative Program, we reviewed and summarized the evidence from 7 published systematic reviews and meta-analyses. Our findings suggest that Tai Chi may have the potential for distinct therapeutic benefits on the major prevalent symptoms of GWI. Future clinical trials are warranted to examine the feasibility, efficacy, durability and potential mechanisms of Tai Chi for improving health outcomes and relieving symptomology in GWI.</p>

<p>Roberts JA, Wolfe TM. Chiropractic management of a veteran with lower back pain associated with diffuse idiopathic skeletal hypertrophy and degenerative disk disease. J Chiropr Med. 2012 Dec;11(4):293-9. doi: 10.1016/j.jcm.2012.10.007.</p>	<p>OBJECTIVE: The purpose of this article is to report the response of chiropractic care of a geriatric veteran with degenerative disk disease and diffuse idiopathic skeletal hyperostosis.</p> <p>CLINICAL FEATURES: A 74-year-old man presented with low back pain (LBP) and loss of feeling in his lower extremities for 3 months. The LBP was of insidious onset with a 10/10 pain rating on the numeric pain scale (NPS) and history of degenerative disk disease and diffuse idiopathic skeletal hypertrophy. Oswestry questionnaire was 44% and health status questionnaire was 52%, which were below average for his age. The patient presented with antalgia and severe difficulty with ambulation and thus used a walker.</p> <p>INTERVENTION AND OUTCOME: Chiropractic care included Activator Methods protocol. Two weeks into treatment, he reported no back pain; and after 4 treatments, he was able to walk with a cane instead of a walker. The NPS decreased from a 10/10 to a 0/10, and his Revised Oswestry score decreased from 44/100 to 13.3/100. His Health Status Questionnaire score increased 25 points to 77/100, bringing him from below average for his age to above average for his age. Follow-up with the patient at approximately 1 year and 9 months showed an Oswestry score of 10/100 and a Health Status Questionnaire score of 67/100, still above average for his age.</p> <p>CONCLUSION: The findings in this case study showed that Activator-assisted spinal manipulative therapy had positive subjective and objective results for LBP and ambulation in a geriatric veteran with degenerative disk disease and diffuse idiopathic skeletal hyperostosis.</p>
<p>Saper RB, Lemaster CM, Elwy AR, Paris R, Herman PM, Plumb DN, Sherman KJ, Groessl EJ, Lynch S, Wang S, Weinberg J. Yoga versus education for Veterans with chronic low back pain: study protocol for a randomized controlled trial. Trials. 2016 Apr 29;17(1):224. doi: 10.1186/s13063-016-1321-5. PubMed PMID: 27129472; PubMed Central PMCID: PMC4850721.</p>	<p>BACKGROUND: Chronic low back pain is the most frequent pain condition in Veterans and causes substantial suffering, decreased functional capacity, and lower quality of life. Symptoms of post-traumatic stress, depression, and mild traumatic brain injury are highly prevalent in Veterans with back pain. Yoga for low back pain has been demonstrated to be effective for civilians in randomized controlled trials. However, it is unknown if results from previously published trials generalize to military populations.</p> <p>METHODS/DESIGN: This study is a parallel randomized controlled trial comparing yoga to education for 120 Veterans with chronic low back pain. Participants are Veterans ≥ 18 years old with low back pain present on at least half the days in the past six months and a self-reported average pain intensity in the previous week of ≥ 4 on a 0-10 scale. The 24-week study has an initial 12-week intervention period, where participants are randomized equally into (1) a standardized weekly group yoga class with home practice or (2) education delivered with a self-care book. Primary outcome measures are change at 12 weeks in low back pain intensity measured by the Defense and Veterans Pain Rating Scale (0-10) and back-related function using the 23-point Roland Morris Disability Questionnaire. In the subsequent 12-week follow-up period, yoga participants are encouraged to continue home yoga practice and education participants continue following recommendations from the book. Qualitative interviews with Veterans in the yoga group and their partners explore the impact of chronic low back pain and yoga on family relationships. We also assess cost-effectiveness from three perspectives: the Veteran, the Veterans Health Administration, and society using electronic medical records, self-reported cost data, and study records.</p> <p>DISCUSSION: This study will help determine if yoga can become an effective treatment for Veterans with chronic low back pain and psychological comorbidities.</p>

<p>Shao X, Corcoran M, O'Bryan M. The Use of Battlefield Acupuncture Prior to Botulinum Toxin A Administration: A 2-Patient Case Series. Med Acupunct. 2018 Oct 1;30(5):282-284. doi: 10.1089/acu.2018.1302. Epub 2018 Oct 15.</p>	<p>Background: Botulinum toxin type A injection is a common and safe procedure used for the treatment of overactive muscles through local injection. This toxin inhibits the release of acetylcholine in the neuromuscular junction. The benefits usually last only 3-6 months; thus, repeated injections are often required. The procedure, however, can be difficult if a patient's spasticity and pain prevents access to the muscles for injection or if a patient is anxious. Battlefield Acupuncture (BFA), a technique developed by Richard C. Niemtzow, MD, PhD, MPH, in 2001, is a form of auricular acupuncture using a very specific sequence of gold Aiguille semipermanente needles inserted into the ear. BFA can be very effective for reducing pain quickly, with few potential side-effects. Cases: BFA was performed prior to Botulinum toxin A injections on 2 patients who had either pain limitations or anxiety limitations during prior Botulinum toxin A injections. Case 1 was a 70-year-old male veteran with painful, right upper-extremity spasticity with hand contractures. Case 2 was a 69-year-old male veteran with spasticity who had anxiety related to his fear of needles. Results: Application of BFA prior to Botulinum toxin A injections enabled the 2 patients who either had pain limitations or anxiety limitations to tolerate the toxin injections much better. Conclusions: BFA is a safe and effective treatment option for rapid pain reduction, enabling Botulinum toxin A to be administered more easily to patients who have had pain or anxiety during prior injections.</p>
<p>Sharp SJ, Huynh MT, Filart R. Frequency-Specific Microcurrent as Adjunctive Therapy for Three Wounded Warriors. Med Acupunct. 2019 Jun 1;31(3):189-192. doi: 10.1089/acu.2019.1366. Epub 2019 Jun 17.</p>	<p>Background: Acupuncture is frequently offered for wounded warriors as a component of an integrated approach to pain and associated symptoms, with increasing availability at military treatment facilities and Veterans Administration hospitals. While medications can be effective for many patients, acupuncture and microcurrent therapies address the growing need to offer nonopiate, nonpharmaceutical therapeutics in integrative pain management. Frequency-specific microcurrent (FSM) is a newer, adjustable, microcurrent, electrical stimulation modality with applications for pain and other associated symptoms. Using low amperage, electrical current delivered transcutaneously affects and repairs tissues at the cellular level. Additionally, concomitant treatment with acupuncture is possible, which is particularly helpful when space and time limit the frequency with which acupuncture treatments can be provided. Cases: For 3 wounded warriors, FSM was combined with acupuncture treatments, resulting in more-rapid reduction of their pain and associated symptoms; including memory problems, mental sluggishness, and post-traumatic stress disorder. Results: FSM was found to be a safe, nonpainful, noninvasive treatment that could be administered concurrently and beneficially with acupuncture. Conclusions: While additional, more-rigorous studies are needed, this case series demonstrates the potential that FSM has within an integrated pain treatment program for wounded warriors.</p>
<p>Shekelle PG et al. . (2017). The Effectiveness and Harms of Spinal Manipulative Therapy for the Treatment of Acute Neck and Lower Back Pain: A Systematic Review [Internet]</p>	<p>Excerpt Back pain and neck pain are among the most common symptoms prompting patients to seek care. Many treatments are used for back pain. Spinal manipulative therapy (SMT) is a treatment option available in VA. In order to better understand the potential role of SMT in treating acute back or neck pain, VA requested an up-to-date synthesis of the evidence.</p>

<p>Smeeding SJ, Bradshaw DH, Kumpfer KL, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for Chronic Nonmalignant Pain. Clin J Pain. 2011 Feb;27(2):146-55</p>	<p>OBJECTIVES: the purpose of this longitudinal outcome study was to investigate the effectiveness of the Integrative Health Clinic and Program, an innovative outpatient clinical service that provides nonpharmacologic, biopsychosocial interventions using research based mind-body skills and complementary and alternative therapies. The study assessed improvement in chronic nonmalignant pain and related depression, anxiety, and health-related quality of life.</p> <p>METHODS: the study was a retrospective post-hoc quasi-experimental design with a group analysis comparing chronic nonspinal-related pain (CNSP) (eg, joint pain, headache, and fibromyalgia) (n=53) to chronic spinal-related pain (CSP) (eg, back pain and neck pain) (n=88). Data were collected at intake and up to 4 follow-up visits. Hierarchical Linear Modeling was used for statistical analysis. Outcome measures included: Quality of Life (Short Form-36), the Beck Depression Inventory, and Beck Anxiety Inventory.</p> <p>RESULTS: there were statistically significant differences within and between the CNSP and CSP groups across all follow-up visits. For the CNSP group, depression, anxiety, and bodily pain significantly improved with moderate-to-large effect sizes at 6 months (Cohen's d=0.74, 0.53, and 0.66, respectively) and these benefits persisted across all follow-up visits. The CSP group showed an improvement trend in bodily pain (Cohen's d=0.26).</p> <p>DISCUSSION: significant study findings revealed that the greatest improvement after participation in Integrative Health Clinic and Program were seen in the CNSP group with benefits persisting to 24 months in mood and in some health-related quality of life subcategories.</p>
<p>Smeeding SJ, Bradshaw DH, Kumpfer K, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for chronic pain and stress-related depression, anxiety, and post-traumatic stress disorder. J Altern Complement Med. 2010 Aug;16(8):823-35. doi: 10.1089/acm.2009.0510. PubMed PMID: 20649442.</p>	<p>OBJECTIVES: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind-body skills.</p> <p>METHODS: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI < 19, n = 82), low depression (BDI < 19, n = 93), and absence of PTSD (n = 102) compared to veterans with high anxiety (BAI > or = 19, n = 77), high depression (BDI > 19, n = 67), and presence of PTSD (n = 63).</p> <p>RESULTS: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's d = 0.52), the high-depression group (Cohen's d = 0.46), and the PTSD group (Cohen's d = 0.41).</p> <p>CONCLUSIONS: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.</p>

<p>Stoelb BL, Jensen MP, Tackett MJ. Hypnotic analgesia for combat-related spinal cord injury pain: a case study. Am J Clin Hypn. 2009 Jan;51(3):273-80.</p>	<p>A U.S. Army soldier stationed in Iraq developed myriad pain problems after sustaining a high-level spinal cord injury (SCI) from a gunshot wound. These problems were negatively impacting his ability to participate fully in his physical rehabilitation and care. Ten sessions of self-hypnosis training were administered to the patient over a 5-week period to help him address these problems. Both the patient and his occupational therapist reported a substantial reduction in pain over the course of treatment, which allowed the patient to actively engage in his therapies. Six months post treatment, the patient reported continued use of the hypnosis strategies taught, which effectively reduced his experience of pain. This case study demonstrates the efficacy of hypnotic analgesia treatment for U.S. military veterans who are experiencing pain problems due to traumatic or combat-related SCIs.</p>
<p>Tan G, Rintala DH, Jensen MP, Fukui T, Smith D, Williams W. A randomized controlled trial of hypnosis compared with biofeedback for adults with chronic low back pain. Eur J Pain. 2015 Feb</p>	<p>BACKGROUND: Chronic low back pain (CLBP) is common and results in significant costs to individuals, families and society. Although some research supports the efficacy of hypnosis for CLBP, we know little about the minimum dose needed to produce meaningful benefits, the roles of home practice and hypnotizability on outcome, or the maintenance of treatment benefits beyond 3 months.</p> <p>METHODS: One hundred veterans with CLBP participated in a randomized, four-group design study. The groups were (1) an eight-session self-hypnosis training intervention without audio recordings for home practice; (2) an eight-session self-hypnosis training intervention with recordings; (3) a two-session self-hypnosis training intervention with recordings and brief weekly reminder telephone calls; and (4) an eight-session active (biofeedback) control intervention.</p> <p>RESULTS: Participants in all four groups reported significant pre- to post-treatment improvements in pain intensity, pain interference and sleep quality. The hypnosis groups combined reported significantly more pain intensity reduction than the control group. There was no significant difference among the three hypnosis conditions. Over half of the participants who received hypnosis reported clinically meaningful ($\geq 30\%$) reductions in pain intensity, and they maintained these benefits for at least 6 months after treatment. Neither hypnotizability nor amount of home practice was associated significantly with treatment outcome.</p> <p>CONCLUSIONS: The findings indicate that two sessions of self-hypnosis training with audio recordings for home practice may be as effective as eight sessions of hypnosis treatment. If replicated in other patient samples, the findings have important implications for the application of hypnosis treatment for chronic pain management.</p>

<p>Taylor SL, Herman PM, Marshall NJ, Zeng Q, Yuan A, Chu K, Shao Y, Morioka C, Lorenz KA. Use of Complementary and Integrated Health: A Retrospective Analysis of U.S. Veterans with Chronic Musculoskeletal Pain Nationally. J Altern Complement Med. 2019 Jan;25(1):32-39.</p>	<p>OBJECTIVE: To partially address the opioid crisis, some complementary and integrative health (CIH) therapies are now recommended for chronic musculoskeletal pain, a common condition presented in primary care. As such, health care systems are increasingly offering CIH therapies, and the Veterans Health Administration (VHA), the nation's largest integrated health care system, has been at the forefront of this movement. However, little is known about the uptake of CIH among patients with chronic musculoskeletal pain. As such, we conducted the first study of the use of a variety of nonherbal CIH therapies among a large patient population having chronic musculoskeletal pain.</p> <p>MATERIALS AND METHODS: We examined the frequency and predictors of CIH therapy use using administrative data for a large retrospective cohort of younger veterans with chronic musculoskeletal pain using the VHA between 2010 and 2013 (n = 530,216). We conducted a 2-year effort to determine use of nine types of CIH by using both natural language processing data mining methods and administrative and CPT4 codes. We defined chronic musculoskeletal pain as: (1) having 2+ visits with musculoskeletal diagnosis codes likely to represent chronic pain separated by 30-365 days or (2) 2+ visits with musculoskeletal diagnosis codes within 90 days and with 2+ numeric rating scale pain scores ≥ 4 at 2+ visits within 90 days.</p> <p>RESULTS: More than a quarter (27%) of younger veterans with chronic musculoskeletal pain used any CIH therapy, 15% used meditation, 7% yoga, 6% acupuncture, 5% chiropractic, 4% guided imagery, 3% biofeedback, 2% t'ai chi, 2% massage, and 0.2% hypnosis. Use of any CIH therapy was more likely among women, single patients, patients with three of the six pain conditions, or patients with any of the six pain comorbid conditions.</p> <p>CONCLUSIONS: Patients appear willing to use CIH approaches, given that 27% used some type. However, low rates of some specific CIH suggest the potential to augment CIH use.</p>
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<p>Vanneman ME et al. Med Care. (2018). Treatment of Low Back Pain With Opioids and Nonpharmacologic Treatment Modalities for Army Veterans.</p>	<p>BACKGROUND: In the Veterans Health Administration (VHA) there is growing interest in the use of nonpharmacologic treatment (NPT) for low back pain (LBP) as pain intensity and interference do not decrease with opioid use.</p> <p>OBJECTIVES: To describe overall and facility-level variation in the extent to which specific NPT modalities are used in VHA for LBP, either alone or as adjuncts to opioid medications, and to understand associations between veterans' clinical and demographic characteristics and type of treatment.</p> <p>RESEARCH DESIGN: This retrospective cohort study examined use of opioids and 21 specific NPT modalities used by veterans.</p> <p>SUBJECTS: VHA-enrolled Iraq and Afghanistan veterans who utilized care in ("linked" to) 130 VHA facilities within 12 months after their separation from the Army between fiscal years 2008-2011, and who were diagnosed with LBP within 12 months after linkage (n=49,885).</p> <p>MEASURES: Measures included per patient: days' supply of opioids, number of visits for NPT modalities, and pain scores within one year after a LBP diagnosis.</p> <p>RESULTS: Thirty-four percent of veterans filled a prescription for opioids, 35% utilized at least 1 NPT modality, and 15% used both within the same year. Most patients with LBP receiving NPT, on average, had moderate pain (36%), followed by low pain (27%), severe pain (15%), and no pain (11%). Eleven percent had no pain scores recorded.</p> <p>CONCLUSIONS: About 65% of VHA patients with a LBP diagnosis did not receive NPT, and about 43% of NPT users also were prescribed an opioid. Understanding utilization patterns and their relationship with patient characteristics can guide pain management decisions and future study.</p>
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<p>Vining R, Minkalis A, Long CR, Corber L, Franklin C, Gudavalli MR, Xia T, Goertz CM. Assessment of chiropractic care on strength, balance, and endurance in active-duty U.S. military personnel with low back pain: a protocol for a randomized controlled trial. <i>Trials</i>. 2018 Dec 5;19(1):671. doi: 10.1186/s13063-018-3041-5. PubMed PMID: 30518400; PubMed Central PMCID: PMC6280458.</p>	<p>BACKGROUND: Low back pain (LBP) is a common cause of disability among U.S. military personnel. Approximately 20% of all diagnoses resulting in disability discharges are linked to back-related conditions. Because LBP can negatively influence trunk muscle strength, balance, and endurance, the military readiness of active-duty military personnel with LBP is potentially compromised. Chiropractic care may facilitate the strengthening of trunk muscles, the alteration of sensory and motor signaling, and a reduction in pain sensitivity, which may contribute to improving strength, balance, and endurance for individuals with LBP. This trial will assess the effects of chiropractic care on strength, balance, and endurance for active-duty military personnel with LBP.</p> <p>METHODS/DESIGN: This randomized controlled trial will allocate 110 active-duty military service members aged 18-40 with non-surgical acute, subacute, or chronic LBP with pain severity of $\geq 2/10$ within the past 24 h. All study procedures are conducted at a single military treatment facility within the continental United States. Participants are recruited through recruitment materials approved by the institutional review board, such as posters and flyers, as well as through provider referrals. Group assignment occurs through computer-generated random allocation to either the study intervention (chiropractic care) or the control group (waiting list) for a 4-week period. Chiropractic care consists primarily of spinal manipulation at a frequency and duration determined by a chiropractic practitioner. Strength, balance, and endurance outcomes are obtained at baseline and after 4 weeks. The primary outcome is a change between baseline and 4 weeks of peak isometric strength, which is measured by pulling on a bimanual handle in a semi-squat position. Secondary outcomes include balance time during a single-leg standing test and trunk muscle endurance with the Biering-Sorensen test. Patient-reported outcomes include pain severity, disability measured with the Roland Morris Disability Questionnaire, symptom bothersomeness, PROMIS-29, Fear Avoidance Beliefs Questionnaire, expectations of care, physical activity, and global improvement.</p> <p>DISCUSSION: This trial may help inform further research on biological mechanisms related to manual therapies employed by chiropractic practitioners.</p>
<p>Williams RM, Ehde DM, Day M, Turner AP, Hakimian S, Gertz K, Ciol M, McCall A, Kincaid C, Pettet MW, Patterson D, Suri P, Jensen MP. The chronic pain skills study: Protocol for a randomized controlled trial comparing hypnosis, mindfulness meditation and pain education in veterans. <i>Contemp Clin Trials</i>. 2020 Jan 8;105935. doi: 10.1016/j.cct.2020.105935.</p>	<p>OBJECTIVES: To describe the protocol of a randomized controlled trial to evaluate the effectiveness and mechanisms of three behavioral interventions.</p> <p>METHODS: Participants will include up to 343 Veterans with chronic pain due to a broad range of etiologies, randomly assigned to one of three 8-week manualized in-person group treatments: (1) Hypnosis (HYP), (2) Mindfulness Meditation (MM), or (3) Education Control (EDU).</p> <p>PROJECTED OUTCOMES: The primary aim of the study is to compare the effectiveness of HYP and MM to EDU on average pain intensity measured pre- and post-treatment. Additional study aims will explore the effectiveness of HYP and MM compared to EDU on secondary outcomes (i.e., pain interference, sleep quality, depression and anxiety), and the maintenance of effects at 3- and 6-months post-treatment. Participants will have electroencephalogram (EEG) assessments at pre- and post-treatment to determine if the power of specific brain oscillations moderate the effectiveness of HYP and MM (Study Aim 2) and examine brain oscillations as possible mediators of treatment effects (exploratory aim). Additional planned exploratory analyses will be performed to identify possible treatment mediators (i.e., pain acceptance, catastrophizing, mindfulness) and moderators (e.g., hypnotizability, treatment expectations, pain type, cognitive function).</p> <p>SETTING: The study treatments will be administered at a large Veterans Affairs Medical Center in the northwest United States. The treatments will be integrated within clinical infrastructure and delivered by licensed and credentialed health care professionals.</p>

Anxiety

Citation	Abstract
<p>Buttner MM, Bormann JE, Weingart K, Andrews T, Ferguson M, Afari N. Multi-site evaluation of a complementary, spiritually-based intervention for Veterans: The Mantram Repetition Program. Complement Ther Clin Pract. 2016 Feb;22:74-9. doi: 10.1016/j.ctcp.2015.12.008. Epub 2015 Dec 19.</p>	<p>BACKGROUND: Mental and physical symptoms affect Veterans' quality of life. Despite available conventional treatments, an increasing number of Veterans are seeking complementary approaches to symptom management. Research on the Mantram Repetition Program (MRP), a spiritually-based intervention, has shown significant improvements in psychological distress and spiritual well-being in randomized trials. However, these findings have not been replicated in real-world settings.</p> <p>METHODS: In this naturalistic study, we analyzed outcomes from 273 Veterans who participated in MRP at six sites and explored outcomes based on facilitator training methods. Measures included satisfaction and symptoms of anxiety, depression, and somatization using the Brief Symptom Inventory-18; Functional Assessment of Chronic Illness Therapy-Spiritual Well-being questionnaire; and the Mindfulness Attention Awareness Scale.</p> <p>RESULTS: There were significant improvements in all outcomes (p's < .001) regardless of how facilitators were trained. Patient satisfaction was high.</p> <p>CONCLUSION: The MRP was disseminated successfully yielding improvements in psychological distress, spiritual well-being, and mindfulness.</p>
<p>Chang BH, Sommers E. Acupuncture and relaxation response for craving and anxiety reduction among military veterans in recovery from substance use disorder. Am J Addict. 2014 Mar-Apr;23(2):129-36. doi: 10.1111/j.1521-0391.2013.12079.x. Epub 2013 Aug 30.</p>	<p>BACKGROUND AND OBJECTIVES: Substance use disorder (SUD) is a major health issue, especially among military veterans. We previously reported the effects of auricular acupuncture and the relaxation response (RR) on reducing craving and anxiety following 10-week interventions among veterans who were in recovery from SUDs. Our current analysis examines effects following each intervention session and RR daily practice.</p> <p>METHODS: We conducted a three-arm randomized controlled trial on residents of a homeless veteran rehabilitation program. Sixty-Seven enrolled participants were randomly assigned to acupuncture (n=23), RR (n=23), or usual care (n=21). Participants in the two intervention groups rated their degree of craving for substance on a scale of 1-10 and anxiety levels on a scale of 1-4 (total score 20-80) before and after each intervention session. Mixed effects regression models were used for analysis.</p> <p>RESULTS: Craving and anxiety levels decreased significantly following one session of acupuncture (-1.04, p=.0001; -8.83, p<.0001) or RR intervention (-.43, p=.02; -4.64, p=.03). The level of craving continued to drop with additional intervention sessions (regression coefficient b=-.10, p=.01, and b=-.10, p=.02 for acupuncture and RR groups, respectively). Number of daily practice days of RR-eliciting techniques is also associated with reduction in craving ratings (b=-.02, p=.008).</p> <p>CONCLUSIONS: Findings demonstrate the value of attending regular acupuncture and RR-eliciting intervention sessions, as well as the daily practice of RR-eliciting techniques.</p> <p>SCIENTIFIC SIGNIFICANCE: Substance addiction is a complex disease and effective treatment remains a challenge. Our study findings add to the scientific evidence of these two non-pharmaceutical approaches for SUD.</p>

<p>Cosio D, Swaroop S. The Use of Mind-body Medicine in Chronic Pain Management: Differential Trends and Session-by-Session Changes in Anxiety. J Pain Manag Med. 2016 Mar</p>	<p>The evidence to date suggests that the use of mind-body medicine in chronic pain management can improve physical and psychological symptoms. However, past research evidence has largely relied on global measures of distress at pre- and post-intervention. Even though it is plausible that reported anxiety occurs in the context of pain, there is also evidence to suggest a reciprocal relationship. Thus, the purpose of the current study was to determine the differential impact that mind-body medical interventions have on anxiety among Veterans with chronic, non-cancer pain. The current study utilized multiple, repeated assessments of anxiety to better understand changes made over time between two mind-body interventions (Acceptance and Commitment Therapy (ACT) and Cognitive Behavioral Therapy (CBT)) used for chronic pain management. Ninety-six Veterans elected to participate in either intervention following the completion of a pain health education program at a Midwestern VA Medical Center between November 3, 2009-November 4, 2010. A 2×7 repeated measures multivariate analyses of variance indicated significantly lower levels of global distress by the end of both the ACT and CBT interventions. Trend analysis revealed differential patterns of change in levels of anxiety over time. Helmert contrast analyses found several modules of ACT were statistically different than the overall mean of previous sessions. Implications related to timing and patterns of change for the interventions are discussed.</p>
<p>Duan-Porter W, Coeytaux RR, McDuffie JR, Goode AP, Sharma P, Mennella H, Nagi A, Williams JW Jr. Evidence Map of Yoga for Depression, Anxiety, and Posttraumatic Stress Disorder. J Phys Act Health. 2016 Mar;13(3):281-8. doi: 10.1123/jpah.2015-0027. PubMed PMID: 26181774.</p>	<p>BACKGROUND: This study describes evidence of yoga's effectiveness for depressive disorders, general anxiety disorder (GAD), panic disorder (PD), and posttraumatic stress disorder (PTSD) in adults. We also address adverse events associated with yoga.</p> <p>METHODS: We searched multiple electronic databases for systematic reviews (SRs) published between 2008 and July 2014, randomized controlled trials (RCTs) not identified in eligible SRs, and ongoing RCTs registered with ClinicalTrials.gov.</p> <p>RESULTS: We identified 1 SR on depression, 1 for adverse events, and 3 addressing multiple conditions. The high-quality depression SR included 12 RCTs (n = 619) that showed improved short-term depressive symptoms (standardized mean difference, -0.69, 95% confidence interval, -0.99 to -0.39), but there was substantial variability (I² = 86%) and a high risk of bias for 9 studies. Three SRs addressing multiple conditions identified 4 nonrandomized studies (n = 174) for GAD/PD and 1 RCT (n = 8) and 2 nonrandomized studies (n = 22) for PTSD. We separately found 1 RCT (n = 13) for GAD and 2 RCTs (n = 102) for PTSD. Collectively, these studies were inconclusive for the effectiveness of yoga in treating GAD/PD and PTSD. The high-quality SR for adverse events included 37 primary reports (n = 76) in which inversion postures were most often implicated. We found 5 ongoing trials (3 for PTSD).</p> <p>CONCLUSIONS: Yoga may improve short-term depressive symptoms, but evidence for GAD, PD, and PTSD remain inconclusive.</p>

<p>Goldberg S, Zeliadt S, Hoggatt K, Simpson T, Fortney J, Taylor SL. Utilization and Perceived Effectiveness of Mindfulness Meditation in Veterans: Results from a National Survey. Mindfulness. Sep 2019; 1-10.</p>	<p>Objectives Complementary and integrative health (CIH) approaches are increasingly utilized in health care, and mindfulness meditation is one such evidence-based CIH practice. More information is needed about veterans' utilization of mindfulness to inform integration within the Veterans Health Administration (VHA).</p> <p>Methods This study involved secondary data analysis of a national survey to evaluate utilization and perceived effectiveness of mindfulness relative to other CIH approaches among military veterans. Military veterans (n = 1230) enrolled in VHA reported CIH utilization rates, reasons for use, perceived effectiveness, treatment barriers, and demographics.</p> <p>Results Approximately 18% of veterans reported using mindfulness meditation in the past year, exceeding the proportion using all other CIH approaches (p < .001), with the exception of massage and chiropractic care. Mindfulness was most commonly used for stress reduction and addressing symptoms of depression and anxiety. Among mindfulness users, veterans rated mindfulness with a mean score of 3.18 out of 5 (SD = 0.82) in terms of effectiveness, reflecting a response in the "somewhat helpful" to "moderately helpful" range. This was similar to ratings of other CIH approaches (mean = 3.20, p = .391). Of those who used mindfulness, nearly all (78%) reported only using it outside the VHA. Veterans identified not knowing if the VHA offered mindfulness as the most common reason for using mindfulness outside VHA.</p> <p>Conclusions In summary, veterans use mindfulness for a range of reasons and report receiving benefit from its use. Low awareness and potentially low availability of VHA's mindfulness programs need to be addressed to increase access.</p>
<p>Schulz-Heik RJ, Meyer H, Mahoney L, Stanton MV, Cho RH, Moore-Downing DP, Avery TJ, Lazzaroni LC, Varni JM, Collery LM, Bayley PJ. Results from a clinical yoga program for veterans: yoga via telehealth provides comparable satisfaction and health improvements to in-person yoga. BMC Complement Altern Med. 2017 Apr 4;17(1):198. doi: 10.1186/s12906-017-1705-4. PubMed PMID: 28376861; PubMed Central PMCID: PMC5381127.</p>	<p>BACKGROUND: Yoga is increasingly popular, though little data regarding its implementation in healthcare settings is available. Similarly, telehealth is being utilized more frequently to increase access to healthcare; however we know of no research on the acceptability or effectiveness of yoga delivered through telehealth. Therefore, we evaluated the feasibility, acceptability, and patient-reported effectiveness of a clinical yoga program at a Veterans Affairs Medical Center and assessed whether these outcomes differed between those participating in-person and those participating via telehealth.</p> <p>METHODS: Veterans who attended a yoga class at the VA Palo Alto Health Care System were invited to complete an anonymous program evaluation survey.</p> <p>RESULTS: 64 Veterans completed the survey. Participants reported high satisfaction with the classes and the instructors. More than 80% of participants who endorsed a problem with pain, energy level, depression, or anxiety reported improvement in these symptoms. Those who participated via telehealth did not differ from those who participated in-person in any measure of satisfaction, overall improvement (p = .40), or improvement in any of 16 specific health problems.</p> <p>CONCLUSIONS: Delivering yoga to a wide range of patients within a healthcare setting appears to be feasible and acceptable, both when delivered in-person and via telehealth. Patients in this clinical yoga program reported high levels of satisfaction and improvement in multiple problem areas. This preliminary evidence for the effectiveness of a clinical yoga program complements prior evidence for the efficacy of yoga and supports the use of yoga in healthcare settings.</p>

<p>Shepardson RL, Funderburk JS. Likelihood of Attending Treatment for Anxiety Among Veteran Primary Care Patients: Patient Preferences for Treatment Attributes. J Clin Psychol Med Settings. 2016 Sep;23(3):225-39. doi: 10.1007/s10880-016-9462-y.</p>	<p>Anxiety is common, but under-treated, in primary care. Behavioral health providers embedded in primary care can help address this treatment gap. Guidance on anxiety treatment preferences would help inform tailoring of clinical practice and new interventions to be more patient-centered and increase treatment engagement. We surveyed 144 non-treatment seeking Veteran primary care patients (82.6 % male, 85.4 % White, age M = 59.8 years, SD = 13.9) reporting current anxiety symptoms (M = 13.87, SD = 3.66, on the Generalized Anxiety Disorder-7 Questionnaire) on their likelihood of attending anxiety treatment featuring various levels of 11 attributes (modality, type, location, format, provider, visit frequency, visit length, treatment duration, type of psychotherapy, symptom focus, and topic/skill). Participants indicated clear preferences for individual, face-to-face treatment in primary care, occurring once a month for at least 30 min and lasting at least three sessions. They also tended to prefer a stress management approach focused on trouble sleeping or fatigue, but all topics/skills were rated equivalently. For most attributes, the highest rated options were consistent with characteristics of integrated care. Implications for research and practice are discussed.</p>
<p>Serpa JG, Taylor SL, Tillisch K. Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. Med Care. 2014 Dec;52(12 Suppl 5):S19-24. doi: 10.1097/MLR.000000000000202. PubMed PMID: 25397818.</p>	<p>INTRODUCTION: Anxiety, depression, and pain are major problems among veterans, despite the availability of standard medical options within the Veterans Health Administration. Complementary and alternative approaches for these symptoms have been shown to be appealing to veterans. One such complementary and alternative approach is mindfulness-based stress reduction (MBSR), a brief course that teaches mindfulness meditation with demonstrated benefits for mood disorders and pain.</p> <p>METHODS: We prospectively collected data on MBSR's effectiveness among 79 veterans at an urban Veterans Health Administration medical facility. The MBSR course had 9 weekly sessions that included seated and walking meditations, gentle yoga, body scans, and discussions of pain, stress, and mindfulness. Pre-MBSR and post-MBSR questionnaires investigating pain, anxiety, depression, suicidal ideation, and physical and mental health functioning were obtained and compared for individuals. We also conducted a mediation analysis to determine whether changes in mindfulness were related to changes in the other outcomes.</p> <p>RESULTS: Significant reductions in anxiety, depression, and suicidal ideation were observed after MBSR training. Mental health functioning scores were improved. Also, mindfulness interacted with other outcomes such that increases in mindfulness were related to improvements in anxiety, depression, and mental health functionality. Pain intensity and physical health functionality did not show improvements.</p> <p>DISCUSSION: This naturalistic study in veterans shows that completing an MBSR program can improve symptoms of anxiety and depression, in addition to reducing suicidal ideations, all of which are of critical importance to the overall health of the patients.</p>

<p>Smeeding SJ, Bradshaw DH, Kumpfer K, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for chronic pain and stress-related depression, anxiety, and post-traumatic stress disorder. J Altern Complement Med. 2010</p>	<p>OBJECTIVES: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind-body skills.</p> <p>METHODS: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI < 19, n = 82), low depression (BDI < 19, n = 93), and absence of PTSD (n = 102) compared to veterans with high anxiety (BAI > or = 19, n = 77), high depression (BDI > 19, n = 67), and presence of PTSD (n = 63).</p> <p>RESULTS: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's d = 0.52), the high-depression group (Cohen's d = 0.46), and the PTSD group (Cohen's d = 0.41).</p> <p>CONCLUSIONS: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.</p>
<p>Williams JW Jr, Gierisch JM, McDuffie J, Strauss JL, Nagi A. An Overview of Complementary and Alternative Medicine Therapies for Anxiety and Depressive Disorders: Supplement to Efficacy of Complementary and Alternative Medicine Therapies for Posttraumatic Stress Disorder. Washington (DC): Department of Veterans Affairs (US); 2011 Aug.</p>	<p>BACKGROUND: VA is committed to expanding the breadth of posttraumatic stress disorder (PTSD)-related services available to Veterans. Since depressive and anxiety disorders share common features with PTSD, this report was commissioned to examine the efficacy of complementary and alternative medicine (CAM) therapies for the treatment of depressive and anxiety disorders as a means to detect treatments that might be applicable to PTSD.</p> <p>METHODS: The key questions (KQs) were adapted from the parent report, Efficacy of Complementary and Alternative Medicine Therapies for Posttraumatic Stress Disorder. We searched MEDLINE® (via PubMed®) and the Cochrane Database of Systematic Reviews for recent English-language systematic reviews (SRs) that examined the literature on mind-body medicine, manipulative and body-based practices, and movement or energy therapies, excluding nutritional, herbal remedies and other supplements. To be included, SRs had to be published within the past five years and be evaluated as a “fair” or “good” quality. Titles, abstracts, and articles were reviewed in duplicate, and relevant data were abstracted by authors trained in the critical analysis of literature.</p> <p>KEY FINDINGS: We identified five relevant SRs on mind-body CAM therapies, but none on manipulative and body-based, movement-based, or energy therapies. Most primary studies were small trials that did not provide descriptions of CAM strategies adequate to permit replication. Dose, duration, and frequency of interventions sometimes varied widely.</p>

Depression

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<p>Buttner MM, Bormann JE, Weingart K, Andrews T, Ferguson M, Afari N. Multi-site evaluation of a complementary, spiritually-based intervention for Veterans: The Mantram Repetition Program. Complement Ther Clin Pract. 2016 Feb;22:74-9. doi: 10.1016/j.ctcp.2015.12.008. Epub 2015 Dec 19.</p>	<p>BACKGROUND: Mental and physical symptoms affect Veterans' quality of life. Despite available conventional treatments, an increasing number of Veterans are seeking complementary approaches to symptom management. Research on the Mantram Repetition Program (MRP), a spiritually-based intervention, has shown significant improvements in psychological distress and spiritual well-being in randomized trials. However, these findings have not been replicated in real-world settings.</p> <p>METHODS: In this naturalistic study, we analyzed outcomes from 273 Veterans who participated in MRP at six sites and explored outcomes based on facilitator training methods. Measures included satisfaction and symptoms of anxiety, depression, and somatization using the Brief Symptom Inventory-18; Functional Assessment of Chronic Illness Therapy-Spiritual Well-being questionnaire; and the Mindfulness Attention Awareness Scale.</p> <p>RESULTS: There were significant improvements in all outcomes (p's < .001) regardless of how facilitators were trained. Patient satisfaction was high.</p> <p>CONCLUSION: The MRP was disseminated successfully yielding improvements in psychological distress, spiritual well-being, and mindfulness.</p>
<p>Duan-Porter W, Coeytaux RR, McDuffie JR, Goode AP, Sharma P, Mennella H, Nagi A, Williams JW Jr. Evidence Map of Yoga for Depression, Anxiety, and Posttraumatic Stress Disorder. J Phys Act Health. 2016 Mar;13(3):281-8. doi: 10.1123/jpah.2015-0027. PubMed PMID: 26181774.</p>	<p>BACKGROUND: This study describes evidence of yoga's effectiveness for depressive disorders, general anxiety disorder (GAD), panic disorder (PD), and posttraumatic stress disorder (PTSD) in adults. We also address adverse events associated with yoga.</p> <p>METHODS: We searched multiple electronic databases for systematic reviews (SRs) published between 2008 and July 2014, randomized controlled trials (RCTs) not identified in eligible SRs, and ongoing RCTs registered with ClinicalTrials.gov.</p> <p>RESULTS: We identified 1 SR on depression, 1 for adverse events, and 3 addressing multiple conditions. The high-quality depression SR included 12 RCTs ($n = 619$) that showed improved short-term depressive symptoms (standardized mean difference, -0.69, 95% confidence interval, -0.99 to -0.39), but there was substantial variability ($I^2 = 86\%$) and a high risk of bias for 9 studies. Three SRs addressing multiple conditions identified 4 nonrandomized studies ($n = 174$) for GAD/PD and 1 RCT ($n = 8$) and 2 nonrandomized studies ($n = 22$) for PTSD. We separately found 1 RCT ($n = 13$) for GAD and 2 RCTs ($n = 102$) for PTSD. Collectively, these studies were inconclusive for the effectiveness of yoga in treating GAD/PD and PTSD. The high-quality SR for adverse events included 37 primary reports ($n = 76$) in which inversion postures were most often implicated. We found 5 ongoing trials (3 for PTSD).</p> <p>CONCLUSIONS: Yoga may improve short-term depressive symptoms, but evidence for GAD, PD, and PTSD remain inconclusive.</p>

<p>Felleman B, Stewart D, Simpson T, Heppner P, Kearney D. Predictors of Depression and PTSD Treatment Response Among Veterans Participating in Mindfulness-Based Stress Reduction. Mindfulness, 2016, Volume 7, Number 4, Page 886</p>	<p>Posttraumatic stress disorder (PTSD) and depression are prevalent and often co-occur among veterans. There is growing interest in the effects of mindfulness-based interventions among veterans. This study examined PTSD and depression outcomes, and baseline predictors of response, among veterans who participated in mindfulness-based stress reduction (MBSR). Participants included 116 veterans with PTSD before and after MBSR. Multilevel modeling assessed baseline predictors of change in PTSD and depressive symptoms. There were clinically significant reductions in PTSD and depression symptoms posttreatment and at 4 months follow-up. For PTSD, effect sizes were in the medium range posttreatment ($d = -.63$) and at follow-up ($d = -.69$), and for depression posttreatment ($d = -.58$) and at follow-up ($d = -.70$). Baseline PTSD was a significant predictor of slope ($\beta = .03$, $p = .04$) on PTSD outcomes; higher baseline PTSD predicted greater rate of reduction in symptoms. For depression ($\beta = .04$, $p < .01$), those with severe or moderately severe depression exhibited the greatest rate of improvement. However, veterans with high symptom severity did remain symptomatic post-MBSR. These findings show preliminary support for MBSR in facilitating symptom reduction for veterans with severe PTSD and co-occurring depression.</p>
<p>Goldberg S, Zeliadt S, Hoggatt K, Simpson T, Fortney J, Taylor SL. Utilization and Perceived Effectiveness of Mindfulness Meditation in Veterans: Results from a National Survey. Mindfulness. Sep 2019; 1-10.</p>	<p>Objectives Complementary and integrative health (CIH) approaches are increasingly utilized in health care, and mindfulness meditation is one such evidence-based CIH practice. More information is needed about veterans' utilization of mindfulness to inform integration within the Veterans Health Administration (VHA).</p> <p>Methods This study involved secondary data analysis of a national survey to evaluate utilization and perceived effectiveness of mindfulness relative to other CIH approaches among military veterans. Military veterans ($n = 1230$) enrolled in VHA reported CIH utilization rates, reasons for use, perceived effectiveness, treatment barriers, and demographics.</p> <p>Results Approximately 18% of veterans reported using mindfulness meditation in the past year, exceeding the proportion using all other CIH approaches ($p < .001$), with the exception of massage and chiropractic care. Mindfulness was most commonly used for stress reduction and addressing symptoms of depression and anxiety. Among mindfulness users, veterans rated mindfulness with a mean score of 3.18 out of 5 ($SD = 0.82$) in terms of effectiveness, reflecting a response in the "somewhat helpful" to "moderately helpful" range. This was similar to ratings of other CIH approaches (mean = 3.20, $p = .391$). Of those who used mindfulness, nearly all (78%) reported only using it outside the VHA. Veterans identified not knowing if the VHA offered mindfulness as the most common reason for using mindfulness outside VHA.</p> <p>Conclusions In summary, veterans use mindfulness for a range of reasons and report receiving benefit from its use. Low awareness and potentially low availability of VHA's mindfulness programs need to be addressed to increase access.</p>

<p>Hull A, Holliday SB, Eickhoff C, Rose-Boyce M, Sullivan P, Reinhard M. The Integrative Health and Wellness Program: Development and Use of a Complementary and Alternative Medicine Clinic for Veterans. Altern Ther Health Med. 2015 Nov-Dec;21(6):12-21. PubMed PMID: 26567446.</p>	<p>Context: A movement exists within the Veterans Health Administration (VHA) toward incorporating complementary and alternative medicine (CAM) as an integrative complement to care for veterans. The Integrative Health and Wellness (IHW) Program is a comprehensive CAM clinic offering services such as integrative restoration (iRest) yoga nidra, individual acupuncture, group auricular acupuncture, chair yoga, qigong, and integrative health education. Objectives: The current study intended to detail the development of the CAM program, its use, and the characteristics of the program's participants. Design: Using a prospective cohort design, this pilot study tracked service use and aspects of physical and mental health for veterans enrolled in the program. Participants: During the first year, the IHW Program received 740 consults from hospital clinics; 325 veterans enrolled in the program; and 226 veterans consented to participate in the pilot study. Outcome Measures: Outcome measures included data from self-report questionnaires and electronic medical records. Results: Veterans enrolled in the program reported clinically significant depression, stress, insomnia, and pain-related interference in daily activities and deficits in health-related quality of life. Regarding use of the program services, individual acupuncture showed the greatest participation by veterans, followed by group auricular acupuncture and iRest yoga nidra. Of the 226 veterans who enrolled in the program and consented to participate in this study, 165 (73.01%) participated in >1 services in the first year of programming. Broadly speaking, enrollment in services appeared to be associated with gender and service branch but not with age or symptom severity. Conclusions: Results have assisted with a strategic planning process for the IHW Program and have implications for expansion of CAM services within the VHA..</p>
<p>Serpa JG, Taylor SL, Tillisch K. Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. Med Care. 2014 Dec;52(12 Suppl 5):S19-24. doi: 10.1097/MLR.000000000000202. PubMed PMID: 25397818.</p>	<p>INTRODUCTION: Anxiety, depression, and pain are major problems among veterans, despite the availability of standard medical options within the Veterans Health Administration. Complementary and alternative approaches for these symptoms have been shown to be appealing to veterans. One such complementary and alternative approach is mindfulness-based stress reduction (MBSR), a brief course that teaches mindfulness meditation with demonstrated benefits for mood disorders and pain.</p> <p>METHODS: We prospectively collected data on MBSR's effectiveness among 79 veterans at an urban Veterans Health Administration medical facility. The MBSR course had 9 weekly sessions that included seated and walking meditations, gentle yoga, body scans, and discussions of pain, stress, and mindfulness. Pre-MBSR and post-MBSR questionnaires investigating pain, anxiety, depression, suicidal ideation, and physical and mental health functioning were obtained and compared for individuals. We also conducted a mediation analysis to determine whether changes in mindfulness were related to changes in the other outcomes.</p> <p>RESULTS: Significant reductions in anxiety, depression, and suicidal ideation were observed after MBSR training. Mental health functioning scores were improved. Also, mindfulness interacted with other outcomes such that increases in mindfulness were related to improvements in anxiety, depression, and mental health functionality. Pain intensity and physical health functionality did not show improvements.</p> <p>DISCUSSION: This naturalistic study in veterans shows that completing an MBSR program can improve symptoms of anxiety and depression, in addition to reducing suicidal ideations, all of which are of critical importance to the overall health of the patients.</p>

<p>Smeeding SJ, Bradshaw DH, Kumpfer K, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for chronic pain and stress-related depression, anxiety, and post-traumatic stress disorder. J Altern Complement Med. 2010</p>	<p>OBJECTIVES: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind-body skills.</p> <p>METHODS: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI < 19, n = 82), low depression (BDI < 19, n = 93), and absence of PTSD (n = 102) compared to veterans with high anxiety (BAI > or = 19, n = 77), high depression (BDI > 19, n = 67), and presence of PTSD (n = 63).</p> <p>RESULTS: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's d = 0.52), the high-depression group (Cohen's d = 0.46), and the PTSD group (Cohen's d = 0.41).</p> <p>CONCLUSIONS: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.</p>
<p>Williams JW Jr, Gierisch JM, McDuffie J, Strauss JL, Nagi A. An Overview of Complementary and Alternative Medicine Therapies for Anxiety and Depressive Disorders: Supplement to Efficacy of Complementary and Alternative Medicine Therapies for Posttraumatic Stress Disorder. Washington (DC): Department of Veterans Affairs (US); 2011 Aug.</p>	<p>BACKGROUND: VA is committed to expanding the breadth of posttraumatic stress disorder (PTSD)-related services available to Veterans. Since depressive and anxiety disorders share common features with PTSD, this report was commissioned to examine the efficacy of complementary and alternative medicine (CAM) therapies for the treatment of depressive and anxiety disorders as a means to detect treatments that might be applicable to PTSD.</p> <p>METHODS: The key questions (KQs) were adapted from the parent report, Efficacy of Complementary and Alternative Medicine Therapies for Posttraumatic Stress Disorder. We searched MEDLINE® (via PubMed®) and the Cochrane Database of Systematic Reviews for recent English-language systematic reviews (SRs) that examined the literature on mind-body medicine, manipulative and body-based practices, and movement or energy therapies, excluding nutritional, herbal remedies and other supplements. To be included, SRs had to be published within the past five years and be evaluated as a “fair” or “good” quality. Titles, abstracts, and articles were reviewed in duplicate, and relevant data were abstracted by authors trained in the critical analysis of literature.</p> <p>KEY FINDINGS: We identified five relevant SRs on mind-body CAM therapies, but none on manipulative and body-based, movement-based, or energy therapies. Most primary studies were small trials that did not provide descriptions of CAM strategies adequate to permit replication. Dose, duration, and frequency of interventions sometimes varied widely.</p>

<p>Wheeler, M.S., Glass, C.R., Arnkoff, D.B. et al. The Effect of Mindfulness and Acup on Psychological Health in Veterans: an Exploratory Study. Mindfulness (2018) 9: 564. https://doi.org/10.1007/s12671-017-0798-7</p>	<p>iRest Yoga Nidra® is a guided mindfulness approach that encourages relaxation, focused attention, experience of joy, observation of opposite feelings and emotions, non-judgment, and integration of these principles into daily life. iRest was developed for the military population, but the research on its effectiveness is in its infancy. This exploratory study examined the effectiveness of iRest in combination with acupuncture compared to acupuncture alone in improving psychological health in Veterans. The combined treatment yielded significant psychological benefit in depression, psychological symptom severity, depression or tension due to pain, and emotional interference with life activities, while the acupuncture-only treatment did not. Although both conditions showed significant decreases in perceived stress, the effect size for the treatment group was medium to large compared to a small effect size for those receiving acupuncture only. The combined treatment condition, iRest plus acupuncture, also demonstrated clinically meaningful change, with significant decreases in the number of Veterans meeting criteria for mild, moderate, and severe depression. Finally, the combined treatment was equally beneficial independent of factors such as age, gender, or race. Given the pervasiveness of psychological distress and depression in the Veteran population and the efficiency with which these group treatments can be provided, these findings lend preliminary support for the extension of complementary and integrative health offerings including iRest and acupuncture into more Veterans Administration hospitals across the country to improve military mental health. Indeed, the encouraging results of this exploratory study underscore the importance of expanded research on iRest and acupuncture for the treatment of psychological health.</p>
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PTSD	
Citation	Abstract
Arhin AO, Gallop K, Mann J, Cannon S, Tran K, Wang MC. Acupuncture as a Treatment Option in Treating Posttraumatic Stress Disorder-Related Tinnitus in War Veterans: A Case Presentation. J Holist Nurs. 2016	<p>Although close associations between tinnitus and posttraumatic stress disorder (PTSD) among war veterans has been documented, there is limited research that explores evidence-based, efficacious interventions to treat the condition in this particular population. This article presents a case of three war veterans with PTSD symptoms who received a series of acupuncture treatments for tinnitus with positive outcomes. Even though the article presents cases of only three veterans and was based on self-reports, there were very clear trends on how veterans with tinnitus symptoms responded to acupuncture treatments. Information generated from this case presentation is a good starting place in exploring evidence-based approaches in treating tinnitus symptoms in war veterans with PTSD.</p>
Avery T, Blasey C, Rosen C, Bayley P. Psychological Flexibility and Set-Shifting Among Veterans Participating in a Yoga Program: A Pilot Study.	<p>INTRODUCTION: Trauma-focused psychotherapies do not meet the needs of all veterans. Yoga shows some potential in reducing stress and perhaps even PTSD in veterans, although little is understood about the mechanisms of action. This study identifies preliminary correlates of change in PTSD and perceived stress for veterans participating in yoga.</p> <p>MATERIALS AND METHODS: Nine veterans (seven males and two females) were recruited from an existing clinical yoga program and observed over 16 wk. Severity of PTSD symptoms (PCL-5) and perceived stress (PSS-10) were collected at baseline and weeks 4, 6, 8, and 16. Psychological flexibility (AAQ-II) and set-shifting (ratio of trail making test A to B) were collected at baseline and at week 6. Subjects attended yoga sessions freely, ranging from 1 to 23 classes over the 16 weeks. The Stanford University Institutional Review Board approved this research protocol.</p> <p>RESULTS: Self-reported PTSD symptoms significantly reduced while perceived stress did not. Lower baseline set-shifting predicted greater improvements in PTSD between baseline and 4 weeks; early improvements in set-shifting predicted overall reduction in PTSD. Greater psychological flexibility was associated with lower PTSD and perceived stress; more yoga practice, before and during the study, was associated with greater psychological flexibility. Other predictors were not supported.</p> <p>CONCLUSIONS: In a small uncontrolled sample, psychological flexibility and set-shifting predicted changes in PTSD symptoms in veterans participating in a clinical yoga program, which supports findings from prior research. Future research should include an active comparison group and record frequency of yoga practiced outside formal sessions.</p>
Beck D, Cosco Holt L, Burkard J, Andrews T, Liu L, Heppner P, Bormann JE. Efficacy of the Mantram Repetition Program for Insomnia in Veterans With Posttraumatic Stress Disorder: A Naturalistic Study. ANS Adv Nurs Sci. 2017 Apr/Jun;40(2):E1-E12. doi: 10.1097/ANS.0000000000000144.	<p>Statistics show that more than 80% of Veterans mention posttraumatic stress disorder (PTSD)-related symptoms when seeking treatment. Sleep disturbances and nightmares are among the top 3 presenting problems. Current PTSD trauma-focused therapies generally do not improve sleep disturbances. The mantram repetition program (MRP), a mind-body-spiritual intervention, teaches a portable set of cognitive-spiritual skills for symptom management. The aim of this study was to evaluate the efficacy of the MRP on insomnia in Veterans with PTSD in a naturalistic, clinical setting. Results show that participation in the MRP significantly reduced insomnia, as well as decreased self-reported and clinician-assessed PTSD symptom burden.</p>

<p>Bergen-Cico D, Smith Y, Wolford K, Gooley C, Hannon K, Woodruff R, Spicer M, Gump B. Dog Ownership and Training Reduces Post-Traumatic Stress Symptoms and Increases Self-Compassion Among Veterans: Results of a Longitudinal Control Study. J Altern Complement Med. 2018 Sep 25. doi: 10.1089/acm.2018.0179.</p>	<p>OBJECTIVES: The aims of this study were to measure the potential impact of a therapeutic dog ownership and training program for Veterans with symptoms of post-traumatic stress.</p> <p>SETTING: Clear Path for Veterans, a nonclinical, open recreation facility whose mission is to support Veterans and their families in the reintegration process after military service.</p> <p>SUBJECTS: Participants (n = 48) were either enrolled in the veterans therapeutic dog owner-trainer program (Dogs2Vets) or were placed in the wait list control group.</p> <p>INTERVENTION: Veterans were enrolled in the Dogs2Vets program, a 12-month structured dog owner-trainer program that engages veterans in the training and care of a dog that they ultimately adopt. The Dogs2Vets Program focuses on the healing aspects of the human-animal bond.</p> <p>OUTCOME MEASURES: PTSD Checklist, Military Version (PCL-M), perceived stress scale, self-compassion scale (SCS) composite, and SCS subscales for isolation and self-judgment.</p> <p>RESULTS: Veterans participating in the Dogs2Vets owner-trainer program experienced significant reductions in symptoms of post-traumatic stress, perceived stress, isolation, and self-judgment accompanied by significant increases in self-compassion. In contrast there were no significant improvements in these measures among veterans in the wait list control group. Qualitative data reinforced the statistical findings with themes of decreased isolation, unconditional acceptance and companionship, and a renewed sense of safety and purpose from their relationships with their dogs.</p> <p>CONCLUSION: Veterans benefit significantly from dog ownership in combination with a structured dog training program. Not only do they experience significant decreases in stress and post-traumatic stress symptoms but also they experience less isolation and self-judgment while also experiencing significant improvements in self-compassion.</p>
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<p>Bormann JE, Thorp SR, Smith E, Glickman M, Beck D, Plumb D, Zhao S, Ackland PE, Rodgers CS, Heppner P, Herz LR, Elwy AR. Individual Treatment of Posttraumatic Stress Disorder Using Mantram Repetition: A Randomized Clinical Trial. Am J Psychiatry. 2018 Oct 1;175(10):979-988. doi: 10.1176/appi.ajp.2018.17060611. Epub 2018 Jun 20. PubMed PMID: 29921143.</p>	<p>OBJECTIVE:: Previous studies suggest that group "mantram" (sacred word) repetition therapy, a non-trauma-focused complementary therapy for posttraumatic stress disorder (PTSD), may be an effective treatment for veterans. The authors compared individually delivered mantram repetition therapy and another non-trauma-focused treatment for PTSD.</p> <p>METHOD:: The study was a two-site, open-allocation, blinded-assessment randomized trial involving 173 veterans diagnosed with military-related PTSD from two Veterans Affairs outpatient clinics (January 2012 to March 2014). The mantram group (N=89) learned skills for silent mantram repetition, slowing thoughts, and one-pointed attention. The comparison group (N=84) received present-centered therapy, focusing on currently stressful events and problem-solving skills. Both treatments were delivered individually in eight weekly 1-hour sessions. The primary outcome measure was change in PTSD symptom severity, as measured by the Clinician-Administered PTSD Scale (CAPS) and by self-report. Secondary outcome measures included insomnia, depression, anger, spiritual well-being, mindfulness, and quality of life. Intent-to-treat analysis was conducted using linear mixed models.</p> <p>RESULTS:: The mantram group had significantly greater improvements in CAPS score than the present-centered therapy group, both at the posttreatment assessment (between-group difference across time, -9.98, 95% CI=-3.63, -16.00; d=0.49) and at the 2-month follow-up (between-group difference, -9.34, 95% CI=-1.50, -17.18; d=0.46). Self-reported PTSD symptom severity was also lower in the mantram group compared with the present-centered therapy group at the posttreatment assessment, but there was no difference at the 2-month follow-up. Significantly more participants in the mantram group (59%) than in the present-centered therapy group (40%) who completed the 2-month follow-up no longer met criteria for PTSD (p<0.04). However, the percentage of participants in the mantram group (75%) compared with participants in the present-centered therapy group (61%) who experienced clinically meaningful changes (≥10-point improvements) in CAPS score did not differ significantly between groups. Reductions in insomnia were significantly greater for participants in the mantram group at both posttreatment assessment and 2-month follow-up.</p> <p>CONCLUSIONS:: In a sample of veterans with PTSD, individually delivered mantram repetition therapy was generally more effective than present-centered therapy for reducing PTSD symptom severity and insomnia.</p>
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<p>Bormann JE, Oman D, Walter KH, Johnson BD. Mindful attention increases and mediates psychological outcomes following mantram repetition practice in veterans with posttraumatic stress disorder. Med Care. 2014 Dec;52(12 Suppl 5):S13-8. doi: 10.1097/MLR.000000000000200. PubMed PMID: 25397817.</p>	<p>BACKGROUND: Several evidence-based treatments are available to veterans diagnosed with posttraumatic stress disorder (PTSD). However, not all veterans benefit from these treatments or prefer to engage in them.</p> <p>OBJECTIVES: The current study explored whether (1) a mantram repetition program (MRP) increased mindful attention among veterans with PTSD, (2) mindful attention mediated reduced PTSD symptom severity and enhanced psychological well-being, and (3) improvement in mindful attention was due to the frequency of mantram repetition practice.</p> <p>RESEARCH DESIGN: Data from a randomized controlled trial comparing MRP plus treatment as usual (MRP+TAU) or TAU were analyzed using hierarchical linear models.</p> <p>SUBJECTS: A total of 146 veterans with PTSD from military-related trauma were recruited from a Veterans Affairs outpatient PTSD clinic (71 MRP+TAU; 75 TAU).</p> <p>MEASURES: The Clinician Administered PTSD Scale (CAPS), PTSD Checklist (PCL), the Brief Symptom Inventory-18 depression subscale, Health Survey SF-12v2, and Mindfulness Attention Awareness Scale (MAAS) were used. Frequency of mantram repetition practice was measured using wrist-worn counters and daily logs.</p> <p>RESULTS: Intent-to-treat analyses indicated greater increases in mindful attention, as measured by the MAAS, for MRP+TAU as compared with TAU participants (P<0.01). Mindful attention gains mediated previously reported treatment effects on reduced PTSD symptoms (using both CAPS and PCL), reduced depression, and improved psychological well-being. Frequency of mantram repetition practice in turn mediated increased mindful attention.</p> <p>CONCLUSIONS: The MRP intervention and specifically, mantram practice, improved mindful attention in veterans with PTSD, yielding improved overall psychological well-being. MRP may be a beneficial adjunct to usual care in veterans with PTSD</p>
<p>Bormann JE, Hurst S, Kelly A. Responses to Mantram Repetition Program from Veterans with posttraumatic stress disorder: a qualitative analysis. J Rehabil Res Dev. 2013</p>	<p>This study describes ways in which a Mantram Repetition Program (MRP) was used for managing posttraumatic stress disorder (PTSD) symptoms in 65 outpatient Veterans with PTSD. The MRP consisted of six weekly group sessions (90 min/wk) on how to (1) choose and use a mantram, (2) slow down thoughts and behaviors, and (3) develop one-pointed attention for emotional self-regulation. Critical incident research technique interviews were conducted at 3 mo postintervention as part of a larger randomized clinical trial. The setting was an academic-affiliated Department of Veterans Affairs hospital in southern California. Categorization and comparison of the types and frequency of incidents (i.e., triggering events) were collected. Participants reported a total of 268 triggering events. Content analysis of the outcomes resulted in 12 discreet categories, including relaxing and calming down, letting go of negative feelings, thinking clearly and rationally, diverting attention away from triggering events, focusing attention, refining mantram skills, dealing with sleep disturbances, coming back from flashbacks, slowing down, communicating thoughts and feelings more effectively, feeling in touch spiritually, and letting go of physical pain. The study shows that the MRP was helpful in managing a wide range of emotional reactions in Veterans with PTSD.</p>

<p>Bremner JD, Mishra S, Campanella C, Shah M, Kasher N, Evans S, Fani N, Shah AJ, Reiff C, Davis LL, Vaccarino V, Carmody J. A Pilot Study of the Effects of Mindfulness-Based Stress Reduction on Post-traumatic Stress Disorder Symptoms and Brain Response to Traumatic Reminders of Combat in Operation Enduring Freedom/Operation Iraqi Freedom Combat Veterans with Post-traumatic Stress Disorder. Front Psychiatry. 2017 Aug 25;8:157.</p>	<p>OBJECTIVE: Brain imaging studies in patients with post-traumatic stress disorder (PTSD) have implicated a circuitry of brain regions including the medial prefrontal cortex, amygdala, hippocampus, parietal cortex, and insula. Pharmacological treatment studies have shown a reversal of medial prefrontal deficits in response to traumatic reminders. Mindfulness-based stress reduction (MBSR) is a promising non-pharmacologic approach to the treatment of anxiety and pain disorders. The purpose of this study was to assess the effects of MBSR on PTSD symptoms and brain response to traumatic reminders measured with positron-emission tomography (PET) in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) combat veterans with PTSD. We hypothesized that MBSR would show increased prefrontal response to stress and improved PTSD symptoms in veterans with PTSD.</p> <p>METHOD: Twenty-six OEF/OIF combat veterans with PTSD who had recently returned from a combat zone were block randomized to receive eight sessions of MBSR or present-centered group therapy (PCGT). PTSD patients underwent assessment of PTSD symptoms with the Clinician-Administered PTSD Scale (CAPS), mindfulness with the Five Factor Mindfulness Questionnaire (FFMQ) and brain imaging using PET in conjunction with exposure to neutral and Iraq combat-related slides and sound before and after treatment. Nine patients in the MBSR group and 8 in the PCGT group completed all study procedures.</p> <p>RESULTS: Post-traumatic stress disorder patients treated with MBSR (but not PCGT) had an improvement in PTSD symptoms measured with the CAPS that persisted for 6 months after treatment. MBSR also resulted in an increase in mindfulness measured with the FFMQ. MBSR-treated patients had increased anterior cingulate and inferior parietal lobule and decreased insula and precuneus function in response to traumatic reminders compared to the PCGT group.</p> <p>CONCLUSION: This study shows that MBSR is a safe and effective treatment for PTSD. Furthermore, MBSR treatment is associated with changes in brain regions that have been implicated in PTSD and are involved in extinction of fear responses to traumatic memories as well as regulation of the stress response.</p>
<p>Crawford JN, Talkovsky AM, Bormann JE, Lang AJ. Targeting hyperarousal: Mantram Repetition Program for PTSD in US veterans. Eur J Psychotraumatol. 2019 Sep 30;10(1):1665768. doi: 10.1080/20008198.2019.1665768.</p>	<p>Background: Hyperarousal appears to play an important role in the development and maintenance of posttraumatic stress disorder (PTSD) symptoms, but current evidence-based treatments appear to address this symptom type less effectively than the other symptom clusters. The Mantram Repetition Program (MRP) is a meditation-based intervention that has previously been shown to improve symptoms of posttraumatic stress disorder (PTSD) and may be especially helpful for hyperarousal. If MRP is an effective tool for decreasing this often treatment-resistant symptom cluster, it may become an important clinical tool. Objective: The goal of this secondary analysis was to examine the effect of the MRP on hyperarousal and other PTSD symptom clusters and to examine hyperarousal as a mediator of treatment response. Method: Secondary analyses were conducted on data from a randomized controlled trial in which Veterans with PTSD (n = 173) were assigned to the MRP or a non-specific psychotherapy control and assessed pre-treatment, post-treatment and 8 weeks after treatment completion. The impact of the interventions on PTSD symptom clusters was examined, and time-lagged hierarchical linear modelling was applied to examine alternative mediation models. Results: All PTSD symptom clusters improved in both treatments. MRP led to greater reductions in hyperarousal at post-treatment (Hedge's g = 0.57) and follow-up (Hedge's g = 0.52), and in numbing at post-treatment (Hedge's g = 0.47). Hyperarousal mediated reductions in the composite of the other PTSD symptom clusters. Although the reverse model was significant as well, the effect was weaker in this direction. Conclusion: Interventions focused on the management of hyperarousal may play an important role in recovery from PTSD. The MRP appears efficacious in reducing hyperarousal, and thereby impacting other PTSD symptom clusters, as one pathway to facilitating recovery.</p>

<p>Cushing RE, Braun KL, Alden C-Iajyt SW, Katz AR. Military-Tailored Yoga for Veterans with Post-traumatic Stress Disorder. Mil Med. 2018 May 1;183(5-6):e223-e231. doi: 10.1093/milmed/usx071. PubMed PMID: 29415222; PubMed Central PMCID: PMC6086130.</p>	<p>Among veterans of post-9/11 conflicts, estimates of post-traumatic stress disorder (PTSD) range from 9% shortly after returning from deployment to 31% a year after deployment. Clinical and pharmaceutically based treatments are underutilized. This could be due to concerns related to lost duty days, as well as PTSD patients' fears of stigma of having a mental health condition. Yoga has been shown to reduce PTSD symptoms in the civilian population, but few studies have tested the impact of yoga on veterans of post-9/11 conflicts. The purpose of this study is to test the impact of yoga on post-9/11 veterans diagnosed with PTSD.</p>
<p>Duan-Porter W, Coeytaux RR, McDuffie JR, Goode AP, Sharma P, Mennella H, Nagi A, Williams JW Jr. Evidence Map of Yoga for Depression, Anxiety, and Posttraumatic Stress Disorder. J Phys Act Health. 2016 Mar;13(3):281-8. doi: 10.1123/jpah.2015-0027. PubMed PMID: 26181774.</p>	<p>BACKGROUND: This study describes evidence of yoga's effectiveness for depressive disorders, general anxiety disorder (GAD), panic disorder (PD), and posttraumatic stress disorder (PTSD) in adults. We also address adverse events associated with yoga.</p> <p>METHODS: We searched multiple electronic databases for systematic reviews (SRs) published between 2008 and July 2014, randomized controlled trials (RCTs) not identified in eligible SRs, and ongoing RCTs registered with ClinicalTrials.gov.</p> <p>RESULTS: We identified 1 SR on depression, 1 for adverse events, and 3 addressing multiple conditions. The high-quality depression SR included 12 RCTs (n = 619) that showed improved short-term depressive symptoms (standardized mean difference, -0.69, 95% confidence interval, -0.99 to 0.39), but there was substantial variability (I² = 86%) and a high risk of bias for 9 studies. Three SRs addressing multiple conditions identified 4 nonrandomized studies (n = 174) for GAD/PD and 1 RCT (n = 8) and 2 nonrandomized studies (n = 22) for PTSD. We separately found 1 RCT (n = 13) for GAD and 2 RCTs (n = 102) for PTSD. Collectively, these studies were inconclusive for the effectiveness of yoga in treating GAD/PD and PTSD. The high-quality SR for adverse events included 37 primary reports (n = 76) in which inversion postures were most often implicated. We found 5 ongoing trials (3 for PTSD).</p> <p>CONCLUSIONS: Yoga may improve short-term depressive symptoms, but evidence for GAD, PD, and PTSD remain inconclusive.</p>
<p>Dunn AS, Passmore SR, Burke J, Chicoine D. A cross-sectional analysis of clinical outcomes following chiropractic care in veterans with and without post-traumatic stress disorder. Mil Med. 2009 Jun;174(6):578-83.</p>	<p>This study was a cross-sectional analysis of clinical outcomes for 130 veteran patients with neck or low back complaints completing a course of care within the chiropractic clinic at the VA of Western New York in 2006. Multivariate analysis of variance (MANOVA) was utilized, comparing baseline and discharge scores for both the neck and low back regions and for those patients with and without post-traumatic stress disorder (PTSD). Patients with PTSD (n = 21) experienced significantly lower levels of score improvement than those without PTSD (n = 119) on self-reported outcome measures of neck and low back disability. These findings, coupled with the theorized relationships between PTSD and chronic pain, suggest that the success of conservative forms of management for veteran patients with musculoskeletal disorders may be limited by the presence of PTSD. Further research is warranted to examine the potential contributions of PTSD on chiropractic clinical outcomes with this unique patient population.</p>
<p>Eads B, Wark DM. Alert Hypnotic Inductions: Use in Treating Combat Post-Traumatic Stress Disorder. Am J Clin Hypn. 2015 Oct;58(2):159-70. doi: 10.1080/00029157.2014.979276.</p>	<p>Alert hypnosis can be a valuable part of the treatment protocol for the resolution of post-traumatic stress disorder (PTSD). Research indicates that combat veterans with PTSD are more hypnotically susceptible than the general population. For that reason, it is hypothesized that they should be better able to use hypnosis in treatment. As opposed to the traditional modality, eyes-open alert hypnosis allows the patient to take advantage of hypnotic phenomena while participating responsibly in work, social life, and recreation. Three case studies are reported on combat veterans with PTSD who learned to overcome their symptoms using alert hypnosis.</p>

<p>Engel CC, Cordova EH, Benedek DM, Liu X, Gore KL, Goertz C, Freed MC, Crawford C, Jonas WB, Ursano RJ. Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder. Med Care. 2014 Dec;52(12 Suppl 5):S57-64. doi: 10.1097/MLR.000000000000237.</p>	<p>BACKGROUND: Initial posttraumatic stress disorder (PTSD) care is often delayed and many with PTSD go untreated. Acupuncture appears to be a safe, potentially nonstigmatizing treatment that reduces symptoms of anxiety, depression, and chronic pain, but little is known about its effect on PTSD.</p> <p>METHODS: Fifty-five service members meeting research diagnostic criteria for PTSD were randomized to usual PTSD care (UPC) plus eight 60-minute sessions of acupuncture conducted twice weekly or to UPC alone. Outcomes were assessed at baseline and 4, 8, and 12 weeks postrandomization. The primary study outcomes were difference in PTSD symptom improvement on the PTSD Checklist (PCL) and the Clinician-administered PTSD Scale (CAPS) from baseline to 12-week follow-up between the 2 treatment groups. Secondary outcomes were depression, pain severity, and mental and physical health functioning. Mixed model regression and t test analyses were applied to the data.</p> <p>RESULTS: Mean improvement in PTSD severity was significantly greater among those receiving acupuncture than in those receiving UPC (PCLΔ=19.8±13.3 vs. 9.7±12.9, P<0.001; CAPSΔ=35.0±20.26 vs. 10.9±20.8, P<0.0001). Acupuncture was also associated with significantly greater improvements in depression, pain, and physical and mental health functioning. Pre-post effect-sizes for these outcomes were large and robust.</p> <p>CONCLUSIONS: Acupuncture was effective for reducing PTSD symptoms. Limitations included small sample size and inability to parse specific treatment mechanisms. Larger multisite trials with longer follow-up, comparisons to standard PTSD treatments, and assessments of treatment acceptability are needed. Acupuncture is a novel therapeutic option that may help to improve population reach of PTSD treatment.</p>
<p>Etingen, Bella PhD, Kathleen M Grubbs, PhD, Juliette M Harik, PhD. Drivers of Preference for Evidence-Based PTSD Treatment: A Qualitative Assessment. Military Medicine, Volume 185, Issue Supplement 1, January-February 2020, Pages 303–310</p>	<p>Introduction Mental health treatment utilization among persons with posttraumatic stress disorder (PTSD) tends to be low but may be improved by aligning treatment with patient preferences. Our objective was to characterize the reasons that drive a person’s selection of a specific evidence-based PTSD treatment.</p> <p>Materials and Methods Data were collected using an online survey of adults who screened positive for PTSD. Participants viewed descriptions of five evidence-based PTSD treatments (cognitive processing therapy, prolonged exposure, eye movement desensitization and reprocessing, stress inoculation training, antidepressant medication) and identified their most preferred treatment. Participants then explained why they selected their top choice. These free-text responses (n = 249) were analyzed using thematic coding and constant comparative methods.</p> <p>Results Identified themes included (1) perceived effectiveness, (2) perceived suitability, (3) requirements of participation, (4) familiarity with the modality, (5) perception of the option as ‘better than alternatives,’ (6) perception of the option as ‘not harmful,’ (7) accessibility, and (8) delivery format. Differences in themes were also examined by treatment modality.</p> <p>Conclusions By highlighting which pieces of information may be most important to detail when presenting different treatment options, these results can help guide treatment planning conversations, as well as the development of shared decision-making tools.</p>

<p>Evans APB, Mascaro JS, Kohn JN, Dobrusin A, Darcher A, Starr SD, Craighead LW, Negi LT. Meditation Training for Emotional Numbing Symptoms Among Veterans with Post-Traumatic Stress Disorder. J Altern Complement Med. 2019</p>	<p>For the 8 million American adults suffering from post-traumatic stress disorder (PTSD), emotional numbing can impair the quality of interpersonal relationships that are themselves critical for the remediation of PTSD. Yet, although reducing emotional numbing and restoring interpersonal connectedness may improve response to treatment, few therapies specifically target the interpersonal deficits that accompany PTSD.</p>
<p>Fogger S, Moore R, Pickett L. Posttraumatic Stress Disorder and Veterans: Finding Hope and Supporting Healing. Journal for Nurse Practitioners, 2016-10-01, Volume 12, Issue 9, Pages 598-604, Copyright © 2016 Elsevier Inc.</p>	<p>Posttraumatic stress disorder (PTSD) frequently occurs among veterans and has multiple treatment options that are not entirely effective for all. Traditional evidence-based therapies for PTSD may not entirely eliminate symptoms or may not be acceptable or accessible to veterans. The most beneficial treatment may be a mix of traditional therapy and adjunctive nonpharmacologic treatments the veteran selects. Although PTSD is treated by mental health professionals, all practitioners can improve and support veteran care by ongoing assessment and education around the different types of treatment options for PTSD including integrative health therapies as viable strategies to improve patient outcomes.</p>
<p>Gallegos AM, Crean HF, Pigeon WR, Heffner KL. Meditation and yoga for posttraumatic stress disorder: A meta-analytic review of randomized controlled trials. Clin Psychol Rev. 2017 Dec;58:115-124. doi: 10.1016/j.cpr.2017.10.004. Review. PubMed PMID: 29100863; PubMed Central PMCID: PMC5939561.</p>	<p>Posttraumatic stress disorder (PTSD) is a chronic and debilitating disorder that affects the lives of 7-8% of adults in the U.S. Although several interventions demonstrate clinical effectiveness for treating PTSD, many patients continue to have residual symptoms and ask for a variety of treatment options. Complementary health approaches, such as meditation and yoga, hold promise for treating symptoms of PTSD. This meta-analysis evaluates the effect size (ES) of yoga and meditation on PTSD outcomes in adult patients. We also examined whether the intervention type, PTSD outcome measure, study population, sample size, or control condition moderated the effects of complementary approaches on PTSD outcomes. The studies included were 19 randomized control trials with data on 1173 participants. A random effects model yielded a statistically significant ES in the small to medium range (ES=-0.39, p<0.001, 95% CI [-0.57, -0.22]). There were no appreciable differences between intervention types, study population, outcome measures, or control condition. There was, however, a marginally significant higher ES for sample size≤30 (ES=-0.78, k=5). These findings suggest that meditation and yoga are promising complementary approaches in the treatment of PTSD among adults and warrant further study.</p>

<p>Goldstein LA, Mehling WE, Metzler TJ, Cohen BE, Barnes DE, Choucroun GJ, Silver A, Talbot LS, Maguen S, Hlavin JA, Chesney MA, Neylan TC. Veterans Group Exercise: A randomized pilot trial of an Integrative Exercise program for veterans with posttraumatic stress. J Affect Disord. 2018 Feb;227:345-352.</p>	<p>BACKGROUND: Posttraumatic stress disorder (PTSD) is prevalent among military veterans and is associated with significant negative health outcomes. However, stigma and other barriers to care prevent many veterans from pursuing traditional mental health treatment. We developed a group-based Integrative Exercise (IE) program combining aerobic and resistance exercise, which is familiar to veterans, with mindfulness-based practices suited to veterans with PTSD. This study aimed to evaluate the effects of IE on PTSD symptom severity and quality of life, as well as assess the feasibility and acceptability of IE.</p> <p>METHODS: Veterans (N = 47) were randomized to either IE or waitlist control (WL). Veterans in IE were asked to attend three 1-h group exercise sessions for 12 weeks.</p> <p>RESULTS: Compared with WL, veterans randomized to IE demonstrated a greater reduction in PTSD symptom severity (d = -.90), a greater improvement in psychological quality of life (d = .53) and a smaller relative improvement in physical quality of life (d = .30) Veterans' ratings of IE indicated high feasibility and acceptability.</p> <p>LIMITATIONS: The sample was relatively small and recruited from one site. The comparison condition was an inactive control.</p> <p>CONCLUSIONS: This initial study suggests that IE is an innovative approach to treating veterans with symptoms of PTSD that reduces symptoms of posttraumatic stress and improves psychological quality of life. This approach to recovery may expand the reach of PTSD treatment into non-traditional settings and to veterans who may prefer a familiar activity, such as exercise, over medication or psychotherapy.</p>
<p>Heffner KL et al. Psychol Trauma. (2016) Meditation programs for veterans with posttraumatic stress disorder: Aggregate findings from a multi-site evaluation. Psychol Trauma. 2016 May;8(3):365-74. doi: 10.1037/tra0000106. Epub 2016 Jan 11.</p>	<p>OBJECTIVE: Interest in meditation to manage posttraumatic stress disorder (PTSD) symptoms is increasing. Few studies have examined the effectiveness of meditation programs offered to Veterans within Department of Veterans Affairs (VA) mental health services. The current study addresses this gap using data from a multisite VA demonstration project.</p> <p>METHOD: Evaluation data collected at 6 VA sites (N = 391 Veterans) before and after a meditation program, and a treatment-as-usual (TAU) program, were examined here using random effects meta-analyses. Site-specific and aggregate between group effect sizes comparing meditation programs to TAU were determined for PTSD severity measured by clinical interview and self-report. Additional outcomes included experiential avoidance and mindfulness.</p> <p>RESULTS: In aggregate, analyses showed medium effect sizes for meditation programs compared to TAU for PTSD severity (clinical interview: effect size (ES) = -0.32; self-report: ES = -0.39). Similarly sized effects of meditation programs were found for overall mindfulness (ES = 0.41) and 1 specific aspect of mindfulness, nonreactivity to inner experience (ES = .37). Additional findings suggested meditation type and program completion differences each moderated program effects.</p> <p>CONCLUSIONS: VA-sponsored meditation programs show promise for reducing PTSD severity in Veterans receiving mental health services. Where meditation training fits within mental health services, and for whom programs will be of interest and effective, require further clarification. (PsycINFO Database Record</p>

<p>Herron RE, Rees B. The Transcendental Meditation Program's Impact on the Symptoms of Post-traumatic Stress Disorder of Veterans: An Uncontrolled Pilot Study. Mil Med. 2018 Jan 1;183(1-2):e144-e150. doi: 10.1093/milmed/usx059.</p>	<p>BACKGROUND: Current treatments for post-traumatic stress disorder (PTSD) are only partially effective. This study evaluated whether an extensively researched stress reduction method, the Transcendental Meditation (TM) technique, can reduce the PTSD symptoms of veterans. Previous research suggested that TM practice can decrease veterans' PTSD symptoms.</p> <p>METHODS: A one-group pretest-posttest design was used to evaluate the impact of TM practice on reducing PTSD symptoms. A convenience sample of 89 veterans completed PTSD Checklist-Civilian (PCL-5) questionnaires. Among those, 46 scored above 33, the threshold for provisional diagnosis of PTSD, and were included in this evaluation. The PCL-5 measured PTSD symptoms at baseline and 30 and 90 d after intervention. Regularity of TM practice was recorded. Paired sample t-tests were used to assess within-group changes from baseline to post-intervention periods. Analysis of variance was used to compare full-dose (two 20-min TM sessions per day) and half-dose (one 20-min TM session per day) groups.</p> <p>FINDINGS: After 1 mo of TM practice, all 46 veterans responded; their PCL-5 average decreased from 51.52 in the pre-intervention period to a post-intervention mean of 23.43, a decline of 28.09 points (-54.5%); standard deviation: 14.57; confidence interval: 23.76-32.41; and effect size: -1.93; $p < 0.0001$. The median PTSD scores declined from 52.5 to 22.5, a decrease of 30 points (-57%), while 40 veterans (87%) had clinically significant declines (>10 points) in PTSD symptoms, and 37 (80%) dropped below the clinical level (<33). At the 90 d posttest, 31 of the 46 responded and three more dropped below the 33 threshold. Intent-to-treat analyses revealed clinically and statistically significant effects. A dose-response effect suggested a causal relationship. The full-dose group exhibited larger mean declines in PTSD symptoms than the half-dose group. Averages of the 46 veterans' responses to 20 PCL-5 questions exhibited significant ($p < 0.0001$) declines from the pre-intervention period to the 30-d post-intervention assessment.</p> <p>DISCUSSION: Results indicated that TM practice reduced PTSD symptoms without re-experiencing trauma. Because of the magnitude of these results and dose-response effect, regression to the mean, spontaneous remission of symptoms, and placebo effects are unlikely explanations for the results. Major limitations were absence of random assignment and lack of a control group. Participants chose to start and continue TM practice and to complete PCL-5 questionnaires. Those who self-selected to enter this study may not be representative of all veterans who have PTSD. Those who did not complete follow-up questionnaires at 90 d may or may not have had the same results as those who responded. The design and sampling method affect the generalizability of the results to wider populations. When taking into account these results and all previous research on the TM technique in reducing psychological and physiological stress, the convergence of evidence suggests that TM practice may offer a promising adjunct or alternative method for treating PTSD. Because of the widely recognized need to identify effective new approaches for treating PTSD, randomized research with control groups is warranted to further investigate the effectiveness of TM practice as a treatment for PTSD.</p>
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<p>Hilton LG, Libretto S, Xenakis L, Eifenbaum P, Boyd C, Zhang W, Clark AA. Evaluation of an Integrative Post-Traumatic Stress Disorder Treatment Program. J Altern Complement Med. 2019</p>	<p>Objectives: Post-traumatic stress disorder (PTSD) and combat-related stress can be refractory, pervasive, and have a devastating impact on those affected, their families, and society at large. Challenges dealing with symptoms may in turn make a servicemember more susceptible to problems, including alcohol abuse, interpersonal conflict, and occupational problems. An effective treatment strategy will address multifactorial issues by using a holistic multimodal approach. Back on Track is an intensive outpatient program utilizing a holistic philosophy and multimodal treatments to provide a whole systems approach for the treatment of combat-related stress reactions and PTSD in active duty servicemembers.</p> <p>Design/Setting/Subjects: An explanatory, sequential, mixed-methods program evaluation was conducted to assess the effectiveness of a PTSD and combat stress treatment program. Quantitative outcomes were collected and analyzed on 595 participants at pre- and postinterventions and 6-week follow-up and qualitative data were gathered through participant interviews.</p> <p>Intervention: The manualized program uses a multimodal, psychoeducational group therapy format with a holistic approach for treating combat stress, increasing resiliency, and assisting with reintegration. Rotating providers visit from other programs and services to deliver content in bio–psycho–social–spiritual domains, including didactic lectures on mindfulness and the relaxation response and daily sessions of yoga nidra and meditation.</p> <p>Outcome measures: The primary outcome measure was PTSD symptom severity assessed with the PTSD Checklist-Military Version (PCL-M). Secondary outcomes included self-efficacy, knowledge, use, and satisfaction. Quantitative data were contextualized with interview data.</p> <p>Results: Results demonstrated a highly statistically significant effect of the program when comparing within-subject PCL-M scores before and after program participation, signed rank S (N= 595) = -47,367, p < 0.001. This translates to a moderate effect size, Cohen’s d (N= 595) = -0.55, 95% confidence interval = -0.62 to -0.47, and a mean decrease of 7 points on the PCL-M at postintervention, demonstrating response to treatment. There were significant increases in knowledge and self-efficacy and high levels of satisfaction with the program overall, content, materials, and delivery.</p> <p>Conclusions: The treatment program has served *800 servicemembers since inception and has since expanded to five installations. The provision of whole systems care where the approach is holistic, multimodal, and multidisciplinary may be a way forward for the successful treatment of PTSD and other debilitating behavioral health conditions in military contexts and beyond.</p>
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<p>Hilton L, Maher AR, Colaiaco B, Apaydin E, Sorbero ME, Booth M, Shanman RM, Hempel S. Meditation for posttraumatic stress: Systematic review and meta-analysis. Psychol Trauma. 2017 Jul;9(4):453-460. doi: 10.1037/tra0000180. Epub 2016 Aug 18. Review. PubMed PMID: 27537781.</p>	<p>OBJECTIVE: We conducted a systematic review and meta-analysis that synthesized evidence from randomized controlled trials of meditation interventions to provide estimates of their efficacy and safety in treating adults diagnosed with posttraumatic stress disorder (PTSD). This review was based on an established protocol (PROSPERO: CRD42015025782) and is reported according to PRISMA guidelines. Outcomes of interest included PTSD symptoms, depression, anxiety, health-related quality of life, functional status, and adverse events.</p> <p>METHOD: Meta-analyses were conducted using the Hartung-Knapp-Sidik-Jonkman method for random-effects models. Quality of evidence was assessed using the Grade of Recommendations Assessment, Development, and Evaluation (GRADE) approach.</p> <p>RESULTS: In total, 10 trials on meditation interventions for PTSD with 643 participants met inclusion criteria. Across interventions, adjunctive meditation interventions of mindfulness-based stress reduction, yoga, and the mantram repetition program improve PTSD and depression symptoms compared with control groups, but the findings are based on low and moderate quality of evidence. Effects were positive but not statistically significant for quality of life and anxiety, and no studies addressed functional status. The variety of meditation intervention types, the short follow-up times, and the quality of studies limited analyses. No adverse events were reported in the included studies; only half of the studies reported on safety.</p> <p>CONCLUSIONS: Meditation appears to be effective for PTSD and depression symptoms, but in order to increase confidence in findings, more high-quality studies are needed on meditation as adjunctive treatment with PTSD-diagnosed participant samples large enough to detect statistical differences in outcomes. (PsycINFO Database Record</p>
<p>Huang W, Johnson TM, Kutner NG, Halpin SN, Weiss P, Griffiths PC, Bliwise DL. Acupuncture for Treatment of Persistent Disturbed Sleep: A Randomized Clinical Trial in Veterans With Mild Traumatic Brain Injury and Posttraumatic Stress Disorder. J Clin Psychiatry. 2018 Dec</p>	<p>OBJECTIVE: To evaluate real, as compared with sham, acupuncture in improving persistent sleep disturbance in veterans with mild traumatic brain injury (mTBI) and posttraumatic stress disorder (PTSD).</p> <p>METHODS: This sham-controlled randomized clinical trial at a US Department of Veterans Affairs Medical Center (2010-2015) included 60 veterans aged 24-55 years (mean of 40 years) with history of mTBI of at least 3 months and refractory sleep disturbance. Most of these participants (66.7%) carried a concurrent DSM-IV clinical diagnosis of PTSD. For the present study, they were randomized into 2 groups and stratified by PTSD status using the PTSD Checklist-Military Version. Each participant received up to 10 treatment sessions. The primary outcome measure was change in baseline-adjusted global Pittsburgh Sleep Quality Index (PSQI) score following intervention. Secondary outcomes were wrist-actigraphy-assessed objective sleep measurements. Comorbid PTSD was analyzed as a covariate.</p> <p>RESULTS: Mean (SD) preintervention global PSQI score was 14.3 (3.2). Those receiving real acupuncture had a global PSQI score improvement of 4.4 points (relative to 2.4 points in sham, P = .04) and actigraphically measured sleep efficiency (absolute) improvement of 2.7% (relative to a decrement of 5.3% in sham, P = .0016). Effective blinding for active treatment was maintained in the study. PTSD participants presented with more clinically significant sleep difficulties at baseline; acupuncture was effective for both those with and without PTSD.</p> <p>CONCLUSIONS: Real acupuncture, compared with a sham needling procedure, resulted in a significant improvement in sleep measures for veterans with mTBI and disturbed sleep, even in the presence of PTSD. These results indicate that an alternative-medicine treatment modality like acupuncture can provide clinically significant relief for a particularly recalcitrant problem affecting large segments of the veteran population.</p>

<p>Johnston JM, Minami T, Greenwald D, Li C, Reinhardt K, Khalsa SB. Yoga for military service personnel with PTSD: A single arm study. 2015</p>	<p>This study evaluated the effects of yoga on posttraumatic stress disorder (PTSD) symptoms, resilience, and mindfulness in military personnel. Participants completing the yoga intervention were 12 current or former military personnel who met the Diagnostic and Statistical Manual for Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR) diagnostic criteria for PTSD. Results were also benchmarked against other military intervention studies of PTSD using the Clinician Administered PTSD Scale (CAPS; Blake et al., 2000) as an outcome measure. Results of within-subject analyses supported the study's primary hypothesis that yoga would reduce PTSD symptoms ($d = 0.768$; $t = 2.822$; $p = .009$) but did not support the hypothesis that yoga would significantly increase mindfulness ($d = 0.392$; $t = -0.9500$; $p = .181$) and resilience ($d = 0.270$; $t = -1.220$; $p = .124$) in this population. Benchmarking results indicated that, as compared with the aggregated treatment benchmark ($d = 1.074$) obtained from published clinical trials, the current study's treatment effect ($d = 0.768$) was visibly lower, and compared with the waitlist control benchmark ($d = 0.156$), the treatment effect in the current study was visibly higher.</p>
<p>Justice L, Brems C. Bridging Body and Mind: Case Series of a 10-Week Trauma-Informed Yoga Protocol for Veterans. Int J Yoga Therap. 2019 Apr 8;. doi: 10.17761/D-17-2019-00029. [Epub ahead of print] PubMed PMID: 30958711.</p>	<p>This case series explored the feasibility and preliminary efficacy of therapeutic yoga as a complementary form of treatment for combat-related trauma. The series recruited for and implemented a 10-week Trauma-Informed Yoga protocol for veterans in an interprofessional community health treatment setting. Participants were enrolled in a series of 90-minute therapeutic yoga classes adapted to be trauma-informed. Feasibility was measured by recruitment, retention, and level of participation in the study. Preliminary efficacy was explored via the Posttraumatic Stress Disorder Checklist, Scale of Body Connection, PROMIS-29, P ROMIS Alcohol Use, PROMIS Substance Use, Difficulties in Emotional Regulation Scale, and Self-Compassion Scale-Short Form. All measures were administered at baseline, week 5, week 10, and at a 5-week follow-up. A qualitative Feasibility Questionnaire was administered weekly and at the 5-week follow-up to assess barriers and motivators for home practice and to collect feedback about session content. Recruitment challenges resulted in only seven interested individuals. Four participants (three males, one female) were successfully enrolled in the study after seven phone screenings and five in-person interviews. The four enrolled clients had a 100% follow-up retention rate, reported no adverse events, and on average participated in 85% of classes. Clinically significant enhancements were observed on trauma- and body connection-related scales for three participants from baseline to follow-up. Qualitative data revealed that motivators to practice include in-session philosophical discussions based on psychological themes; breathwork; mindfulness; and physical, social, work/academic, and mental health impact. Barriers included motivation, time, and location. Important themes emerged related to cultural considerations for veterans. Although this 10-week trauma-informed protocol faced challenges to recruitment, retention and participation were high. Efficacy measures yielded promising results for reducing reducing trauma-related symptoms.</p>

<p>Kang SS, Erbes CR, Lamberty GJ, Thuras P, Sponheim SR, Polusny MA, Moran AC, Van Voorhis AC, Lim KO. Transcendental meditation for veterans with post-traumatic stress disorder. Psychol Trauma. 2018 Nov;10(6):675-680. doi: 10.1037/tra0000346. Epub 2018 Jul 19.</p>	<p>OBJECTIVE: Transcendental Meditation (TM) is a mental technique using a mantra to facilitate meditation. TM has a potential for treating symptoms of posttraumatic stress disorder (PTSD), but its clinical efficacy remains to be clarified. This pilot study evaluated the acceptability, preliminary effectiveness, and neurophysiology of TM for veterans with PTSD.</p> <p>METHOD: Twenty-nine veterans (20.7% female) were recruited from a major medical center and enrolled in the study. TM instruction was provided by certified TM teachers from the Maharishi Foundation and consisted of 8 weeks of individual and group-based meditation instruction and practice. Outcomes were assessed at baseline, during treatment, posttreatment, and at 2-month follow-up, and included clinical interviews, self-report questionnaires, and electroencephalography (EEG) recorded during resting and meditation states.</p> <p>RESULTS: From baseline to posttreatment, participants reported reductions in PTSD symptoms, experiential avoidance, and depressive and somatic symptoms, as well as increases on measures of mindfulness and quality of life. Gains were either maintained or continued to improve through the 2-month follow-up. Compared to baseline, EEG spectral power increased in low-frequency bands (1-7 Hz) at posttreatment and follow-up and only during meditation states suggesting TM-specific changes in brain state associated with the intervention.</p> <p>CONCLUSIONS: TM appears to be an acceptable and effective treatment for veterans with PTSD that warrants further study regarding specific outcomes and beneficial changes in brain function. (PsycINFO Database Record (c) 2018 APA, all rights reserved).</p>
<p>Kearney DJ, Malte CA, McManus C, Martinez ME, Felleman B, Simpson TL. Loving-kindness meditation for posttraumatic stress disorder: a pilot study. J Trauma Stress. 2013</p>	<p>Loving-kindness meditation is a practice designed to enhance feelings of kindness and compassion for self and others. Loving-kindness meditation involves repetition of phrases of positive intention for self and others. We undertook an open pilot trial of loving-kindness meditation for veterans with posttraumatic stress disorder (PTSD). Measures of PTSD, depression, self-compassion, and mindfulness were obtained at baseline, after a 12-week loving-kindness meditation course, and 3 months later. Effect sizes were calculated from baseline to each follow-up point, and self-compassion was assessed as a mediator. Attendance was high; 74% attended 9-12 classes. Self-compassion increased with large effect sizes and mindfulness increased with medium to large effect sizes. A large effect size was found for PTSD symptoms at 3-month follow-up ($d = -0.89$), and a medium effect size was found for depression at 3-month follow-up ($d = -0.49$). There was evidence of mediation of reductions in PTSD symptoms and depression by enhanced self-compassion. Overall, loving-kindness meditation appeared safe and acceptable and was associated with reduced symptoms of PTSD and depression. Additional study of loving-kindness meditation for PTSD is warranted to determine whether the changes seen are due to the loving-kindness meditation intervention versus other influences, including concurrent receipt of other treatments.</p>

<p>King CH et al. J Holist Nurs. (2016). Exploring Self-Reported Benefits of Auricular Acupuncture Among Veterans With Posttraumatic Stress Disorder.</p>	<p>PURPOSE: Auricular acupuncture treatments are becoming increasingly available within military treatment facilities, resulting in an expansion of nonpharmacologic treatment options available to veterans with posttraumatic stress disorder (PTSD). This study aimed to explore the self-reported benefits of auricular acupuncture treatments for veterans living with PTSD.</p> <p>DESIGN: A qualitative research methodology, thematic content analysis, was used to analyze data.</p> <p>METHOD: Seventeen active duty veterans with PTSD provided written comments to describe their experiences and perceptions after receiving a standardized auricular acupuncture regimen for a 3-week period as part of a pilot feasibility study.</p> <p>FINDINGS: A variety of symptoms experienced by veterans with PTSD were improved after receiving auricular acupuncture treatments. Additionally, veterans with PTSD were extremely receptive to auricular acupuncture treatments. Four themes emerged from the data: (1) improved sleep quality, (2) increased relaxation, (3) decreased pain, and (4) veterans liked/loved the auricular acupuncture treatments.</p> <p>CONCLUSIONS: Veterans with PTSD reported numerous benefits following auricular acupuncture treatments. These treatments may facilitate healing and recovery for veterans with combat-related PTSD, although further investigations are warranted into the mechanisms of action for auricular acupuncture in this population.</p>
<p>Lang AJ, Malaktaris AL, Casmar P, Baca SA, Golshan S, Harrison T, Negi L. Compassion Meditation for Posttraumatic Stress Disorder in Veterans: A Randomized Proof of Concept Study. J Trauma Stress. 2019 Apr;32(2):299-309. doi: 10.1002/jts.22397. Epub 2019 Mar 31. PubMed PMID: 30929283.</p>	<p>There is considerable interest in developing complementary and integrative approaches for ameliorating posttraumatic stress disorder (PTSD). Compassion meditation (CM) and loving-kindness meditation appear to offer benefits to individuals with PTSD, including symptom reduction. The present study was a pilot randomized controlled trial of CM for PTSD in veterans. The CM condition, an adaptation of Cognitively-Based Compassion Training (CBCT®), consists of exercises to stabilize attention, develop present-moment awareness, and foster compassion. We compared CM to Veteran.calm (VC), which consists of psychoeducation about PTSD, rationale for relaxation, relaxation training, and sleep hygiene. Both conditions consist of 10 weekly 90-min group sessions with between-session practice assignments. A total of 28 veterans attended at least one session of the group intervention and completed pre- and posttreatment measures of PTSD severity and secondary outcomes as well as weekly measures of PTSD, depressive symptoms, and positive and negative emotions. Measures of treatment credibility, attendance, practice compliance, and satisfaction were administered to assess feasibility. A repeated measures analysis of variance revealed a more substantive reduction in PTSD symptoms in the CM condition than in the VC condition, between-group $d = -0.85$. Credibility, attendance, and satisfaction were similar across CM and VC conditions thus demonstrating the feasibility of CM and the appropriateness of VC as a comparison condition. The findings of this initial randomized pilot study provide rationale for future studies examining the efficacy and effectiveness of CM for veterans with PTSD.</p>

<p>Libby DJI, Reddy F, Pilver CE, Desai RA. The use of yoga in specialized VA PTSD treatment programs. Int J Yoga Therap. 2012;(22):79-87.</p>	<p>BACKGROUND: Posttraumatic stress disorder (PTSD) is a chronic, debilitating anxiety disorder that is highly prevalent among U.S. military veterans. Yoga, defined to include physical postures (asana) and mindfulness and meditation, is being increasingly used as an adjunctive treatment for PTSD and other psychological disorders. No research or administrative data have detailed the use of these services in Department of Veterans Affairs' (VA) 170 PTSD treatment programs.</p> <p>METHODS: One hundred twenty-five program coordinators or designated staff completed an 81-item survey of their program's use of complementary and alternative medicine modalities in the past year. This report describes data from a subset of 30 questions used to assess the prevalence, nature, and context of the use of yoga, mindfulness, and meditation other than mindfulness practices.</p> <p>RESULTS: Results revealed that these practices are widely offered in VA specialized PTSD treatment programs and that there is great variability in the context and nature of how they are delivered.</p> <p>CONCLUSIONS: Understanding how yoga is used by these programs may inform ongoing efforts to define and distinguish yoga therapy as a respected therapeutic discipline and to create patient-centered care models that mindfully fulfill the unmet needs of individuals with mental health issues, including veterans with PTSD.</p>
<p>Maltz B, Hoyt T, Uomoto J, Herodes M. A case analysis of service-member trauma processing related to art therapy within a military-intensive outpatient program. J Clin Psychol. 2020 Jan 17.</p>	<p>OBJECTIVES: Art therapy has been widely used in clinical settings and has shown preliminary success in military trauma. This case study describes a mask-making art therapy directive facilitated by a board-certified art therapist as an adjunct to group posttraumatic stress disorder (PTSD) treatment in a military-intensive outpatient program.</p> <p>METHODS: Described are clinical outcome measures, linguistic analysis of a personal journal, evaluation of this service-member's artwork, and experiences in the program.</p> <p>RESULTS: Mask-making, as a trauma-focused group-art therapy directive, expanded the understanding of treatment progress reflected in journal notes, mask imagery, and by a change in linguistic indices of trauma processing, despite an overall increase in PTSD symptoms as he confronted his traumatic experiences. He reported improvement in coping and successfully returned to full military duty following treatment.</p> <p>CONCLUSIONS: This case study suggests that art therapy and written narrative, combined with standardized self-report assessments, may more accurately indicate improvement in overall PTSD treatment.</p>

<p>Marchand WR, Yabko B, Herrmann T, Curtis H, Lackner R. Treatment Engagement and Outcomes of Mindfulness-Based Cognitive Therapy for Veterans with Psychiatric Disorders. J Altern Complement Med. 2019 Sep;25</p>	<p>Objectives: The aim of this study was to evaluate utilization and outcomes of mindfulness-based cognitive therapy (MBCT) provided to veterans with psychiatric disorders. Design: Retrospective chart review. Settings: Veterans Administration Medical Center (VAMC). Subjects: Ninety-eight veterans with psychiatric illness who were enrolled in an MBCT class between May of 2012 and January of 2016. Subjects were predominately white (95%), male (81%), and >50 years old (74%). The most common psychiatric conditions were any mood disorder (82%) and post-traumatic stress disorder (54%). Intervention: Eight-week MBCT class. Outcome measures: Session attendance and pre- to postintervention changes in numbers of emergency department (ED) visits and psychiatric hospitalizations. Results: The average number of sessions attended was 4.87 of 8 and only 16% were present for all sessions. Veteran demographic variables did not predict the number of MBCT sessions attended. However, both greater numbers of pre-MBCT ED visits ($p = 0.004$) and psychiatric admissions ($p = 0.031$) were associated with attending fewer sessions. Among patients who experienced at least one pre- or post-treatment psychiatric admission in the 2 years pre- or postintervention ($N = 26, 27\%$), there was a significant reduction in psychiatric admissions from pre to post ($p = 0.002$). There was no significant change in ED visits ($p = 0.535$). Conclusions: MBCT may be challenging to implement for veterans with psychiatric illness in, at least some, outpatient VAMC settings due to a high attrition rate. Possible mediation approaches include development of methods to screen for high dropout risk and/or development of shorter mindfulness-based interventions (MBIs) and/or coupling MBIs with pleasurable activities. The finding of a significant decrease in psychiatric hospitalizations from pre- to post-MBCT suggests that prospective studies are warranted utilizing MBCT for veterans at high risk for psychiatric hospitalization.</p>
<p>Martin EC, Dick AM, Scioli-Salter ER, Mitchell KS. Impact of a Yoga Intervention on Physical Activity, Self-Efficacy, and Motivation in Women with PTSD Symptoms. J Altern Complement Med. 2015 Jun;21(6):327-32. doi: 10.1089/acm.2014.0389. Epub 2015 May 14.</p>	<p>BACKGROUND: Studies using yoga have demonstrated initial efficacy for treating symptoms across anxiety disorders, including posttraumatic stress disorder.</p> <p>OBJECTIVE: Understanding how interventions influence participants' physical activity and what determinants affect continued physical activity behavior change is important because maintenance of the behavior may be critical to continued mental health gains and symptom reduction.</p> <p>METHODS: This study investigated change in physical activity and possible psychological mechanisms of physical activity behavior change, including self-efficacy and regulatory motivation, in a randomized controlled trial of yoga for women with post-traumatic stress disorder symptoms ($n=38$).</p> <p>RESULTS: Growth curve modeling results showed no significant changes in physical activity or self-efficacy for either group, whereas external motivation decreased significantly in the yoga group but not in the control group.</p> <p>CONCLUSIONS: Investigators of future yoga interventions may want to focus on increasing self-efficacy and internal regulatory motivation, so that physical activity and resultant symptom relief can be maintained.</p>

<p>Mathersul DC, Tang JS, Schulz-Heik RJ, Avery TJ, Seppälä EM, Bayley PJ. Study protocol for a non-inferiority randomised controlled trial of SKY breathing meditation versus cognitive processing therapy for PTSD among veterans. BMJ Open. 2019 Apr 3;9(4):e027150. doi: 10.1136/bmjopen-2018-027150.</p>	<p>INTRODUCTION: Post-traumatic stress disorder (PTSD) is a debilitating, highly prevalent condition. Current clinical practice guidelines recommend trauma-focused psychotherapy (eg, cognitive processing therapy; CPT) as the first-line treatment for PTSD. However, while these treatments show clinically meaningful symptom improvement, the majority of those who begin treatment retain a diagnosis of PTSD post-treatment. Perhaps for this reason, many individuals with PTSD have sought more holistic, mind-body, complementary and integrative health (CIH) interventions. However, there remains a paucity of high-quality, active controlled efficacy studies of CIH interventions for PTSD, which precludes their formal recommendation.</p> <p>METHODS AND ANALYSES: We present the protocol for an ongoing non-inferiority parallel group randomised controlled trial (RCT) comparing the efficacy of a breathing meditation intervention (Sudarshan Kriya Yoga [SKY]) to a recommended evidence-based psychotherapy (CPT) for PTSD among veterans. Assessors are blinded to treatment group. The primary outcome measure is the PTSD Checklist-Civilian Version and a combination of clinical, self-report, experimental and physiological outcome measures assess treatment-related changes across each of the four PTSD symptom clusters (re-experiencing, avoidance, negative cognitions or mood and hyperarousal/reactivity). Once the RCT is completed, analyses will use both an intent-to-treat (using the 'last observation carried forward' for missing data) and a per-protocol or 'treatment completers' procedure, which is the most rigorous approach to non-inferiority designs.</p> <p>ETHICS AND DISSEMINATION: To the best of our knowledge, this is this first non-inferiority RCT of SKY versus CPT for PTSD among veterans. The protocol is approved by the Stanford University Institutional Review Board. All participants provided written informed consent prior to participation. Results from this RCT will inform future studies including larger multi-site efficacy RCTs of SKY for PTSD and other mental health conditions, as well as exploration of cost-effectiveness and evaluation of implementation issues. Results will also inform evidence-based formal recommendations regarding CIH interventions for PTSD.</p>
<p>Mehling WE, Chesney MA, Metzler TJ, Goldstein LA, Maguen S, Geronimo C, Agcaoilu G, Barnes DE, Hlavin JA, Neylan TC. A 12-week integrative exercise program improves self-reported mindfulness and interoceptive awareness in war veterans with posttraumatic stress symptoms. J Clin Psychol. 2018 Apr;74(4):554-565. doi: 10.1002/jclp.22549.</p>	<p>OBJECTIVE: Innovative approaches to the treatment of war-related posttraumatic stress disorder (PTSD) are needed. We report on secondary psychological outcomes of a randomized controlled trial of integrative exercise (IE) using aerobic and resistance exercise with mindfulness-based principles and yoga. We expected-in parallel to observed improvements in PTSD intensity and quality of life-improvements in mindfulness, interoceptive bodily awareness, and positive states of mind.</p> <p>METHOD: A total of 47 war veterans with PTSD were randomized to 12-week IE versus waitlist. Changes in mindfulness, interoceptive awareness, and states of mind were assessed by self-report standard measures.</p> <p>RESULTS: Large effect sizes for the intervention were observed on Five-Facet Mindfulness Questionnaire Non-Reactivity ($d = .85$), Multidimensional Assessment of Interoceptive Awareness Body Listening ($d = .80$), and Self-Regulation ($d = 1.05$).</p> <p>CONCLUSION: In a randomized controlled trial of a 12-week IE program for war veterans with PTSD, we saw significant improvements in mindfulness, interoceptive bodily awareness, and positive states of mind compared to a waitlist.</p>

<p>Nidich S, Mills PJ, Rainforth M, Heppner P, Schneider RH, Rosenthal NE, Salerno J, Gaylord-King C., Non-trauma-focused meditation versus exposure therapy in veterans with post-traumatic stress disorder: a randomised controlled trial. Lancet Psychiatry. 2018</p>	<p>BACKGROUND: Post-traumatic stress disorder (PTSD) is a complex and difficult-to-treat disorder, affecting 10-20% of military veterans. Previous research has raised the question of whether a non-trauma-focused treatment can be as effective as trauma exposure therapy in reducing PTSD symptoms. This study aimed to compare the non-trauma-focused practice of Transcendental Meditation (TM) with prolonged exposure therapy (PE) in a non-inferiority clinical trial, and to compare both therapies with a control of PTSD health education (HE).</p> <p>METHODS: We did a randomised controlled trial at the Department of Veterans Affairs San Diego Healthcare System in CA, USA. We included 203 veterans with a current diagnosis of PTSD resulting from active military service randomly assigned to a TM or PE group, or an active control group of HE, using stratified block randomisation. Each treatment provided 12 sessions over 12 weeks, with daily home practice. TM and HE were mainly given in a group setting and PE was given individually. The primary outcome was change in PTSD symptom severity over 3 months, assessed by the Clinician-Administered PTSD Scale (CAPS). Analysis was by intention to treat. We hypothesised that TM would show non-inferiority to PE in improvement of CAPS score ($\Delta=10$), with TM and PE superior to PTSD HE. This study is registered with ClinicalTrials.gov, number NCT01865123.</p> <p>FINDINGS: Between June 10, 2013, and Oct 7, 2016, 203 veterans were randomly assigned to an intervention group (68 to the TM group, 68 to the PE group, and 67 to the PTSD HE group). TM was significantly non-inferior to PE on change in CAPS score from baseline to 3-month post-test (difference between groups in mean change -5.9, 95% CI -14.3 to 2.4, $p=0.0002$). In standard superiority comparisons, significant reductions in CAPS scores were found for TM versus PTSD HE (-14.6 95% CI, -23.3 to -5.9, $p=0.0009$), and PE versus PTSD HE (-8.7 95% CI, -17.0 to -0.32, $p=0.041$). 61% of those receiving TM, 42% of those receiving PE, and 32% of those receiving HE showed clinically significant improvements on the CAPS score.</p> <p>INTERPRETATION: A non-trauma-focused-therapy, TM, might be a viable option for decreasing the severity of PTSD symptoms in veterans and represents an efficacious alternative for veterans who prefer not to receive or who do not respond to traditional exposure-based treatments of PTSD.</p>
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<p>Niles BL, Mori DL, Polizzi CP, Pless Kaiser A, Ledoux AM, Wang C. Feasibility, qualitative findings and satisfaction of a brief Tai Chi mind-body programme for veterans with post-traumatic stress symptoms. BMJ Open. 2016 Nov 29;6(11):e012464. doi: 10.1136/bmjopen-2016-012464. PubMed PMID: 27899398; PubMed Central PMCID: PMC5168527.</p>	<p>OBJECTIVE: To examine feasibility, qualitative feedback and satisfaction associated with a 4-session introduction to Tai Chi for veterans with post-traumatic stress symptoms.</p> <p>DESIGN: We observed and reported recruitment and retention rates, participant characteristics, adherence, and satisfaction across 2 cohorts. We also examined qualitative feedback provided by questionnaires, focus groups and individual interviews.</p> <p>MAIN OUTCOME MEASURES: Rates of recruitment and retention, focus group and individual feedback interviews, self-reported satisfaction.</p> <p>PARTICIPANTS: 17 veterans with post-traumatic stress symptoms.</p> <p>RESULTS: Almost 90% (17/19) of those eligible following the telephone screen enrolled in the programme. Three-quarters (76.4%) of the participants attended at least 3 of the 4 Tai Chi sessions. Qualitative data analysis revealed themes indicating favourable impressions of the Tai Chi sessions. In addition, participants reported feeling very engaged during the sessions, and found Tai Chi to be helpful for managing distressing symptoms (ie, intrusive thoughts, concentration difficulties, physiological arousal). Participants also reported high satisfaction: 93.8% endorsed being very or mostly satisfied with the programme. All participants (100%) indicated that they would like to participate in future Tai Chi programmes and would recommend it to a friend.</p> <p>CONCLUSIONS: Tai Chi appears to be feasible and safe for veterans with symptoms of post-traumatic stress disorder (PTSD), is perceived to be beneficial and is associated with high rates of satisfaction. This study highlights the need for future investigation of Tai Chi as a novel intervention to address symptoms of PTSD</p>
<p>Nolan CR. Bending without breaking: A narrative review of trauma-sensitive yoga for women with PTSD. Complement Ther Clin Pract. 2016 Aug;24:32-40. doi: 10.1016/j.ctcp.2016.05.006. Epub 2016 May 8. Review.</p>	<p>OBJECTIVE: The purpose of this review is to evaluate the peer-reviewed empirical evidence on the use of Trauma-Sensitive Yoga (TSY) for the treatment of women with post-traumatic stress disorder (PTSD): specifically interpersonal trauma such as intimate partner violence. To date, no such review has been conducted.</p> <p>METHODS: Articles meeting study inclusionary criteria were identified through electronic database searches. A total of five studies (N = 5) were selected and reviewed. These studies included two randomized controlled trials (RCT), one follow-up of an RCT, one quasi-experimental study, and one qualitative study.</p> <p>RESULTS: There is tentative evidence to support the efficacy of TSY in reducing PTSD, depression, and anxiety symptomatology for women with PTSD; there is also tentative evidence confirming the feasibility of implementing TSY as an adjunctive mental health intervention, particularly for individuals who are non-responsive to cognitive-based psychotherapies. The qualitative findings speak to a number of benefits of yoga practice stimulated by TSY participation centering on the phenomenon of peaceful embodiment.</p> <p>CONCLUSIONS: Replication of these results using larger and more diverse samples and rigorous study designs by independent researchers would add credibility to these findings and contribute to the growing body of knowledge on TSY. Additionally, there is a dearth of studies on this nascent form of therapeutic yoga. Therefore, further research is needed to explore the potential efficacy of TSY with other types of trauma, populations, and settings.</p>

<p>Pence PG, Katz LS, Huffman C, Cojucar G. Delivering Integrative Restoration-Yoga Nidra Meditation (iRest®) to Women with Sexual Trauma at a Veteran's Medical Center: A Pilot Study. Int J Yoga Therap. 2014</p>	<p>OBJECTIVE: This pilot study examines iRest, a form of guided mindfulness meditation, and its ability to reduce symptoms associated with sexual trauma, including military sexual trauma (MST), in a sample of women seeking psychotherapy services at a Department of Veterans Affairs (VA) medical center.</p> <p>METHODS: 90-minute sessions were held 19 times, twice a week for 10 weeks, except for the week with a holiday. Participants completed self-report measures Brief Symptom Inventory-18 (BSI), Posttraumatic Cognitions Inventory (PTCI), and the Post-traumatic Stress Disorder Check List (PCL) pre- and post-treatment. Sixteen women were recruited: 15 enrolled, 5 dropped due to transportation issues, and 10 completed the protocol.</p> <p>RESULTS: Completers reported significant decreases in symptoms of posttraumatic stress disorder (PCL, $t(9) = 3.17, p < 0.01, d = 0.66$), negative thoughts of self-blame (PTCI $t(9) = 2.96, p < 0.05, d = 0.52$), and depression (BSI, $t(9) = 2.33, p < 0.05, d = 0.64$). Participants also offered verbal reports of decreased body tension, improved quality of sleep, improved ability to handle intrusive thoughts, improved ability to manage stress, and an increased feeling of joy. Participants also enthusiastically endorsed the class and stated they would take it again and recommend it to others.</p> <p>CONCLUSIONS: This small pilot study showed promising results for delivering iRest to women with sexual trauma in a VA medical center. Further research is warranted.</p>
<p>Pigeon W, Allen C, Possemato K, Bergen-Cico D, Treatman S. Feasibility and Acceptability of a Brief Mindfulness Program for Veterans in Primary Care with Posttraumatic Stress Disorder. Mindfulness. 2015, Volume 6, Number 5, Page 986</p>	<p>Mindfulness-based stress reduction programs have improved psychological health for clinical populations including veterans with posttraumatic stress disorder (PTSD). Veterans with PTSD who seek services in Department of Veterans Affairs primary care are especially in need of brief treatments that can alleviate PTSD symptoms. A clinical demonstration project was carried out to assess the feasibility and acceptability of a brief mindfulness program consisting of four weekly 1.5-h class sessions. Veterans enrolled in primary care with diagnostic or subthreshold PTSD were recruited. The brief mindfulness intervention was feasible to deliver, and veterans were generally satisfied with the program. Despite good retention once a class session was attended, a large number of veterans provided a variety of reasons for not attending the program at all. Veteran feedback that can be addressed to improve the brief mindfulness program is discussed, including enhancing initial attendance.</p>

<p>Polusny MA, Erbes CR, Thuras P, Moran A, Lamberty GJ, Collins RC, Rodman JL, Lim KO. Mindfulness-Based Stress Reduction for Posttraumatic Stress Disorder Among Veterans: A Randomized Clinical Trial. JAMA. 2015 Aug 4;314(5):456-65. doi: 10.1001/jama.2015.8361. PubMed PMID: 26241597.</p>	<p>IMPORTANCE: Mindfulness-based interventions may be acceptable to veterans who have poor adherence to existing evidence-based treatments for posttraumatic stress disorder (PTSD).</p> <p>OBJECTIVE: To compare mindfulness-based stress reduction with present-centered group therapy for treatment of PTSD.</p> <p>DESIGN, SETTING, AND PARTICIPANTS: Randomized clinical trial of 116 veterans with PTSD recruited at the Minneapolis Veterans Affairs Medical Center from March 2012 to December 2013. Outcomes were assessed before, during, and after treatment and at 2-month follow-up. Data collection was completed on April 22, 2014.</p> <p>INTERVENTIONS: Participants were randomly assigned to receive mindfulness-based stress reduction therapy (n = 58), consisting of 9 sessions (8 weekly 2.5-hour group sessions and a daylong retreat) focused on teaching patients to attend to the present moment in a nonjudgmental, accepting manner; or present-centered group therapy (n = 58), an active-control condition consisting of 9 weekly 1.5-hour group sessions focused on current life problems.</p> <p>MAIN OUTCOMES AND MEASURES: The primary outcome, change in PTSD symptom severity over time, was assessed using the PTSD Checklist (range, 17-85; higher scores indicate greater severity; reduction of 10 or more considered a minimal clinically important difference) at baseline and weeks 3, 6, 9, and 17. Secondary outcomes included PTSD diagnosis and symptom severity assessed by independent evaluators using the Clinician-Administered PTSD Scale along with improvements in depressive symptoms, quality of life, and mindfulness.</p> <p>RESULTS: Participants in the mindfulness-based stress reduction group demonstrated greater improvement in self-reported PTSD symptom severity during treatment (change in mean PTSD Checklist scores from 63.6 to 55.7 vs 58.8 to 55.8 with present-centered group therapy; between-group difference, 4.95; 95% CI, 1.92-7.99; P=.002) and at 2-month follow-up (change in mean scores from 63.6 to 54.4 vs 58.8 to 56.0, respectively; difference, 6.44; 95% CI, 3.34-9.53, P < .001). Although participants in the mindfulness-based stress reduction group were more likely to show clinically significant improvement in self-reported PTSD symptom severity (48.9% vs 28.1% with present-centered group therapy; difference, 20.9%; 95% CI, 2.2%-39.5%; P = .03) at 2-month follow-up, they were no more likely to have loss of PTSD diagnosis (53.3% vs 47.3%, respectively; difference, 6.0%; 95% CI, -14.1% to 26.2%; P = .55).</p> <p>CONCLUSIONS AND RELEVANCE: Among veterans with PTSD, mindfulness-based stress reduction therapy, compared with present-centered group therapy, resulted in a greater decrease in PTSD symptom severity. However, the magnitude of the average improvement suggests a modest effect.</p>
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<p>Prisco MK, Jecmen MC, Bloeser KJ et al. Group auricular acupuncture for PTSD-related insomnia in veterans: a randomized trial. 17 Dec 2013https://doi.org/10.1089/acu.2013.0989</p>	<p>Objectives: This study examined how group auricular acupuncture may influence sleep quality, sleep patterns, and hypnotic medication use associated with PTSD-related insomnia in Operation Enduring Freedom and Operation Iraqi Freedom veterans.</p> <p>Design: This study was a randomized controlled trial with sham acupuncture and wait-list controls.</p> <p>Setting: This study took place at the Washington, DC, Department of Veterans Affairs (VA), Medical Center.</p> <p>Subjects: Thirty-five subjects were randomized to participate in the study, but only 25 subjects completed the study.</p> <p>Interventions: Subjects were randomized to one of three groups: (1) true group auricular acupuncture; (2) sham auricular acupuncture; or (3) wait-list control.</p> <p>Outcome Measures: The primary outcome measure was perceived sleep quality (as measured by Insomnia Severity Index (ISI) questionnaires and Morin Sleep Diaries [MSDs]). Secondary outcome measures were total sleep time (TST), sleep efficiency, sleep latency, naps (as measured by MSD and wrist actigraphs [WAs]), hypnotic medication use, veteran satisfaction, and attrition rates.</p> <p>Results: Subjects in the true auricular acupuncture group had a statistically significant improvement ($p=0.0165$) in sleep quality as measured by the ISI at time (t)=1 month. This group had a trend toward lower MSD TST at $t=2$ months ($p=0.078$), lower WA TST at $t=1$ month ($p=0.0893$), and toward higher MSD nap times than the other two groups post-treatment ($p=0.0666$). No statistically significant association between group assignment and hypnotic medication use and satisfaction scores were noted.</p> <p>Conclusions: Acupuncturists should consider incorporating sleep hygiene education into their clinical practices and/or collaborate with insomnia health care professionals when working with individuals with insomnia. This study also supports the finding that perceived sleep quality and objective WA measurements are not significantly correlated.</p>
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<p>Pyne JM, Constans JI, Nanney JT, Wiederhold MD, Gibson DP, Kimbrell T, Kramer TL, Pitcock JA, Han X, Williams DK, Chartrand D, Gevirtz RN, Spira J, Wiederhold BK, McCraty R, McCune TR. Heart Rate Variability and Cognitive Bias Feedback Interventions to Prevent Post-deployment PTSD: Results from a Randomized Controlled Trial. Mil Med. 2019 Jan 1;184(1-2):e124-e132. doi: 10.1093/milmed/usy171.</p>	<p>INTRODUCTION: There is a long history of pre-deployment PTSD prevention efforts in the military and effective pre-deployment strategies to prevent post-deployment PTSD are still needed.</p> <p>MATERIALS AND METHODS: This randomized controlled trial included three arms: heart rate variability biofeedback (HRVB), cognitive bias modification for interpretation (CBM-I), and control. The hypothesis was that pre-deployment resilience training would result in lower post-deployment PTSD symptoms compared with control. Army National Guard soldiers (n = 342) were enrolled in the Warriors Achieving Resilience (WAR) study and analyzed. The outcome was PTSD symptom severity using the PTSD Checklist - Military version (PCL) measured at pre-deployment, 3- and 12-month post-deployment. Due to the repeated measures for each participant and cluster randomization at the company level, generalized linear mixed models were used for the analysis. This study was approved by the Army Human Research Protection Office, Central Arkansas Veterans Healthcare System Institutional Review Board (IRB), and Southeast Louisiana Veterans Health Care System IRB.</p> <p>RESULTS: Overall, there was no significant intervention effect. However, there were significant intervention effects for subgroups of soldiers. For example, at 3-months post-deployment, the HRVB arm had significantly lower PCL scores than the control arm for soldiers with no previous combat zone exposure who were age 30 and older and for soldiers with previous combat zone exposure who were 45 and older (unadjusted effect size -0.97 and -1.03, respectively). A significant difference between the CBM-I and control arms was found for soldiers without previous combat zone exposure between ages 23 and 42 (unadjusted effect size -0.41). Similarly, at 12-months post-deployment, the HRVB arm had significantly lower PCL scores in older soldiers.</p> <p>CONCLUSION: Pre-deployment resilience training was acceptable and feasible and resulted in lower post-deployment PTSD symptom scores in subgroups of older soldiers compared with controls. Strengths of the study included cluster randomization at the company level, use of iPod device to deliver the resilience intervention throughout the deployment cycle, and minimal disruption of pre-deployment training by using self-paced resilience training. Weaknesses included self-report app use, study personnel not able to contact soldiers during deployment, and in general a low level of PTSD symptom severity throughout the study. In future studies, it would be important for the study team and/or military personnel implementing the resilience training to be in frequent contact with participants to ensure proper use of the resilience training apps.</p>
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<p>Reddy S, Dick AM, Gerber MR, Mitchell K. The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. J Altern Complement Med. 2014 Oct;20(10):750-6. doi: 10.1089/acm.2014.0014. Epub 2014 Sep 11. PubMed PMID: 25211372; PubMed Central PMCID: PMC4195227</p>	<p>BACKGROUND: Individuals with posttraumatic stress disorder (PTSD) often exhibit high-risk substance use behaviors. Complementary and alternative therapies are increasingly used for mental health disorders, although evidence is sparse.</p> <p>OBJECTIVES: Investigate the effect of a yoga intervention on alcohol and drug abuse behaviors in women with PTSD. Secondary outcomes include changes in PTSD symptom perception and management and initiation of evidence-based therapies.</p> <p>MATERIALS AND METHODS: The current investigation analyzed data from a pilot randomized controlled trial comparing a 12-session yoga intervention with an assessment control for women age 18 to 65 years with PTSD. The Alcohol Use Disorder Identification Test (AUDIT) and Drug Use Disorder Identification Test (DUDIT) were administered at baseline, after the intervention, and a 1-month follow-up. Linear mixed models were used to test the significance of the change in AUDIT and DUDIT scores over time. Treatment-seeking questions were compared by using Fisher exact tests.</p> <p>RESULTS: The mean AUDIT and DUDIT scores decreased in the yoga group; in the control group, mean AUDIT score increased while mean DUDIT score remained stable. In the linear mixed models, the change in AUDIT and DUDIT scores over time did not differ significantly by group. Most yoga group participants reported a reduction in symptoms and improved symptom management. All participants expressed interest in psychotherapy for PTSD, although only two participants, both in the yoga group, initiated therapy.</p> <p>CONCLUSIONS: Results from this pilot study suggest that a specialized yoga therapy may play a role in attenuating the symptoms of PTSD, reducing risk of alcohol and drug use, and promoting interest in evidence-based psychotherapy. Further research is needed to confirm and evaluate the strength of these effects.</p>
<p>Reinhardt KM, Noggle Taylor JJ, Johnston J, Zameer A, Cheema S, Khalsa SBS. Kripalu Yoga for Military Veterans With PTSD: A Randomized Trial.</p>	<p>OBJECTIVES: This randomized controlled trial of yoga for military veterans and active duty personnel with posttraumatic stress disorder (PTSD) evaluated the efficacy of a 10-week yoga intervention on PTSD.</p> <p>METHOD: Fifty-one participants were randomized into yoga or no-treatment assessment-only control groups. Primary outcome measures included questionnaires and the Clinician Administered PTSD Scale.</p> <p>RESULTS: Both yoga (n = 9) and control (n = 6) participants showed significant decreases in reexperiencing symptoms, with no significant between-group differences. Secondary within-group analyses of a self-selected wait-list yoga group (n = 7) showed significant reductions in PTSD symptoms after yoga participation, in contrast to their control group participation. Consistent with current literature regarding high rates of PTSD treatment dropout for veterans, this study faced challenges retaining participants across conditions.</p> <p>CONCLUSION: These results are consistent with recent literature indicating that yoga may have potential as a PTSD therapy in a veteran or military population. However, additional larger sample size trials are necessary to confirm this conclusion.</p>

<p>Rosenthal JZ, Grosswald S, Ross R, Rosenthal N. Effects of transcendental meditation in veterans of Operation Enduring Freedom and Operation Iraqi Freedom with posttraumatic stress disorder: a pilot study. Mil Med. 2011 Jun;176(6):626-30.</p>	<p>We conducted an uncontrolled pilot study to determine whether transcendental meditation (TM) might be helpful in treating veterans from Operation Enduring Freedom or Operation Iraqi Freedom with combat-related posttraumatic stress disorder (PTSD). Five veterans were trained in the technique and followed for 12 weeks. All subjects improved on the primary outcome measure, the Clinician Administered PTSD Scale (mean change score, 31.4; $p = 0.02$; $df = 4$). Significant improvements were also observed for 3 secondary outcome measures: Clinician's Global Inventory-Severity (mean change score, 1.60; $p < 0.04$; $df = 4$), Quality of Life Enjoyment and Satisfaction Questionnaire (mean change score, -13.00; $p < 0.01$; $df = 4$), and the PTSD Checklist-Military Version (mean change score, 24.00; $p < 0.02$; $df = 4$). TM may have helped to alleviate symptoms of PTSD and improve quality of life in this small group of veterans. Larger, placebo-controlled studies should be undertaken to further determine the efficacy of TM in this population.</p>
<p>Rutledge T, Nidich S, Schneider RH, Mills PJ, Salerno J, Heppner P, Gomez MA, Gaylord-King C, Rainforth M. Design and rationale of a comparative effectiveness trial evaluating transcendental meditation against established therapies for PTSD. Contemp Clin Trials. 2014 Sep;39(1):50-6. doi: 10.1016/j.cct.2014.07.005. Epub 2014 Jul 25.</p>	<p>BACKGROUND: Although meditation therapies such as the Transcendental Meditation (TM) technique are commonly used to assist with stress and stress-related diseases, there remains a lack of rigorous clinical trial research establishing the relative efficacy of these treatments overall and for populations with psychiatric illness. This study uses a comparative effectiveness design to assess the relative benefits of TM to those obtained from a gold-standard cognitive behavioral therapy for posttraumatic stress disorder (PTSD) in a Veteran population.</p> <p>METHODS AND DESIGN: This paper describes the rationale and design of an in progress randomized controlled trial comparing TM to an established cognitive behavioral treatment - Prolonged Exposure (PE) - and an active control condition (health education [HE]) for PTSD. This trial will recruit 210 Veterans meeting DSM-IV criteria for PTSD, with testing conducted at 0 and 3 months for PTSD symptoms, depression, mood disturbance, quality of life, behavioral factors, and physiological/biochemical and gene expression mechanisms using validated measures. The study hypothesis is that TM will be noninferior to PE and superior to HE on changes in PTSD symptoms, using the Clinician Administered PTSD Scale (CAPS).</p> <p>DISCUSSION: The described study represents a methodologically rigorous protocol evaluating the benefits of TM for PTSD. The projected results will help to establish the overall efficacy of TM for PTSD among Veterans, identify bio-behavioral mechanisms through which TM and PE may improve PTSD symptoms, and will permit conclusions regarding the relative value of TM against currently established therapies for PTSD.</p>
<p>Schuman D. Veterans' Experiences using Complementary and Alternative Medicine for Posttraumatic Stress: A Qualitative Interpretive Meta-Synthesis. Soc Work Public Health. 2016;31(2):83-97. doi: 10.1080/19371918.2015.1087915. Epub 2016 Jan 22.</p>	<p>Combat Veterans struggling with combat-related post(*)traumatic stress disorder and subthreshold symptoms often look outside the conventional behavioral health care system for treatment because standard care has not met their needs. This study utilized a qualitative interpretive metasynthesis to describe the lived experience of combat Veterans seeking complementary and alternative health therapies for posttraumatic stress symptoms. This research aimed to understand what attracts these Veterans to complementary and alternative medicine techniques and how they benefit from their experiences with nonconventional therapies. Findings suggest the need for further research into increasing access and eliminating disparities for Veterans seeking more integrative care.</p>

<p>Schuman DL, Killian MO. Pilot Study of a Single Session Heart Rate Variability Biofeedback Intervention on Veterans' Posttraumatic Stress Symptoms. Appl Psychophysiol Biofeedback. 2018 Sep 18. doi: 10.1007/s10484-018-9415-3. [Epub ahead of print] PubMed PMID: 30229543.</p>	<p>Abstract Veterans with posttraumatic stress symptoms exhibit reduced heart rate variability characteristic of autonomic nervous system dysregulation. Studies show heart rate variability biofeedback (HRVB) is effective in reducing posttraumatic stress symptoms by improving autonomic functioning. Participants in this pilot study were veterans of different war eras with military-related posttraumatic stress symptoms. The study aims were to examine the impact of a single session HRVB intervention on posttraumatic stress symptoms and heart rate variability, test persistence of effects, and determine if veterans would find the intervention acceptable. One group (n = 6) received training in diaphragmatic breathing and heart rate variability biofeedback, augmented by twice-daily practice using a smart phone and breath pacing app. A second group (n = 6) received only a single session of diaphragmatic breathing training. After 4 weeks, participants in the second group (n = 5) received the full intervention. HRVB significantly reduced global posttraumatic stress symptoms, whereas diaphragmatic breathing alone did not. Further, veterans found the approach acceptable, as demonstrated by a high degree of adherence with prescribed practice, low study attrition, and continued use over time. Results of this pilot study warrant further refinement of a protocol utilizing mHealth to treat posttraumatic stress symptoms in military populations.</p>
<p>Schure MB, Simpson TL, Martinez M, Sayre G, Kearney DJ. Mindfulness-Based Processes of Healing for Veterans with Post-Traumatic Stress Disorder. J Altern Complement Med. 2018 Nov;24(11):1063-1068. doi: 10.1089/acm.2017.0404. Epub 2018 May 7.</p>	<p>OBJECTIVE: U.S. veterans are at increased risk of developing post-traumatic stress disorder (PTSD). Prior studies suggest a benefit of mindfulness-based stress reduction (MBSR) for PTSD, but the mechanisms through which MBSR reduces PTSD symptoms and improves functional status have received limited empirical inquiry. This study used a qualitative approach to better understand how training in mindfulness affects veterans with PTSD. DESIGN: Qualitative study using semistructured in-depth interviews following participation in an MBSR intervention. SETTING: Outpatient. INTERVENTION: Eight-week MBSR program. OUTCOME MEASURE: Participants' narratives of their experiences from participation in the program. RESULTS: Interviews were completed with 15 veterans. Analyses identified six core aspects of participants' MBSR experience related to PTSD: dealing with the past, staying in the present, acceptance of adversity, breathing through stress, relaxation, and openness to self and others. Participants described specific aspects of a holistic mindfulness experience, which appeared to activate introspection and curiosity about their PTSD symptoms. Veterans with PTSD described a number of pathways by which mindfulness practice may help to ameliorate PTSD.</p>
<p>Seppälä EM, Nitschke JB, Tudorascu DL, Hayes A, Goldstein MR, Nguyen DT, Perlman D, Davidson RJ. Breathing-based meditation decreases posttraumatic stress disorder symptoms in U.S. military veterans: a randomized controlled longitudinal study.</p>	<p>Given the limited success of conventional treatments for veterans with posttraumatic stress disorder (PTSD), investigations of alternative approaches are warranted. We examined the effects of a breathing-based meditation intervention, Sudarshan Kriya yoga, on PTSD outcome variables in U.S. male veterans of the Iraq or Afghanistan war. We randomly assigned 21 veterans to an active (n = 11) or waitlist control (n = 10) group. Laboratory measures of eye-blink startle and respiration rate were obtained before and after the intervention, as were self-report symptom measures; the latter were also obtained 1 month and 1 year later. The active group showed reductions in PTSD scores, d = 1.16, 95% CI [0.20, 2.04], anxiety symptoms, and respiration rate, but the control group did not. Reductions in startle correlated with reductions in hyperarousal symptoms immediately postintervention (r = .93, p < .001) and at 1-year follow-up (r = .77, p = .025). This longitudinal intervention study suggests there may be clinical utility for Sudarshan Kriya yoga for PTSD.</p>

<p>Smeeding SJ, Bradshaw DH, Kumpfer K, Trevithick S, Stoddard GJ. Outcome evaluation of the Veterans Affairs Salt Lake City Integrative Health Clinic for chronic pain and stress-related depression, anxiety, and post-traumatic stress disorder. J Altern Complement Med. 2010 Aug;16(8):823-35. doi: 10.1089/acm.2009.0510. PubMed PMID: 20649442.</p>	<p>OBJECTIVES: The purpose of this longitudinal outcome research study was to determine the effectiveness of the Integrative Health Clinic and Program (IHCP) and to perform a subgroup analysis investigating patient benefit. The IHCP is an innovative clinical service within the Veterans Affairs Health Care System designed for nonpharmacologic biopsychosocial management of chronic nonmalignant pain and stress-related depression, anxiety, and symptoms of post-traumatic stress disorder (PTSD) utilizing complementary and alternative medicine and mind-body skills.</p> <p>METHODS: A post-hoc quasi-experimental design was used and combined with subgroup analysis to determine who benefited the most from the program. Data were collected at intake and up to four follow-up visits over a 2-year time period. Hierarchical linear modeling was used for the statistical analysis. The outcome measures included: Health-Related Quality of Life (SF-36), the Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). Subgroup comparisons included low anxiety (BAI < 19, n = 82), low depression (BDI < 19, n = 93), and absence of PTSD (n = 102) compared to veterans with high anxiety (BAI > or = 19, n = 77), high depression (BDI > 19, n = 67), and presence of PTSD (n = 63).</p> <p>RESULTS: All of the comparison groups demonstrated an improvement in depression and anxiety scores, as well as in some SF-36 categories. The subgroups with the greatest improvement, seen at 6 months, were found in the high anxiety group (Cohen's d = 0.52), the high-depression group (Cohen's d = 0.46), and the PTSD group (Cohen's d = 0.41).</p> <p>CONCLUSIONS: The results suggest IHCP is an effective program, improving chronic pain and stress-related depression, anxiety, and health-related quality of life. Of particular interest was a significant improvement in anxiety in the PTSD group. The IHCP model offers innovative treatment options that are low risk, low cost, and acceptable to patients and providers.</p>
<p>Staples JK, Hamilton MF, Uddo M. A yoga program for the symptoms of post-traumatic stress disorder in veterans. Mil Med. 2013 Aug;178(8):854-60. doi: 10.7205/MILMED-D-12-00536.</p>	<p>The purpose of this pilot study was to evaluate the feasibility and effectiveness of a yoga program as an adjunctive therapy for improving post-traumatic stress disorder (PTSD) symptoms in Veterans with military-related PTSD. Veterans (n = 12) participated in a 6 week yoga intervention held twice a week. There was significant improvement in PTSD hyperarousal symptoms and overall sleep quality as well as daytime dysfunction related to sleep. There were no significant improvements in the total PTSD, anger, or quality of life outcome scores. These results suggest that this yoga program may be an effective adjunctive therapy for improving hyperarousal symptoms of PTSD including sleep quality. This study demonstrates that the yoga program is acceptable, feasible, and that there is good adherence in a Veteran population.</p>
<p>Steele E, Wood DS, J Usadi E, Applegarth DM. TRR's Warrior Camp: An Intensive Treatment Program for Combat Trauma in Active Military and Veterans of All Eras. Mil Med. 2018 Mar 1;183(suppl_1):403-407.</p>	<p>Effective treatments for combat trauma in military service members exist, but barriers to care abound, including poor access, stigma, and dropout. Although the effects of post-traumatic stress disorder (PTSD) can be severe, recovery is possible when proper treatment is implemented. Trauma and Resiliency Resources, Inc.'s Warrior Camp (WC) program is designed to address the effects of combat trauma in military service members and veterans. This intensive, 7-d treatment incorporates eye movement desensitization and reprocessing therapy, equine-assisted psychotherapy, yoga, and narrative writing in context of community. This single-group pretest-posttest design included paired t-tests and effect size analyses for 85 participants of WC. Outcome measures included the Mississippi Scale for Combat-related PTSD, the Patient Health Questionnaire, the Revised Adult Attachment Scales, and the Moral Injury Events Scale. Clinician-administered measures included the Davidson Trauma Scale and the Dissociative Experiences Scale. All measures showed statistically significant reductions in distress. The effect sizes ranged from small to large. Results suggest that WC participants experienced significant improvement in PTSD, depression, moral injury, dissociation and adult attachment. Clinicians should consider the potential benefits of this short-term, intensive treatment when addressing combat-related PTSD among military service members and veterans.</p>

<p>Sylvia L, West E, Blackburn AM, Gupta C, Bui E, Mahoney T, Duncan G, Wright EC, Lejeune S, Spencer TJ. Acceptability of an adjunct equine-assisted activities and therapies program for veterans with posttraumatic stress disorder and/or traumatic brain injury. J Integr Med. 2020 Jan 21. pii: S2095-4964(20)30006-6. doi:</p>	<p>OBJECTIVE: Equine-assisted activities and therapies (EAATs) have been a growing adjunctive integrative health modality, as they allow participants to practice mindfulness, emotional regulation, and self-mastery or self-esteem building skills. Preliminary evidence suggests that these programs may be helpful in reducing posttraumatic stress disorder (PTSD), anxiety, and depressive symptoms. The current study examines the acceptability of integrating an EAAT program as part of a two-week, intensive clinical program for veterans with PTSD and/or traumatic brain injury (TBI).</p> <p>METHODS: A family member or support person could accompany veterans and participate in the program. One hundred and six participants (veteran n = 62, family n = 44) left the urban environment in an intensive outpatient program (IOP) to attend a two-day, weekend EAAT in rural New Hampshire. Satisfaction surveys were conducted on the last day of the program and examined using thematic analysis.</p> <p>RESULTS: The following themes were reported in the surveys: ability of horses to catalyze emotional rehabilitation, effectiveness of immersion in equine-assisted activities, program's ability to foster interpersonal relationships and necessity of education about PTSD for staff. Participants also reported enjoying the program as highlighted by qualitative feedback, a mean score of 9.76 (standard deviation [SD] = 0.61) as reported by veterans and a mean score of 9.91 (SD = 0.29) as reported by family members on a 10-point visual analog scale with higher scores indicating a greater overall experience.</p> <p>CONCLUSION: These data offer preliminary evidence that an adjunct EAAT program is acceptable for veterans with PTSD and/or TBI participating in an IOP.</p>
<p>Taylor SL, Elwy AR. Complementary and alternative medicine for US veterans and active duty military personnel: promising steps to improve their health. Med Care.2014 Dec;52(12 Suppl 5):S1-4. doi: 10.1097/MLR.000000000000270. PubMed PMID: 25397816.</p>	<p>This special issue, funded by the Veterans Health Administration's (VA's) Office of Patient Centered Care and Cultural Transformation, presents the most recent evidence from health services research on the use of complementary and alternative medicine (CAM) among US veterans and active military personnel.</p>

<p>Wahbeh H, Goodrich E, Goy E, Oken BS. Mechanistic Pathways of Mindfulness Meditation in Combat Veterans With Posttraumatic Stress Disorder. J Clin Psychol. 2016</p>	<p>OBJECTIVE: This study's objective was to evaluate the effect of two common components of meditation (mindfulness and slow breathing) on potential mechanistic pathways.</p> <p>METHODS: A total of 102 combat veterans with posttraumatic stress disorder (PTSD) were randomized to (a) the body scan mindfulness meditation (MM), (b) slow breathing (SB) with a biofeedback device, (c) mindful awareness of the breath with an intention to slow the breath (MM+SB), or (d) sitting quietly (SQ). Participants had 6 weekly one-on-one sessions with 20 minutes of daily home practice. The mechanistic pathways and measures were as follows: (a) autonomic nervous system (hyperarousal symptoms, heart rate [HR], and heart rate variability [HRV]); (b) frontal cortex activity (attentional network task [ANT] conflict effect and event-related negativity and intrusive thoughts); and (c) hypothalamic-pituitary-adrenal axis (awakening cortisol). PTSD measures were also evaluated.</p> <p>RESULTS: Meditation participants had significant but modest within-group improvement in PTSD and related symptoms, although there were no effects between groups. Perceived impression of PTSD symptom improvement was greater in the meditation arms compared with controls. Resting respiration decreased in the meditation arms compared with SQ. For the mechanistic pathways, (a) subjective hyperarousal symptoms improved within-group (but not between groups) for MM, MM+SB, and SQ, while HR and HRV did not; (b) intrusive thoughts decreased in MM compared with MM+SB and SB, while the ANT measures did not change; and (c) MM had lower awakening cortisol within-group (but not between groups).</p> <p>CONCLUSION: Treatment effects were mostly specific to self-report rather than physiological measures. Continued research is needed to further evaluate mindfulness meditation's mechanism in people with PTSD.</p>
<p>Walker J 3rd, Pacik D. Controlled Rhythmic Yogic Breathing as Complementary Treatment for Post-Traumatic Stress Disorder in Military Veterans: A Case Series. Med Acupunct. 2017 Aug 1;29(4):232-238. doi: 10.1089/acu.2017.1215.</p>	<p>Background: Post-traumatic stress disorder (PTSD) is a cluster of symptoms in which a person persistently relives a traumatic event, through recurring thoughts, nightmares, and flashbacks for at least 1 month or more. There are various behavioral and medical treatment options for PTSD. Mind-body techniques, such as biofeedback and breathing-based stress reduction, have shown some promise in the treatment of PTSD symptoms. The purpose of this case series was to examine controlled yogic breathing as a complementary treatment of PTSD in military veterans. A retrospective review was performed from 2012 to 2016 in 3 cases, and participant demographics, member statements, and PTSD Checklist-Military Version (PCL-M) scores, pre-and-post course, were extracted. Cases: Three military veterans with PTSD participated in a standardized 5-day course designed to teach them controlled rhythmic yogic breathing exercises. Results: Subjectively, all 3 participants reported a decrease in PTSD symptoms after the course. Objectively, all 3 participants had a reduction in their overall PCL-M scores after the course. Among all 3 participants, there were score decreases in the Avoidance and Increased Arousal categories. The most dramatic improvement occurred in the participant with the most severe symptoms. Conclusions: Controlled yogic breathing, specifically Sudarshan Kriya (SKY), appeared to reduce the symptoms of PTSD in 3 veterans of the Armed Services.</p>

<p>Willing AE, Girling SA, Deichert R, Wood-Deichert R, Gonzalez J, Hernandez D, Foran E, Sanberg PR, Kip KE. Brazilian Jiu Jitsu Training for US Service Members and Veterans with Symptoms of PTSD. Mil Med. 2019 Dec 1;184(11-12):e626-e631. doi:</p>	<p>INTRODUCTION: The United States has been actively involved in major armed conflicts over the last 15 years. As a result, a significant proportion of active duty service personnel and returning veterans have endured combat, putting them at risk for developing post-traumatic stress disorder (PTSD), a disabling disorder that may occur after exposure to a traumatic event. Current therapies often require long-term, time-intensive and costly commitment from the patient and have variable degrees of success. There remains an ongoing need for better therapies, including complementary medicine approaches that can effectively reduce PTSD symptoms. While anecdotal evidence suggests that routine practice of Brazilian Jiu Jitsu (BJJ) can reduce symptoms of PTSD, there have been no formal studies to address this.</p> <p>MATERIALS AND METHODS: This study was approved by the University of South Florida Institutional Review Board (#PRO00019430). Male US active duty service members and veterans from the Tampa area participated in a 5-month (40 sessions) BJJ training program. Before beginning and again midway through and upon completion of training the participants completed several validated self-report measures that addressed symptoms of PTSD and other co-morbid conditions. Effect size and 95% confidence intervals were determined using a within-person single-group pretest-posttest design.</p> <p>RESULTS: Study participants demonstrated clinically meaningful improvements in their PTSD symptoms as well as decreased symptoms of major depressive disorder, generalized anxiety and decreased alcohol use; effect sizes varied from 0.80 to 1.85.</p> <p>CONCLUSIONS: The results from this first-of-kind pilot study suggest that including BJJ as a complementary treatment to standard therapy for PTSD may be of value. It will be necessary to validate these promising results with a larger subject cohort and a more rigorous experimental design before routinely recommending this complementary therapy.</p>
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<p>Zalta AK, Held P, Smith DL, Klassen BJ, Lofgreen AM, Normand PS, Brennan MB, Rydberg TS, Boley RA, Pollack MH, Karnik NS. Evaluating patterns and predictors of symptom change during a three-week intensive outpatient treatment for veterans with PTSD. BMC Psychiatry. 2018 Jul 27;18(1):242. doi: 10.1186/s12888-018-1816-6.</p>	<p>BACKGROUND: Intensive delivery of evidence-based treatment for posttraumatic stress disorder (PTSD) is becoming increasingly popular for overcoming barriers to treatment for veterans. Understanding how and for whom these intensive treatments work is critical for optimizing their dissemination. The goals of the current study were to evaluate patterns of PTSD and depression symptom change over the course of a 3-week cohort-based intensive outpatient program (IOP) for veterans with PTSD, examine changes in posttraumatic cognitions as a predictor of treatment response, and determine whether patterns of treatment outcome or predictors of treatment outcome differed by sex and cohort type (combat versus military sexual trauma [MST]).</p> <p>METHOD: One-hundred ninety-one veterans (19 cohorts: 12 combat-PTSD cohorts, 7 MST-PTSD cohorts) completed a 3-week intensive outpatient program for PTSD comprised of daily group and individual Cognitive Processing Therapy (CPT), mindfulness, yoga, and psychoeducation. Measures of PTSD symptoms, depression symptoms, and posttraumatic cognitions were collected before the intervention, after the intervention, and approximately every other day during the intervention.</p> <p>RESULTS: Pre-post analyses for completers (N = 176; 92.1% of sample) revealed large reductions in PTSD (d = 1.12 for past month symptoms and d = 1.40 for past week symptoms) and depression symptoms (d = 1.04 for past 2 weeks). Combat cohorts saw a greater reduction in PTSD symptoms over time relative to MST cohorts. Reduction in posttraumatic cognitions over time significantly predicted decreases in PTSD and depression symptom scores, which remained robust to adjustment for autocorrelation.</p> <p>CONCLUSION: Intensive treatment programs are a promising approach for delivering evidence-based interventions to produce rapid treatment response and high rates of retention. Reductions in posttraumatic cognitions appear to be an important predictor of response to intensive treatment. Further research is needed to explore differences in intensive treatment response for veterans with combat exposure versus MST.</p>
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Substance/Opioid Abuse	
Citation	Abstract
<p>Carey EP, Nolan C, Kerns RD, Ho PM, Frank JW. Association Between Facility-Level Utilization of Non-pharmacologic Chronic Pain Treatment and Subsequent Initiation of Long-Term Opioid Therapy. J Gen Intern Med. 2018 May;33(Suppl 1):38-45.</p>	<p>BACKGROUND: Expert guidelines recommend non-pharmacologic treatments and non-opioid medications for chronic pain and recommend against initiating long-term opioid therapy (LTOT).</p> <p>OBJECTIVE: We examined whether veterans with incident chronic pain receiving care at facilities with greater utilization of non-pharmacologic treatments and non-opioid medications are less likely to initiate LTOT.</p> <p>DESIGN: Retrospective cohort study PARTICIPANTS: Veterans receiving primary care from a Veterans Health Administration facility with incident chronic pain between 1/1/2010 and 12/31/2015 based on either of 2 criteria: (1) persistent moderate-to-severe patient-reported pain and (2) diagnoses "likely to represent" chronic pain.</p> <p>MAIN MEASURES: The independent variable was facility-level utilization of pain-related treatment modalities (non-pharmacologic, non-opioid medications, LTOT) in the prior calendar year. The dependent variable was patient-level initiation of LTOT (≥ 90 days within 365 days) in the subsequent year, adjusting for patient characteristics.</p> <p>KEY RESULTS: Among 1,094,569 veterans with incident chronic pain from 2010 to 2015, there was wide facility-level variation in utilization of 10 pain-related treatment modalities, including initiation of LTOT (median, 16%; range, 5-32%). Veterans receiving care at facilities with greater utilization of non-pharmacologic treatments were less likely to initiate LTOT in the year following incident chronic pain. Conversely, veterans receiving care at facilities with greater non-opioid and opioid medication utilization were more likely to initiate LTOT; this association was strongest for past year facility-level LTOT initiation (adjusted rate ratio, 2.10; 95% confidence interval, 2.06-2.15, top vs. bottom quartile of facility-level LTOT initiation in prior calendar year).</p>

<p>Chang BH, Sommers E. Acupuncture and relaxation response for craving and anxiety reduction among military veterans in recovery from substance use disorder. Am J Addict. 2014 Mar-Apr;23(2):129-36. doi: 10.1111/j.1521-0391.2013.12079.x. Epub 2013 Aug 30.</p>	<p>BACKGROUND AND OBJECTIVES: Substance use disorder (SUD) is a major health issue, especially among military veterans. We previously reported the effects of auricular acupuncture and the relaxation response (RR) on reducing craving and anxiety following 10-week interventions among veterans who were in recovery from SUDs. Our current analysis examines effects following each intervention session and RR daily practice.</p> <p>METHODS: We conducted a three-arm randomized controlled trial on residents of a homeless veteran rehabilitation program. Sixty-Seven enrolled participants were randomly assigned to acupuncture (n=23), RR (n=23), or usual care (n=21). Participants in the two intervention groups rated their degree of craving for substance on a scale of 1-10 and anxiety levels on a scale of 1-4 (total score 20-80) before and after each intervention session. Mixed effects regression models were used for analysis.</p> <p>RESULTS: Craving and anxiety levels decreased significantly following one session of acupuncture (-1.04, p=.0001; -8.83, p<.0001) or RR intervention (-.43, p=.02; -4.64, p=.03). The level of craving continued to drop with additional intervention sessions (regression coefficient b=-.10, p=.01, and b=-.10, p=.02 for acupuncture and RR groups, respectively). Number of daily practice days of RR-eliciting techniques is also associated with reduction in craving ratings (b=-.02, p=.008).</p> <p>CONCLUSIONS: Findings demonstrate the value of attending regular acupuncture and RR-eliciting intervention sessions, as well as the daily practice of RR-eliciting techniques.</p> <p>SCIENTIFIC SIGNIFICANCE: Substance addiction is a complex disease and effective treatment remains a challenge. Our study findings add to the scientific evidence of these two non-pharmaceutical approaches for SUD.</p>
<p>Crawford P, Penzien DB, Coeytaux R. Reduction in Pain Medication Prescriptions and Self-Reported Outcomes Associated with Acupuncture in a Military Patient Population. Med Acupunct. 2017 Aug 1;29(4):229-231. doi: 10.1089/acu.2017.1234. PubMed PMID: 28874924; PubMed Central PMCID: PMC5580367</p>	<p>Background: Acupuncture is being offered to patients as part of routine medical care in selected military bases in the United States. There is little published information about the clinical outcomes associated with acupuncture in these clinical settings. Objective: The goal of this research was to assess clinical outcomes observed among adult patients who received acupuncture treatments at a United States Air Force medical center. Materials and Methods: This retrospective chart review was performed at the Nellis Family Medicine Residency in the Mike O'Callaghan Military Medical Center at Nellis Air Force Base in Las Vegas, NV. The charts were from 172 consecutive patients who had at least 4 acupuncture treatments within 1 year. The main outcome measures were prescriptions for opioid medications, muscle relaxants, benzodiazepines, and nonsteroidal anti-inflammatory drugs (NSAIDs) in the 60 days prior to the first acupuncture session and in the corresponding 60 days 1 year later; and Measure Yourself Medical Outcome Profile (MYMOP2) values for symptoms, ability to perform activities, and quality of life. Results: Opioid prescriptions decreased by 45%, muscle relaxants by 34%, NSAIDs by 42%, and benzodiazepines by 14%. MYMOP2 values decreased 3.50-3.11 (P < 0.002) for question 1, 4.18-3.46 (P < 0.00001) for question 3, and 2.73-2.43 (P < 0.006) for question 4. Conclusions: In this military patient population, the number of opioid prescriptions decreased and patients reported improved symptom control, ability to function, and sense of well-being after receiving courses of acupuncture by their primary care physicians.</p>
<p>Gellad WF, Good CB, Shulkin DJ. Addressing the Opioid Epidemic in the United States: Lessons From the Department of Veterans Affairs. JAMA Intern Med. 2017 May 1;177(5):611-612. doi: 10.1001/jamainternmed.2017.0147. PubMed PMID: 28288245.</p>	<p>Over the past 15 years, more than 165 000 people in the United States have died from overdoses related to prescription opioids,¹ and millions more have suffered adverse consequences. The misuse and abuse of prescription opioids have contributed to a precipitous increase in heroin and fentanyl overdoses.</p> <p>Patients treated in the health care system of the Department of Veterans Affairs (VA) are part of this epidemic. Chronic pain impacts half of veterans using the VA, complicated by high rates of psychiatric comorbidities such as substance use disorder and posttraumatic stress disorder.⁴ In 2009, the VA established a national office to coordinate and improve pain management practices, and in 2011, developed standardized metrics for opioid use across the system. Nonetheless, by 2012, nearly 25% of veterans receiving outpatient care in the VA were receiving an opioid.</p>

<p>Gibson CJ, Grasso J, Li Y, Purcell N, Tighe J, Zamora K, Nicosia F, Seal KH. An Integrated Pain Team Model: Impact on Pain-Related Outcomes and Opioid Misuse in Patients with Chronic Pain. Pain Med. 2020 Feb 25. pii: pnaa003.</p>	<p>OBJECTIVE: Biopsychosocial integrated pain team (IPT) care models are being implemented in Veterans Health Administration (VA) and other health care systems to address chronic pain and reduce risks related to long-term opioid therapy, with little evaluation of effectiveness to date. We examined whether IPT improves self-reported pain-related outcomes and opioid misuse.</p> <p>DESIGN: Single-group quality improvement study.</p> <p>SETTING: Large VA health care system.</p> <p>SUBJECTS: Veterans with chronic pain (N = 99, 84% male, mean age [SD] = 60 [13] years).</p> <p>METHODS: Using paired t tests and Wilcoxon matched-pairs signed-ranks tests, we examined pain experience (Brief Pain Inventory, Pain Catastrophizing Scale), opioid misuse (Current Opioid Misuse Measure), treatment satisfaction (Pain Treatment Satisfaction Scale), and pain management strategies among patients with chronic pain before and after three or more IPT encounters.</p> <p>RESULTS: After an average (SD) of 14.3 (9) weeks engaged in IPT, patients reported improvement in pain interference (mean [SD] = 46.0 [15.9] vs 40.5 [16.2], P < 0.001), pain catastrophizing (mean [SD] = 22.9 [13.0] vs 19.3 [14.1], P = 0.01), treatment satisfaction (i.e., "very satisfied" = 13.1% at baseline vs 25.3% at follow-up, P = 0.01), and reduced opioid misuse (mean [SD] = 11.0 [7.5] vs 8.2 [6.1], P = 0.01). Patients reported increased use of integrative (i.e., acupuncture, 11% at baseline vs 26% at follow-up, P < 0.01) and active pain management strategies (i.e., exercise, 8% at baseline vs 16% at follow-up, P < 0.01) and were less likely to use only pharmacological pain management strategies after IPT engagement (19% at baseline vs 5% at follow-up, P < 0.01).</p> <p>CONCLUSIONS: Biopsychosocial, integrated pain care may improve patient-centered outcomes related to opioid misuse and the subjective experience and nonpharmacological self-management of chronic pain.</p>
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<p>Hadlandsmyth K, Mosher H, Vander Weg MW, Lund BC. Decline in Prescription Opioids Attributable to Decreases in Long-Term Use: A Retrospective Study in the Veterans Health Administration 2010-2016. J Gen Intern Med. 2018 Jun;33(6):818-824.</p>	<p>BACKGROUND: Improved understanding of temporal trends in short- and long-term opioid prescribing may inform efforts to curb the opioid epidemic.</p> <p>OBJECTIVE: To characterize the prevalence of short- and long-term opioid prescribing in the Veterans Health Administration (VHA) from 2010 to 2016.</p> <p>DESIGN: Observational cohort study using VHA databases.</p> <p>PARTICIPANTS: All patients receiving at least one outpatient prescription through the VHA during calendar years 2010 through 2016.</p> <p>MAIN MEASURES: Prevalence of opioid use from 2010 through 2016, stratified by short-term, intermediate-term, and long-term use. Temporal trends in discontinuation among existing long-term users and initiation of new long-term use and the net impact on rates of long-term opioid use. Relative likelihood of transitioning to long-term opioid use contrasted with use patterns in the prior year.</p> <p>KEY RESULTS: The prevalence of opioid prescribing was 20.8% in 2010, peaked at 21.2% in 2012, and declined annually to 16.1% in 2016. Between 2010 and 2016, reductions in long-term opioid prescribing accounted for 83% of the overall decline in opioid prescription fills. Comparing data from 2010-2011 to data from 2015-2016, declining rates in new long-term use accounted for more than 90% of the decreasing prevalence of long-term opioid use in the VHA, whereas increases in cessation among existing long-term users accounted for less than 10%. The relative risk of transitioning to long-term use during 2016 was 6.5 (95% CI: 6.4, 6.7) among short-term users and 35.5 (95% CI: 34.8, 36.3) among intermediate users, relative to patients with no opioid prescriptions filled during 2015.</p> <p>CONCLUSIONS: Opioid prescribing trends followed similar trajectories in VHA and non-VHA settings, peaking around 2012 and subsequently declining. However, changes in long-term opioid prescribing accounted for most of the decline in the VHA. Recent VA opioid initiatives may be preventing patients from initiating long-term use. This may offer valuable lessons generalizable to other healthcare systems.</p>
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<p>Lehmann LP, Detweiler JG, Detweiler MB. Veterans in substance abuse treatment program self-initiate box gardening as a stress reducing therapeutic modality. Complement Ther Med. 2018 Feb;36:50-53. doi: 10.1016/j.ctim.2017.10.013. Epub 2017 Oct 31.</p>	<p>OBJECTIVES: To assess the experiences of a veteran initiated horticultural therapy garden during their 28-day inpatient Substance Abuse Residential Rehabilitation Treatment Program (SARRTP).</p> <p>DESIGN: Retrospective study.</p> <p>SETTING: Veterans Affairs Medical Center (VAMC), Salem, Virginia, USA</p> <p>INTERVENTIONS: Group interviews with veterans from the last SARRTP classes and individual interviews with VAMC greenhouse staff in summer of 2016.</p> <p>OUTCOME MEASURES: Time spent in garden, frequency of garden visits, types of passive and active garden activities, words describing the veterans' emotional reactions to utilizing the garden.</p> <p>RESULTS: In 3 summer months of 2016, 50 percent of the 56 veterans interviewed visited and interacted with the gardens during their free time. Frequency of visits generally varied from 3 times weekly to 1-2 times a day. Amount of time in the garden varied from 10min to 2h. The veterans engaged in active and/or passive gardening activities during their garden visits. The veterans reported feeling "calm", "serene", and "refreshed" during garden visitation and after leaving the garden.</p> <p>CONCLUSIONS: Although data was secured only at the end of the 2016 growing season, interviews of the inpatient veterans revealed that they used their own initiative and resources to continue the horticulture therapy program for 2 successive growing years after the original pilot project ended in 2014. These non-interventionist, therapeutic garden projects suggest the role of autonomy and patient initiative in recovery programs for veterans attending VAMC treatment programs and they also suggest the value of horticulture therapy as a meaningful evidence-based therapeutic modality for veterans.</p>
<p>Lisi AJ, Corcoran KL, DeRycke EC, Bastian LA, Becker WC, Edmond SN, Goertz CM, Goulet JL, Haskell SG, Higgins DM, Kawecki T, Kerns RD, Mattocks K, Ramsey C, Ruser CB, Brandt CA. Opioid Use Among Veterans of Recent Wars Receiving Veterans Affairs Chiropractic Care. Pain Med. 2018 Sep 1;19(suppl 1):S54-S60. doi: PubMed PMID: 30203014.</p>	<p>Objective: To examine patient sociodemographic and clinical characteristics associated with opioid use among Veterans of Operations Enduring Freedom/Iraqi Freedom/New Dawn (OEF/OIF/OND) who receive chiropractic care, and to explore the relationship between timing of a chiropractic visit and receipt of an opioid prescription.</p> <p>Methods: Cross-sectional analysis of administrative data on OEF/OIF/OND veterans who had at least one visit to a Veterans Affairs (VA) chiropractic clinic between 2004 and 2014. Opioid receipt was defined as at least one prescription within a window of 90 days before to 90 days after the index chiropractic clinic visit.</p> <p>Results: We identified 14,025 OEF/OIF/OND veterans with at least one chiropractic visit, and 4,396 (31.3%) of them also received one or more opioid prescriptions. Moderate/severe pain (odds ratio [OR] = 1.87, 95% confidence interval [CI] = 1.72-2.03), PTSD (OR = 1.55, 95% CI = 1.41-1.69), depression (OR = 1.40, 95% CI = 1.29-1.53), and current smoking (OR = 1.39, 95% CI = 1.26-1.52) were associated with a higher likelihood of receiving an opioid prescription. The percentage of veterans receiving opioid prescriptions was lower in each of the three 30-day time frames assessed after the index chiropractic visit than before.</p> <p>Conclusions: Nearly one-third of OEF/OIF/OND veterans receiving VA chiropractic services also received an opioid prescription, yet the frequency of opioid prescriptions was lower after the index chiropractic visit than before. Further study is warranted to assess the relationship between opioid use and chiropractic care.</p>

<p>Lovejoy TI, Morasco BJ, Demidenko MI, Meath THA, Dobscha SK. Clinician Referrals for Non-opioid Pain Care Following Discontinuation of Long-term Opioid Therapy Differ Based on Reasons for Discontinuation. J Gen Intern Med. 2018 May;33(Suppl 1):24-30.</p>	<p>OBJECTIVE: This study aimed to compare rates of non-opioid analgesic pharmacotherapy initiation and clinician referrals for non-pharmacologic pain treatment, complementary and integrative pain therapies, and specialty mental health and substance use disorder treatment between patients discontinued from opioid therapy due to aberrant behaviors versus other reasons.</p> <p>DESIGN: The design included retrospective manual electronic health record review and administrative data abstraction.</p> <p>PARTICIPANTS: Patients were sampled from a national cohort of US Department of Veterans Affairs patients prescribed continuous opioid therapy in 2011 who subsequently discontinued opioid therapy in 2012. The study sample comprised 509 patients discontinued from LTOT by opioid-prescribing clinicians.</p> <p>MAIN MEASURES: The primary independent variable was reason for discontinuation of LTOT (aberrant behaviors versus other reasons). Pain care dichotomous outcomes included clinician use of an opioid taper; initiating new non-opioid analgesic pharmacotherapy; and referrals for non-pharmacologic pain treatment, complementary and integrative pain therapies, and specialty mental health and substance use disorder treatment.</p> <p>KEY RESULTS: We observed low rates of opioid taper (15% of patients), initiations of new or modifications of existing non-opioid analgesic pharmacotherapy (45% of patients), and clinician referrals for non-pharmacologic pain treatment (58% of patients) and complementary and integrative therapies (25% of patients). Patients discontinued due to aberrant behaviors, relative to patients discontinued for other reasons, were more likely to receive opioid tapers (adjusted OR = 5.60, 95% CI = 2.10-14.93), receive new non-opioid analgesic medications or dose changes to an existing non-opioid analgesic medications (adjusted OR = 2.61, 95% CI = 1.59-4.29), or be referred for specialty substance use disorder treatment (adjusted OR = 7.39, 95% CI = 3.76-14.53).</p> <p>CONCLUSIONS: These findings highlight the variability in referral rates for different types of non-opioid pain treatments and challenges accessing specific types of pain care.</p>
<p>Marchand WR, Klinger W, Block K, VerMerris S, Herrmann TS, Johnson C, Paradiso N, Scott M, Yabko B. Mindfulness Training plus Nature Exposure for Veterans with Psychiatric and Substance Use Disorders: A Model Intervention. Int J Environ Res Public Health. 2019 Nov 27;16(23).</p>	<p>There is a need to develop novel complementary interventions aimed at enhancing treatment engagement and/or response for veterans with psychiatric and substance use disorders. There is evidence that both mindfulness training and nature exposure (MT/NE) may be beneficial for this population and that combining the two approaches into one intervention might result in synergistic benefit. However, to date, the MT/NE concept has not been tested. This article reports a pilot feasibility and acceptability study of MT/NE which was, in this case, provided via recreational sailing. The primary aim of this project was to develop a model intervention and evaluation process that could be used for future studies of MT/NE interventions using a variety of methods of nature exposure (e.g., hiking, skiing, mountain biking). Results indicate preliminary evidence that it is feasible to utilize MT/NE interventions for the population studied and that the MT/NE model described can serve as a template for future investigations. Further, there were significant pre- to post-intervention decreases in state anxiety, as well as increases in trait mindfulness. Three psychological instruments were identified that might be used in future studies to evaluate MT/NE outcomes. Results from this project provide a model MT/NE intervention template along with evaluation metrics for use in future studies.</p>

<p>Marchand WR, Klinger W, Block K, VerMerris S, Herrmann TS, Johnson C, Shubin E, Sheppard S. Safety and psychological impact of sailing adventure therapy among Veterans with substance use disorder s. Complement Ther Med. 2018 Oct;40:42-47. doi:</p>	<p>OBJECTIVES: Many Veterans suffer from substance use disorders (SUDs). Treatment challenges include poor treatment engagement and high relapse rates. Complementary interventions have the potential to enhance both. This study was a preliminary evaluation of sailing adventure therapy (SAT) for this population.</p> <p>DESIGN: Retrospective chart review. Participants in the intervention were 22 Veterans (20 male, 2 female) aged 22-65 who entered a Veterans Administration residential SUD treatment program. All subjects had two or more SUDs, and many had psychiatric (95%) and/or medical (77%) comorbidities. The age, gender and diagnosis-matched control group (n = 22) received residential SUD treatment as usual (TAU) in the same program but without SAT.</p> <p>SETTING: Residential SUD treatment program at a Veterans Administration Medical Center.</p>
<p>Reddy S, Dick AM, Gerber MR, Mitchell K. The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. J Altern Complement Med. 2014 Oct;20(10):750-6. doi: 10.1089/acm.2014.0014. Epub 2014 Sep 11. PubMed PMID: 25211372; PubMed Central PMCID: PMC4195227</p>	<p>BACKGROUND: Individuals with posttraumatic stress disorder (PTSD) often exhibit high-risk substance use behaviors. Complementary and alternative therapies are increasingly used for mental health disorders, although evidence is sparse.</p> <p>OBJECTIVES: Investigate the effect of a yoga intervention on alcohol and drug abuse behaviors in women with PTSD. Secondary outcomes include changes in PTSD symptom perception and management and initiation of evidence-based therapies.</p> <p>MATERIALS AND METHODS: The current investigation analyzed data from a pilot randomized controlled trial comparing a 12-session yoga intervention with an assessment control for women age 18 to 65 years with PTSD. The Alcohol Use Disorder Identification Test (AUDIT) and Drug Use Disorder Identification Test (DUDIT) were administered at baseline, after the intervention, and a 1-month follow-up. Linear mixed models were used to test the significance of the change in AUDIT and DUDIT scores over time. Treatment-seeking questions were compared by using Fisher exact tests.</p> <p>RESULTS: The mean AUDIT and DUDIT scores decreased in the yoga group; in the control group, mean AUDIT score increased while mean DUDIT score remained stable. In the linear mixed models, the change in AUDIT and DUDIT scores over time did not differ significantly by group. Most yoga group participants reported a reduction in symptoms and improved symptom management. All participants expressed interest in psychotherapy for PTSD, although only two participants, both in the yoga group, initiated therapy.</p> <p>CONCLUSIONS: Results from this pilot study suggest that a specialized yoga therapy may play a role in attenuating the symptoms of PTSD, reducing risk of alcohol and drug use, and promoting interest in evidence-based psychotherapy. Further research is needed to confirm and evaluate the strength of these effects.</p>

<p>Tick H, Nielsen A, Pelletier KR, Bonakdar R, Simmons S, Glick R, Ratner E, Lemmon RL, Wayne P, Zador V; Pain Task Force of the Academic Consortium for Integrative Medicine and Health. Evidence-Based Nonpharmacologic Strategies for Comprehensive Pain Care: The Consortium Pain Task Force White Paper. Explore (NY). 2018 May - Jun;14(3):177-211.</p>	<p>Medical pain management is in crisis; from the pervasiveness of pain to inadequate pain treatment, from the escalation of prescription opioids to an epidemic in addiction, diversion and overdose deaths. The rising costs of pain care and managing adverse effects of that care have prompted action from state and federal agencies including the DOD, VHA, NIH, FDA and CDC. There is pressure for pain medicine to shift away from reliance on opioids, ineffective procedures and surgeries toward comprehensive pain management that includes evidence-based nonpharmacologic options. This White Paper details the historical context and magnitude of the current pain problem including individual, social and economic impacts as well as the challenges of pain management for patients and a healthcare workforce engaging prevalent strategies not entirely based in current evidence. Detailed here is the evidence-base for nonpharmacologic therapies effective in postsurgical pain with opioid sparing, acute non-surgical pain, cancer pain and chronic pain. Therapies reviewed include acupuncture therapy, massage therapy, osteopathic and chiropractic manipulation, meditative movement therapies Tai chi and yoga, mind body behavioral interventions, dietary components and self-care/self-efficacy strategies. Transforming the system of pain care to a responsive comprehensive model necessitates that options for treatment and collaborative care must be evidence-based and include effective nonpharmacologic strategies that have the advantage of reduced risks of adverse events and addiction liability. The evidence demands a call to action to increase awareness of effective nonpharmacologic treatments for pain, to train healthcare practitioners and administrators in the evidence base of effective nonpharmacologic practice, to advocate for policy initiatives that remedy system and reimbursement barriers to evidence-informed comprehensive pain care, and to promote ongoing research and dissemination of the role of effective nonpharmacologic treatments in pain, focused on the short- and long-term therapeutic and economic impact of comprehensive care practices.</p>
<p>Vanneman, M, Mary Jo Larson, Cheng Chen, Rachel Sayko Adams, Thomas V. Williams, Esther Meerwijk, Alex H.S. Harris. Treatment of Low Back Pain with Opioids and Non-pharmacologic Treatment Modalities for Army Veterans. Med Care. 2018 Oct; 56(10): 855–861</p>	<p>OBJECTIVES: To describe overall and facility-level variation in the extent to which specific NPT modalities are used in VHA for LBP, either alone or as adjuncts to opioid medications, and to understand associations between veterans’ clinical and demographic characteristics and type of treatment.</p> <p>RESEARCH DESIGN: Our retrospective cohort study examined use of opioids and 21 specific NPT modalities used by veterans.</p> <p>SUBJECTS: VHA-enrolled Iraq and Afghanistan veterans who utilized care in (“linked” to) 130 VHA facilities within 12 months after their separation from the Army between fiscal years 2008–11, and who were diagnosed with LBP within 12 months after linkage (n=49,885).</p> <p>MEASURES: Measures included per patient: days’ supply of opioids, number of visits for NPT modalities, and pain scores within one year after a LBP diagnosis.</p> <p>RESULTS: Thirty-four percent of veterans filled a prescription for opioids, 35% utilized at least one NPT modality, and 15% used both within the same year. Most patients with LBP receiving NPT, on average, had moderate pain (36%), followed by low pain (27%), and severe pain (15%), no pain (11%). Eleven percent had no pain scores recorded.</p> <p>CONCLUSIONS: About 65% of VHA patients with a LBP diagnosis did not receive NPT, and about 43% of NPT users also were prescribed an opioid. Understanding utilization patterns and their relationship with patient characteristics can guide pain management decisions and future study.</p>

Stress & Wellbeing

Citation	Abstract
<p>Bolton RE, Fix GM, VanDeusen Lukas C, Elwy AR, Bokhour BG. Biopsychosocial benefits of movement-based complementary and integrative health therapies for patients with chronic conditions. Chronic Illn. 2018 Jan 1;1742395318782377. doi: 10.1177/1742395318782377. [Epub ahead of print] PubMed PMID: 29914264.</p>	<p>Objectives Complementary and integrative health practices are growing in popularity, including use of movement-based therapies such as yoga, tai-chi, and qigong. Movement-based therapies are beneficial for a range of health conditions and are used more frequently by individuals with chronic illness. Yet little is known about how patients with chronic conditions characterize the health benefits of movement-based therapies. Methods We conducted focus groups with 31 patients enrolled in yoga and qigong programs for chronic conditions at two VA medical centers. Transcripts were analyzed using conventional content analysis with codes developed inductively from the data. Participants' descriptions of health benefits were then mapped to Engel's biopsychosocial model. Results Participants described improvements in all biopsychosocial realms, including improved physical and mental health, reduced opiate and psychotropic use, enhanced emotional well-being, and better social relationships. Changes were attributed to physical improvements, development of coping skills, and increased self-awareness. Discussion Patients with chronic illnesses in our sample reported multiple benefits from participation in movement-based therapies, including in physical, mental, and social health realms. Providers treating patients with complex comorbidities may consider referrals to movement-based therapy programs to address multiple concerns simultaneously, particularly among patients seeking alternatives to medication or adjunctive to an opiate reduction strategy.</p>
<p>Combs MA, Critchfield EA, Soble JR. Relax while you rehabilitate: A pilot study integrating a novel, yoga-based mindfulness group intervention into a residential military brain injury rehabilitation program. Rehabil Psychol. 2018 May;63(2):182-193.</p>	<p>OBJECTIVE: This preliminary, pilot study assessed the effectiveness of a group-based, mindfulness intervention in a residential, rehabilitation setting with specific focus on assessing participants' self-report of perceived benefit of the intervention on overall health, pain, sleep, mood/anxiety, attention, and self-awareness, as well as implementing modifications needed for successful intervention application among a diverse, clinical military population.</p> <p>METHOD/DESIGN: Participants were 19 veterans and active duty service members with a history of traumatic brain injury (TBI; 63% severe) who completed a mindfulness-based group intervention during inpatient admission at a Veterans Affairs Polytrauma Transitional Rehabilitation Program (PTRP). Mindfulness and yoga skills were taught in a required, weekly group incorporated into participants' rehabilitation schedule. Opinions and attitudes about mindfulness, as well as pertinent self-report outcome measures, were obtained pre- and postgroup participation.</p> <p>RESULTS: Results suggested that participation in the group was positively associated with individuals' self-reported belief about the benefit of mindfulness in the areas of overall health, physical health, mood, focus, and self-awareness. The more groups attended, the more positive the participants' beliefs about potential impact on overall health and mood became, even while controlling for length of rehabilitation stay. Additionally, several specific group modifications relevant to this population (e.g., physical/environmental modifications, repetition, ignoring/reorienting) were implemented to support successful participation.</p> <p>CONCLUSIONS/IMPLICATIONS: These preliminary and exploratory findings suggest that it may be worthwhile for psychologists, clinicians, and other health care providers working with a mixed TBI population, and more specifically a military population with TBI, to consider introducing mindfulness skills as part of multidisciplinary rehabilitation.</p>

<p>Haun JN, Paykel J, Alman AC, Patel N, Melillo C. The Integrative Health and Wellness Program: Development and Use of a Complementary and Alternative Medicine Clinic for Veterans. Explore (NY). 2019 Aug 12. pii: S1550-8307(19)30444-6</p>	<p>INTRODUCTION: Transforming Health and Resiliency through Integration of Values-based Experiences (THRIVE) is an evidence-based 14-week curriculum-based group medical appointment clinical program. THRIVE is based on principles of integrative medicine, positive psychology, and acceptance and commitment therapy. The goal of this paper is to review findings from a local THRIVE program implementation piloted in the Women's Health outpatient clinics on mental and physical health indicators.</p> <p>MATERIALS AND METHODS: Pilot data were obtained for 14 THRIVE cohorts of female veterans enrolled from outpatient clinics at the James A. Haley veterans' Hospital in Tampa, FL between 2016 and 2018 (N = 201). THRIVE assessments were conducted as part of the THRIVE program, at the first visit (baseline), mid-way, and at the end of the program. Data were collected using self-administered paper-pencil method on standardized scales for physical and mental health (Patient Health Questionnaire, Generalized Anxiety Disorder Questionnaire, Acceptance and Action Questionnaire-II, Satisfaction With Life Scale, and the physical and mental function components of the Short Form Survey). Linear mixed effects models were used to examine change in physical and mental health scales over time while adjusting for age, race (white vs. other), and cohort. In addition, we examined whether the rate of change differed by age or race.</p> <p>RESULTS: Improvement was seen for most scales across the 3 assessments ($p < 0.05$) with the exception of physical composite score of the Short Form Survey ($p = 0.487$). Participants reported that pain interfering with work significantly decreased from "quite a bit" at baseline to "moderately" by assessment 3 ($p = 0.042$). Older ages had lower baseline scores on the Patient Health Questionnaire and Acceptance and Action Questionnaire than younger ages, but younger ages had a greater rate of improvement over the intervention (p for interaction 0.016 and 0.056, respectively). Whites reported greater improvement in life satisfaction than non-whites (p for interaction 0.043). For physical composite score, whites had higher baseline score, but did not report significant improvement in physical function over the assessment period, while non-whites had lower baseline score, but did report significant improvement in physical function (p for interaction 0.059). Non-white veterans reported more pain interfering with work relative to white veterans (OR 5.9, 95% CI 1.79-19.43, $p = 0.004$).</p> <p>CONCLUSIONS: We found significant improvement on self-reported mental health scales as well as improvement in how much pain interferes with work in a pilot sample of women veterans over the 14-week program.</p>
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<p>Hull A, Brooks Holliday S, Eickhoff C, Sullivan P, Courtney R, Sossin K, Adams A, Reinhard M. Veteran participation in the integrative health and wellness program: Impact on self-reported mental and physical health outcomes. Psychol Serv. 2018 Apr 5. doi: 10.1037/ser0000192. [Epub ahead of print] PubMed PMID: 29620393.</p>	<p>Complementary and integrative health (CIH) services are being used more widely across the nation, including in both military and veteran hospital settings. Literature suggests that a variety of CIH services show promise in treating a wide range of physical and mental health disorders. Notably, the Department of Veterans Affairs is implementing CIH services within the context of a health care transformation, changing from disease based health care to a personalized, proactive, patient-centered approach where the veteran, not the disease, is at the center of care. This study examines self-reported physical and mental health outcomes associated with participation in the Integrative Health and Wellness Program, a comprehensive CIH program at the Washington DC VA Medical Center and one of the first wellbeing programs of its kind within the VA system. Using a prospective cohort design, veterans enrolled in the Integrative Health and Wellness Program filled out self-report measures of physical and mental health throughout program participation, including at enrollment, 12 weeks, and 6 months. Analyses revealed that veterans reported significant improvements in their most salient symptoms of concern (primarily pain or mental health symptoms), physical quality of life, wellbeing, and ability to participate in valued activities at follow-up assessments. These results illustrate the potential of CIH services, provided within a comprehensive clinic focused on wellbeing not disease, to improve self-reported health, wellbeing, and quality of life in a veteran population. Additionally, data support recent VA initiatives to increase the range of CIH services available and the continued growth of wellbeing programs within VA settings. (PsycINFO Database Record (c) 2019 APA, all rights reserved).</p>
<p>Hull A, Holliday SB, Eickhoff C, Rose-Boyce M, Sullivan P, Reinhard M. The Integrative Health and Wellness Program: Development and Use of a Complementary and Alternative Medicine Clinic for Veterans. Altern Ther Health Med. 2015 Nov-Dec;21(6):12-21. PubMed PMID: 26567446.</p>	<p>Context: A movement exists within the Veterans Health Administration (VHA) toward incorporating complementary and alternative medicine (CAM) as an integrative complement to care for veterans. The Integrative Health and Wellness (IHW) Program is a comprehensive CAM clinic offering services such as integrative restoration (iRest) yoga nidra, individual acupuncture, group auricular acupuncture, chair yoga, qigong, and integrative health education. Objectives: The current study intended to detail the development of the CAM program, its use, and the characteristics of the program's participants. Design: Using a prospective cohort design, this pilot study tracked service use and aspects of physical and mental health for veterans enrolled in the program. Participants: During the first year, the IHW Program received 740 consults from hospital clinics; 325 veterans enrolled in the program; and 226 veterans consented to participate in the pilot study. Outcome Measures: Outcome measures included data from self-report questionnaires and electronic medical records. Results: Veterans enrolled in the program reported clinically significant depression, stress, insomnia, and pain-related interference in daily activities and deficits in health-related quality of life. Regarding use of the program services, individual acupuncture showed the greatest participation by veterans, followed by group auricular acupuncture and iRest yoga nidra. Of the 226 veterans who enrolled in the program and consented to participate in this study, 165 (73.01%) participated in >1 services in the first year of programming. Broadly speaking, enrollment in services appeared to be associated with gender and service branch but not with age or symptom severity. Conclusions: Results have assisted with a strategic planning process for the IHW Program and have implications for expansion of CAM services within the VHA..</p>
<p>Gaddy MA. Implementation of an integrative medicine treatment program at a Veterans Health Administration residential mental health facility. Psychol Serv. 2018</p>	<p>A 4-week interdisciplinary integrative medicine program was recently added to the core treatment offerings for veterans participating in the Mental Health Residential Rehabilitation Program at the Dwight D. Eisenhower Veterans Affairs Medical Center. The new integrative medicine program teaches veterans about using meditative practices, nutrition, creative expression, tai chi, hatha yoga, sensory and breathing techniques, and lifestyle changes to enhance well-being. The groups are run by professionals from a variety of disciplines including recreation therapy, art therapy, occupational therapy, psychology, and nutrition. For the first 42 veterans to complete the program, the Short Form 12-item Health Survey was administered before and after participation in the integrative medicine program to assess the potential effectiveness of the program in enhancing physical and psychological well-being. In addition, a brief semistructured interview was used to assess veteran opinions about the program. Results suggest that the program was well received and that both physical and mental health scores improved from before to after treatment in this sample of veterans with complex behavioral health concerns. (PsycINFO Database Record (c) 2018 APA, all rights reserved).</p>

<p>Kopacz MS, Connery AL, Bishop TM, Bryan CJ, Drescher KD, Currier JM, Pigeon WR. Moral injury: A new challenge for complementary and alternative medicine. Complement Ther Med. 2016 Feb;24:29-33. doi: 10.1016/j.ctim.2015.11.003. Epub 2015 Nov 27.</p>	<p>Abstract</p> <p>Moral injury represents an emerging clinical construct recognized as a source of morbidity in current and former military personnel. Finding effective ways to support those affected by moral injury remains a challenge for both biomedical and complementary and alternative medicine. This paper introduces the concept of moral injury and suggests two complementary and alternative medicine, pastoral care and mindfulness, which may prove useful in supporting military personnel thought to be dealing with moral injury. Research strategies for developing an evidence-base for applying these, and other, complementary and alternative medicine modalities to moral injury are discussed.</p>
<p>Solloway MR, Taylor SL, Shekelle PG, Miake-Lye IM, Beroes JM, Shanman RM, Hempel S. An evidence map of the effect of Tai Chi on health outcomes. Syst Rev. 2016 Jul 27;5(1):126. doi: 10.1186/s13643-016-0300-y. PubMed PMID: 27460789; PubMed Central PMCID: PMC4962385.</p>	<p>BACKGROUND:</p> <p>This evidence map describes the volume and focus of Tai Chi research reporting health outcomes. Originally developed as a martial art, Tai Chi is typically taught as a series of slow, low-impact movements that integrate the breath, mind, and physical activity to achieve greater awareness and a sense of well-being.</p> <p>METHODS:</p> <p>The evidence map is based on a systematic review of systematic reviews. We searched 11 electronic databases from inception to February 2014, screened reviews of reviews, and consulted with topic experts. We used a bubble plot to graphically display clinical topics, literature size, number of reviews, and a broad estimate of effectiveness.</p> <p>RESULTS:</p> <p>The map is based on 107 systematic reviews. Two thirds of the reviews were published in the last five years. The topics with the largest number of published randomized controlled trials (RCTs) were general health benefits (51 RCTs), psychological well-being (37 RCTs), interventions for older adults (31 RCTs), balance (27 RCTs), hypertension (18 RCTs), fall prevention (15 RCTs), and cognitive performance (11 RCTs). The map identified a number of areas with evidence of a potentially positive treatment effect on patient outcomes, including Tai Chi for hypertension, fall prevention outside of institutions, cognitive performance, osteoarthritis, depression, chronic obstructive pulmonary disease, pain, balance confidence, and muscle strength. However, identified reviews cautioned that firm conclusions cannot be drawn due to methodological limitations in the original studies and/or an insufficient number of existing research studies.</p> <p>CONCLUSIONS:</p> <p>Tai Chi has been applied in diverse clinical areas, and for a number of these, systematic reviews have indicated promising results. The evidence map provides a visual overview of Tai Chi research volume and content.</p>

Insomnia	
Citation	Abstract
<p>Beck D, Cosco Holt L, Burkard J, Andrews T, Liu L, Heppner P, Bormann JE. Efficacy of the Mantram Repetition Program for Insomnia in Veterans With Posttraumatic Stress Disorder: A Naturalistic Study. ANS Adv Nurs Sci. 2017 Apr/Jun;40(2):E1-E12. doi: 10.1097/ANS.000000000000144.</p>	<p>Statistics show that more than 80% of Veterans mention posttraumatic stress disorder (PTSD)-related symptoms when seeking treatment. Sleep disturbances and nightmares are among the top 3 presenting problems. Current PTSD trauma-focused therapies generally do not improve sleep disturbances. The mantram repetition program (MRP), a mind-body-spiritual intervention, teaches a portable set of cognitive-spiritual skills for symptom management. The aim of this study was to evaluate the efficacy of the MRP on insomnia in Veterans with PTSD in a naturalistic, clinical setting. Results show that participation in the MRP significantly reduced insomnia, as well as decreased self-reported and clinician-assessed PTSD symptom burden.</p>
<p>Garner BK, Hopkinson SG, Ketz AK, Landis CA, Trego LL. Auricular Acupuncture for Chronic Pain and Insomnia: A Randomized Clinical Trial. Med Acupunct. 2018 Oct 1;30(5):262-272. doi: 10.1089/acu.2018.1294. Epub 2018 Oct 15. PubMed PMID: 30377462; PubMed Central PMCID: PMC6205765.</p>	<p>Objective: In the United States, 1.6 million adults use complementary and alternative or integrative medicine for treating pain and insomnia. However, very few studies have tested the use of auricular acupuncture using a standard protocol for chronic pain and insomnia. The aims of this research were to assess the feasibility and credibility of auricular acupuncture, and to evaluate the effects of auricular acupuncture on pain severity and interference scores, and on insomnia severity over an 8-day study period. Materials and Methods: Forty-five participants were randomized to either an auricular acupuncture group (AAG) or a usual care group (CG) on study day 4. A standard auricular acupuncture protocol was administered, with penetrating semipermanent acupuncture needles in place for up to 4 days. The main outcome measures were feasibility of conducting the study, credibility of auricular acupuncture as a treatment modality, Brief Pain Inventory pain severity and interference scores, and Insomnia Severity Index (ISI) scores. Results: There was high interest in the study and the retention was 96%. Credibility of auricular acupuncture as a treatment was high in both groups. The use of the standard auricular acupuncture protocol in the AAG led to significant within- and between-group reduced pain severity and interference scores, compared to the CG. Both groups showed within-group decreased ISI scores. However, the AAG showed significant between-group reduced ISI severity scores compared to the CG. Conclusions: With the heightened focus on the opioid crisis in the United States, this easy-to-administer protocol may be an option for treating military beneficiaries who have chronic pain and insomnia</p>

<p>Huang W, Johnson TM, Kutner NG, Halpin SN, Weiss P, Griffiths PC, Bliwise DL. Acupuncture for Treatment of Persistent Disturbed Sleep: A Randomized Clinical Trial in Veterans With Mild Traumatic Brain Injury and Posttraumatic Stress Disorder. J Clin Psychiatry. 2018 Dec</p>	<p>OBJECTIVE: To evaluate real, as compared with sham, acupuncture in improving persistent sleep disturbance in veterans with mild traumatic brain injury (mTBI) and posttraumatic stress disorder (PTSD).</p> <p>METHODS: This sham-controlled randomized clinical trial at a US Department of Veterans Affairs Medical Center (2010-2015) included 60 veterans aged 24-55 years (mean of 40 years) with history of mTBI of at least 3 months and refractory sleep disturbance. Most of these participants (66.7%) carried a concurrent DSM-IV clinical diagnosis of PTSD. For the present study, they were randomized into 2 groups and stratified by PTSD status using the PTSD Checklist-Military Version. Each participant received up to 10 treatment sessions. The primary outcome measure was change in baseline-adjusted global Pittsburgh Sleep Quality Index (PSQI) score following intervention. Secondary outcomes were wrist-actigraphy-assessed objective sleep measurements. Comorbid PTSD was analyzed as a covariate.</p> <p>RESULTS: Mean (SD) preintervention global PSQI score was 14.3 (3.2). Those receiving real acupuncture had a global PSQI score improvement of 4.4 points (relative to 2.4 points in sham, $P = .04$) and actigraphically measured sleep efficiency (absolute) improvement of 2.7% (relative to a decrement of 5.3% in sham, $P = .0016$). Effective blinding for active treatment was maintained in the study. PTSD participants presented with more clinically significant sleep difficulties at baseline; acupuncture was effective for both those with and without PTSD.</p> <p>CONCLUSIONS: Real acupuncture, compared with a sham needling procedure, resulted in a significant improvement in sleep measures for veterans with mTBI and disturbed sleep, even in the presence of PTSD. These results indicate that an alternative-medicine treatment modality like acupuncture can provide clinically significant relief for a particularly recalcitrant problem affecting large segments of the veteran population.</p>
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<p>Nakamura Y, Lipschitz DL, Donaldson GW, Kida Y, Williams SL, Landward R, Glover DW, West G, Tuteja AK. Investigating Clinical Benefits of a Novel Sleep-Focused Mind-Body Program on Gulf War Illness Symptoms: A Randomized Controlled Trial. Psychosom Med. 2017</p>	<p>OBJECTIVE: Mind-Body Bridging (MBB) has been shown to be effective for improving disturbed sleep. In this prospective randomized controlled trial, we evaluated the efficacy of sleep-focused MBB compared with sleep education control (SED) for improving sleep in previously deployed Gulf War veterans.</p> <p>METHODS: US military service members with sleep and physical health complaints who were deployed in 1990-1991 were randomized to receive three weekly sessions of either MBB (n = 33) or SED (n = 27) between 2012 and 2015. The primary outcome of Medical Outcomes Study Sleep Scale was completed at baseline, weekly during treatment, postintervention, and 3-month follow-up. Secondary outcome measures for posttraumatic stress disorder, depression, fatigue, quality of life, symptom severity, and mindfulness were completed at baseline, postintervention and 3-month follow-up. Salivary samples were collected at five time points per day at each visit for cortisol and α-amylase assessment. Clinician-administered assessments of sleep and co-occurring conditions were conducted at baseline and postintervention.</p> <p>RESULTS: MBB was significantly more efficacious than SED in reducing disturbed sleep at follow-up ($F(1,180.54) = 4.04, p = .046$). In addition, self-reported posttraumatic stress disorder ($F(1,56.42) = 4.50, p = .038$) for the treatment effect, depression ($F(1,93.70) = 4.44, p = .038$), and fatigue symptoms ($F(1,68.58) = 3.90, p = .050$) at follow-up improved in MBB compared with those in SED. Consistently higher percentages of veterans in MBB reported improvements of sleep, pain, and composite sleep/general co-occurring symptoms at the postclinical evaluation, as compared with veterans in SED. Finally, the mean waking level of salivary α-amylase in the MBB declined to a greater extent than that in the SED, at follow-up ($F(1,88.99) = 3.78, p = .055$), whereas no effects were found on cortisol.</p> <p>CONCLUSIONS: Sleep-focused MBB can improve sleep and possibly also co-occurring symptoms in Gulf War veterans.</p>
<p>Prisco MK, Jecmen MC, Bloeser KJ et al. Group auricular acupuncture for PTSD-related insomnia in veterans: a randomized trial. 17 Dec 2013 https://doi.org/10.1089/acu.2013.0989</p>	<p>Objectives: This study examined how group auricular acupuncture may influence sleep quality, sleep patterns, and hypnotic medication use associated with PTSD-related insomnia in Operation Enduring Freedom and Operation Iraqi Freedom veterans.</p> <p>Design: This study was a randomized controlled trial with sham acupuncture and wait-list controls.</p> <p>Setting: This study took place at the Washington, DC, Department of Veterans Affairs (VA), Medical Center.</p> <p>Subjects: Thirty-five subjects were randomized to participate in the study, but only 25 subjects completed the study.</p> <p>Interventions: Subjects were randomized to one of three groups: (1) true group auricular acupuncture; (2) sham auricular acupuncture; or (3) wait-list control.</p> <p>Outcome Measures: The primary outcome measure was perceived sleep quality (as measured by Insomnia Severity Index (ISI) questionnaires and Morin Sleep Diaries [MSDs]). Secondary outcome measures were total sleep time (TST), sleep efficiency, sleep latency, naps (as measured by MSD and wrist actigraphs [WAs]), hypnotic medication use, veteran satisfaction, and attrition rates.</p> <p>Results: Subjects in the true auricular acupuncture group had a statistically significant improvement ($p=0.0165$) in sleep quality as measured by the ISI at time (t)=1 month. This group had a trend toward lower MSD TST at t=2 months ($p=0.078$), lower WA TST at t=1 month ($p=0.0893$), and toward higher MSD nap times than the other two groups post-treatment ($p=0.0666$). No statistically significant association between group assignment and hypnotic medication use and satisfaction scores were noted.</p> <p>Conclusions: Acupuncturists should consider incorporating sleep hygiene education into their clinical practices and/or collaborate with insomnia health care professionals when working with individuals with insomnia. This study also supports the finding that perceived sleep quality and objective WA measurements are not significantly correlated.</p>

Suicide

Citation	Abstract
<p>Forkus SR, Breines JG, Weiss NH. Morally injurious experiences and mental health: The moderating role of self-compassion. Psychol Trauma. 2019 Sep;11(6):630-638. doi:</p>	<p>INTRODUCTION: Military veterans are at heightened risk for developing mental and behavioral health problems. Morally injurious combat experiences have recently gained empirical and clinical attention following the increased rates of mental and behavioral health problems observed in this population.</p> <p>OBJECTIVE: Extending extant research, the current investigation assessed the relationship between morally injurious experiences and mental and behavioral health outcomes. Furthermore, it examined the potential protective role of self-compassion in these relationships.</p> <p>METHOD: Participants were 203 military veterans (M age = 35.08 years, 77.30% male) who completed online questionnaires.</p> <p>RESULTS: Analyses indicated that self-compassion significantly moderated the relationship between exposure to morally injurious experiences and posttraumatic stress disorder, depression severity, and deliberate self-harm versatility.</p> <p>CONCLUSIONS: These results highlight the potential clinical utility of self-compassion in military mental health, particularly in the context of morally injurious experiences. (PsycINFO Database Record (c) 2019 APA, all rights reserved).</p>
<p>Kelley ML, Bravo AJ, Davies RL, Hamrick HC, Vinci C, Redman JC. Moral injury and suicidality among combat-wounded veterans: The moderating effects of social connectedness and self-compassion. Psychol Trauma. 2019 Sep;11(6):621-629. doi:</p>	<p>OBJECTIVE: Among combat veterans, moral injury (i.e., the guilt, shame, inability to forgive one's self and others, and social withdrawal associated with one's involvement in events that occurred during war or other missions) is associated with a host of negative mental health symptoms, including suicide. To better inform and tailor prevention and treatment efforts among veterans, the present study examined several potential risk (i.e., overidentification and self-judgment) and protective (i.e., self-kindness, mindfulness, common humanity, and social connectedness) variables that may moderate the association between moral injury and suicidality.</p> <p>METHOD: Participants were 189 combat wounded veterans (96.8% male; mean age = 43.14 years) who had experienced one or more deployments (defined as 90 days or more). Nearly all participants reported a service-connected disability (n = 176, 93.1%) and many had received a Purple Heart (n = 163, 86.2%).</p> <p>RESULTS: Within a series of moderation models, we found 3 statistically significant moderation effects. Specifically, the association between self-directed moral injury and suicidality strengthened at higher levels of overidentification, that is, a tendency to overidentify with one's failings and shortcomings. In addition, the association between other-directed moral injury and suicidality weakened at higher levels of mindfulness and social connectedness.</p> <p>CONCLUSIONS: These findings provide insight on risk and protective factors that strengthen (risk factor) or weaken (protective factor) the association between moral injury and suicidality in combat-wounded veterans. Taken together, mindfulness, social connectedness, and overidentification are relevant to understand the increased/decreased vulnerability of veterans to exhibit suicidality when experiencing moral injury. (PsycINFO Database Record (c) 2019 APA, all rights reserved).</p>

<p>Serpa JG, Taylor SL, Tillisch K. Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. Med Care. 2014 Dec;52(12 Suppl 5):S19-24. doi: 10.1097/MLR.000000000000202. PubMed PMID: 25397818.</p>	<p>INTRODUCTION: Anxiety, depression, and pain are major problems among veterans, despite the availability of standard medical options within the Veterans Health Administration. Complementary and alternative approaches for these symptoms have been shown to be appealing to veterans. One such complementary and alternative approach is mindfulness-based stress reduction (MBSR), a brief course that teaches mindfulness meditation with demonstrated benefits for mood disorders and pain.</p> <p>METHODS: We prospectively collected data on MBSR's effectiveness among 79 veterans at an urban Veterans Health Administration medical facility. The MBSR course had 9 weekly sessions that included seated and walking meditations, gentle yoga, body scans, and discussions of pain, stress, and mindfulness. Pre-MBSR and post-MBSR questionnaires investigating pain, anxiety, depression, suicidal ideation, and physical and mental health functioning were obtained and compared for individuals. We also conducted a mediation analysis to determine whether changes in mindfulness were related to changes in the other outcomes.</p> <p>RESULTS: Significant reductions in anxiety, depression, and suicidal ideation were observed after MBSR training. Mental health functioning scores were improved. Also, mindfulness interacted with other outcomes such that increases in mindfulness were related to improvements in anxiety, depression, and mental health functionality. Pain intensity and physical health functionality did not show improvements.</p> <p>DISCUSSION: This naturalistic study in veterans shows that completing an MBSR program can improve symptoms of anxiety and depression, in addition to reducing suicidal ideations, all of which are of critical importance to the overall health of the patients.</p>
<p>Walser RD, Garvert DW, Karlin BE, Trockel M, Ryu DM, Taylor CB. Effectiveness of Acceptance and Commitment Therapy in treating depression and suicidal ideation in Veterans. Behav Res Ther. 2015 Nov;74:25-31. doi:</p>	<p>OBJECTIVE: This paper examines the effects of Acceptance and Commitment Therapy for depression (ACT-D), and the specific effects of experiential acceptance and mindfulness, in reducing suicidal ideation (SI) and depression among Veterans.</p> <p>METHOD: Patients included 981 Veterans, 76% male, mean age 50.5 years. Depression severity and SI were assessed using the BDI-II. Experiential acceptance and mindfulness were measured with the Acceptance and Action Questionnaire-II (AAQ-II) and the Five Facet Mindfulness Questionnaire, respectively.</p> <p>RESULTS: Of the 981 patients, 647 (66.0%) completed 10 or more sessions or finished early due to symptom relief. For Veterans with SI at baseline, mean BDI-II score decreased from 33.5 to 22.9. For Veterans with no SI at baseline, mean BDI-II score decreased from 26.3 to 15.9. Mixed models with repeated measurement indicated a significant reduction in depression severity from baseline to final assessment ($b = -10.52, p < .001$). After adjusting for experiential acceptance and mindfulness, patients with SI at baseline demonstrated significantly greater improvement in depression severity during ACT-D treatment, relative to patients with no SI at baseline ($b = -2.81, p = .001$). Furthermore, increases in experiential acceptance and mindfulness scores across time were associated with a reduction in depression severity across time ($b = -0.44, p < .001$ and $b = -0.09, p < .001$, respectively), and the attenuating effect of mindfulness on depression severity increased across time ($b = -0.05, p = .042$). Increases in experiential acceptance scores across time were associated with lower odds of SI across time (odds ratio = 0.97, 95% CI [0.95, 0.99], $p = .016$) and the attenuating effect of experiential acceptance on SI increased across time (odds ratio = 0.96, 95% CI [0.92, 0.99], $p = .023$). Overall the number of patients with no SI increased from 44.5% at baseline to 65% at follow-up.</p> <p>CONCLUSIONS: Veterans receiving ACT-D demonstrated decreased depression severity and decreased odds of SI during treatment. Increases in experiential acceptance and mindfulness scores were associated with reduction in depression severity across time and increases in experiential acceptance scores were associated with reductions in SI across time.</p>

Veteran caregiver & VA employee Wellbeing

Citation	Abstract
<p>Bui E, Blackburn AM, Brenner LH, Laifer LM, Park ER, Fricchione GL, Sylvia LG. Military and Veteran Caregivers' Perspectives of Stressors and a Mind-Body Program. Issues Ment Health Nurs. 2018 Oct;39(10):850-857</p>	<p>There are over one million post-9/11 military caregivers in the United States who face a variety of stressors inherent to caring for an incapacitated loved one. Mind-body interventions, such as the Stress Management and Resilience Training Relaxation Response Resiliency Program (SMART-3RP), have been shown to reduce stress and improve overall health and functioning. The present qualitative study aims to explore stressors experienced by military caregivers in their caregiving role and to assess attitudes towards the virtual delivery of the SMART-3RP. We conducted two focus groups with a total of 13 caregivers [M (SD) age = 41.25 (11.49); 92% female], and participants subsequently completed a survey on their caregiving experiences. Focus groups were conducted remotely via Google Hangouts by two doctoral-level clinicians, transcribed verbatim, and coded using inductive thematic analysis. Themes related to stressors of caregiving included: logistical stressors faced by caregivers, demands of the caregiving role, concerns about children, worries about the future, exacerbation of the caregiver's physical/mental health concerns, social dynamics, sacrifices made for their veteran in the caregiving role, and relationship dynamics between the veteran and caregiver. Military caregivers found the SMART-3RP logical and felt as though it could be helpful to them. Caregivers expressed interest in a brief, virtual version of the SMART-3RP. Using the findings from the current study, we are adapting the SMART-3RP to be administered virtually as a podcast-based intervention.</p>
<p>Freeman RC Jr, Sukuan N, Tota NM, Bell SM, Harris AG, Wang HL. Promoting Spiritual Healing by Stress Reduction Through Meditation for Employees at a Veterans Hospital: A CDC Framework-Based Program Evaluation. Workplace Health Saf. 2019 Sep 20:2165079919874795.</p>	<p>Background: Employees in the Veterans Affairs (VA) hospital experience psychological stress from caring for vulnerable veteran populations. Evidence suggests that mindfulness meditation decreases stress in health care employees and military personnel. The purpose of this worksite program was to explore the acceptability of a mindfulness meditation program among VA workers. Methods: Chaplain residents developed the "Promoting Spiritual Healing by Stress Reduction Through Meditation" (Spiritual Meditation) program for employees in a VA hospital. To evaluate acceptability, a 13-multiple-choice-item survey with an open-ended question was administered after the intervention. Descriptive statistics and qualitative content analysis were performed. Findings: In 29 participants, 70% to 100% agreed with positive statements for the personal learning experience, program components, teacher quality, time to practice, and place to practice. Two categories emerged from qualitative responses: "positive practical experience of Spiritual Meditation" and "perceived values from Spiritual Meditation." Conclusion/Application to Practice: Occupational health nurses are uniquely positioned to lead and collaborate with chaplains to deliver Spiritual Meditation in their workplace setting.</p>

<p>Haun JN, Ballistrea LM, Melillo C, Standifer M, Kip K, Paykel J, Murphy JL, Fletcher CE, Mitchinson A, Kozak L, Taylor SL, Glynn SM, Bair M. A Mobile and Web-Based Self-Directed Complementary and Integrative Health Program for Veterans and Their Partners (Mission Reconnect): Protocol for a Mixed-Methods Randomized Controlled Trial. JMIR Res Protoc. 2019 May 13;8(5):e13666.</p>	<p>BACKGROUND: Complementary and integrative health (CIH) is a viable solution to PTSD and chronic pain. Many veterans believe CIH can be performed only by licensed professionals in a health care setting. Health information technology can bring effective CIH to veterans and their partners.</p> <p>OBJECTIVE: This paper describes the rationale, design, and methods of the Mission Reconnect protocol to deliver mobile and Web-based complementary and integrative health programs to veterans and their partners (eg, spouse, significant other, caregiver, or family member).</p> <p>METHODS: This three-site, 4-year mixed-methods randomized controlled trial uses a wait-list control to determine the effects of mobile and Web-based CIH programs for veterans and their partners, or dyads. The study will use two arms (ie, treatment intervention arm and wait-list control arm) in a clinical sample of veterans with comorbid pain and posttraumatic stress disorder, and their partners. The study will evaluate the effectiveness and perceived value of the Mission Reconnect program in relation to physical and psychological symptoms, global health, and social outcomes.</p> <p>RESULTS: Funding for the study began in November 2018, and we are currently in the process of recruitment screening and data randomization for the study. Primary data collection will begin in May 2019 and continue through May 2021. Projected participants per site will be 76 partners/dyads, for a total of 456 study participants. Anticipated study results will be published in November 2022.</p> <p>CONCLUSIONS: This work highlights innovative delivery of CIH to veterans and their partners for treatment of posttraumatic stress disorder and chronic pain.</p>
<p>Lara-Cinisomo S, Fujimoto EM, Santens RL. Feasibility of a Mindfulness-Based Intervention for Caregivers of Veterans: A Pilot Study. J Holist Nurs. 2019 Dec;37(4):322-337.</p>	<p>Purpose: This pilot study aimed to assess the feasibility of conducting an 8-week mindfulness-based intervention with caregivers of veterans and to examine the effectiveness of the intervention to improve mindfulness using the Five Facet Mindfulness Questionnaire compared with waitlist controls. Design: In this randomized controlled trial, 23 caregivers of veterans were assigned to either the intervention or waitlist group. Method: Compliance with mindfulness instruction and attendance was assessed among those in the intervention. Wilcoxon signed-rank tests compared within group pre- and post-intervention scores and Mann-Whitney U tests compared difference scores (post-pre) by group type. Effect sizes were also calculated. Compliance variables were correlated with difference scores in the intervention group only. Findings: Of the 23 participants, 11 were assigned to the intervention; 100% of participants were retained. There was significant improvement from pre- to post-intervention in four of the five facets of mindfulness ($p < .05$) in the intervention group. Significant between-group differences ($p < .05$) were also observed in two of the five facets. Effect sizes ranged from small (.44) to large (.89). No significant improvement was observed in the waitlist control group. Conclusions: A mindfulness-based intervention is feasible and acceptable to improve mindfulness in caregivers of veterans.</p>
<p>Richards LK, Bui E, Charney M, Hayes KC, Baier AL, Rauch PK, Allard M, Simon NM. Treating Veterans and Military Families: Evidence Based Practices and Training Needs Among Community Clinicians. Community Ment Health J. 2017 Feb;53(2):215-223.</p>	<p>Little is known about the capacity of community providers to provide military informed evidence based services for posttraumatic stress disorder (PTSD). We conducted a regional, web-based survey of 352 community mental health care providers that sought to identify clinical practices, training needs, and predictors of evidence based treatment (EBT) use for PTSD. Overall, 49 % of providers indicated they seldom or never use a validated PTSD screening instrument. Familiarity with EBTS, specifically prolonged exposure (PE; $\chi^2(4) = 14.68, p < .01$) and cognitive processing therapy (CPT; $\chi^2(4) = 4.55, p < .05$), differed by provider type. Of providers who received training in PE or CPT (N = 121), 75 % reported using treatment in their practice, which was associated with having received clinical supervision ($\chi^2(1) = 20.16, p < .001$). Widely disseminated trainings in empirically supported PTSD assessment and treatment, and implementation of case supervision in community settings are needed.</p>