Mindfulness- and acceptance-based interventions for anxiety disorders: a systematic review and meta-analysis

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CRD summary

The authors concluded that mindfulness- and acceptance-based interventions were associated with substantial reductions in the symptoms of anxiety and depression, but more research was needed. They acknowledged some of the limitations of the evidence that prevented definitive conclusions. Their caution seems appropriate and should be borne in mind when interpreting the findings.

Authors' objectives

To assess the effects of mindfulness- and acceptance-based interventions, in the treatment of patients with anxiety disorders.

Searching

MEDLINE, Web of Science, PsycINFO, and The Cochrane Library were searched, for peer-reviewed articles published in English, German, or Norwegian, up to July 2010. Search terms were reported. Reference lists of relevant publications were manually searched.

Study selection

Eligible for inclusion were controlled or uncontrolled clinical trials, assessing the effectiveness of mindfulness- or acceptance-based interventions, in the treatment of adults, with a primary diagnosis of anxiety disorder (as defined in the review). Eligible trials had to include at least 10 patients, and report objective measures of anxiety symptoms.

In the included trials, the patients were diagnosed with generalised anxiety disorder (with or without panic disorder), social anxiety disorder, or depression and anxiety. The interventions included cognitive therapy, task concentration, acceptance exercises, and stress management or reduction. They consisted of between eight and 16 sessions, which lasted between 45 and 150 minutes, where reported. They were provided to groups or individuals, and other medications were permitted. The controls were placebo, waiting list, or other established treatments. Various tools were used to measure anxiety; quality of life was measured in some trials.

Two reviewers screened articles for inclusion; discrepancies were resolved through discussion.

Assessment of study quality

The authors did not state that they assessed trial quality.

Data extraction

The data on anxiety and depression at the start and after intervention were extracted to calculate effect sizes. The authors did not state how many reviewers extracted the data.

Methods of synthesis

A random-effects model was used to combine effect sizes (Hedges' g) and 95% confidence intervals. For controlled trials, Hedges' g was calculated for the differences in treatment effect between intervention and control groups. Where multiple outcome measures for anxiety or depression were reported, an average Hedges' g was calculated.

Statistical heterogeneity was assessed using Q and I^2; an I^2 of 50% indicated moderate heterogeneity, and an I^2 of 75% indicated high heterogeneity. Separate analyses were performed by intervention (mindfulness alone versus multi-component treatment), individual versus group treatment, study design, diagnosis, and treatment duration.

Publication bias was assessed by visual inspection of funnel plots and by calculating fail-safe N.

Results of the review

Nineteen trials (491 patients; range 10 to 53) were included in the review. Five were randomised controlled trials (RCTs) and 14 were uncontrolled trials. Follow-up ranged from after treatment to 12 months. Attrition rates ranged from zero to 45.5%.

Mindfulness- and acceptance-based interventions statistically significantly reduced anxiety symptoms (Hedges' g 1.08, 95% CI 0.81 to 1.34; I^2=61%; 18 trials) and depression symptoms (Hedges' g 0.85, 95% CI 0.66 to 1.03; I^2=17%; 15 trials) after intervention. They statistically significantly improved quality of life after intervention (Hedges' g 0.65, 95% CI 0.36 to 0.93; I^2=0; five trials).

The controlled trials showed that mindfulness- and acceptance-based interventions were statistically significantly more effective, at improving anxiety and depression, than controls, but there was evidence of statistical heterogeneity (I^2=87% for anxiety and 67% for depression).

Separate analyses indicated that patients with panic disorder and generalised anxiety disorder reported greater improvements (Hedges' g 1.85, 95% CI 1.29 to 2.41) than patients with other anxiety disorders.

There was no evidence of publication bias in the funnel plots and fail-safe N estimates.

Authors' conclusions

Mindfulness- and acceptance-based interventions were associated with substantial reductions in the symptoms of anxiety and depression, but more research was required.

CRD commentary

The review question and inclusion criteria were clearly stated. Several electronic databases were searched for relevant literature. The search was restricted to three languages, and it does not appear that attempts were made to locate unpublished data, so relevant data might have been missed. The authors do not appear to have assessed trial quality, which means that the quality of the trial methods remains unclear. Study selection was performed by two people, but it was unclear whether this was true for data extraction; reviewer error and bias cannot be ruled out.

The patient and study characteristics varied across trials, and samples were small, which the authors acknowledged. Appropriate statistical methods were used to account for heterogeneity and small samples, and additional analyses were used to investigate factors that may have influenced the findings. One trial was excluded from analyses as it was deemed to be an outlier that could have overestimated the positive results. The authors acknowledged that most trials were uncontrolled, preventing a definite conclusion. They acknowledged that patients might have received other treatment that could have influenced the findings.

There was the potential for missed data and bias in the review process. The authors acknowledged some of the limitations of the evidence that prevented definitive conclusions. Their caution seems appropriate and should be borne in mind when interpreting the findings.

Implications of the review for practice and research

Practice: The authors stated that it was reasonable to conclude that disorder-specific cognitive-behavioural therapy should be the initial treatment for anxiety disorders for most patients.

Research: The authors stated that well-designed research assessing the effectiveness of mindfulness- and acceptance-based interventions on anxiety disorders was warranted, including research into the efficacy of multi-component treatments and treatment provided to individuals.

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