Cognitive-behavioral interventions for depression in children and adolescents: meta-analysis, promising programs, and implications for school personnel

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CRD summary
The authors of the review concluded that early cognitive behavioural intervention may be key to prevention or at least mitigation of the negative impact of depression on children's functioning. The conclusion represented the evidence presented, but the limited literature search and lack of study quality assessment made the reliability of the conclusion unclear.

Authors' objectives
To evaluate the effectiveness of cognitive-behavioural interventions (CBI) for the treatment of depression in children and adolescents.

Searching
PsycLIT and Education Resources Information Center First Search were searched from 1970 to February 2007. Search terms were reported. An ancestor search was conducted for all articles that met the inclusion criteria. The reference lists of 10 existing reviews were searched.

Study selection
Published peer-reviewed articles of randomised studies of active cognitive behavioural treatments versus control/waiting list or placebo in children of high school age (age not further specified) or younger and that used standardised depression measures or clinical interviews were eligible for inclusion. Mean age in included studies varied from 9.2 years to 16.3 years. The percentage of female children ranged from 44.4% to 71.29%. Study settings included clinics, primary school, elementary school, middle school and high school. Where reported, length of CBI ranged from five to 13.3 weeks. Most studies used multiple outcome measures, the most common of which were Beck Depression Inventory (BDI) and Child Depression Inventory (CDI).

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

Assessment of study quality
The authors did not state whether an assessment of study quality was performed; it was noted that the authors extracted variables that related to internal validity.

Data extraction
Mean performance of treated and untreated participants and their respective standard deviations were extracted in order to calculate post-intervention effects sizes (ES) for each study.

Data were extracted by one reviewer and checked by two other reviewers. Any discrepancies were discussed and resolved by consensus.

Methods of synthesis
Hedges and Olkin correction formula was used to adjust all effect sizes for bias due to small sample size. Negative effect size values indicated that the treatment group improved more than the control group. Where two or more CBI were compared in a study, study information was pooled or collapsed to represent one treatment outcome for each study.

Effect sizes were combined in a random-effects model weighted by the inverse of the variance. Heterogeneity was assessed using the Q statistic. Potential sources of heterogeneity (percentage of females, average age, trial setting and...
length of intervention in weeks) were investigated by subgroup analyses.

**Results of the review**
Twenty studies (n=2,903 participants) were included in the review. Sample sizes ranged from 16 to 1,266 participants. Patients who received CBI showed a statistically significant improvement in depression compared to the control group (ES -0.5; p<0.01). However, there was evidence of statistically significant heterogeneity (Q statistic=67.12, p<0.001).

Subgroup analysis revealed that the source of heterogeneity was length of intervention in weeks, with larger effect sizes found for shorter interventions than for long-term interventions. Studies in which the CBI occurred for 10 weeks or more had weaker effects (mean ES 0.13, standard error 0.13) than those studies in which CBI was for eight weeks or less (mean ES -0.54, standard error 0.10).

**Authors' conclusions**
Early CBI may be the key to preventing or at least mitigating the negative impact depression has on children’s functioning.

**CRD commentary**
The review addressed a clear research question and was supported by adequate inclusion criteria. The search was limited to two databases and to published articles only. It was unclear whether studies published in languages other than English were included in the review, which meant that relevant studies may have been missed. It was not reported how the study selection was performed, which made it unclear whether the review process was subject to reviewer error or bias. Study quality was not assessed, which meant that reliability of data included in the review could not be determined. Synthesis methods were appropriate and potential sources of heterogeneity were investigated. The conclusion represented the evidence presented, but the limited literature search and lack of study quality assessment made the reliability of the conclusion unclear.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that further research was needed to determine: the point in time at which the effects of CBI diminished; whether there was a treatment duration by frequency interaction; and examine the effects of a specific CBI technique on a particular outcome measure in various settings.

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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.