Can mindfulness and acceptance be learnt by self-help? A systematic review and meta-analysis of mindfulness and acceptance-based self-help interventions

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CRD summary
The authors concluded that self-help interventions, with mindfulness or acceptance components, significantly improved mindfulness or acceptance skills and significantly reduced anxiety and depression symptoms, compared with controls. The authors’ conclusions reflect the evidence presented, but may not be reliable due to the limitations of the evidence; the clinical significance of the findings remains unclear.

Authors’ objectives
To evaluate the effectiveness and acceptability of low-intensity interventions with mindfulness or acceptance components.

Searching
MEDLINE, Web of Knowledge, PsycINFO and The Cochrane Library were searched in May 2013 for publications in English; search terms were reported. Reference lists and relevant journals were checked.

Study selection
Eligible were randomised controlled trials (RCTs) of adults receiving a self-help mindfulness or acceptance-based intervention, including self-practice, with no or reduced therapist support. Support had to be less than 90 minutes or over 90 minutes, but less than the standard intervention. Trials had to report data after intervention for at least one measure of mindfulness, acceptance, depression or anxiety.

The included trials were of non-clinical populations, such as teachers or students; self-referred adults with the symptoms or a diagnosis of mental health conditions, such as depression; or people with a physical illness, such as chronic pain, tinnitus, or irritable bowel syndrome. The interventions were purely mindfulness, acceptance or commitment therapy; or involved mindfulness or acceptance components, alongside cognitive-behavioural therapy, behavioural activation or integrative psychological theory. Most interventions were delivered over the internet, by books, or by audio methods, and lasted for two weeks to three months. One trial did not provide therapist support; the others provided up to eight hours support per participant. Comparators were no intervention, waiting list, a monitored online discussion forum, psychoeducation, or active psychotherapy. Mindfulness, acceptance, depression and anxiety outcomes were measured using a range of scales.

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

Assessment of study quality
The Jadad scale was used to assess trial quality for randomisation, blinding, and drop-outs and withdrawals (maximum score 5).

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

Data extraction
The after-intervention means and standard deviations for mindfulness, acceptance, depression or anxiety measures were extracted to calculate between-group effect sizes. Where several measures of depression and anxiety were reported, the one with the strongest concurrent validity was extracted. Where several reliable measures of mindfulness and acceptance were reported, the mindfulness data were extracted. Where several controls were reported, data for the inactive control were extracted. Where possible, the data were extracted on an intention-to-treat basis.

The authors did not state how many reviewers extracted data.

Methods of synthesis
The data were pooled using a random-effects model to calculate standardised mean differences, with 95% confidence intervals. Statistical heterogeneity was assessed using $\chi^2$. Funnel plots and Orwin's fail-safe N were used to assess publication bias.

**Results of the review**
Fifteen RCTs (2,286 participants; range 24 to 551) were included. Scores on the Jadad scale ranged from 2 to 4, with just over half the trials scoring 3. The percentage of participants completing after-treatment measures ranged from 48 to 98 (mean 78).

Mindfulness- or acceptance-based interventions, compared with control, resulted in greater mindfulness or acceptance skills, with a medium effect size (SMD 0.49, 95% CI 0.23 to 0.76; 10 RCTs); fewer depression symptoms, with a small-to-medium effect size (SMD -0.37, 95% CI -0.56 to -0.18; 12 RCTs), and fewer anxiety symptoms, with a small-to-medium effect size (SMD -0.33, 95% CI -0.56 to -0.10; 12 RCTs).

Statistical heterogeneity for all three outcomes was considered not significant. Funnel plots showed no evidence of publication bias for mindfulness or acceptance skills and depressive symptoms, but some indication of bias for anxiety symptoms. Post-hoc subgroup analyses were conducted, but not all the results were reported.

**Cost information**
No trials reported cost-effectiveness data for mindfulness-based self-help interventions.

**Authors' conclusions**
Self-help interventions with mindfulness or acceptance components significantly improved mindfulness or acceptance skills and significantly reduced anxiety and depression symptoms, compared with controls, with small-to-medium effect sizes.

**CRD commentary**
The review question and inclusion criteria were clear. The restriction to trials in English may have excluded some relevant data. It was unclear whether steps were taken to reduce errors and bias in the review processes. Some trials had risks of bias. As the authors noted, there were differences between the interventions, populations, methods and measures used in the trials, but no statistical heterogeneity was identified for the three primary outcomes. The authors also noted that few trials were adequately powered, and there were high drop-out rates in some trials.

The authors’ conclusions reflect the evidence presented, but the conclusions may not be reliable due to the limitations of the evidence. The clinical significance of the results and the effectiveness of the interventions within mental health services remain unclear.

**Implications of the review for practice and research**
**Practice:** The authors stated that the widespread implementation of self-help mindfulness and acceptance-based interventions could be premature.

**Research:** The authors stated that research should be on a large scale, with robust designs. They recommended exploring cost-effectiveness, establishing the mechanisms of change, and exploring the generalisability of the findings, and they made further recommendations.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.