

## Is cognitive-behavioral therapy more effective than other therapies? A meta-analytic review

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### CRD summary

The authors found that cognitive behaviour therapy was more effective than alternative therapies, particularly psychodynamic therapy, for some outcomes up to one year after treatment in patients with anxiety and depressive disorders. The authors acknowledged some limitations of the analyses, but bias could not be excluded and the conclusions should be considered tentative.

### Authors' objectives

To compare the effectiveness of cognitive-behavioural therapy (CBT) versus alternative types of psychotherapy and examine the relationship between differential outcome and study-specific variables.

### Searching

MEDLINE and PsycINFO were searched from inception to September 2007 for relevant studies published in English; search terms were reported. Reference lists of retrieved studies and relevant reviews were searched.

### Study selection

Randomised controlled trials (RCTs) that compared a variant of CBT with a non-CBT psychotherapy were eligible for inclusion in the review. Eligible studies needed to provide sufficient information for computation of effect sizes. Studies were excluded if they compared variants of CBT, included a second analysis of a dataset already included in the meta-analysis and if they were categorised as non bona fide treatments (details of the definition of bona fide were located in the publication).

In the included studies, participant diagnoses included depressive, substance use, anxiety, psychotic, personality and eating disorders; they were either recruited or came from clinics. Therapies were based on individual or group sessions. CBT therapies included relaxation training, exposure therapy, behaviour reversal, cognitive restructuring and operant procedures. Alternative therapies included psychodynamic, interpersonal and supportive approaches. Outcomes included comorbid symptoms, general functioning, global symptoms, primary symptoms, quality of life, self concept and social adjustment. Outcomes were measured by self report, by trained raters from the research team, by parents or were corroborative (objective data). Studies were conducted between 1972 and 2006.

Four reviewers selected studies for inclusion after initial application of basic eligibility criteria. Disagreements were resolved by discussion until consensus was reached.

### Assessment of study quality

Studies were assessed for quality according to Jadad criteria and Foa and Meadows criteria of intention-to-treat analyses, adequate inclusion and exclusion criteria, reliable and valid measures, blinding of participants and evaluators, fidelity of CBT and alternative therapy, training of therapists and assessors, allegiance of therapists, randomisation method, description of dropouts and bona fide CBT and alternative therapy.

It appeared that four reviewers undertook quality assessment and resolved disagreements by discussion.

### Data extraction

For studies that used multiple dependent measures, individual measure effect sizes were extracted and categorised as primary symptom severity, self concept, comorbid symptoms, global symptom severity, general functioning, mechanism, social adjustment and quality of life (QoL). Where multiple dependent measures within the same category were used, an aggregate effect size was calculated from the mean of the effect size estimates and the pooled variance, and this was used in the overall analysis. Cohen's *d* was calculated for continuous data (weighted by sample size): a value of 0.0 represented no difference, 0.2 represented a small difference, 0.5 represented a medium difference and 0.8 represented a large difference between treatments. Odds ratios (ORs) were calculated for dichotomous outcomes and converted to Cohen's *d*. For other studies, *d* was obtained from published *t* or *p* values. Data were extracted at post-treatment and follow-up (data nearest to six months and one year).

It appeared that four reviewers extracted data and resolved disagreements by discussion.

### Methods of synthesis

Studies were pooled in meta-analyses and summary effect measures and 95% confidence intervals (CIs) were calculated, using a random effects model. Statistical heterogeneity was assessed using the *I*<sup>2</sup> statistic. Subgroup analyses were undertaken by type of CBT and alternative therapy, specific condition of patient, type of outcome measure and time of outcome measurement (post-treatment, six months or one year follow-up). The file drawer effect was computed to assess the likelihood of publication bias. Meta-regression was used to test the impact of moderator variables (quality score, year of publication, population, source of data, treatment duration, number of sessions, group versus individual therapy) on primary symptom severity at post-treatment. Allegiance effects were examined using linear regression analyses predicting effect size of measures of primary symptom severity at post-treatment from the three allegiance ratings provided by the principal investigators.

### Results of the review

Twenty-six studies from 28 publications (*n*=1,981 participants) were included in the review. Study scores on the Jadad scale ranged from 1 to 4 and on the Foa and Meadows scale from 1 to 13. Meta-regression indicated that the quality of the studies was not associated with the effect size of primary symptom severity at post-treatment.

CBT was associated with lower scores on measures of primary symptoms at post treatment (*d* 0.22, 95%

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CI 0.09 to 0.35; 32 comparisons), at six-month follow-up (d 0.47, 95% CI 0.29 to 0.66; 20 comparisons) and at one year follow-up (d 0.34, 95% CI 0.06 to 0.62; nine comparisons) compared to alternative treatments. There were beneficial effects on general functioning and global symptoms at post-treatment, but no evidence of significant differences in post-treatment comorbid symptoms, QoL, self concept or social adjustment between CBT and alternative therapies.

When comparisons were made with different types of alternative therapy, CBT had significantly lower scores for primary symptoms when compared to psychodynamic therapy (d 0.28, 95% CI 0.12 to 0.44; 24 comparisons), but not other therapies. Significant differences in scores between CBT and alternative treatments were reported for patients with anxiety disorders (d 0.43, 95% CI 0.14 to 0.72; five comparisons) and depressive disorders (d 0.21, 95% CI 0.04 to 0.39; 16 comparisons), but not for other disorders.

The effect size for CBT compared to alternative therapy was significantly affected by corroborative sources of data, patient self report and professional raters. There was no evidence of an impact of the other moderator variables examined (year of publication, treatment duration, number of sessions, individual versus group therapy and source of patients).

Researcher allegiance (not therapist or research team allegiance) was a significant and positive predictor of effect size at post-treatment for measures of primary symptom severity. Controlling for this variable did not markedly change the overall effect size estimates.

Significant heterogeneity was reported for overall estimates at one year follow-up. Overall estimates post-treatment and at one year follow up were not robust against the file drawer effect.

### **Authors' conclusions**

The authors' conclusions appeared to be that CBT was more effective than alternative therapies, particularly psychodynamic therapy, for some outcomes up to one year after treatment in patients with anxiety and depressive disorders.

### **CRD commentary**

The review addressed a complex research question. The broad inclusion criteria appeared appropriate. Searches were limited to two electronic databases and reference lists of retrieved studies; eligible studies were restricted to those published in English, so language and publication bias could not be excluded. It appeared that appropriate methods were used to select studies, extract data and assess included studies for quality, but these were not described clearly. There was wide variability among studies in terms of participants, interventions and outcomes and these were investigated using subgroup analysis. Analysis was appropriate, but multiple comparisons were made without adjustment and so spurious findings could not be ruled out. Some subgroup analyses were underpowered. So, although benefits were found for CBT compared to psychodynamic therapy it was unclear how CBT compared to the other alternative types of therapy because of insufficient data. Some subgroup analyses were not robust against the file drawer effect, which suggested that findings could be overturned by unpublished null results. Effect sizes were generally small to moderate.

The authors acknowledged some limitations of the analyses, but bias could not be excluded and the conclusions should be considered tentative.

### **Implications of the review for practice and research**

**Practice:** The authors stated that CBT should be considered a first-line psychosocial treatment of choice, at least for patients with anxiety and depressive disorders.

**Research:** The authors stated that further research was needed to assess the effects of CBT on outcomes other than primary symptoms and general functioning.

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