Psychological treatment of depressive symptoms in patients with medical disorders: a meta-analysis


CRD summary
This meta-analysis concluded that psychological treatments were effective in reducing depression in people with a depressive disorder or elevated level of depressive symptomatology in addition to a range of medical disorders. Considerable heterogeneity and limitations of individual studies mean these conclusions should be interpreted with caution.

Authors' objectives
To examine the effects of psychological treatments in people with a depressive disorder or elevated level of depressive symptomatology in addition to one of 10 medical disorders.

Searching
PubMed, PsycINFO, EMBASE and Cochrane Central Register of Controlled Trials (CENTRAL) were searched from from 1966 to January 2009. Dissertation Abstracts International was searched for unpublished trials. Search terms were reported in part. All references of relevant articles, meta-analyses and reviews were checked. No language or age restrictions were applied.

Study selection
Randomised controlled trials (RCTs) that compared a psychological treatment to a control or another treatment in patients with a depressive disorder or elevated level of depressive symptomatology in addition to one of 10 primary medical disorders (cancer, diabetes mellitus, epilepsy, HIV or AIDS, heart failure, myocardial infarction, multiple sclerosis, chronic obstructive pulmonary disease, rheumatoid arthritis and stroke) were included. Studies were excluded if the psychological interventions could not be distinguished from other elements of the intervention. Outcome data collected from all trials were measures of depression.

The included trials compared psychological treatment (cognitive-behaviour therapy (CBT), supportive therapy, coping effectiveness training, problem solving treatment, interpersonal therapy and optimism-based CBT) to each other, pharmacotherapy (antidepressants with or without clinical management) or a control (care as usual or waiting list). None of the trials included patients with chronic obstructive pulmonary disease or heart failure. Psychotherapy was delivered in five to 16 sessions. Formats were individual face-to-face sessions, group sessions, telephone sessions and a self-help format with additional telephone sessions. Outcomes were measured using various measurement tools. Depression was diagnosed using various scales.

Eligibility judgment was performed independently by two reviewers.

Assessment of study quality
Validity was assessed using a number of criteria from the 2005 version of the Cochrane Handbook: allocation by an independent third party; blinding of outcome assessment; adequacy of random allocation concealment; and completeness of follow-up.

The assessment was performed by two independent reviewers.

Data extraction
Post-test means and standard deviations for treatment and control groups were extracted to enable calculation of effect sizes. Where only dichotomous data or change scores were reported, these were converted to effect sizes.

Data extraction was undertaken independently by two reviewers.
Methods of synthesis
A random-effects model was used to pool individual standardised mean differences (Cohen's d effect size) in a meta-analysis. When more than one depression measure was reported, the overall mean effect size was used. Sensitivity analyses were conducted using the lowest and highest effect sizes.

Separate meta-analyses were done for psychotherapy versus controls and psychotherapy versus other psychotherapies. The results of the three studies that compared psychotherapy to pharmacotherapy were reported narratively.

Statistical heterogeneity was investigated using the $I^2$ and Q statistics. The p value for Q statistics of more than 0.05 were reported.

Subgroup analyses were conducted for type of medical disorder, definition of depressive symptoms, type of treatment, treatment format, type of control and type of analysis. A mixed-effects model was used for the subgroup analyses.

Publication bias was investigated using a funnel plot and Duval and Tweedie's trim-and-fill procedure.

Results of the review
Twenty-three RCTs were included. There were 4,209 participants (range 15 to 2,481, most trials included fewer than 100 participants). Eight RCTs reported adequate allocation. Concealment of allocation was not possible or not reported in any of the trials. Blinding was reported in nine trials, was not possible in nine trials as self-report measures were used and was unreported in five trials. Loss to follow-up ranged from 0% to 41%. Fourteen studies used intention-to-treat analyses.

Psychotherapy was significantly more effective compared to controls. There was a large overall effect size of 1.00 (95% confidence interval (CI) 0.57 to 1.44; 15 RCTs with 18 comparisons). Because of the very high heterogeneity ($I^2=92.5\%$) an additional analysis was conducted without two possible outliers and this resulted in a moderate overall effect size of 0.42 (95% CI 0.27 to 0.58) and low heterogeneity ($I^2=25.9\%$).

There was no difference between effect sizes calculated from the lowest and highest reported results. None of the subgroup analyses significantly altered the findings.

Because there was some indication of asymmetry in the funnel plot, a trim-and-fill analysis was performed using five imputed studies with negative results. The results of this analysis showed a small positive effect size in the psychotherapy group compared to controls (effect size 0.31, 95% CI 0.14 to 0.48).

CBT or interpersonal therapy was significantly more effective when compared to supportive therapy or information sessions (effect size 0.42, 95% CI, 0.14 to 0.69; five RCTs with six comparisons).

Results from the three RCTs (four comparisons) that compared psychotherapies to pharmacotherapy were reported narratively.

Authors' conclusions
Depressive symptoms in patients with medical disorders could be treated effectively with psychological interventions. There were too few studies that compared psychotherapy to pharmacotherapy to draw any conclusion.

CRD commentary
The review question and inclusion criteria were clear. The search strategy was good as several databases and other sources were searched and efforts to limit publication and language bias were taken. The authors reported methods designed to reduce reviewer bias during study selection, validity assessment and data extraction. Appropriate methods were used during data synthesis and to assess statistical heterogeneity and publication bias.

Limited reporting of quality criteria in the included studies, the small size of most studies, statistical and clinical heterogeneity and evidence of publication bias mean that the authors' conclusions should be interpreted with caution.
Implications of the review for practice and research

**Practice:** The authors stated that depressive symptoms in patients with medical disorders can be treated effectively with psychological interventions. The results for type of treatment were unclear.

**Research:** The authors stated that further research was needed to elucidate the association between severity of symptoms and effectiveness in this group of patients with medical disorders.

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