Benefits of cognitive-behavioural therapy for children and youth with obsessive-compulsive disorder: re-examination of the evidence  
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CRD summary
This review, which determined the efficacy of cognitive-behavioural therapy (CBT) for obsessive-compulsive disorder in children and adolescents, concluded that CBT gives promising results particularly when combined with medication, but additional studies are needed to clarify its benefits. Given the small datasets with few high-quality studies, the author's conclusion seems appropriate.

Authors' objectives
To determine the efficacy of cognitive-behavioural therapy (CBT) for obsessive-compulsive disorder (OCD) in children and adolescents.

Searching
MEDLINE, PsycINFO, EMBASE and the Cochrane Depression, Anxiety and Neurosis Group's Controlled Trials Register were searched; the search terms were reported. Journal and conference proceedings related to behavioural treatment of OCD were also searched and the references of relevant articles were checked.

Study selection
Study designs of evaluations included in the review
- Randomised controlled trials (RCTs), quasi-RCTs or single-group 'open' trials were eligible for inclusion. Case studies were excluded, but case series where estimates of group pre-post treatment effects were provided were included.

Specific interventions included in the review
- Studies of the main CBT techniques (exposure with response prevention, psycho-education, cognitive training, anxiety management training, and parental or family involvement) alone or in combination with other CBT techniques or medication were eligible for inclusion regardless of 'treatment' status of comparison. The included studies compared standard cognitive-behavioural techniques (either alone or in combination) compared with active drug, placebo or wait list. Studies delivered CBT interventions in between 7 and 20 sessions of 1 to 2 hours in duration.

Participants included in the review
- Studies of children or adolescents (18 years or younger) with a diagnosis of OCD as established by clinical assessment or standardised diagnostic interview were eligible for inclusion. The age of the participants ranged from 5 to 18 years.

Outcomes assessed in the review
- For comparative studies, the primary outcome was between-group differences in post-treatment measures on OCD symptom severity; for single-group studies, the primary outcome was difference between baseline and post-treatment measures in OCD severity. Additional outcomes included frequency, duration of and degree of distress of obsessions and compulsions (clinician rated or self-rated) using standardised measures, whether patients had improved or not, or whether diagnosis had remitted or not.

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

Assessment of study quality
Two reviewers independently assessed the validity of the primary studies using criteria that considered randomisation, allocation concealment, blinding, withdrawals and use of intention-to-treat analysis. Any disagreements were resolved through discussion.
Data extraction
The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
The studies were combined using a fixed-effect meta-analysis. Pooled effect sizes and corresponding 95% confidence intervals (CIs) were calculated as standardised mean differences or, where the same measurement was used across studies, the weighted mean difference (WMD). Studies were weighted by the precision of its estimate of effect. For single-group design studies, effect sizes were estimated adjusting for sample size. Relative risks (RRs) were calculated for dichotomous outcomes in post-treatment comparison studies and absolute risk was calculated in single-group design studies. Where meta-analysis was not possible, the results were reported in a narrative format. The studies were grouped by type of study and nature of comparison.

How were differences between studies investigated?
Statistical heterogeneity was assessed using the I-squared test.

Results of the review
Nineteen studies were included in the review: 5 comparative studies (n=262) and 14 single-group studies (n=300).

One study was considered to have a low risk of bias, 5 studies were considered to have a low-to-moderate risk of bias, 10 studies were considered to have a moderate risk of bias, and 3 studies were considered to have a moderate-to-high risk of bias.

In the controlled studies, effect sizes for the severity of OCD ranged from 0.79 to 2.73. The estimates were not pooled because of substantial statistical heterogeneity (I-squared 89.3%). In the single-group studies, the mean effect sizes ranged from 0.78 to 4.38.

Low risk of bias was associated with lower adjusted effect sizes; one study (20%) in the low or low-to-moderate bias categories reported an adjusted effect size above 1, while 11 studies (92%) in the moderate or moderate-to-high bias categories reported effect sizes around 1 and seven (58%) reports effects above 2.

Three controlled studies assessed CBT alone against medication. No between-group difference was found for treatment groups for OCD severity (WMD -3.87, 95% CI: -8.15, 0.41), based on 2 studies (CBT versus clomipramine and CBT versus sertraline). No between-group differences were found for the proportion of participants continuing to have OCD at post-treatment follow-up (RR 0.75, 95% CI: 0.54, 1.05), based on 2 studies.

A result in favour of the combined treatment compared with medication alone was found (WMD -4.55, 95% CI: -7.40, -1.70), based on 2 controlled studies. One study found that CBT combined with medication was significantly less likely to continue to have OCD at post-treatment follow-up than medication alone (RR 0.59, 95% CI: 0.38, 0.92) and placebo (RR 0.48, 95% CI: 0.32, 0.72), but no significant difference was found in comparison with CBT alone (RR 0.76, 95% CI: 0.47, 1.26).

Authors' conclusions
CBT is a promising treatment for paediatric OCD. It should be considered an equivalent first-line treatment to anti-OCD medication, with the potential to lead to better outcomes when combined with medication than medication alone. However, additional studies are needed to clarify the benefits of CBT.

CRD commentary
The review question was clear and supported by detailed inclusion and exclusion criteria. The search involved appropriate electronic databases and was not restricted by language. The author did not report whether steps were taken to minimise reviewer bias and errors in relation to the study selection and data extraction processes. Validity was assessed using an aggregate quality scoring system and summary results were
reported. Standard statistical methods were used to pool the data and potential sources of heterogeneity were explored. Given the small datasets with few high-quality studies, the author's conclusion that, whilst results are promising, additional studies are required to clarify the benefits of CBT, seems appropriate.

Implications of the review for practice and research
Practice: The author suggested that CBT should be regarded as an equivalent first-line treatment to anti-OCD medication.

Research: The author stated that additional well-conducted studies using a range of outcomes, including measures of life functioning, are required to clarify the benefits of CBT for paediatric OCD. In the interim, the author suggested further investigation of how CBT can be made more available as a treatment option.

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Other publications of related interest

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