**Interventions**

*Articles testing the applied science and implementation of mindfulness-based interventions*


Kong, F., Wang, X., Song, Y., Liu, J. (2015). Brain regions involved in dispositional...
mindfulness during resting state and their relation with well-being. Social Neuroscience. [link]


METHODS

Articles developing empirical procedures to advance the measurement and methodology of mindfulness


REVIEWS

Articles reviewing content areas of mindfulness or conducting meta-analyses of published research


Bibeau, M., Dionne, F., Leblanc, J. (2015). Can compassion meditation contribute to the
Highlights

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Highlights by
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OCT 2015

Vol 6 - No. 10

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MINDFULNESS RESEARCH MONTHLY

development of psychotherapists’ empathy?
A review. Mindfulness. [link]


Hickman, S. D. (2015). This is the hour: A call for reflection and introspection in the field of mindfulness. Mindfulness. [link]


TRIALS

Research studies newly funded by the National Institutes of Health (SEP 2015)

Brown University (E. Loucks, PI). Mindfulness influences on self-regulation: mental and physical health implications. NIH/NCCIH project #1UH2AT009145-01. [link]

Carnegie-Mellon University (J. D. Creswell, PI). Mindfulness meditation training in lonely older adults. NIH/NCCIH project #1R01AT008685-01. [link]

Duke University (H. A. Williams, PI). Mindfulness-based intervention for pain catastrophizing in sickle cell disease. NIH/NINR project #5F31NR014954-02. [link]

Johns Hopkins University (M. Rosen, PI). Simulation for building leadership capacity for patient safety. NIH/AHRQ project #5R18HS023159-02. [link]

Medical University of South Carolina (T. K. Killeen, PI). Mindfulness meditation for the treatment of women with PTSD and SUD. NIH/NIDA project #1R01DA040968-01. [link]

University of Denver (K. A. Bender, PI). Randomized clinical trial: substance use victimization in homeless youth. NIH/NIDA project #1R15DA039355-01. [link]

University of Southern California (H. Amaro, PI). Neural mechanisms in women’s treatment and early recovery. NIH/NIDA project #1R01DA038648-01A1. [link]
**Highlights**

A summary of select studies from the issue, providing a snapshot of some of the latest research findings

Epileptic disorders are neurological disorders characterized by recurrent seizures. About 30% of people with epilepsy are drug resistant, meaning that despite trials of at least two different anti-epileptic medications, they are unable to rid themselves of seizures. Because people with epilepsy are prone to depression and anxiety, and because stress plays a significant role in provoking seizures, people with epilepsy may benefit from mindfulness-based interventions (MBIs).

In a randomized, controlled study, Tang, et al. [Neurology] tested the impact of a MBI on quality of life, seizure frequency, and cognition in drug-resistant epileptics.

The researchers recruited 60 drug-resistant epileptics (53% female, average age = 35) from neurology practices in Hong Kong, and randomly assigned them to either a 6-week MBI program that included social support or a 6-week program of social support (SS) alone. Both interventions provided didactic information about epilepsy along with the opportunity to share experiences related to seizures and their management. The MBI also offered practice in the body scan, mindful breathing, listening, and eating, and non-judgmental awareness of thoughts.

Both interventions were offered in four 2.5-hour biweekly classes, and in addition, MBI participants were encouraged to practice mindfulness for 45 minutes per day at home. Participants kept daily diaries of seizure frequency for 6 weeks prior to the intervention and during a 6-week post-intervention follow-up. They also completed a battery of self-report and cognitive measures at baseline and post-intervention.

Both groups showed significant improvement on a 100-point Quality of Life (QOL) scale, but a significantly greater percentage of MBI participants (37%) showed clinically meaningful QOL improvement (a 12-point or greater increase) compared to SS participants (13%). Both groups significantly reduced their symptoms of depression and anxiety, but MBI participants reduced their symptoms significantly more (anxiety partial $\eta^2 = 0.11$; depression partial $\eta^2=0.67$). These between-group differences were large enough to be clinically meaningful for anxiety, but not for depression.

The MBI participants reduced their seizure frequency (partial $\eta^2=0.31$) by a significantly greater percent (40%) than did SS participants (19%). The researchers also measured the participants’ ability to recall a list of unrelated words after a time delay and after hearing a list of interfering words. MBI participants significantly improved more on this measure, both after delay (partial $\eta^2=0.31$) and interference (partial $\eta^2=0.10$). Mindfulness may have increased their ability to attend to and retain verbal information, or the increase may be due to improved neurological functioning given their decreased seizure frequency.

This randomized, controlled study demonstrates that a standardized six-week mindfulness training improves short-term seizure control and quality of life in a drug-resistant epileptic population better than a social support program alone. Reduced emotional reactivity to seizure symptoms may be instrumental in both reducing seizure frequency and improving emotional well-being.
The basic mindfulness instruction to “attend to the present moment without judgment” seems straightforward, but novices are often unsure whether they are practicing mindfulness “correctly.” There are no existing objective behavioral markers of mindfulness, and descriptions of what mindfulness “feels like” are often metaphorical (e.g., “spacious” or “intimate”) and hard to interpret.

This lends a hit-or-miss quality to training, and has led some to wonder whether neurofeedback (a form of biofeedback that uses electroencephalogram (EEG) data to alter brain rhythms) might be a useful way to support mindfulness practice. Previous research has identified a group of EEG parameters (e.g., the appearance of alpha frequencies, increasing alpha amplitude, and a gradual shift towards lower alpha and theta frequencies) that accompany the meditative state. Neurofeedback devices that help meditators achieve these EEG patterns may help assist in cultivating mindfulness.

Sas & Chopra [Personal and Ubiquitous Computing] developed a wearable mindfulness neurofeedback device (MeditAid) and tested it with novice and experienced meditators. The MeditAid prototype includes a wearable, wireless headset to record scalp EEGs and software to translate EEG patterns into auditory feedback. The auditory feedback is delivered as either monaural beats (sounds of differing frequencies presented to both ears simultaneously) or binaural beats (sounds of differing frequencies presented to each ear separately) through headphones. Each method produces a rhythmic pattern of beats that corresponds to the user’s EEG frequency.

The difference between monaural and binaural beats is that monaural beat perception is a function of the mechanics of the inner ear, whereas binaural beat perception is a function of the integrative activity of the brain. Listeners hear lower monaural and binaural beat frequencies as having a lower pitch. MeditAid users move their EEGs toward slower, more “mindful” brain rhythms by attempting to lower the pitch of the beats. The beats do more than just provide feedback, however. They also stimulate the brain to match and echo their frequencies, a phenomenon known as “entrainment.”

The researchers recruited 16 participants (62% female, average age = 41) with a range of from 1 month to 40 years of meditation experience. Those with over 8 years of experience were designated “experienced;” those with less were deemed “novices.” Participants used the MeditAid device under three different conditions: without auditory feedback, with monaural beats, and with binaural beats. The deepest meditative level attained under each condition was assessed by EEG, and participants were interviewed and asked to rate how “still” their minds were under each condition.

All of the participants achieved significantly “deeper” EEG levels with binaural feedback than with either no feedback or monaural feedback ($\eta^2=0.80$). Experienced meditators achieved significantly “deeper” EEG levels than novices ($\eta^2=0.44$), but binaural feedback was of significantly more benefit to novices ($\eta^2=0.26$). EEG levels were significantly associated (correlations ranged from 0.51 to 0.55) with subjective judgments of the percentage of time participants experienced their minds as being “still.” Participants reported significantly greater “stillness” with binaural beats than either monaural or no beats ($\eta^2=0.38$). While participants rated the prototype as “useful,” some complained of physical discomfort or found the beats distracting.

This study demonstrates neurofeedback’s potential value in cultivating mindfulness. Neurofeedback increases lower alpha and theta rhythms, and binaural beat feedback is more effective for novices. More research is needed, however, to determine the degree to which lower alpha and theta rhythms mirror the subjective experience of mindfulness.
OCTOBER 2015

ANNOUNCEMENTS

Submit your announcements online at goAMRA.org/publications/
Categories: Events & Conferences, Research & Education, Books & Media, and Employment & Volunteer

Events & Conferences

Search Inside Yourself in LA!
Developed at Google and based on neuroscience research, SIY uses mindfulness practice to train emotional intelligence skills, leading to resilience, well-being, and centered leadership. In the midst of complexity, it’s about finding the inner capacity to create, thrive, and lead. Backed by leading experts in neuroscience and mindfulness, SIY is changing thousands of lives in over a dozen countries. October 2-3 at University of Southern California in Los Angeles.

INFO: Registration and details at SIYLosAngeles.eventbrite.com

Mindful Mental Health Professionals

If you are a Mental Health Professional (Masters’ level or higher) with an ongoing mindfulness practice for at least 2 months, please take 15-20 minutes to fill out the following anonymous survey. After survey completion, sign up to receive a useful electronic booklet on mindfulness.

INFO: Complete the survey here: https://mnsu.co1.qualtrics.com/SE/?SID=SV_3DeCdtP55wKEKjn

Announce your events in Mindfulness Research Monthly

Get your message out to our mindfulness community of over 10,700 subscribers (includes researchers, physicians, teachers, other professionals, students, and the general public) in our monthly open-access publication.
INFO: For details and info, visit https://goamra.org/publications/advertising/

Research & Education

Funding for Mindfulness Teachers and Researchers: Now Closed
The American Mindfulness Research Association (AMRA) Professional Development Award program is now closed. This competitive grant provides $500 awards to promising researchers and teachers for their commitment to excellence in mindfulness research and practice. Congratulations to awardees that have now been selected. Award notices will be posted on the AMRA website soon.

INFO: For details visit https://goamra.org/about/grants/

Books & Media

New Book! Mindfulness for Teachers
Based upon the author’s extensive experience as a mindfulness practitioner, teacher, teacher educator and scientist, this book offers valuable research-based information about how mindfulness can help teachers manage the stressful demands of the classroom, cultivate an exceptional learning environment, and revitalize teaching and learning.

INFO: http://amzn.com/0393708071

Mindful Medical Practice: Clinical Narratives
Patricia Dobkin’s new book, forwarded by Ron Epstein, showcases how mindfulness enhances clinician-patient relationships while adding depth and meaning to their work. Each chapter, authored by physicians or allied professionals, provides therapeutic insights across a broad spectrum of specialties and settings in five countries.


Employment & Volunteer

Post Doc Fellow Needed UofCalgary
We are looking for a postdoctoral fellow in the area of Integrative Oncology, under Dr. Linda E. Carlson, Professor at University of Calgary and holder of the Enbridge Research Chair in Psychosocial Oncology as study coordinator for the research study Preference-Based Multi-Site Randomized Comparative Effectiveness Trial (CET) of Mindfulness-Based Cancer Recovery (MBCR) vs. Tai Chi/Qigong (TCQ) in Cancer Survivors.

INFO: Contact Linda E. Carlson to apply or for more information: lcarlso@ucalgary.ca