Acceptance and commitment therapy: a meta-analytic review

Powers MB, Zum Vorde Sive Vording MB, Emmelkamp PM

CRD summary
This review found that acceptance and commitment therapy was more effective than control conditions across several disorders, but there was no evidence that it was more effective than established treatments. The limitations in the review, which included high clinical heterogeneity between trials, questionable pooling of data, and low trial quality, mean that the authors' conclusions might not be reliable.

Authors' objectives
To evaluate the effectiveness of acceptance and commitment therapy for mental and physical health disorders.

Searching
PsycINFO, MEDLINE, Scopus, and the Cochrane Central Register of Controlled Trials (CENTRAL) were searched for articles from inception to March 2008. Search terms were reported. Electronic citation maps and citation search tools were used and the reference lists of reviews and meta-analyses were checked. The search was restricted to studies published in English.

Study selection
Controlled studies of acceptance and commitment therapy for mental or physical health disorders were eligible for inclusion, provided they used consecutive or random assignment. Studies of participants who had not sought treatment were excluded. The outcomes of interest included measures specific to the mental or physical disorder (primary outcome) and secondary measures of general distress or functional impairment.

In the included studies, the participants had a wide range of disorders and these included psychosis, anxiety, depression, diabetes, substance abuse, pain, trichotillomania, and maths anxiety. Half the studies had control groups that received usual care and the other half had non-active control groups, which included waiting list and psychological placebo, or active intervention control groups. The active interventions included problem solving, systematic desensitisation, cognitive-behavioural therapy, cognitive therapy, mental pain control and twelve-step facilitation. Outcomes varied according to the target disorder and included hallucinations, depression scores, smoking cessation, diabetes self-care, body mass index, and hair-pulling score. Where reported, the duration of follow-up ranged from three to 12 months; one third of the studies did not report comparative follow-up data.

The authors did not state how many reviewers performed the selection.

Assessment of study quality
Study quality was evaluated using the Jadad scale, which assesses the adequacy of randomisation, blinding, and reporting of withdrawals or dropouts. Each study was awarded a score out of a maximum of five points. The authors did not state how many reviewers assessed validity.

Data extraction
Primary and secondary outcome measures were defined for each study according to the target disorder (e.g. depression score was defined as primary outcome in a depression study, but as a secondary outcome in a pain study). A single effect estimate was calculated for each primary or secondary outcome for each study, using Hedges' g to calculate between-group effect sizes and 95% confidence intervals. Published methods were used to compensate for small sample sizes and for multiple outcomes per domain. Effect sizes were interpreted using Cohen's convention of small (0.2), medium (0.5), or large (0.8) effects.

The authors did not state how many reviewers extracted the data. Primary study authors were contacted for more information if required.
Methods of synthesis
The data were combined using random-effects methods to calculate a pooled mean effect size. Heterogeneity was assessed using the $\chi^2$ test. Subgroup analyses were conducted by type of control condition, timing of follow-up assessment, target disorder (depression, physical health, distress problems, or other mental health condition) and publication year. Meta-regression was used to test the impact of study quality on the effect estimates. Publication bias was assessed using the Rosenthal's fail-safe N.

Results of the review
Eighteen randomised controlled trials (RCTs, n=917 patients, range 14 to 212) were included. Quality scores ranged from zero to three and 13 trials scored two points or less.

When all trials were combined (regardless of comparison or duration of follow-up), acceptance and commitment therapy was significantly more effective than control conditions, with a medium effect size for primary outcomes (0.42, 95% CI 0.23 to 0.60) and for secondary outcomes (0.59, 95% CI 0.31 to 0.86).

In subgroup analyses, by control condition, acceptance and commitment therapy was significantly more effective than non-active control conditions (0.68, 95% CI 0.22 to 1.15) or treatment as usual (0.42, 95% CI 0.20 to 0.65), but was not significantly more effective than established treatments (active intervention controls). Compared with control, acceptance and commitment therapy was of statistically significant benefit for depression (two RCTs), physical health (five RCTs), and other mental health conditions (seven RCTs), but not for distress conditions (four RCTs). Other subgroup analyses did not significantly affect the results.

No statistically significant heterogeneity was detected and there was no convincing evidence of publication bias.

Authors' conclusions
Acceptance and commitment therapy was more effective than control conditions across several disorders, but there was no evidence that it was more effective than established treatments.

CRD commentary
The objectives and inclusion criteria were clear and relevant sources were searched for studies. The restriction to published studies in English meant that the review was prone to language and publication biases, but no evidence of publication bias was found. It was unclear whether steps were taken to minimise the risk of reviewer bias and error by having more than one reviewer select studies, assess their validity, and extract the data. Some relevant aspects of quality were assessed using the Jadad scale, but other important quality criteria were not reported, such as the methods of allocation concealment. Jadad scores for most of the trials were very low, and one scored zero, which was inconsistent with the statement that all of them were RCTs. The methods used to combine trials did not appear to be clinically valid; the primary measure of effect combined very dissimilar outcome measures, such as rehospitalisation and hallucination rates.

The effect estimates from all trials were statistically pooled despite major differences in the clinical characteristics of their participants and outcome measures. These factors cast doubt on the reliability and applicability of the review findings.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that further research was needed to compare acceptance and commitment therapy with empirically supported treatments for specific disorders diagnosed using the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria. Future trials should include controls receiving waiting list and psychological placebo conditions, as well as usual care or established treatments.

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