Are psychological and pharmacologic interventions equally effective in the treatment of adult depressive disorders? A meta-analysis of comparative studies

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CRD summary
The review found that psychological and pharmacological therapies had similar efficacies in the short-term treatment of depressive disorders. Despite some limitations in the reporting of the review, the authors' main conclusions are likely to be reliable.

Authors' objectives
To determine the relative efficacy of psychological and pharmacological therapies in the treatment of mild to moderate depression in adults.

Searching
MEDLINE, PsycINFO, EMBASE and Cochrane Central Register of Controlled Trials (CENTRAL) were searched (1966 to May 2007) without language restrictions. Brief search terms were reported in the review. Bibliographies of 22 meta-analyses of psychological treatment for depression were handsearched for additional studies.

Study selection
Randomised controlled trials (RCTs) that compared a pharmacological with a psychological therapy in the treatment of depressive disorders in adults were eligible for inclusion. Studies of patients with depressive symptoms, but not a diagnosis of depression, and those of relapse prevention or maintenance treatment were not eligible.

In the included trials, most participants were a general adult population, though some trials included only elderly, female or patients with multiple sclerosis. Participants were identified through a combination of clinical referrals, community samples and other methods. Most studies included patients with a major depressive disorder; the remainder included patients with dysthymia and/or mild depressive disorder. Definitions of depression for each study were given in the review. The psychological treatments included a variety of types of therapy; details were given in the review. Where reported, the number of sessions ranged from six to 24. The most common pharmacological treatments were selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants. Outcomes were scored on one or more standard rating scales, listed in the review. Trials were conducted in North America, Mexico and the United Kingdom, and ranged in size from 20 to 454 patients.

The authors did not state how many reviewers selected the trials.

Assessment of study quality
Quality was assessed based on three criteria: independent randomisation; blinding of outcome assessors and completeness of outcome data; or the use of intention-to-treat analysis. The authors did not report how many reviewers assessed validity.

Data extraction
The mean post-test scores for the intervention and control groups were extracted to calculate a Cohen's d effect size (standardised mean difference), with a 95% confidence interval (CI). Effect sizes of 0.8 were defined as large, 0.5 as moderate and 0.2 as small. More than one outcome measure was used, a mean effect size per trial (or contrast group) was calculated.

Methods of synthesis
Pooled mean effect sizes (d) were calculated using random-effects models. The authors reported that the results from fixed-effect models were similar. Heterogeneity was assessed using the Q statistic and I². Meta-regression was used to assess whether there was an association between key variables and effect size. Subgroup analyses included analyses of studies of patients with major depressive disorder, and severity of depression at baseline. Drop-out rate was assessed using a pooled odds ratio (OR) and 95% confidence interval. Publication bias was assessed using visual inspection of
funnel plots and the trim-and-fill method.

**Results of the review**

Thirty RCTs (37 comparisons; 3,178 participants) were included in the review. The quality of the included studies was reported briefly; 14 studies reported independent allocation to treatment, 17 reported blinded outcome assessment, and 21 studies used intention-to-treat analysis. There was no evidence of publication bias.

**Overall analysis:**

The difference in effect between pharmacological and psychological therapy was small and not statistically significant (d=-0.07, 95% CI -0.15 to 0.01), with a low level of statistical heterogeneity (I²=21.31%). Drop-out rates were lower in psychological compared to pharmacological therapy, although there was moderate statistical heterogeneity (OR 0.66, 95%CI 0.47 to 0.92, I²=69.46%).

**Subgroup analysis:**

In patients with dysthymia, pharmacotherapy was significantly more effective than psychological therapy (d=-0.28, 95% CI -0.47 to -0.10, six comparisons, I²=26.36%), whereas there was no difference in effect between the two therapies in patients with major depression (d=-0.02, 95%CI -0.10 to 0.06, 31 comparisons, I²=4.22%).

Treatment with SSRIs was significantly more effective than psychological therapy, (d=-0.20, 95% CI -0.31 to -0.10, 15 comparisons, I²=0%). The effect of treatment with other antidepressants was similar to that of psychological therapy. Results of other subgroup analyses were reported.

Pre-treatment level of depression did not affect the results.

Studies which used intention-to-treat analyses (27 comparisons) had a smaller effect size than those based only on completers (10 comparisons), although neither was statistically significant.

**Authors’ conclusions**

Psychological and pharmacological therapies had similar efficacies in the treatment of depressive disorders, and each had its own merits.

**CRD commentary**

The study addressed a clear question. Intervention, design and participant inclusion criteria were specified. The search covered several databases, and was not restricted by language. The restriction to published studies meant that the results may have been affected by publication bias, although no evidence of this was found. Duplication of study selection, quality assessment and data extraction was not reported, so the potential for error and bias could not be ruled out.

Limited details of the participants included in the review were reported. Appropriate methods were used for data synthesis and to assess statistical heterogeneity and publication bias.

The authors acknowledged the lack of long-term follow-up data, and stated that the small benefit of pharmacological treatment was probably not clinically significant, nor was it statistically significant in the main analysis.

Despite some limitations in the reporting of the review, the authors' main conclusions were likely to have been reliable. However, the large number of subgroup analyses means that positive findings may have arisen by chance.

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

**Practice:** The authors stated that both psychological and pharmacological therapies were effective in the treatment of depressive disorders.

**Research:** The authors stated that research was needed to understand the mechanisms through which psychological and pharmacological therapies work, and which patients may benefit from each therapy singly, or both combined.

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