A meta-analysis of the effects of cognitive therapy in depressed patients

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Authors' objectives
To compare the effects of cognitive therapy (CT) in depressed patients with control conditions (antidepressants, behaviour therapy and other psychotherapies), and to examine if the effects of CT are long lasting.

Searching
The following sources were searched: MEDLINE and EMBASE; references in papers or books; previous reviews and meta-analyses; abstracts from congress presentations; and pre-prints sent by authors. The identified trials were published between January 1st 1977 and December 1st 1996.

Study selection
Study designs of evaluations included in the review
The studies had to be randomised, and have at least one CT group and one comparison group. The included studies had between 2 and 4 arms, and at least one study used a multifactorial design. The length of therapy was measured in weeks or the number of sessions. It ranged from 4 to 79.3 weeks and from 6 to 20 sessions.

Specific interventions included in the review
CT compared with standard care, waiting-list, placebo, antidepressants, behaviour therapy, or another psychotherapeutic treatment as control regimes. CT was sometimes combined with other interventions (e.g. placebo, or antidepressants) as either treatment or control.

Participants included in the review
The patients had to have major depression or dysthymic disorder according to the Research Diagnostic Criteria, or the American Psychiatric Association's criteria (DSM-III or DSM-IIIR). Those with psychotic depression and bipolar effective disorder were excluded. The sample consisted mainly of out-patients. The gender ratio was available in 43 of the 48 trials. The mean percentage of woman was 71.1% (range: 0 to 100%). The mean age (available in 42 trials) was 39.3 years. The mean Beck Depression Inventory (BDI) score at pre-test ranged from 10 to 31.

Outcomes assessed in the review
Post-test BDI scores were assessed.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
Some sort of validity assessment was undertaken because 30 trials were excluded for methodological reasons. The authors do not describe the approach used to assess validity.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction. The data were extracted in an intention-to-treat format.

The effect size was calculated for each trial by dividing the difference in post-test BDI value between the CT and control groups, by the pooled within-group standard deviation adjusted for small sample size bias.
Methods of synthesis
How were the studies combined?
The $d^+$ value of Hedges and Olkin (see Other Publications of Related Interest), which represents a combined estimate of a set of studies, was computed. Each trial was weighted by the reciprocal of its estimated variance. The level of significance was set at a $p$-value of less than 0.01 to correct for multiple comparisons. Negative effect sizes indicated that the patients improved more with cognitive therapy. Z-scores were computed for statistical comparisons.

A simple comparison was made between the percentage of relapse after CT or antidepressants.

How were differences between studies investigated?
The Q statistic was used to test for heterogeneity, using a $p$-value of less than 0.05 to indicate significance. The dependencies of the effect size on several characteristics of the patients (BDI score, gender and age) were investigated by regression analysis using a linear multivariate model without interaction term, taking trials as statistical units.

Results of the review
There were a total of 48 trials (72 comparisons) with 2,765 participants included. The trials compared CT with waiting-list or placebo (20 comparisons), antidepressants (17 comparisons), behaviour therapy (13 comparisons), and other therapies (22 comparisons).

CT was found to be superior to waiting-list or placebo (20 comparisons; $d^+=-0.82$, 95% CI: -0.83, -0.81, $p<0.0001$). There was significant between-trial heterogeneity ($Q=137.1$, d.f.=19, $p<0.05$). CT was also superior to antidepressants (17 comparisons; $d^+=-0.38$, 95% CI: -0.39, -0.37, $p<0.0001$). No significant heterogeneity was present. There was no statistically-significant difference between CT and behaviour therapy, and no significant heterogeneity was present. CT was superior to a set of miscellaneous psychotherapies ($d^+=-0.24$, 95% CI: -0.25, -0.23, $p<0.01$): psychodynamic therapies (n=7), interpersonal therapies (n=4), non-directive (n=2), supportive (n=4), relaxation (n=4) and alternative bibliography (n=1). However, there was significant heterogeneity between trials ($Q=73$, d.f.=21, $p<0.05$). After adjustment for the type of treatment, multiple regression found no relation between the effect size and BDI score, gender or age. Eight trials compared CT with antidepressants at a follow-up point of at least 1 year. CT had a preventative effect on CT relapse in 5 of the 8 studies. On average, only 29.5% of the patients treated with CT relapsed, versus 60% of those treated with antidepressants.

Authors' conclusions
The authors concluded that although the therapeutic process of CT may be shared with behaviour therapy, it has been demonstrated effective in patients with mild or moderate depression and its effects exceed those of antidepressants.

This is consonant with the prevalent opinion that drugs are the first-line of treatment for patients with high-severity or psychotic depression, especially in-patients.

CRD commentary
The review answered a well-defined question. The inclusion and exclusion criteria were appropriate. Sufficient details of the individual studies were presented. The studies were combined appropriately. The literature search was reasonably thorough, although the search terms were not provided. The method used to assess validity was not described. The results of this meta-analysis should be treated with caution, due to small sample sizes (cells contained as few as five participants) and the heterogeneity present in some instances. In addition, there were large differences in intervention regimes, e.g. definitions of cognitive and behaviour therapy, and the types of standard care varied between centres. The majority of participants included in this study were out-patients. Therefore, the results of this study cannot be generalised to in-patients, who may have more severe depression than out-patients. The authors' met their objectives and their conclusions follow from the results.

Implications of the review for practice and research
The authors state that studies and meta-analyses of the use of CT versus antidepressant drugs for preventing the recurrence of depression, are now overdue.
Bibliographic details

PubMedID
9574861

Other publications of related interest

This additional published commentary may also be of interest. Bellissimo A. Review: cognitive therapy is beneficial and equivalent to behaviour therapy and antidepressants for mild to moderate depression. Evid Based Med 1999;4:20.

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Antidepressive Agents /therapeutic use; Chi-Square Distribution; Cognitive Therapy /standards; Confidence Intervals; Depression /therapy; Female; Humans; Linear Models; Male; Multivariate Analysis; Psychotherapy /classification /standards; Randomized Controlled Trials as Topic /statistics & numerical data

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.