

COLUMN

Scanning the Global Literature

In each issue of Global Advances in Health and Medicine, we will publish summaries of and commentaries on select articles from journals our editors and other contributors to the journal are reading.

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HEALTH BENEFITS OF WALKING IN NATURE

Projected global increases in depression, obesity, cardiovascular disease, and dementia pose significant public health challenges and contribute to the escalating costs of healthcare, as does stress. National group walk programs have the potential to improve physical, mental, emotional, and social wellbeing. Marselle et al designed a study to evaluate the health benefits of participating in group walks in nature. In this large-scale study (N=1516), nature group walkers were matched with non-group walkers using propensity scores. After 13 weeks, group walks in nature were associated with significantly lower depression, perceived stress, and negative affect as well as enhanced positive affect and mental wellbeing, both before and after controlling for covariates.



Commentary by Mary Jo Kreitzer, PhD, RN, FAAN

Walking is an accessible, low-risk, and inexpensive form of exercise that has been documented to have health benefits. This study makes a very important contribution to the field of nature-based therapies (NBT). It was unique in being longitudinal, having a large sample size and control group, using robust measures, and testing a group intervention based in nature. Prior to this study, little was known about the potential additional benefits that might occur when walking in a natural environment. Other NBT including facilitated green exercise, therapeutic horticulture, healing gardens and animal-assisted interventions are emerging as options that are of great interest to patients. Like many other integrative therapies, they show promise of improving patient-centered health outcomes. Before NBT are widely adopted, studies like the one conducted by Marselle and colleagues are necessary to replicate to demonstrate safety, efficacy, and cost-effectiveness.

REFERENCE

Marselle MR, Irvine KN, Warber SL. Examining group walks in nature and multiple aspects of wellbeing: a large-scale study. *Ecopyschology*. 2014;6(3):134-47.

YOGA REDUCES SYMPTOMS IN WOMEN WITH POSTTRAUMATIC STRESS DISORDER

A startling and disturbing 10% of women in the United States have histories of violent physical assault, and more than one-third of these victims develop post-traumatic stress disorder (PTSD). Researchers randomized 64 female survivors of childhood assaults diagnosed with chronic treatment-resistant PTSD to 10-week time-matched group programs of either trauma-informed yoga or supportive women's health education. The primary outcome assessed at baseline, midtreatment, and posttreatment was the Clinician Administered PTSD Scale (CAPS).

Sixteen of the 31 participants (52%) who completed CAPS at the final assessment no longer met criteria for PTSD vs 6 of 29 (21%) in the control group ($X^2=0.013$). Intention-to-treat analyses for longitudinal changes in CAPS, as well for other trauma- and symptom-related outcomes, revealed statistically greater improvements in the yoga group and generally medium to large effect sizes. While improvements in most outcomes at midtreatment were also observed in the control group, gains were only maintained in the yoga group.



Commentary by Peter Wayne, PhD

This study, which employed rigorous screening and assessment methods, highlights the potential of mind-body therapies for treating PTSD. In contrast to therapeutic processes targeted in current cognitive and pharmacological approaches, it suggests that the mindful attention to body posture and breath inherent in yoga may positively impact PTSD symptoms through somatic regulation and interoceptive awareness. Future larger studies and trials including more diverse populations are needed to confirm the clinical effectiveness of yoga for PTSD, as well as underlying mechanisms of action. Important limitations of this study were lack of adverse-event reporting and the qualifications of instructors. Future studies should report intervention safety and tolerance, and efforts should be made to evaluate characteristics of specifically modified yoga programs (eg, trauma-informed yoga) and instructors that might lead to improved outcomes and safety.

REFERENCE

van der Kolk BA, Stone L, West J, et al. Yoga as an adjunctive treatment for posttraumatic stress disorder: a randomized controlled trial. *J Clin Psychiatry*. 2014;75(6):e559-65.

MINDFULNESS MEDITATION AND SUPPORTIVE-EXPRESSIVE THERAPY IN BREAST CANCER SURVIVORS IS ASSOCIATED WITH INCREASED TELOMERE LENGTH

Successful breast cancer treatment does not prevent ongoing distress and need for psychosocial care in surviving women. Two possible interventions are mindfulness-based cancer recovery (MBCR), based on hatha yoga, and supportive-expressive therapy (SET), based on emotional expression and group support. In a multisite 3-arm randomized controlled trial (MINDSET) of 271 breast cancer survivors (stage I-III) suffering from distress, Carlson and colleagues reported in 2013 that both these interventions compared to a minimal intervention control group led to a decrease in stress and increase in quality of life, social support, and improved diurnal cortisol rhythm. Now the same investigators have reported a secondary analysis of telomere length (TL) has been reported. Telomeres are the regions at the ends of chromosomes and are critical for genetic stability. They shorten with increasing cell replications, which is associated with aging and a variety of diseases. The enzyme telomerase counterbalances telomere shortening. Both telomeres and telomerase are involved in carcinogenesis. An increased TL is associated with better breast cancer prognosis, although details of the connection are still unclear.

In a subgroup of 88 patients from 1 study center with available blood samples, the baseline and post-treatment TL were compared: In the treatment groups TL was maintained but decreased in the control group. Between the MBCR or SET group no difference was found, but a trend difference between the combined treatment groups and the control group was observed ($P=.043$). Changes in TL were not associated with changes in mood or stress.



Commentary by Gunver Kienle, Dr med

These results are in line with prior studies on effectiveness of mindfulness meditation and SET in various conditions. Both interventions are based on contemplative spiritual traditions and may be an important tool

to support breast cancer survivors suffering from distress. An open question is whether psychosocial care influences cancer control not only via improved psychosocial functioning. The hypothalamic-pituitary-adrenal axis and telomeres present interesting pathways for further understanding. Limitations were multiple, including the analysis was post-hoc, missing data, and an association between TL and stress or mood could not be verified. Still, the results are promising and can give rise to more investigations in this clinically important area.

REFERENCE

Carlson LE, Beattie TL, Giese-Davis J, et al. Mindfulness-based cancer recovery and supportive-expressive therapy maintain telomere length relative to controls in distressed breast cancer survivors. *Cancer*. 2014 Nov 3. doi: 10.1002/cntr.29063. Epub ahead of print.

INTERNATIONAL REVIEW OF MIND-BODY RESEARCH IN VETERAN AND MILITARY POPULATIONS

While research has identified substantial use of a range of complementary and alternative medicine (CAM) among veteran and military populations, the evidence base for such use of CAM interventions remains unclear. This timely paper reports the first scoping review of relevant literature worldwide determining the size and nature of the evidence base for CAM interventions amongst veterans and active military personnel, as well as identifying the gaps in empirical research requiring future attention. Elwy and colleagues identified 50 randomized controlled trials (RCTs) conducted in 9 countries. Although the majority of trials (88%) took place in the United States, studies were also identified from Israel, India, Australia, Finland, Taiwan, Thailand, and Turkey. Meditation, imagery (part of relaxation techniques), and acupuncture were among the mind-body practices most often studied in veteran and military populations. Furthermore, from the substantial number of RCTs identified on this topic, the vast majority were assessed as having poor methodological quality. In response, the authors propose a number of recommendations for future research including that future RCTs follow CONSORT requirements, and measures employed to examine common health conditions in these populations should be made publicly available via a repository.



Commentary by Jon Adams, PhD

Recent global conflicts have contributed to an abrupt rise in the numbers of active duty personnel and veterans suffering from chronic pain, posttraumatic stress disorder, depression, substance abuse disorder, and traumatic brain injury, among others. Conventional medical and psychiatric approaches to these conditions, although helpful, often are not fully satisfactory to both patients and clinicians. Rigorous research into mind-body practices are needed to determine if they improve health outcomes for military personnel, veterans, and their families. This paper provides an excellent overview and insights that will aid future investigations in what is a compelling, fascinating, and growing area of the CAM research landscape.

REFERENCE

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: s70-82.

COMMUNITY-BASED STRESS MANAGEMENT FOR UNDERSERVED BLACK CANCER SURVIVORS

Black women with breast cancer have higher mortality rates than other ethnic and racial groups, suffer disproportionately from diminished quality of life, and often lack access to psychosocial support and integrative healthcare. With the goal of improving psychosocial adaptation to cancer survivorship, researchers compared cognitive behavioral stress management (CBSM) to a breast cancer wellness and education program (CW) using a randomized trial design. A sample of 114 underserved black breast cancer survivors were recruited using a community-based approach in the Miami, Florida, area. The average age of the participants was 51.1 years, mean time since cancer diagnosis was 14.1 months, and stage of diagnosis ranged from 0-IV. All had completed treatment for breast cancer including surgery, chemotherapy, and radiation within 1 year of study enrollment. Both 10-session interventions were group-based, culturally adapted, manualized, and led by a female black professional. CBSM included progressive muscle relaxation, guided imagery, deep breathing, and meditation. Both groups received the same educational materials.

No baseline differences between the participant groups were observed, and both groups benefited from their respective interventions. No significant differences between the 2 groups were observed for the main outcome measures: mood, quality of life, intrusive thoughts, depressive symptoms, or perceived stress. However, favorable within-subjects effects were observed in both groups for all outcomes except mood, and these improvements were maintained during the 6-month follow-up period. A post-hoc comparison of study participants who attended at least 1 session with nonattenders showed that nonattenders demonstrated poorer adjustment to survivorship compared to attenders over the same time period.



Commentary by Martha Brown Menard, PhD, LMT

The study is noteworthy for its successful recruitment of a population that is usually difficult to reach, its high attendance (an average of 7 out of 10 sessions), and retention rate (95%).

Low-income minorities often have a greater burden of cancer survivorship. The study also speaks to the necessity of cultural competence in successfully addressing health disparities. The comparison education and wellness program, chosen for ethical reasons over a wait-list or no treatment group, appears to have been a more active intervention than anticipated. The study also highlights the limitation of the randomized controlled trial when 2 active interventions are compared—if both interventions are effective, then no statistically significant difference between groups will be observed.

REFERENCE

Lechner SC, Whitehead NE, Vargas S, et al. Does a community-based stress management intervention affect psychological adaptation among underserved black breast cancer survivors? *J Natl Cancer Inst Monogr*. 2014;50:315-22.

A LOOK AT THE GLOBAL BURDEN OF LOW BACK PAIN

The Global Burden of Disease 2010 (GBD 2010) study is a massive effort funded by the Bill & Melinda Gates Foundation, Seattle, Washington, and conducted by hundreds of investigators across multiple academic institutions and the World Health Organization. GBD 2010 estimates age, sex, and world region-specific estimates of disability attributed to 291 different diseases and injuries. Hoy et al analyzed the disability burden of low back pain (LBP). They used prevalence data from 117 studies obtained through a systematic review and multiple national health surveys. Complex statistical methods using Bayesian meta-regression were combined with survey-derived disability weights for different severities of LBP. Of all conditions analyzed, LBP was the leading cause of disability (years lived with disability, YLDs) and sixth for overall disease burden (disability-adjusted life years, DALYs). Globally, LBP prevalence was 9.4% (95% CI 9.0-9.8). From 1990 to 2010, there was a 66% increase in disability burden attributed to LBP. Burden and prevalence increased with age.



Commentary by Robert Saper, MD, MPH

Chronic pain, and LBP in particular, causes substantial disability and cost in developed and developing countries. Growing rates of obesity and sedentary work have likely contributed to its rise. Back pain is also the leading condition for which complementary and integrative therapies are used. Treatment guidelines suggest approaches such as manipulation, massage, yoga, acupuncture, and cognitive behavioral therapy have fair to good evidence for moderate effectiveness for back pain. Integrative interdisciplinary models of care, bringing together the best of mainstream medicine, behavioral health, and complementary therapies, may hold promise for this prevalent condition and deserve further research.

REFERENCE

Hoy D, March L, Brooks P, et al. The global burden of low back pain: estimates from the Global Burden of Disease 2010 study. *Ann Rheum Dis*. 2014;73(6):968-74.