Mindfulness-based interventions for people diagnosed with a current episode of an anxiety or depressive disorder: a meta-analysis of randomised controlled trials

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CRD summary

The authors concluded that, compared with control conditions, mindfulness-based interventions resulted in significantly lower levels of primary symptom severity in people with a current episode of depression, but suggested that these interventions should not be a first-line therapy for primary anxiety disorder. Although the review was largely well-conducted, lack of review process reporting means that the overall reliability is unclear.

Authors' objectives

To evaluate the effectiveness of mindfulness-based interventions for people diagnosed with a current episode of an anxiety or depressive disorder.

Searching

MEDLINE, Web of Science, Scopus, ProQuest, and PsycINFO were searched from inception up to July 2013 for published or unpublished studies in English. Search terms were reported. Reference lists were searched manually. Unpublished data were sought from three clinical trial registers. Researchers were contacted for details of their findings.

Study selection

Eligible for inclusion were randomised controlled trials of face-to-face group interventions, where mindfulness represented a core part of therapy and daily practice was encouraged between sessions. Eligible participants had to be 18 year or older, and had to meet full diagnostic criteria for a current episode of DSM-IV (Diagnostic and Statistical Manual of mental disorders version four or later) or ICD-10 (International Classification of Diseases-10) anxiety or depressive disorder (specific disorders were listed in the paper). Eligible outcomes were psychometrically reliable and valid measures of depression or anxiety. Trials of participants with cognitive impairment or of those engaged in substance misuse were excluded.

Included participants had a DSM-IV confirmed diagnosis of a major depressive disorder or an anxiety disorder (which covered social anxiety, generalised anxiety, post-traumatic stress disorder, health anxiety, or a range of anxiety disorders). Mean ages of participants ranged from 21 to 52 years. Most studies reported some use of psychotropic medication.

Most interventions were Mindfulness-Based Cognitive Therapy or Mindfulness-Based Stress Reduction (eight 2-3 hour weekly sessions plus one whole day session); one study used Person-Based Cognitive Therapy (twelve 90-minute sessions). Active control groups received cognitive behavioural therapy or group psycho-education. Inactive control groups received treatment as usual, aerobic exercise, or were on a waiting list.

Primary outcomes were symptom severity for the target clinical problem. Secondary outcomes were anxiety and depression symptom severity (irrespective of diagnosis).

The authors did not state how many reviewers selected the studies for inclusion.

Assessment of study quality

Trial quality was assessed using the Jadad scale, with items covering randomisation method, blinding, and study withdrawals/drop-outs. The maximum score was 5 (high quality).

The authors did not state how many reviewers assessed study quality.

Data extraction

Data were extracted on means, standard deviations, and numbers of participants for all outcomes. These were used to calculate post-intervention between-group effect sizes (using the formula for Hedges g), together with 95% confidence

intervals. Intention-to-treat data were used, where possible.

The authors did not state how many reviewers extracted the data.

Methods of synthesis

Standardised mean differences (SMD) and 95% confidence intervals were synthesised in a random-effects meta-analysis. Statistical heterogeneity was assessed using X^2 and I^2.

To investigate heterogeneity, moderator analysis was conducted to explore the impact of primary diagnosis (anxiety or depressive disorder), control condition (inactive or active), and intervention type (Mindfulness-Based Stress Reduction or Mindfulness-Based cognitive therapy). The relationship between quality score and study effect size was also explored.

Publication bias was assessed in a funnel plot, and addressed by Rosenthal's Fail-Safe method.

Results of the review

Twelve trials (578 participants) were included in the meta-analysis. Jadad trial quality scores ranged from 2 to 5 (mean 2.83). Withdrawals/drop-outs ranged from 8% to 38%.

Primary symptom severity: Mindfulness-based interventions were associated with statistically significant improvements in primary symptom severity (medium effect size; Hedges g -0.59, 95% CI -1.06 to -0.12; I^2=86%; 12 trials). Moderator analysis showed no significant differences between groups of trials targeting depressive disorders and those targeting anxiety disorders, but (taken separately) there was a larger and statistically significant effect in favour of interventions targeting depressive disorders (four trials). Significant differences were found between type of control; mindfulness-based interventions were more effective when compared with inactive control (seven trials) than with active control conditions (five trials). There was no significant group difference between mindfulness-based cognitive behavioural therapy and mindfulness-based stress reduction intervention groups, but (taken separately) mindfulness-based cognitive behavioural therapy showed a small to medium significant effect size (six trials).

Depressive and anxiety symptom severity (irrespective of diagnosis): Mindfulness-based interventions were associated with a statistically significant improvement in depressive symptom severity (medium effect size; Hedges g -0.64, 95% CI -1.00 to -0.28; I^2=76%; 12 trials). Improvement in anxiety symptom severity was not statistically significant (nine trials; I^2=87%).

Potential publication bias was found in the analysis for primary symptom severity, but the authors reported that a substantial number of unpublished studies would be required to alter the statistical significance of this result.

There was no significant relationship between trial quality and effect size.

Authors' conclusions

Compared with control conditions, mindfulness-based interventions resulted in significantly lower levels of primary symptom severity in people diagnoses with a current episode of depression.

CRD commentary

The review question was clear. Inclusion criteria were adequately specified. The search strategy seemed appropriate; although there was potential for language bias, attempts were made to locate unpublished data. The review process (number of reviewers and procedure for decisions) was not reported, which meant that the potential for error and bias could not be ruled out.

Appropriate quality criteria were applied to the included trials and their results were presented. Trial characteristics were highly variable, and this variation was appropriately explored as part of the synthesis. Significant heterogeneity remained in the subgroup analyses.

The authors' conclusion reflected the evidence presented. The review was largely well-conducted, but failure to report the review process means that its overall reliability is unclear.

Implications of the review for practice and research

Practice: The authors stated that people meeting diagnostic criteria for a current episode of a depressive disorder could benefit from mindfulness-based interventions (specifically Mindfulness-Based Cognitive Therapy or Person-Based Cognitive Therapy). Mindfulness-based interventions should not be offered as a first-line intervention for people experiencing a primary anxiety disorder.

Research: The authors recommended that future research should aim to isolate the specific benefits of learning mindfulness in the wider context of mindfulness-based interventions, should include longer follow-up periods, and should explore the variation in drop-out rates.

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