A meta-analysis of CBT for pathological worry among clients with GAD
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CRD summary
The review found that cognitive behavioural therapy (CBT) can be a highly effective treatment for pathological worry associated with generalised anxiety disorder (GAD), with effects maintained over 12-month follow up. The largest benefits were for younger adults and for individual treatment. This review's many deficiencies raise serious concerns about the reliability of the authors’ conclusions.

Authors' objectives
To determine the effectiveness of CBT for pathological worry in patients with GAD.

Searching
PsycINFO was searched to 2006. Search terms were not reported. The reference lists of previously published systematic reviews were handsearched. The search was limited to published peer-reviewed articles.

Study selection
Studies of patients with Generalised Anxiety Disorder (GAD) diagnosed by the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 3rd edition (revised) or 4th Edition were eligible for inclusion, provided that they included CBT as an intervention and control groups received either no treatment or a psychological placebo condition (for example, nondirective or supportive therapy). CBT was required to include both cognitive and behavioural components. Studies were required to measure outcomes using the Penn State Worry Questionnaire (PSWQ) and to report data in a form appropriate for meta-analysis. There were no specific inclusion criteria with respect to study design.

Most participants in the included studies were female. Mean participant age was 50.75 years, mean length of GAD was 19.6 years and mean PSWQ score before treatment was 63.59 (more than one standard deviation (SD) outside the normal population range). One study in the review included a control group that participated in a discussion group on worry (this group was excluded from analysis). In another study, a group of participants who received additional psychotherapy following CBT were excluded from follow-up analyses. CBT settings varied; both individual and group formats were used. Group formats were more common in studies of older patients. The mean number of CBT sessions given was 13.5. The review included both controlled and uncontrolled studies.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
The following validity criteria were considered: whether studies assessed the reliability of intake diagnoses; whether they assessed the degree to which treatment protocol was maintained; dropout rates; and whether patients on medication were included. The authors did not state how the assessment was performed.

Data extraction
It appears that the authors extracted PSWQ data and used it to calculate effect sizes (ESs). The data were adjusted to correct for biases related to small samples, using the method of Hedges 1985. The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
Meta-analysis was conducted to obtain pooled ESs, weighted by inverse variance. It was not stated whether a fixed- or random-effects model was used. Hedges' test for homogeneity was used. Scatter plots and subgroup analyses (by age and by treatment setting) were used to investigate any significant heterogeneity found. Publication bias was assessed using the Fail Safe N test (Rosenthal 1984) to calculate how many studies would be required to negate the statistical significance of the findings.
Results of the review
Ten studies were included, of which seven were controlled. The overall number of participants was not stated.

Quality
The overall quality of studies was judged as relatively high. Most assessed the reliability of diagnoses at baseline and also evaluated the degree to which the treatment protocol was maintained. There were high attrition rates among studies of older participants.

Immediate effectiveness of CBT (seven controlled studies)
Pooling of seven controlled studies resulted in an overall ES of -1.15, significantly favouring CBT compared to controls receiving a non-specific active treatment or no current treatment (Fischer’s z test p<0.05). The Fail Safe N test indicated that 18 studies with no effect would be required to negate the statistical significance of this result. However, there was significant statistical heterogeneity (p<0.05). Subgroup analysis by age showed a larger ES for young adults (mean age 39) (ES -1.69, standard deviation (SD) 0.36, p<0.05) than for older participants (mean age 68) (ES -0.82, SD 0.43, p<0.05). Hedges’ test for homogeneity was non-significant for these subgroup analyses (p>1).

Effectiveness of CBT over time (eight studies)
When scores in the CBT groups at the end of treatment were compared with their measures at six and 12 months the differences in ES were quite small, indicating that the benefits of therapy were generally maintained over follow up. At six months, mean ES in the young adult group was 0.009 (SD 0.26) and in older adults it was 0.12 (SD 0.22). At 12 months, ES in the young adult group was 0.027 (SD 0.37) and in older adults it was 0.23 (SD 0.12). The mean PSWQ score of CBT groups after treatment was within the normal range in both young people (mean score 46.93) and older adults (mean score 51.00) and over one SD outside the clinical range. This trend continued over 12-month follow up.

Effect of setting
Subgroup analysis showed that the immediate effect of CBT was higher in studies using individual CBT (ES -1.72) than in those using group sessions (ES 0.91). Follow-up data indicated that studies using group sessions had a continued reduction in worry at six months (0.25) and 12 months (-0.43). In groups receiving individual therapy there was little change during follow up.

Authors’ conclusions
CBT can be a highly effective treatment for pathological worry associated with GAD, with effects maintained over 12-month follow up. The largest benefits are for younger adults and when individual treatment is used.

CRD commentary
The review objective was clear, as were the inclusion criteria for participants and outcome measures. However, the criteria for eligible interventions were not clearly defined (particularly with regard to interventions in control groups) and no inclusion criteria were mentioned for study design. The search was limited to one database. It does not appear that attempts were made to retrieve unpublished studies, so some data may have been missed. It was unclear whether steps were taken to minimise the risk of error and bias in the processes of study selection, data extraction and validity assessment. Although study validity was assessed, it was not used in the interpretation of findings. Moreover, no information was provided on the design, sample numbers, interventions or comparisons of primary studies, which prevents evaluation of the reliability of their findings. The authors did not state what method they used to pool the data, did not report 95% confidence intervals for ES and did not report the results of statistical tests for homogeneity for all outcomes. This made interpretation of the results difficult. It was also unclear why standardised mean differences (ESs) were used, as all studies used the PSQW; a rationale would have been useful. Some possible sources of heterogeneity were investigated by subgroup analysis. Other clinical and methodological differences between the studies were not addressed. This review’s many deficiencies raise serious concerns about the reliability of the authors’ conclusions.

Implications of the review for practice and research
Practice: the authors stated that CBT is very effective for controlling excessive worry in patients with GAD, both in the short term and over time. Younger adults appear to benefit more than older age groups.
Research: the authors stated that there is a need to test the difference between individual and group formats for CBT among both younger and older patients with GAD, and to ascertain which components of CBT are most effective.

**Funding**
The Ontario Mental Health Foundation, Fonds Quebecois de la Recherche sur la Societe et la culture (FQRSC), the Social Sciences and Humanities Research Council (SSHRC).

**Bibliographic details**

**PubMed ID**
17321717

**DOI**
10.1016/j.janxdis.2007.01.002

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adult; Age Factors; Aged; Anxiety Disorders /psychology /therapy; Cognitive Therapy; Female; Humans; Male; Middle Aged; Treatment Outcome

**Accession Number**
12008000017

**Date bibliographic record published**
01/09/2008

**Date abstract record published**
02/03/2009

**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.