## Interventions

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


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ASSOCIATIONS

Articles examining the correlates and mechanisms of mindfulness


Reviews

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


Trials

Research studies newly funded by the National Institutes of Health (JAN 2018)

Beth Israel Medical Center (G. Yeh, PI). Coupling technology with mind-body exercise to facilitate physical activity in patients with chronic cardiopulmonary disease. NIH/NCCIH project # 5R34AT009354-02. [link]

Central New York Research Corporation (K. Possemato, PI). Primary care based mindfulness training for veterans with PTSD. NIH/NCCIH project #1R34AT009678-01. [link]

Northwestern University at Chicago (B. Yanez, PI). Mindfulness-based health intervention to improve medication adherence among breast cancer survivors. NIH/NCCIH project #1R34AT009447-01A1. [link]

University of California, San Francisco (H. Weng, PI). Optimizing measurement of mindfulness meditation using brain pattern classification. NIH/NCCIH project #5K08AT009385-02. [link]
Highlights

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

While people generally regard helpfulness and friendliness to be virtues, they often fail to extend their empathy to strangers in need. Berry et al. [Journal of Experimental Psychology] conducted a series of four experiments to see whether mindfulness—as an individual’s disposition and as an induced mental state—increases prosocial behavior towards an excluded stranger by increasing empathic concern.

In the first study, 82 undergraduates (52% female, 58% Caucasian) completed the Mindful Attention Awareness Scale (MAAS) and the Act with Awareness subscale of the Five Facet Mindfulness Questionnaire (FFMQ). Participants then watched a Cyberball computer game involving three computer-generated characters playing catch. Participants were misled into believing that the computer-generated characters represented three live participants playing the game in other rooms. During the observed game, two characters excluded the third character by passing the ball only between themselves.

After watching the game, participants were assessed for empathic concern and distress, and asked to write emails to each of the players. Empathic concern is the desire to help others, whereas empathic distress often leads to focusing on relieving one’s own distress rather than helping others. Participants then played a game of Cyberball together with the other characters. The researchers rated the helpfulness of the emails written to the excluded character, and counted how often the participant threw the ball to the excluded character. The study found that higher mindfulness was significantly associated with higher empathic concern (but not empathic distress), more helpful emails, and a greater number of ball throws to the excluded character.

In the second study, 83 undergraduates (68% female, 44% Caucasian) completed the same personality measures and followed the same Cyberball protocol as in the first study. Before playing Cyberball, participants were randomly assigned to listen to audio-recorded instructions for either a brief (8.5 minute) mindfulness or attention-based training. The mindfulness training focused participants on moment-to-moment somatic, cognitive, and affective experiencing. The attention-based training centered on the importance of focusing on goals. The results showed that mindfulness trainees had significantly higher levels of empathic concern than attention-focused trainees, and the same level of empathic distress. Mindfulness trainees sent significantly more helpful emails and threw the ball significantly more often to the excluded character.

In the third study with 146 undergraduates (76% female, 40% Caucasian), a “no instruction” control group was added to the design of the second study, along with a measure of empathic anger. As in the second study, mindfulness training significantly increased empathic concern, email helpfulness, and ball throwing to the excluded character relative to both the attention-based and “no instruction” conditions. The groups didn’t significantly differ in empathic distress or empathic anger.

The fourth study randomly assigned 131 undergraduates (69% female, 44% Caucasian) to either mindfulness training, progressive muscle relaxation training, or a “no instructions” control prior to watching and playing Cyberball. A self-report measure of concentration was taken after observing the Cyberball game. Mindfulness significantly increased empathic concern, email helping, and ball throws to the excluded character relative to the muscle relaxation and no instruction controls. The groups didn’t differ in concentration, so all the groups were equally attentive to the experimental tasks.
In a statistical analysis of combined study results, mindfulness training yielded moderate effect sizes for empathic concern (g=.54), email helping (g=.67) and ball throwing (g=.62). Dispositional mindfulness effects were small (g=.14-.32).

Consistent findings from these repeated studies show that mindfulness training and a mindful disposition increase prosocial behavior to an excluded stranger. They also demonstrate that mindfulness does this by increasing empathic concern and not by increasing empathic distress, empathic anger, concentration, or relaxation. The study is limited by the degree to which computer-based Cyberball findings can be generalized to real-life contexts. However, they may have a direct relevance to social media phenomena such as on-line social exclusion and bullying.

Event-related potentials (ERPs) are segments of brain waves occurring in response to stimuli. For example, when people with depression are shown happy faces, the amplitude of their ERPs 300 milliseconds later (the so-called “P3b” ERP) is smaller than in non-depressed people. Since mindfulness encourages openness to emotions, mindfulness may enhance P3b responding to emotional stimuli and perhaps play a role in reducing or preventing depressive symptoms.

In a pioneering study of adolescent brain function and school mindfulness programs, Sanger et al. [Developmental Science] tested whether a high school mindfulness-training program could affect the size of healthy students’ P3b responses to happy and sad faces, and whether it improved their wellbeing relative to a control group.

The researchers assigned 40 students (16-18 years old) to mindfulness training or a waitlist control. Assignment was not random. Volunteers from two secondary schools were assigned to mindfulness training, and volunteers from two other secondary schools were assigned to the waitlist control. Control volunteers were slightly older and more likely to be male.

Participants completed the Five Facet Mindfulness Questionnaire (FFMQ) along with measures of stress, wellbeing, and empathy, both before and after training. Schoolteachers taught the mindfulness practices in eight 50-minute classes. Curriculum topics included “Taming the Animal Mind,” “Being Here and Now,” “Moving Mindfully,” and “Befriending the Difficult.” Before and after training, students were shown pictures of faces with varying expressions while an EEG measured their P3bs. Most of the faces shown were neutral, but 20% were happy or sad. Participants were instructed to press a space bar whenever they saw a happy or sad face.

Mindfulness levels did not increase over time, nor did they differ between the mindfulness trainees and controls. Wellbeing improved significantly for the mindfulness group and decreased marginally for waitlist controls, a difference between groups that was marginally significant (η²=.06). The mindfulness group was less empathic than the controls both before and after training. Within the mindfulness group, empathy correlated significantly with class attendance (r=.66) and marginally with home practice (r=.49). Control group ERP magnitudes decreased from pre- to post-testing, but the mindfulness group’s ERP magnitudes stayed the same (η²=.12). The magnitude of ERP change scores in response to happy and sad faces correlated positively with pre- to post changes in empathy scores (happy faces r=.37; sad faces r=.33).

The results demonstrate that adolescents in a school-based mindfulness program show less habituation in their P3b responses to emotional cues. Mindfulness training seems to prevent a diminished response to happy and sad faces over time. It's often said that mindfulness helps one to “keep things fresh” and not assume there's no new information in repeated stimuli, and this may be an example of that. Changes in P3b magnitudes varied with changes in empathy, suggesting that decreased habituation may be due to an increased attentiveness to socially relevant emotional cues. The study is limited by its lack of randomization and an active control group.
Science from Within
10 - 13 July 2018, Amsterdam, the Netherlands

International Conference on Mindfulness (ICM) 2018

Deadline poster submissions: 10th March 2018
Deadline early bird tickets: 10th March 2018

Highlights:

- 3-day main conference with keynotes by Stephen Batchelor, Ruth Baer, Mark Williams and many others!
- Pre-conference workshops
- Post-conference retreat

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