Psychological treatment of social anxiety disorder: a meta-analysis
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CRD summary
The review concluded that psychological treatments were effective in treating social anxiety disorder in adults, but that the effects may be reduced in severe disorders and in trials where care-as-usual and placebo control groups are used. The authors’ conclusion reflects the evidence presented, but the reliability of their conclusion is limited by the poor quality of included trials.

Authors’ objectives
To assess the overall effects of psychological treatments on social anxiety disorders in adults and to explore the influence of study characteristics (design, year, etc) on outcomes following psychological therapy.

Searching
MEDLINE, PsycINFO, EMBASE and the Cochrane Central Register of Controlled Trials (CENTRAL) were searched from inception to January 2007 for articles in any language. Search terms were reported. Digital Dissertations was searched to identify unpublished studies. The reference lists of identified studies, systematic reviews and meta-analyses were also handsearched.

Study selection
Randomised controlled trials (RCTs) that compared the effects of psychological treatments with control conditions in patients (aged at least 18 years) with social phobia, were eligible for inclusion. Only trials where social anxiety disorders were defined using the criteria of Diagnostic and Statistical Manual of Mental Disorders (DSM-III, DSM-III-R or DSM-IV) and scoring above a cut-off score on a self-rating or clinician-rated social anxiety disorder questionnaire, were considered.

The primary outcome measure was change in social anxiety score. Secondary outcomes included: cognitive, depression and general anxiety measures.

The majority of included trials compared psychological treatments to waiting-list controls. About half of the trials were conducted in the USA. Trial settings were varied and included community, clinical and mixed settings. The number of intervention sessions ranged from one to 20. The pre-post follow-up periods, where reported, ranged from one month to 18 months. Varied anxiety measurement scales were used. Full details were reported in the paper.

Psychological treatments considered included: cognitive behavioural therapy, cognitive therapy, social skills training, relaxation, exposure, symptom prescription with or without reframing, Lefkoe method and a combination of the treatments. The treatments were delivered in varied formats: individual, group and mixed formats. The majority of the trials evaluated DSM-III, DSM-III-R or DSM-IV anxiety disorders. Most participants were adults with varied ages.

The authors did not state how the studies were selected for review or how many reviewers performed the study selection.

Assessment of study quality
The methodological quality of the studies was assessed according to the following criteria: adequacy of independent participant group allocation, concealment of random allocation process, blinding of outcome assessors, and completeness of follow-up data.

The authors did not report how the validity assessment was performed.

Data extraction
Data on the number of participants in each group who experienced each of the review outcome measures were
extracted from each trial. Mean effect sizes (Cohen's d) and 95% confidence intervals (CIs) were calculated for the range of social anxiety measures.

The authors did not state how the data were extracted for the review or how many reviewers performed the data extraction.

Methods of synthesis
Pooled mean effect size (Cohen's d) and 95% confidence interval was calculated (using a random-effects model) for the overall effect of psychological treatment on included measures of social anxiety. The t test was used to estimate effect sizes where means and standard deviations were not reported. For each trial, effect sizes were calculated separately for social anxiety disorder, cognitive distortions, depression and general anxiety.

The Cochran Q was used to assess for homogeneity, while the $I^2$ statistic was used to assess for heterogeneity of effect sizes across trials. Sub-group analyses were conducted to assess the effects of potential trial covariates. Publication bias was assessed visually using the funnel plot and by Duval and Tweedie's trim and fill procedure. 'Orwin's fail-safe N' was also calculated. The robustness of effect sizes was assessed through a series of sensitivity analyses excluding each trial in turn.

Results of the review
Thirty RCTs (n=1,628 participants) were included in the review. Sample sizes ranged from 7 to 91 participants. The quality of most of the trials was sub-optimal with most analyses based on completers-only analysis. Intention-to-treat analyses were used in nine trials.

Post-test effects of psychological treatments: Psychological treatment was associated with a statistically significant reduction in social anxiety disorder (mean effect size (MES) 0.77, 95% CI 0.60 to 0.94; 29 RCTs; 48 contrast groups). Similarly, psychological treatment was associated with a statistically significant reduction in other outcomes: fear of negative evaluation (MES 0.59, 95% CI 0.39 to 0.78; 18 RCT; 26 contrast groups); Social Avoidance and Distress Scale (MES 0.83, 95% CI 0.56 to 1.10; 11 RCTs; 15 comparisons); cognitive outcomes (MES 0.80, 95% CI 0.54 to 1.05; 15 RCTs; 26 comparisons) and in self-reported depression (MES 0.70, 95% CI 0.46 to 0.94; 12 RCTs, 19 comparisons). However, psychological treatment had no effect on in general anxiety (MES 0.70, 95% CI 0.47 to 0.93; nine RCTs; 16 comparisons).

Sub-group analyses: Heterogeneity was present in only two sub-groups: trials with waiting-list control groups had a significantly larger effect size than trials with placebo or treatment-as-usual control groups; trials with patients who met diagnostic criteria for a social anxiety disorder had a smaller effect size than trials were other inclusion criteria was used. Overall, reported effects of psychological treatments on social anxiety disorder were found not to vary significantly over time. The findings were also unlikely to be biased by possible publication bias.

Authors' conclusions
Psychological treatments were effective in treating social anxiety disorder in adults, but their effects may be reduced in severe disorders and in trials where care-as-usual and placebo control groups are used.

CRD commentary
This review addressed a clear question with well-defined inclusion criteria. Several relevant databases were searched with no language restrictions, minimising the risk of language bias. Efforts were made to search for unpublished papers and the potential for publication bias was assessed; no evidence of it was found. It was unclear whether steps were taken to minimise the risk of reviewer error and bias in the review methods. Validity was assessed using appropriate criteria; the quality of trials was reported to be varied and sub-optimal. Appropriate statistical methods were used to pool study results. Statistical heterogeneity was assessed using a range of methods. The potential influence of trial factors on effect sizes were explored and results discussed. The conclusion reflected the reported results. The reported effects may have been overestimated (as acknowledged by the authors). The reliability of the authors' conclusion is limited by the poor quality of included trials.
Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors stated that further large studies are needed to examine effects of treatments in patients with varying severity of anxiety disorders. Future studies should separate the effects of cognitive restructuring, exposure, social skills training, applied relaxation or the Lefkoe method and should be large enough to compare outcomes in pill-placebo and treatment-as-usual control groups.

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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.