INTERVENTIONS

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


electroencephalogram (qeeeg) and 24-hour EEG activity. Medicine. [link]


Contents

61 New Cites p1
20 Interventions
17 Associations
11 Methods
12 Reviews
1 Trial

Highlights p5


**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 (OCT 2018)

VA Connecticut Healthcare (L. Kachadourian, PI). Mindfulness treatment for anger in veterans with PTSD. Veterans Affairs project #5IK2CX001259-03. [link]
About one in eight U.S. women will be diagnosed with breast cancer at some point in their lives. Cancer is often diagnosed by a stereotactic breast biopsy that uses a mammography-guided needle to extract suspicious tissue. The procedure requires women to remain immobile for 15-30 minutes while undergoing breast compression, which can be an uncomfortable, anxiety-provoking experience.

Patients can take prescription drugs to reduce anxiety, but this requires them to be driven to and from the procedure and can delay their return to work. As a result, there is interest in non-drug interventions to reduce biopsy discomfort and anxiety. Ratcliff et al. [Journal of the American College of Radiology] compared the effect of mindfulness meditation or focused breathing to a control group on breast biopsy pain and anxiety.

The researchers randomly assigned 76 women (average age = 55 years; 74% Caucasian and 20% Hispanic/Latina) preparing to undergo stereotactic breast biopsy to: 1) a 10-minute guided mindfulness meditation, 2) a 10-minute guided period of focused diaphragmatic breathing, or 3) a 10-minute period of listening to a neutral audio clip.

Mindfulness meditation emphasized nonjudgmental observation of the breath, sensations, thoughts, and feelings with reminders to refocus whenever the mind wandered. The meditation was guided in-person by a mind-body medicine specialist. The specialist also accompanied the patient to the biopsy, coaching them in meditation during the procedure. Focused breathing was taught and coached similarly. Audio clip patients were not accompanied or coached during the biopsy.

Measures of anxiety and pain were taken after the training interventions, every four minutes during the biopsy, and immediately following the biopsy. Additionally, an electroencephalogram (EEG) measured patient brain wave activity in regions of interest before, during, and after the biopsy.

The mindfulness group showed a significantly greater reduction in anxiety during the biopsy than the focused breathing group (Cohen’s d = 0.48) or the audio clip control (d = 0.45). Reported pain levels did not significantly differ across groups. Although mindfulness reduced anxiety more than focused breathing, a significantly greater percentage of focused breathing participants rated their intervention as useful or very useful (97%) than did mindfulness participants (77%).

The mindfulness group displayed significantly stronger EEG beta range activity in the insula (d = 1.4) and anterior cingulate cortex (d = 1.0) during the biopsy compared to the control group. There were similar trends for the insula (d = 1.6) and anterior cingulate cortex (d = 0.7) when compared to the focused breathing group. The mindfulness group also showed a trend towards greater theta activity in three brain regions. Brain wave differences were indicative of improved attention and bodily awareness. There was a trend in both the mindfulness and the focused breathing groups towards reduced delta activity in the precuneus region. This decreased delta activity correlated significantly (r = 0.51) with decreased anxiety during the biopsy.

The study shows that a brief, instructor-led mindfulness meditation is superior to instructor-led focused breathing in reducing anxiety during stereotactic breast biopsy. The study is limited by the fact that a mind-body specialist did not accompany control group participants during the biopsy. Useable EEGs were obtained for only one third of the participants, limiting the statistical power of the analyses.
While there is a fairly extensive research literature evaluating the benefits of Mindfulness Based Stress Reduction (MBSR) for adults with depression and anxiety, research into the benefits of MBSR for adolescents with mental health problems is sparse.

Vohra et al. [Child and Adolescent Mental Health] conducted a controlled trial of MBSR as an adjunctive treatment for adolescents attending an intensive residential mental health treatment program.

The researchers studied 85 non-psychotic adolescent patients (average age = 14 years; 59% male; 73% Caucasian) residing in an intensive residential mental health treatment program. Half of the residents received standard residential care and half received standard residential care plus adjunctive MBSR. Assignment to condition was based on the time of year that patients resided in the treatment program, rather than on individual randomization.

Standard residential care consisted of a structured program including daily group therapy, medication, education, recreation, and weekly family therapy. Adjunctive MBSR was offered in eight two-hour weekly sessions with a three-hour retreat in week eight. The standard MBSR protocol was modified for the age group and homework was less demanding.

Outcome measures assessed at baseline, 10 weeks, and 3 months included parent, teacher, and self-ratings using the Behavioral Assessment System for Children System (BASC) as well as self-ratings on perceived stress, mindfulness (using the Child Acceptance and Mindfulness Measure), and emotional regulation. During the course of the study, 4 participants were discharged early and one participant declined further participation. Average MBSR session attendance was 88%.

BASC teacher ratings showed significant improvements for the adjunctive MBSR group on measures of internalizing problems (depression, anxiety, somatization) and adaptive skills (social skills, study skills, leadership) compared to standard care alone. Average ratings of internalizing problems in the MBSR group decreased from 53 to 51, whereas standard care alone ratings increased from 56 to 63. Average MBSR adaptive skills ratings improved from 44.7 to 45.5, whereas standard care alone ratings improved from 44.4 to 44.6.

Effect sizes for adaptive skills were not indicated, but appear small. There were no significant differences on any other rating scales. In a post-hoc analysis, the MBSR group had a significantly shorter length of stay in the program (133 vs.151 days).

The results of this study show that adjunctive MBSR can improve teacher-reported internalizing problems and adaptive skills among adolescents attending an intensive residential mental health program. These same improvements were not found for participant self-report or parental ratings, but as this was a residential program, parents had only minimal contact with their children.

The study was limited by its lack of individual random assignment, as well as the fact that teachers performing ratings were not blind to condition, introducing the possibility of evaluation bias.