Cognitive-behavioral therapy of depression and depressive symptoms during adolescence: a review and meta-analysis
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Authors' objectives
To determine whether cognitive behaviour therapy (CBT) approaches are effective in alleviating depression symptomatology among adolescents.

Searching
The literature was searched from 1970 to February 1997. The search involved a computerised search of medical and psychological databases, a review of references from identified studies and narrative descriptions of CBT, and a manual search of relevant journals. The authors only included psychotherapy outcome studies published in English in their analysis.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) comparing a CBT group with a randomly assigned control group from the same population. The duration of therapy varied from 6 individual sessions to 14 course sessions (2 hours per session, over 7 weeks), and the follow-up period ranged from 1 to 24 months.

Specific interventions included in the review
CBT, defined as 'interventions that seek to promote emotional and behavioural change by teaching children to change thought and thought processes in an overt, active, and problem-oriented manner'. Control interventions included relaxation, waiting list, self-control and supportive therapy.

Participants included in the review
The participants were dysphoric and depressed children recruited from schools. Inclusion criteria for depression included: Beck Depression Inventory score greater than or equal to 12, Children's Depression Inventory (CDI) greater than or equal to 13, CDI greater than or equal to 15, a diagnosis of major depression (American Psychiatric Association DSM-III criteria) or depressive disorder (Research Diagnostic Criteria), Modified Scale for Suicidal Ideation greater than or equal to 11, Reynolds Adolescent Depression Scale greater than or equal to 72, Mood and Feelings Questionnaire greater than or equal to 15.

Participants were aged 19 or younger, with a mean age ranging from 11.2 to 19.2 years. There were 79 male and 172 female participants.

Outcomes assessed in the review
Depression, as measured by the following: Beck Depression Inventory, Reynolds Adolescent Depression Scale, CDI, Child Depression Scale, Center for Epidemiological Studies Depression Scale, Mood and Feelings Questionnaire.

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

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.
Methods of synthesis
How were the studies combined?
The DSTAT software (see Other publications of Related Interest no.1) was used to calculate the effect sizes. The effect sizes reported in the analyses were corrected using Hedges’ procedure. Negative scores indicated that the treatment groups improved more than the controls. The procedures outlined by Hedges and Olkin (see Other Publications of Related Interest no.2) were used to calculate and compare effect sizes from independent studies.

How were differences between studies investigated?
The DSTAT software (see Other Publications of Related Interest no.1) was used to test for heterogeneity. Each individual comparison was tested for heterogeneity, and an overall test for post-treatment and follow-up conditions was performed.

Results of the review
Six studies with a total of 251 participants were included, although the authors stated in the abstract that the total number of participants was 217. There were 14 comparisons of post-treatment versus control, and 10 comparisons of follow-up versus control.

The heterogeneity test for the post-test data was non significant (chi-squared 14.97, d.f.=13, p=0.31), suggesting that these studies were homogeneous. The overall effect size for the post-test difference scores was significant (d -1.02; 95% confidence interval, CI: -0.81, -1.23), indicating that CBT might be effective in alleviating dysphoria and depression among adolescents.

The heterogeneity test for the follow-up data was non significant (chi-squared 12.28, d.f.=9, p=0.20), suggesting homogeneity. The overall effect size for the follow-up data was significant (d -0.61, 95% CI; -0.35, -0.88), indicating that the effects of CBT were maintained over time.

The fail-safe N-values for this study were 426 for the analysis of the post-test effects and 62 for the analysis of follow-up effects; these indicated that the findings were robust.

Authors’ conclusions
CBT may be useful for reducing dysphoria among adolescents, and treatment gains are maintained over time. These conclusions are based on a limited number of studies, but the findings are robust and consistent with outcome research with depressed adults. The fail-safe N-values indicate that the effects found would not be invalidated even if a publication bias existed.

CRD commentary
A well-defined review question was presented. Sufficient detail of the individual studies was presented, and the studies were combined appropriately.

The inclusion criteria were appropriate, but the exclusion criteria were not reported. The validity of the included studies was not assessed. The authors state that by only using published psychotherapy outcome studies in the analysis, the quality of the studies reviewed is assured. However, many studies of bad quality are published and this strategy could lead to a publication bias. The authors did not state which medical and psychological databases were searched, or the search terms that were used. The authors highlighted the following limitations of the research:

1. The studies involved small sample sizes (in most of the studies there were less than 20 participants in each group).
2. There were a small number of therapists used in each treatment condition, making it difficult to ascertain whether the treatment effects are generalisable to therapists with differing styles.
3. The majority of the studies used dysphoric rather than clinically depressed adolescents.

The authors’ conclusions follow from the results and useful suggestions are provided for future research.

**Implications of the review for practice and research**

The authors state that, in the included studies, the effectiveness of CBT was typically contrasted with a relaxation or wait-list control group. They suggest that future research should examine whether CBT is more effective than other forms of psychotherapy or medication in treating clinically depressed adolescents.

Few studies have focused on the effectiveness of specific forms of psychotherapy for addressing specific clinical concerns. The authors recommend that future studies should include detailed descriptions of the treatments being provided, and documentation of their integrity and fidelity.

The authors also suggest that future research should use objective ratings of symptom severity and raters who are blinded to the treatment condition of the participants.

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