Psychotherapy of childhood anxiety disorders: a meta-analysis
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CRD summary
This review evaluated the efficacy of psychotherapy for childhood anxiety disorders. The authors concluded that anxiety disorders in children can be treated efficaciously using cognitive-behavioural therapy. However, the findings should be treated with caution as, given the averaging of data across different outcomes and studies and the lack of an assessment of study quality, they may not be reliable.

Authors' objectives
To evaluate the efficacy of psychotherapy for childhood anxiety disorders.

Searching
MEDLINE and PsycINFO were searched for papers published up to March 2005 in English or German; the search terms were provided. In addition, an internet search was conducted and references of retrieved articles were assessed.

Study selection

Study designs of evaluations included in the review
Only randomised controlled trials (RCTs) with at least 10 participants in each treatment group were eligible for inclusion.

Specific interventions included in the review
Studies comparing a treatment for anxiety disorder with a control condition or alternative psychotherapeutic treatment were eligible for inclusion. Psychopharmacological studies were excluded from the review. All of the included studies assessed cognitive-behavioural therapy and included a child-focused treatment and/or a family-focused treatment. Child-focused techniques included a mixture of exposure techniques, cognitive restructuring strategies, relaxation techniques and positive self-talk. Family-focused techniques included a mixture of teaching parents how to cope with child anxiety, teaching communication and problem-solving, and managing the parents' own anxiety. Most of the included studies used a waiting-list control; the remainder used an alternative therapy. The length of treatment ranged from 3 to 18 sessions (average 12.3). Where reported, the duration of follow-up ranged from 1 month to 7 years.

Participants included in the review
Studies of children diagnosed with a principal anxiety disorder using the DSM (American Psychiatric Association) or ICD (International Classification of Diseases) diagnostic criteria were eligible for inclusion. Studies of children with obsessive compulsive disorder or post-traumatic stress disorder were not eligible for inclusion. Most of the included studies used the Anxiety Disorders Interview Schedule for Children to establish a diagnosis, which was consistent with the DSM criteria. Participants who were currently involved in psychosocial or psychopharmacological treatment were usually excluded, as were participants with psychotic symptoms or mental retardation. The mean age of the included participants was 10.9 years (range: 6 to 18).

Outcomes assessed in the review
Only studies reporting the efficacy of psychotherapy, and reporting outcome means and standard deviation and sample sizes during post treatment and follow-up, were eligible for inclusion. The included studies used many different scales to measure treatment effect; the three most commonly used were the Revised Children's Manifest Anxiety Scale (RCMAS), the Fear Survey Schedule for Children-Revised (FSSC-R) and the Children's Depression Inventory (CDI).

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.
Assessment of study quality
The authors did not state that they assessed validity.

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

For each study, an overall effect size was calculated by averaging the Cohen's d effect size across all outcomes. Also calculated were 95% confidence intervals (CIs) for end of treatment and end of follow-up. Completion rates were extracted and the percentage of participants likely to recover following treatment, for those who completed therapy and by intention-to-treat analysis, were also presented with 95% CIs.

Methods of synthesis
How were the studies combined?
The Cohen's d effect size was averaged across all included studies to produce an overall global effect size with 95% CIs. An overall treatment versus control effect size was calculated, presented with 95% CIs, and tested for significance using the t-test. Separate effect sizes were calculated for the three most commonly used measures and calculated for end of treatment and end of follow-up. Publication bias was assessed using the fail-safe N method.

How were differences between studies investigated?
Heterogeneity was assessed using Cochran's Q test statistic. Subgroup analyses were performed for child- and family-focused therapy, for group and individual therapy, and by type of control intervention used.

Results of the review
Twenty-four RCTs (n=1,275) were included.

Effect sizes.

Pre-/post-treatment: overall, there was a significantly higher effect size in the intervention group compared with the control group (d=0.66, 95% CI: 0.35, 0.96; t-test 6.92, d.f.=37, p=0.00). The effect size was 0.86 (95% CI: 0.69, 1.03; 24 trials) for treatment intervention, compared with 0.13 (95% CI: 0.03, 0.24; 16 trials) for waiting-list control and 0.58 (95% CI: -1.6, 1.3) for attention placebo control. There was no statistically significant heterogeneity between the trials.

The effect size using the RCMAS outcome measure was 0.83 (95% CI: 0.64, 1.02) in the intervention group compared with 0.22 (95% CI: 0.08, 0.35) in the control group. The effect size using the FSSC-R outcome measure was 0.85 (95% CI: 0.45, 1.24) in the intervention group compared with 0.32 (95% CI: 0.11, 0.54) in the control group. The effect size using the CDI outcome measure was 0.70 (95% CI: 0.54, 0.86) in the intervention group compared with 0.20 (95% CI: 0.07, 0.33) in the control group.

Follow-up effect size: the intervention effect size for studies reporting short term follow-up was 1.36 (95% CI: 0.78, 1.94; 16 trials).

Subgroups: child-focused therapy studies, family-focused therapy studies and individual therapy studies all showed a significant treatment effect size, both post-treatment and at follow-up. Group therapy studies showed a significant treatment effect size post-treatment, but a non significant effect size at follow-up.

Percentage recovery.

Significantly more participants in the intervention group no longer met the criterion for their principal pre-treatment anxiety disorder compared with participants in the control group (t-test 15.06, d.f.=34, p<0.00). Across all active treatments, 68.9% of participants in the intervention group (21 trials) who completed the therapy no longer met the criteria for their pre-treatment anxiety disorder at the end of treatment, compared with only 12.9% who were assigned.
to a waiting list. The recovery rate increased to 72% for participants in the intervention group who completed treatment at the end of follow-up. Recovery rates based on intention-to-treat were 55.4% after treatment.

In terms of the fail-safe N, 17 additional studies of zero effect would be needed to reduce the overall effect size from 0.86 to 0.50, and 79 studies to reduce it from 0.86 to 0.20.

**Authors' conclusions**
Anxiety disorders in children can be treated efficaciously using cognitive-behavioural therapy.

**CRD commentary**
The review question was clear in terms of the study design, participants and intervention; however, outcomes of interest were not stated explicitly. The search strategy adopted was reasonable, but limiting the search to published studies written in English or German could potentially have introduced publication and language bias. The authors did not state how the studies were selected or how the data were extracted, therefore the potential for reviewer bias and error cannot be assessed. The authors also appeared not to have assessed the validity of the studies.

Information on each included study was provided; however, given the diversity of the interventions and outcomes used a more detailed summary would have been helpful. The authors provided a good description of the statistical analysis adopted in the review. They also averaged the effect sizes of a diverse range of outcome measures to produce one effect size for each study, which might not have been appropriate. Data were also averaged across studies; without further details of the characteristics of the studies it is difficult to assess whether this was appropriate. Overall, the lack of an assessment of study quality and the averaging of data across different outcomes and studies suggest that the authors' findings should be interpreted with caution as they may not be reliable.

**Implications of the review for practice and research**
- **Practice**: The authors did not state any implications for practice.
- **Research**: Further research should take into consideration the inclusion of individual, teacher and parent report in assessing efficacy.

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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.