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


Hirshberg, M. J., Flook, L., Enright, R. D., Davidson, R. J. (2020). Integrating mindfulness and connection practices into preservice teacher education improves classroom practices. Learning and Instruction. [link]


Brown, D. R., Jackson, T. C., Claus, E. D., Clark, V. P. (2019). Decreases in the late positive potential to alcohol images among alcohol treatment seekers following MBRP. *Alcohol and Alcoholism*. [link]


Contents

66 New Cites p1
19 Interventions
21 Associations
13 Methods
12 Reviews
1 Trial

Highlights p5

Editor-in-Chief
David S. Black, Ph.D.

Highlights by
Seth Segall, Ph.D.

Subscribe at:
goAMRA.org/publications

American Mindfulness Research Association

Based intervention. BMJ Simulation Technology Enhanced Learning. [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

Anderson-Ross, K. (2020). We are what we think: Downregulating the chronic stress response with technology-assisted mindfulness meditation. *J Restor Med.* [link]


TRIALS

Research studies newly funded by the National Institutes of Health (DEC 2019)

VA Northern CA Healthcare System (J. Baldo, PI). **MBSR to improve neuropsychological functioning in acquired brain injury.** VA project #1I01RX002951-01A2. [link]
Highlights

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

Taken properly, anti-retroviral medications successfully reduce viral loads in people living with HIV infections, helping them to maintain health and reduce disease transmission. Persons with HIV who use methamphetamines often fail to get the full benefit of their anti-retroviral medications. Such stimulant users are more likely to skip medication doses, engage in high-risk sexual behavior, and show signs of hastened AIDS progression.

Carrico et al. [Journal of the International AIDS Society] studied whether an add-on intervention designed to boost positive affect can increase the efficacy of a contingency management program. Contingency management involved offering financial rewards for clean drug tests, and the add-on intervention included elements of mindfulness training.

The researchers randomly assigned 110 HIV+ men who engaged in anal sex with other men and tested positive for methamphetamine use (average age = 43 years; 43% Caucasian) to the add-on intervention called Affect Regulation Treatment to Enhance Methamphetamine Intervention Success (ARTEMIS), or an attention-control condition. Both groups also participated in a 3-month contingency management program offering financial rewards for maintaining stimulant-free urine samples. The period of active contingency management coincided with participation in the 3-month ARTEMIS or attention-control group, and financial rewards were not continued after 3 months.

The ARTEMIS intervention consisted of 5 individual 1-hour training sessions delivered over a 3-month period. The program provided training in noticing and savoring positive events, mindfulness, gratitude, altruism, self-compassion, positive reappraisal, and reaching attainable goals. The training included breath-focused and loving-kindness meditations, values clarification, and psychoeducation on stimulant withdrawal. The attention-control condition consisted of 5 individual 1-hour sessions in which participants were administered psychological tests and engaged in neutral writing exercises. Assessments occurred at baseline, and at 3, 6, 12, and 15 months. They included measures of HIV viral load and CD4+ T-cell (immune cell) counts, urine tests for substance use, and self-reports of stimulant cravings and use and positive affect.

The results showed ARTEMIS participants had significantly lower viral loads at 6 (Cohen's d = 0.89), 12 (d = 0.43), and 15 (d = 0.50) months, and were significantly more likely to have all viral loads under 200 viral copies/mL (the level at which HIV infection is undetectable) than were controls. ARTEMIS participants reported more positive affect at the time of their last ARTEMIS training session (d = 0.56) and at 6 (d = 0.53) and 12 (d = 0.41) months than controls. ARTEMIS participants reported significantly less stimulant use at 3 (d = 0.46), 6 (d = 0.44), and 12 (d = 0.39) months, and fewer and less intense cravings at 3 (d = 0.50), 6 (d = 0.55), and 12 (d = 0.61) months than controls. ARTEMIS participants were also significantly less likely to have any stimulant-positive urine tests over the course of 15 months, especially at 6 (d = 0.32) and 12 (d = 0.38) months than controls. There were no significant between-group differences in CD4+ T-cell counts at any time.

The study shows increased positive affect, decreased viral load, and decreased stimulant use in persons living with HIV who participated in contingency management with an add-on program to boost positive affect that included mindfulness skills. This is the first randomized, controlled study showing persistent (up to 12 months) viral load decreases after active contingency management has ended. ARTEMIS is designed to bolster multiple affect regulation skills, and it is not clear how much the mindfulness practices alone contributed to the observed benefits.
A diagnosis of mild cognitive impairment (MCI) represents a degree of cognitive decline greater than what one might expect from normal aging but not severe enough to call for a diagnosis of dementia. While older adults with MCI show mild memory and word-finding difficulties, they remain capable of independent living. Nevertheless, they are at an increased risk for developing dementia, and clinicians are interested in developing ways to delay or prevent the onset or progression of dementia. MCI symptoms are often accompanied by decreased structural and functional brain connectivity, as diverse regions of the brain show greater difficulty in cross-communicating information and coordinating activity.

Prior research suggests that mindfulness practice enhances aspects of structural and functional brain connectivity in healthy adults. Fam et al. [Psychiatry and Clinical Neurosciences] examined whether mindfulness practice can also improve dynamic functional connectivity (changing patterns of functional connectivity over time) in older adults with MCI.

The researchers randomly assigned 47 meditation-naïve older adults (average age = 72 years; 72% female; 97% Chinese) diagnosed with MCI to a mindfulness awareness program or an active control. Mindfulness participants attended a series 12 weekly 40-minute group mindfulness training sessions and were encouraged to engage in daily home practice.

Control group participants attended a series of 12 weekly 40-minute talks on health-related topics including diet, sleep, exercise, and personal safety. Four mindfulness participants and 7 controls failed to complete the study, leaving a final analytic sample of 36 participants.

All participants underwent resting-state functional magnetic resonance imaging (fMRI) at baseline and three months later. Measures of the efficiency of brain information transmission were calculated. Higher efficiency is indicative of a shorter transmission time between disparate brain regions. Longer brain transmission times result from information taking a roundabout route to get from point A to point B. The more intermediate steps information has to take to get from one brain region to the another, the greater the chance information gets distorted or lost. Participants were also assessed on neuropsychological measures of spatial analysis, auditory verbal learning, attention, short-term memory, processing speed, and semantic fluency.

The results showed that the mindfulness group significantly improved over time on auditory verbal learning recognition, while controls did not (η²=0.12). Controls showed a significant decline in overall brain temporal efficiency, while mindfulness participants retained their level of overall brain temporal efficiency (η²=0.16).

In addition, controls showed specific significant declines in temporal efficiency involving the insula, cingulate gyrus and superior temporal gyrus, whereas mindfulness participants maintained their regional temporal efficiency.

The study shows that mindfulness training can slow or prevent degradation of neural functional connectivity over a three-month window, as well as improve auditory verbal recognition memory in older adults with mild cognitive impairment. Findings support the use of mindfulness as a potential means to slow or halt cognitive decline in adults with mild cognitive impairment, possibly preventing the onset or progression of dementia.