

Suggested Readings: Research on Mind-Body Approaches to Wellness and Healing

Mind-body approaches to supporting health and wellness encompass a range of practices that focus on the connections between our minds, emotions, bodies, and spirits.¹ It includes practices such as yoga, tai chi, breathing exercises, acupuncture, biofeedback, creative arts therapies, and meditation, among others.² Many of these practices originate from religious, philosophical, and medicine traditions in East, South, and Southeast Asia and have been used for thousands of years. In recent years, elements of these practices have increasingly been adopted and used in a variety of contexts and settings. Subsequently, research on mind-body practices has burgeoned, particularly research on yoga and meditation. For example, articles on yoga cited in PubMed grew from 89 in 2004 to 382 in 2014. Part of this emerging body of research provides information about the biological and psychophysiological mechanisms by which yoga and meditation support physical and mental health. It also provides quantitative and qualitative evidence for the efficacy of meditation and yoga in reducing stress, increasing comfort in bodily awareness, and enhancing overall mental and physical health and wellbeing.

This collection of articles provides an overview of research on the potential helpfulness of yoga and mindfulness practices for people who have experienced trauma, including trauma related to domestic and sexual violence. A variety of methodologies are represented, including recent randomized controlled trials, qualitative studies, and meta-analyses. The articles in this collection may be of particular interest to domestic violence/sexual assault programs and coalitions, policymakers, and researchers. This is offered in conjunction with The National Center on Domestic Violence, Trauma & Mental Health's ongoing series on mind-body, breathing, and movement practices to promote wellness:
<http://www.nationalcenterdvtraumamh.org/publications-products/resource-for-advocates/>

Meditation

Meditation has long been used in many religions and cultures and continues to be central to spiritual practices for many people. According to the 2012 National Health Interview Study³, 8% of U.S. adults (or 18 million adults) reported practicing meditation at some point over the previous 12 months. While there are numerous forms of meditative practice (e.g. Transcendental Meditation, loving-kindness meditation, mantra meditation, mindfulness-based meditation, Zen Buddhist

¹ The National Institute for the Clinical Application of Behavioral Medicine, <https://www.nicabm.com/programs/mindbody/>

² National Center for Complementary and Integrative Health, <https://nccih.nih.gov/health/mindbody>

³ Clarke TC, Black LI, Stussman BJ, Barnes PM, Nahin RL (2015). Trends in the use of complementary health approaches among adults: United States, 2002-2012. National Health Statistics Reports; No. 79. Hyattsville, MD: National Center for Health Statistics.

meditation), according to The National Center for Complementary and Integrative Health, most forms include four common elements. These elements are 1) a quiet location with as few distractions as possible; 2) a specific, comfortable posture; 3) a focal point of attention, such as an object, the sensations of the breath, or a specific phrase; and 4) an open attitude in the moment-to-moment practice of meditation, letting distractions come and go without judging them.⁴ Meditation is often used to support relaxation, coping, compassion, spirituality, and wellbeing, in addition to promoting mindfulness. Because mindfulness can be understood as an outcome of meditative practice or as a form of meditation itself, the articles in this section focus both on mindfulness and meditation.

In recent years, elements of mindfulness meditation have been incorporated into existing Western mental health treatment modalities. This includes Mindfulness-Based Cognitive Therapy⁵ (MBCT), which combines elements of cognitive behavioral therapy and mindfulness approaches, and Mindfulness-Based Stress Reduction⁶ (MBSR), a group-based modality that uses both mindfulness and yoga techniques. The following articles provide information on: mindfulness and psychological well-being; the efficacy of mindfulness-based therapies for people living with anxiety, depression, or stress; potential mechanisms underlying MBCT and MBSR; how meditation may help with posttraumatic stress disorder (PTSD); the applicability of MBSR for survivors of domestic violence; and an anthropological perspective on how mindfulness helps to address trauma.

1. Keng, S.-L., et al. (2011). Effects of mindfulness on psychological health: A review of empirical studies. *Clinical Psychology Review*, 31(6): 1041-56.

This article is available at: http://greatergood.berkeley.edu/images/uploads/Keng-Mindfulness_Review_and_Conceptions.pdf

Abstract:

Within the past few decades, there has been a surge of interest in the investigation of mindfulness as a psychological construct and as a form of clinical intervention. This article reviews the empirical literature on the effects of mindfulness on psychological health. We begin with a discussion of the construct of mindfulness, differences between Buddhist and Western psychological conceptualizations of mindfulness, and how mindfulness has been integrated into Western medicine and psychology, before reviewing three areas of empirical research: cross-sectional,

⁴ For more information, please see: <https://nccih.nih.gov/health/meditation/overview.htm>, <https://nccih.nih.gov/about/offices/od/2010-06.htm>

⁵ For more information, please see: Sipe, W.E.B., & Eisendrath, S.J. (2012). Mindfulness-based cognitive therapy: Theory and practice. *The Canadian Journal of Psychiatry / La Revue Canadienne De Psychiatrie*, 57(2), 63-69.

⁶ For more information, please see: <http://www.mindfullivingprograms.com/whatMBSR.php>

correlational research on the associations between mindfulness and various indicators of psychological health; intervention research on the effects of mindfulness-oriented interventions on psychological health; and laboratory-based, experimental research on the immediate effects of mindfulness inductions on emotional and behavioral functioning. We conclude that mindfulness brings about various positive psychological effects, including increased subjective well-being, reduced psychological symptoms and emotional reactivity, and improved behavioral regulation. The review ends with a discussion on mechanisms of change of mindfulness interventions and suggested directions for future research.

2. Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., et al. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*, 33(6), 763-771.

This article is available at: <http://www.mindfulnessstudies.com/wp-content/uploads/2014/01/1-Khoury-Meta-analysis.pdf>

Abstract:

Mindfulness-based therapy (MBT) has become a popular form of intervention. However, the existing reviews report inconsistent findings. Objective: To clarify these inconsistencies in the literature, we conducted a comprehensive effect-size analysis to evaluate the efficacy of MBT. Data sources: A systematic review of studies published in journals or in dissertations in PubMed or PsycINFO from the first available date until May 10, 2013. Review methods: A total of 209 studies (n = 12,145) were included. Results: Effect-size estimates suggested that MBT is moderately effective in pre-post comparisons (n = 72; Hedge's g = .55), in comparisons with wait list controls (n = 67; Hedge's g = .53), and when compared with other active treatments (n = 68; Hedge's g = .33), including other psychological treatments (n = 35; Hedge's g = .22). MBT did not differ from traditional CBT or behavioral therapies (n = 9; Hedge's g = -.07) or pharmacological treatments (n = 3; Hedge's g = .13). Conclusion: MBT is an effective treatment for a variety of psychological problems, and is especially effective for reducing anxiety, depression, and stress.

3. Gu, J., Strauss, C., Bond, R., Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of meditation studies. *Clinical Psychology Review*, 37C, 1-12.

The article is available via PubMed at:
<http://www.ncbi.nlm.nih.gov/pubmed/25689576>

Abstract

Given the extensive evidence base for the efficacy of mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), researchers have started to explore the mechanisms underlying their therapeutic effects on psychological outcomes, using methods of mediation analysis. No known studies have systematically reviewed and statistically integrated mediation studies in this field. The present study aimed to systematically review mediation studies in the literature on mindfulness-based interventions (MBIs), to identify potential psychological mechanisms underlying MBCT and MBSR's effects on psychological functioning and wellbeing, and evaluate the strength and consistency of evidence for each mechanism. For the identified mechanisms with sufficient evidence, quantitative synthesis using two-stage meta-analytic structural equation modelling (TSSEM) was used to examine whether these mechanisms mediate the impact of MBIs on clinical outcomes. This review identified strong, consistent evidence for cognitive and emotional reactivity, moderate and consistent evidence for mindfulness, rumination, and worry, and preliminary but insufficient evidence for self-compassion and psychological flexibility as mechanisms underlying MBIs. TSSEM demonstrated evidence for mindfulness, rumination and worry as significant mediators of the effects of MBIs on mental health outcomes. Most reviewed mediation studies have several key methodological shortcomings which preclude robust conclusions regarding mediation. However, they provide important groundwork on which future studies could build.

4. Lang, A.J., Strauss, J.L., Bomyea, J., Bormann, J.E., Hickman, S.D., Good, R.C., Essex, M. (2012). The theoretical and empirical basis for meditation as an intervention for PTSD. *Behavior Modification*, 36(6), 759-786.

The article is available via PubMed at:

<http://www.ncbi.nlm.nih.gov/pubmed/22669968>

Abstract:

Despite the widespread use of meditation-based approaches, there is minimal research rigorously assessing their effectiveness for people experiencing PTSD. This article reviews meditation as an intervention for PTSD, considering three major types of meditative practices: mindfulness, mantra, and compassion meditation. The mechanisms by which these approaches may effectively reduce PTSD symptoms and improve quality of life are presented. Empirical evidence of the efficacy of meditation for PTSD is very limited but holds some promise. Additional evaluation of meditation-based treatment is clearly warranted.

5. Dutton, M.A., Bermudez, D., Matás, A., Majid, H., Myers, N.L. (2013). Mindfulness-Based Stress Reduction for low-income, predominantly African American women with PTSD and a history of intimate partner violence. *Cognitive and Behavioral Practice*, 20, 23-32.

This article is available at:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3772725/pdf/nihms-440886.pdf>

Abstract:

In this article, the authors consider the use of Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1991) as a community-based intervention for posttraumatic stress disorder (PTSD) among low-income, predominantly African American women with a history of intimate partner violence (IPV). They describe their rationale for using MBSR as an intervention for PTSD with this group of women, describe MBSR and how they adapted and implemented the curriculum, and discuss the feasibility and acceptability of the intervention based on participants' feedback and their observations. The results of a pilot randomized clinical trial (RCT) of MBSR as an intervention for PTSD with low-income predominantly African American women are forthcoming.

6. Myers, N., Lewis, S., & Dutton, M. A. (2015). Open mind, open heart: An anthropological study of the therapeutics of meditation practice in the US. *Culture, Medicine and Psychiatry*, doi: <http://dx.doi.org/10.1007/s11013-014-9424-5>

The article is available via PubMed at:

<http://www.ncbi.nlm.nih.gov/pubmed/25613595>

Abstract:

Based on ethnographic fieldwork and interviews collected with meditation teachers and students in the United States, this article will argue that active training in meditation-based practices occasions the opportunity for people with traumatic stress to develop a stronger mind-body connection through heightened somatic awareness and a focus on the present moment that they find to be therapeutic. Three important themes related to healing through meditation for trauma emerged from the data and centered around the ways our interlocutors attempted to realign their sense of self, mind and body, after a traumatic experience. The themes helped explain why US women perceive meditation as therapeutic for trauma, namely that the practice of meditation enables one to focus on the lived present rather than traumatic memories, to accept pain and "open" one's heart, and to make use of silence instead of speech as a healing modality. As meditation practices increasingly enter global popular culture, promoted for postulated health benefits, the driving question of this research—how meditation may perpetuate human resilience for

women who have experienced trauma based on their own perspectives of meditation practices—is a critical addition to the literature.

Yoga

Yoga is a family of mental, physical, and spiritual practices that have been a part of Indian religious and philosophical traditions for over 2,000 years.⁷ All forms of yoga incorporate physical poses and exercises, meditation, and breath work⁸, with some variation in rigor and approach depending on the type of yoga practiced (e.g. Vinyasa, Bikram, Hatha, Ashtanga, Raja). Over the past decade, yoga has become significantly more popular in the U.S., with about 10% of the population practicing it by 2012.⁹ Both the physical and mental health benefits of yoga have been explored and documented in the literature. For example, a recent bibliometric analysis of yoga found that 312 randomized controlled trials have been conducted, covering a broad range of health and mental health conditions (e.g. cardiovascular conditions, cancer, pulmonary function, neurological conditions, depression, PTSD, and overall psychological wellbeing).⁵ Current evidence suggests that yoga may be helpful for trauma survivors. In light of this, The Trauma Center at the Justice Resource Institute developed a modified form of yoga to address the specific needs of trauma survivors, a modality they refer to as trauma-sensitive yoga. Trauma-sensitive yoga incorporates trauma-informed principles into yoga practice, with attention to the physical environment in which yoga is practiced, an awareness of how yoga practice may elicit trauma reminders, and the use of invitational language to support choice. Because three of the studies in this section use interventions incorporating elements of trauma-sensitive yoga, this collection includes an article describing its key principles. This collection also features an overview of the physical and mental health benefits that have been established in the literature, recent randomized controlled trials on yoga and PTSD, and an article examining the possible mechanisms underlying yoga's benefits among women experiencing PTSD.

1. Büssing, A., Michalsen, A, Khalsa, S.B.S., Telles, S., Sherman, K.J. (2012). Effects of yoga on mental and physical health: A short summary of reviews. *Evidence-Based Complementary and Alternative Medicine*, vol. 2012, Article ID 165410, 7 pages.

This article is available at: <http://www.hindawi.com/journals/ecam/2012/165410/>

Abstract:

This report summarizes the current evidence on the effects of yoga interventions on various components of mental and physical health, by focusing on the evidence described in review articles. Collectively, these reviews suggest a number of areas

⁷ For more information, please see: <http://www.biomedcentral.com/1472-6882/14/328>

⁸ For more information, please see: <https://nccih.nih.gov/health/yoga>

⁹ For more information, please see: <http://www.cdc.gov/nchs/data/nhsr/nhsr079.pdf>

where yoga may well be beneficial, but more research is required for virtually all of them to firmly establish such benefits. The heterogeneity among interventions and conditions studied has hampered the use of meta-analysis as an appropriate tool for summarizing the current literature. Nevertheless, there are some meta-analyses which indicate beneficial effects of yoga interventions, and there are several randomized clinical trials (RCT's) of relatively high quality indicating beneficial effects of yoga for pain-associated disability and mental health. Yoga may well be effective as a supportive adjunct to mitigate some medical conditions, but not yet a proven stand-alone, curative treatment. Larger-scale and more rigorous research with higher methodological quality and adequate control interventions is highly encouraged because yoga may have potential to be implemented as a beneficial supportive/adjunct treatment that is relatively cost-effective, may be practiced at least in part as a self-care behavioral treatment, provides a life-long behavioral skill, enhances self-efficacy and self-confidence and is often associated with additional positive side effects.

2. Emerson, D., Sharma, R., Chaudhry, S., Turner, J. (2009). Trauma-sensitive yoga: Principles, practice, and research. *International Journal of Yoga Therapy, 19*, 123-128.

This article is available at:

http://www.traumacenter.org/products/..%5Cproducts%5Cpdf_files%5Cijyt_article_2009.pdf

Abstract:

This paper describes principles and best practices of teaching Yoga to survivors of trauma based on the experiences of the Trauma Center Yoga Program at the Justice Resource Institute in Brookline Massachusetts in providing Yoga to a variety of trauma survivors, including war veterans, rape survivors, at-risk youth, and survivors of chronic childhood abuse and neglect since 2003 and training Yoga instructors and clinicians on how to offer Yoga to trauma survivors. Pilot study results have demonstrated the benefits of Yoga for individuals suffering from post-traumatic stress disorder.

3. van der Kolk, B.A., Stone, L., West, J., Rhodes, A., Emerson, D, et al. (2014). Yoga as an adjunctive treatment for posttraumatic stress disorder: A randomized controlled trial. *Journal of Clinical Psychiatry, 75*(6), e559-e565.

This article is available at:

http://www.traumacenter.org/products/pdf_files/Yoga_Adjunctive_Treatment_PTS_D_V0001.pdf

Abstract:

More than a third of the approximately 10 million women with histories of interpersonal violence in the United States develop posttraumatic stress disorder (PTSD). Currently available treatments for this population have a high rate of incomplete response, in part because problems in affect and impulse regulation are major obstacles to resolving PTSD. This study explored the efficacy of yoga to increase affect tolerance and to decrease PTSD symptomatology.

Method: Sixty-four women with chronic, treatment-resistant PTSD were randomly assigned to either trauma-informed yoga or supportive women's health education, each as a weekly 1-hour class for 10 weeks. Assessments were conducted at pretreatment, mid-treatment, and post-treatment and included measures of *DSM-IV* PTSD, affect regulation, and depression. The study ran from 2008 through 2011.

Results: The primary outcome measure was the Clinician-Administered PTSD Scale (CAPS). At the end of the study, 16 of 31 participants (52%) in the yoga group no longer met criteria for PTSD compared to 6 of 29 (21%) in the control group ($n = 60$, $\chi^2 = 6.17$, $P = .013$). Both groups exhibited significant decreases on the CAPS, with the decrease falling in the large effect size range for the yoga group ($d = 1.07$) and the medium to large effect size decrease for the control group ($d = 0.66$). Both the yoga ($b = -9.21$, $t = -2.34$, $P = .02$, $d = -0.37$) and control ($b = -22.12$, $t = -3.39$, $P = .001$, $d = -0.54$) groups exhibited significant decreases from pretreatment to the mid-treatment assessment. However, a significant group \times quadratic trend interaction ($d = -0.34$) showed that the pattern of change in Davidson Trauma Scale significantly differed across groups. The yoga group exhibited a significant medium effect size linear ($d = -0.52$) trend. In contrast, the control group exhibited only a significant medium effect size quadratic trend ($d = 0.46$) but did not exhibit a significant linear trend ($d = -0.29$). Thus, both groups exhibited significant decreases in PTSD symptoms during the first half of treatment, but these improvements were maintained in the yoga group, while the control group relapsed after its initial improvement.

Discussion: Yoga significantly reduced PTSD symptomatology with effect sizes comparable to well-researched psychotherapeutic and psychopharmacologic approaches. Yoga may improve the functioning of traumatized individuals by helping them to tolerate physical and sensory experiences associated with fear and helplessness and to increase emotional awareness and affect tolerance.

4. Reddy, S., Dick, A. M., Gerber, M. R., & Mitchell, K. (2014). The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. *The Journal of Alternative and Complementary Medicine*, 20(10), 750-756.

This article is available at:

http://www.academia.edu/8612289/The_Effect_of_a_Yoga_Intervention_on_Alcohol_and_Drug_Abuse_Risk_in_Veteran_and_Civilian_Women_with_Posttraumatic_Stress_Disorder

Abstract:

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.

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.

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.

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.

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.

5. Dick, A. M., Niles, B. L., Street, A. E., DiMartino, D. M., & Mitchell, K. S. (2014). Examining mechanisms of change in a yoga intervention for women: The influence of mindfulness, psychological flexibility, and emotion regulation on PTSD symptoms. *Journal of Clinical Psychology, 70*(12), 1170-1182.

The article is available via PubMed at:

<http://www.ncbi.nlm.nih.gov/pubmed/24888209>

Abstract:

Objective: This study explored possible mechanisms through which symptoms of posttraumatic stress disorder (PTSD) were reduced in a randomized controlled trial comparing the effect of a yoga intervention with an assessment control.

Method: We examined whether changes in psychological flexibility, mindfulness, and emotion regulation strategies (expressive suppression and reappraisal) were associated with post-treatment PTSD symptoms for 38 women with Diagnostic and Statistical Manual of Mental Disorders Fourth Edition full or sub-threshold PTSD.

Results: Hierarchical linear regression models revealed that expressive suppression significantly decreased for the yoga group relative to the assessment control. Psychological flexibility increased significantly for the control but not yoga group. However, increases in psychological flexibility were associated with decreases in PTSD symptoms for the yoga but not control group.

Conclusion: Preliminary findings suggest that yoga may reduce expressive suppression and may improve PTSD symptoms by increasing psychological flexibility. More research is needed to replicate and extend these findings.