**INTERVENTIONS**

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


Nyklíček, I., van Son, J., Pop, V., Pouwer, F. (2016). Does MBCT benefit all people with...

Oddi, M., Bennett, R. (2016). **Mixed staff and client mindfulness groups in a long stay inpatient setting: An evaluation. Journal of Psychosocial Rehabilitation and Mental Health.** [link]


**ASSOCIATIONS**

**Articles examining the correlates and mechanisms of mindfulness**

Anastasiades, M. H., Kapoor, S., Wootten, J., Lams, D. A. (2016). **Perceived stress, depressive symptoms, and suicidal ideation in undergraduate women with varying levels of mindfulness. Archives of Women’s Mental Health.** [link]

Calvete, E., Orue, I., Sampedro, A. (2016). **Does the acting with awareness trait of mindfulness buffer the predictive association between stressors and psychological symptoms in adolescents? Personality and Individual Differences.** [link]


Fulton, C. L. (2016). **Mindfulness, self-compassion, and counselor characteristics and session variables. Journal of Mental Health Counseling.** [link]


Håkansson, K., Ledreux, A., Daffner, K., Mohammed, A. K. (2016). **BDNF responses in healthy older persons to 35 minutes of physical
Highlights

David S. Black, Editor

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exercise, cognitive training, and mindfulness: Associations with working memory function. Journal of Alzheimer’s Disease. [link]


Methods

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

Badran, B. W., Austelle, C. W., Smith, N. R.,..Short, B. (2016). A double-blind study exploring the use of transcranial direct current stimulation (tdcs) to potentially enhance mindfulness meditation (e-meditation). Brain Stimulation. [link]

intervention on mood state and on visual and auditory attention and memory task performance. Current Psychology. [link]


Crane, R. S. (2016). Implementing mindfulness in the mainstream: Making the path by walking it. Mindfulness. [link]

Egan, H., Mantzios, M., Jackson, C. (2016). Health practitioners and the directive towards compassionate healthcare in the UK: Exploring the need to educate health practitioners on how to be self-compassionate and mindful alongside mandating compassion towards patients. Health Professions Education. [link]


Highlights

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

While anecdotal evidence suggests that an increasing number of medical students and physicians are gaining exposure to mindfulness-related concepts and practices, there have been no formal surveys of the extent and scope of mindfulness-related activities in U.S. medical schools. If mindfulness is to be more than a passing fad, MBI-related concepts and practices need to be integrated into medical education, and institutions must be created that will sustain medical MBI education, practice, and research into the future. To what extent is that happening across the nation?

Barnes et al. [Mindfulness] performed a systematic search of all of the 140 accredited U.S. medical school websites for information concerning MBI education, practice programs, and research activity. Whenever the schools were found to have affiliated academic mindfulness centers, the directors of those centers were surveyed about program content and sustainability.

The researchers evaluated over 5,000 web links that were harvested in an Internet search of links that included a medical school name and a reference to mindfulness. Mindfulness activities in those links were categorized as clinical activity, medical school curricular activity, student/staff wellness activity, or research activity. The search also identified potential academic mindfulness centers associated with the medical schools (AMCAMS). To be identified as an AMCAMS, centers had to be a distinct administrative entity, be affiliated with the medical school, and offer at least one MBI course. Center directors were asked to complete an online survey requesting detailed information about their programs, participants, staffing, revenue sources, and whether the center had an exclusive mindfulness focus or a broader integrative medicine focus.

Results showed that in 2014, 79% (111/140) of U.S. medical schools provided online information about mindfulness-related activities. In terms of types of mindfulness activities, 62% of the schools offered staff/student wellness-related activities, 49% offered research-related activities, 34% offered MBIs to patients, and 31% offered mindfulness-related material in their medical education curriculum.

Nearly a quarter (33/140; 24%) of the medical schools had an AMCAMS. Most of the AMCAMS directors (87%) responded to the survey. Of those AMCAMS, 42% were focused primarily on MBIs, while 55% had a broader integrative medicine focus that included mindfulness. The most commonly offered MBIs were MBSR (67%), MBCT (39%) and Mindful Movement (39%). AMCAMS supported themselves through a combination of MBI class fees (64%), private donations (52%), fee-for-service billing (48%), research funding (42%), and insurance billing (23%). The majority (61%) reported formal involvement of medical and psychology students, trainees, interns, and residents in their programming. The average AMCAMS had 12 full-time employees and offered an average of 15 MBI courses a year to 447 participants.

These findings are the first to document the breadth of integration of MBI-related concepts and practices into U.S. medical education on a national level. Mindfulness programs have established organizational and administrative footholds in nearly a quarter of U.S. medical schools. These data set the stage for future investigations into the status of mindfulness in American medical education. While the study surveyed the potential availability of mindfulness-related activities in U.S. medical schools, it does not evaluate the degree to which medical trainees actually participate in, receive training in, or conduct research in these activities.
Life expectancy of tobacco smokers is cut by 10 years, and smoking is responsible for nearly a half-million deaths in the United States each year. The vast majority of smokers want to quit, but unassisted attempts usually fail, and those that succeed often end in relapse. Studies show that acute stress increases both the likelihood of smoking and the risk of relapse. That is the reason why stress reduction techniques are often offered as a key component in smoking cessation programs.

Kober et al. [Neuroimage] investigated differences in the brain’s response to stress in cigarette smokers participating in one of two smoking cessation interventions: mindfulness training for smoking (MT) or the American Lung Association’s Freedom from Smoking (FFS) program.

The study reported on 23 adult smokers (average age = 48, 70% male, 58% Caucasian) who volunteered for a smoking cessation intervention. The participants were randomly assigned to either MT or FFS, and the relative success of these interventions was reported on in a separate publication (both interventions were effective, with MT participants demonstrating a greater improvement in smoking reduction). Both group interventions met twice a week over a four-week period. The MT program emphasized present-moment awareness and acceptance as strategies for coping with negative emotions and cravings and utilized mindfulness and loving-kindness meditations. The FFS program emphasized self-monitoring, identifying triggers, developing individualized quitting plans, maintaining a healthy lifestyle, and cognitive-behavioral coping strategies.

The participants underwent functional magnetic resonance brain imaging (fMRI) immediately after smoking cessation treatment. The participants listened to recordings of individualized stressful and neutral scenarios during their brain scans. The individualized scenarios were developed based on actual stressful life events the participants had reported during prior interviews in order to assure that the scenarios would actually trigger a stress-response. The researchers then compared participant brain activity while listening to the stressful versus neutral scenarios. They also monitored the number of cigarettes smoked per day during the intervention and three-month follow-up periods.

Listening to the stressful scenarios significantly increased participant’s reported level of stress (Cohen’s d=.60) and cigarette cravings (d=.36), whereas the neutral scenarios did neither. For the entire sample, brain stress response in a wide variety of limbic, insular, and midbrain structures was inversely correlated with post-treatment and three-month follow-up reductions in smoking (d >1.0). That is, the smokers who had the greatest success in decreasing their smoking also showed the smallest brain stress responses, whereas the least successful showed the highest brain stress reactivity.

Comparing treatment groups, FFS participants showed significantly larger brain stress responses than MT participants in 10 different brain regions. On the other hand, no brain region showed a significantly larger stress response for the MT participants. There were several stress-responsive brain regions (the amygdala, the insula, and the parahippocampal gyrus) that were specifically associated with successful smoking reduction and showed comparatively lower levels of stress-reactivity for MT participants (d >1.0).

Results support the hypothesis that mindfulness training for smoking successfully alters brain stress reactivity, and that this reduction in stress reactivity facilitates smoking reduction. The study also raises the possibility that mindfulness and acceptance strategies may be more successful at reducing smoker’s stress reactivity than cognitive behavioral strategies, at least as they are taught in FFS. The study is limited by its small sample size.