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


Brown, R. (2017). The perceived impact of mindfulness instruction on pre-service elementary teachers. Childhood Education. [link]


Yılmaz, E., Okanlı, A. (2017). Test of mindfulness-based psychosocial skills training to improve insight and functional recovery in schizophrenia. *Western J Nursing Research.* [link]

**ASSOCIATIONS**

Articles examining the correlates and mechanisms of mindfulness


Grant, K. C. (2017). From teaching to being: The qualities of a mindful teacher. Childhood Education. [link]


METHODS

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


Trube, B. (2017). Mindfulness practices in mentoring and teaching. Childhood Education. [link]

REVIEWS

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


None reported.
Mindfulness training has been shown to improve performance on behavioral measures of executive control including attention, working memory, emotional and cognitive control, and decision making. Research also suggests that a brain region known as the dorsolateral prefrontal cortex (dPFC) plays an important role in executive control, serving as the hub of an executive control brain network. The dPFC has rich anatomical connections to other brain regions that are also thought to be involved in executive control. Does mindfulness training assist executive control by improving the way the dPFC interrelates with these other brain regions?

One way to test this is by assessing resting state functional connectivity between the dPFC and other brain regions. Resting state functional connectivity is a measure of how much different brain regions work in tandem. For example, when one region increases activity, other brain regions act in sync with it. Taren et al. [Psychosomatic Medicine] tested whether mindfulness training increases the functional connectivity between the dPFC and other executive control brain regions by comparing functional connectivity after either mindfulness training or relaxation training in a randomized, controlled study.

The researchers randomly assigned 35 unemployed, job-seeking adults (average age = 40; 57% male; 66% Caucasian) who reported high levels of stress to either an intensive 3-day residential mindfulness training, or an intensive 3-day residential relaxation training. Mindfulness training was a condensed version of Mindfulness-Based Stress Reduction that included body scanning, sitting, walking, and eating meditations, and mindful yoga. Relaxation training included resting while walking and stretching and didactic presentations, but did not include progressive muscle relaxation. All participants underwent functional magnetic resonance imaging (fMRI) both at baseline and two weeks after training. The fMRI sessions included a five-minute period when participants passively viewed a nearly empty computer screen with just a cross in the center while neither relaxing nor meditating. Resting state functional connectivity was assessed during this period.

The results showed that mindfulness training increased functional connectivity between the dPFC and five different brain regions associated with cognitive control (the left superior parietal lobule, right supplementary eye field, right middle frontal gyrus, right inferior frontal gyrus, and left middle temporal/angular gyrus) significantly more than did relaxation training. Mindfulness participants showed no relative decreases in functional connectivity between the dPFC and any of the brain regions as compared to relaxation training participants.

Findings show that mindfulness training increases functional connectivity between the dPFC and other specific brain regions involved in executive control. This contributes to our knowledge of how mindfulness may enhance attention, working memory and other executive control functions through increasing functional connections between brain regions. Future research can determine whether there is a relationship between these functional changes and the structural differences reported in studies of long-term meditators. The study is limited by its failure to include behavioral measures of executive control to test if they varied with changes in functional connectivity.

People tend to be happiest when their career and relationship goals align with their motivations. The problem is that people often have relatively little awareness of their unconscious motives. We can infer the existence of unconscious motives based on how a person behaves, but people are rarely able to recognize or
describe these motives. Unconscious motives are formed early in life and tend to be poorly integrated with higher mental processes. Prior research suggests, however, that people who are highly aware of their internal body sensations are also more likely to be aware of their unconscious motives. Could then a mindfulness exercise that increases body awareness also increase awareness of unconscious motives?

Strick et al [Personality and Social Psychology Bulletin] tested this possibility by first assessing people’s unconscious motives, and then having them select and rate a set of goals after engaging in either a mindfulness practice called the body scan or a control activity.

Sixty college students (mean age = 22; 75% female) attended a series of three experimental sessions. In the first session, participants made up stories in response to pictures depicting social situations. The content of their stories was then rated by the researchers for the presence of implicit wishes for affiliation (the wish to pursue and maintain relationships) and power (the wish to control and influence others). The participants also rated their conscious desires for affiliation and power using a self-report measure.

In the second session, participants were randomly assigned to either a body scan or control activity. Body scan participants listened to a brief (12-14 minutes) digitally recorded guided body scan in which they were instructed to mindfully attend to body sensations. Control participants read magazines for the same length of time. Participants were then asked to imagine starting a new job and select the goals they would like to pursue from a list of affiliation (e.g., "I would like to work in a team") and power (e.g., "I would want to act self-confident") goals. Participants then rated the selected goals for how true they were for them. Following this, participants were asked to choose from another list of affiliation and power goals, but this time to vividly imagine how pursuing those goals might make them feel before selecting and rating them. Finally participants rated how aware they were of their bodily sensations.

Two months later, participants returned for a third session in which those previously assigned to do the body scan now read magazines, and vice versa. During this third session, participants selected and rated their goals in a new scenario involving imagining beginning to attend a new school.

The body scan effectively increased participants’ ratings of bodily awareness. Unconscious affiliation motives significantly predicted participants’ goal selections and ratings after the body scan, but not after reading magazines. In other words, unconscious affiliation motives led to selecting more affiliation goals, but only after the body scan manipulation. On the other hand, when the participants were later asked to vividly imagine their selections, the relationship between their unconscious motives and their goal selections disappeared. In contrast to affiliation motives, unconscious power motives did not affect power goal selection or ratings. Measures of unconscious and conscious motivation did not correlate with each other. Conscious affiliation motives were a better predictor of goal selection in the control condition than in the body scan condition, whereas unconscious affiliation motives were a better predictor of goal selection in the body scan condition than in the controls.

In summary, the findings show that the body scan enhances the influence of unconscious affiliation motives on goal selection, thereby better aligning goals with unconscious motives. However, this effect is either fleeting or easily counteracted because it disappeared when the participants vividly imagined pursuing their goals.

The research adds to our knowledge of whether and under what circumstances a mindfulness practice may increase access to unconscious mental processes. It also suggests a role for mindfulness in improving decision making around personal goals. The study is limited by the brevity of its mindfulness task and the fact that it was offered as a stand-alone task without accompanying mindfulness education.
EVALUATION OF A MINDFULNESS GAME

AN ONLINE STUDY FROM THE UNIVERSITY OF THE SUNSHINE COAST, QUEENSLAND, AUSTRALIA.

This research evaluates the efficacy and user experience of a digital game for mindfulness. The mindfulness game was developed using existing research evidence and several new studies conducted by the research team of Jacek Sliwinski, Prof. Christian Jones and Prof. Mary Katsikitis.

In this game, you will control an avatar through a virtual world to collect objects and dodge obstacles. Be the first to play the game and share your opinion on how it can be improved. Furthermore, the player who achieves the highest score in the game wins a surprise gift.

You can play the game on your browser, anywhere that is convenient for you. Currently, only desktop users with Chrome or Firefox are supported. The game takes 15 minutes to complete, excluding pre- and post-test.

To participate visit www.mindfulgaming.org/improve

FOR MORE INFORMATION CONTACT: JACEK.SLIWINSKI@RESEARCH.USC.EDU.AU