The effect of cognitive behavioral group therapy for depression: a meta-analysis 2000-2010

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CRD summary
The review found that group-based cognitive-behavioural therapy was more effective than control interventions for treatment of depression but that this effect did not persist beyond six months. Limitations in the review process make the reliability of the authors' conclusions uncertain.

Authors' objectives
To determine the overall effect of cognitive-behavioural group therapy on the level of depression and risk of relapse and to determine the aspects of the intervention that affect the effectiveness of the therapy.

Searching
The Cochrane Library, EBSCO Host, MEDLINE (via OVID and PubMed) and ProQuest Medical Library were searched for articles published in English between 2000 and 2010; reference lists of studies were searched.

Study selection
Randomised controlled trials (RCTs) that compared the effects of cognitive-behavioural group therapy to control (not further specified) as treatment for depression were eligible for inclusion if they had sufficient data to calculate an effect size. Eligible studies had to include participants aged over 18 years with a diagnosis of depression based on standardised criteria such as International Classification of Diseases, Diagnostic and Statistical Manual of Mental Disorders (DSM) III, DSM III-R, DSM IV, DSM IV-TR or Research Diagnostic Criteria. Studies were excluded if the cognitive-behavioural group therapy took place over the phone or the Internet. Primary outcomes of interest were level of depression and relapse rate from depression. There were further eligibility criteria based on study quality.

The included studies involved patients with mild to severe depression, chronic depression, seasonal affective disorder, residual depression, recovered recurrent depression, late life depression or major depressive disorder. The active and control interventions were behavioral activation, cognitive-behavioral analysis system of psychotherapy, cognitive-behavioral therapy, clinical management, cognitive therapy, interpersonal psychotherapy, light therapy, mindfulness-based cognitive therapy, minimal contact, delayed therapy, mutual support group, no treatment, pharmacotherapy, placebo pill, psychodrama and being on a waiting list.

Depression was measured using one or more of Beck Depression Inventory (English or Chinese version), Clinical Interview for Depression, Composite International Diagnostic Interview, DSM-III-R, DSM-IV, Geriatric Depression Scale, Hamilton Depression Rating Scale, Montgomery-Asberg Depression Rating Scale, Psychiatric status ratings, Research Diagnostic Criteria, Raskin Depression Scale, Structured Interview Guide for the Hamilton Rating Scale for Depression and supplementary Atypical Symptom subscale.

The mean age of participants ranged from 19.5 to 75.2 years. Cognitive-behavioural group therapy was conducted in groups of six to 10 people, generally by experienced therapists. Therapy sessions usually involved use of a therapy manual. Sessions usually lasted for one hour per week for eight to 12 weeks. Many studies involved take-home assignments.

Two reviewers independently selected the studies for inclusion. The authors do not state how discrepancies were resolved.

Assessment of study quality
Study quality was evaluated using Cochrane Collaboration Guidelines to score studies out of 10. Only studies that scored over 6 were included in the review and had to meet the criteria of randomised and controlled design, use of standardized diagnostic criteria, withdrawals noted, reliable measures and objective outcomes, adequate statistics (significance, adjustment for multiple comparisons and sufficient power) and follow-up assessment.

It appeared that two reviewers assigned study quality; their agreement was measured with a kappa value of 0.92. The
authors did not state how discrepancies were resolved.

**Data extraction**

Data were extracted to calculate an effect size using Hedges’ g-value and associated confidence interval (CI) at three time points (immediately post-intervention, within six months after intervention and after six months). If studies reported outcome data at more than one time point, the immediate post-test data were used for calculation of the overall effect size; where this was not available, data from the first follow-up were used. Where multiple effect size were reported per study (for example, due to multiple outcome measures) an average effect size was calculated for the overall effect size.

Two reviewers independently extracted data. The authors do not state how discrepancies were resolved.

**Methods of synthesis**

Random effects meta-analysis was used to combine the results. Heterogeneity was assessed using the Q and I² statistics. Subgroup and meta-regression analyses were used to identify characteristics of the intervention that had greatest effect on the outcomes.

The area under the curve and risk differences (RD) were computed to assess the effect of treatment on relapse rate.

Funnel plot and Orwin's fail safe N analyses were used to assess publication bias.

**Results of the review**

Thirty-two studies (4,197 participants, range 23 to 681) were included in the review. Quality scores ranged from 6 to 8 out of 10. Funnel plots for each outcome showed no evidence of publication bias.

**Immediately post-intervention (16 studies):** Cognitive-behavioural group therapy was associated with a reduction in symptoms (g -0.40, 95% CI -0.68 to -0.11) compared to control; there was significant heterogeneity (I²=91%).

**Six months post-intervention (five studies):** Cognitive-behavioural group therapy was associated with a reduction in symptoms, (g -0.38, 95%CI -0.60 to -0.16, I²=40%) compared to control but was not associated with a change in relapse rate (two studies).

**Over six months post-intervention (four studies):** Cognitive-behavioural group therapy was not associated with a persistent effect on symptoms after six months but was associated with a lower relapse rate (RD 0.18, 95%CI 0.12 to 0.25) based on data from 11 studies.

Subgroup analysis showed that the effect of cognitive-behavioural group therapy was stronger when compared to usual care rather than medication, if the therapy session lasted over an hour compared to shorter sessions, if a take-home assignment was provided, among patients with less severe depression and where there was lower subject turnover rate in the therapy sessions.

**Authors’ conclusions**

Cognitive-behavioural group therapy had a moderate effect on the level of depression persisting up to six months and a small effect on the relapse rate from depression lasting over six months. Patients should receive a course of therapy at least every six months.

**CRD commentary**

This review included a thorough search. The results may have been affected by language bias as the search was limited to studies in English. There was no evidence of publication bias, although for outcomes with small numbers of studies such an assessment is not reliable. Appropriate action was taken to avoid the risk of reviewer bias. Quality assessment was not adequate as it was based on assessing reporting rather than bias. Blinding and the impact of non-specific effects for comparisons with usual care were not assessed. This meant that the reliability of the individual study results was difficult to evaluate.

The authors identified several limitations of the review; these included differences between the studies, variable presentation of results in the included studies, variable timing of the therapy in patients' journey, variable length of
follow-up beyond six months and the small number of studies in some subgroup analyses. Further limitations were small trial sizes for many of the included studies and the variability in the definition of the control arms of the study.

The meta-analysis included many different interventions (seven types of cognitive-behavioural therapy were mentioned) and the main conclusion was based on a highly heterogenous result. The meta-regression and subgroup analyses lacked sufficient data to draw reliable conclusions and these too had significant levels of heterogeneity. The conclusion regarding the frequency of the therapy sessions was extrapolated from the results and not tested empirically.

Limitations in the review process make the reliability of the authors' conclusions uncertain.

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

**Practice:** The authors stated that cognitive-behavioural therapy could be a good non-pharmaceutical therapy to reduce depression and that patients with depression should be provided with this therapy to improve their mood.

**Research:** Future trials should use additional outcomes such as errors in cognition, automatic thoughts and suicidal ideation.

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