



Efficacy and Acceptability of Cognitive Behavioral Therapy for Depression in Children: A Systematic Review and Meta-analysis

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Conflict of Interest: The authors declare that they have no conflict of interest.

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ABSTRACT

BACKGROUND: Few meta-analyses have focused on the effect of cognitive behavioral therapy (CBT) for depression in children.

STUDY SELECTION: Randomized controlled trials comparing CBT with control conditions for depression in children (≤ 13 years old) were included.

DATA SOURCES: Seven electronic databases (PubMed, Embase, CENTRAL, Web of Science, PsycINFO, CINAHL, and LiLACS) were searched from inception to September 2015.

DATA EXTRACTION AND SYNTHESIS: The primary efficacy was defined as mean change scores in depressive symptoms, and the second efficacy (remission) was a score below the threshold for a diagnosis of depression, both after treatment and at the end of follow-up. We also measured acceptability by the proportion of participants who discontinued treatment up to posttreatment.

RESULTS: Nine studies with 306 participants were selected for this analysis. At posttreatment, CBT was significantly more effective than control conditions in terms of primary efficacy

(standardized mean difference, -0.41 ; 95% confidence interval [CI], -0.64 to -0.18) and secondary efficacy (odds ratio [OR], 2.16; 95% CI, 1.24 to 3.78). At follow-up, the results were consistent with those of efficacy outcomes at posttreatment, with a standardized mean difference of -0.34 and an OR of 2.04. CBT had no statistical more all-cause discontinuations than the control group (OR, 0.69; 95% CI, 0.26 to 1.82). However, subgroup analyses found that CBT was only significantly more effective than nontreatment, while it was not better than wait list or psychological placebo.

CONCLUSIONS: CBT seems to be more beneficial in the treatment of depression in children than nontreatment; however, this finding is limited by the small size of the trials and low literature quality.

KEYWORDS: adolescent; child; depression; meta-analysis; psychotherapy

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WHAT THIS SYSTEMATIC REVIEW ADDS

- CBT seems to reduce depressive symptoms in children, but this finding requires further confirmation.
- CBT had no statistical more all-cause discontinuations than the control groups.
- CBT performed better than nontreatment, but it did not perform better than wait list or placebo.

HOW TO USE This Systematic Review

- We lack evidence that CBT is better than either wait list or placebo.
- Researchers should investigate CBT with parent involvement as well as non-CBT interventions.

DEPRESSION IS ONE of the most common mental disorders among children (≤ 13 years old). The lifetime

prevalence of depression in preschool children is about 1% and in schoolchildren is about 3%.¹ Compared to adults, children with major depression are often underdiagnosed and undertreated because depression in children may be expressed in unspecific symptoms, eg, somatic complaints, headache, social withdrawal, and hopelessness.² Some researchers have found that the average duration of a major depressive episode in children is approximately 6 to 9 months.^{3,4} Although this duration is similar to that in adults, it may have a more severe effect on children because of the impact on their academic and social development. Moreover, depressed children have an increased risk of psychological and physiological ill health in adolescence and adulthood, as well as suicide attempts, alcohol and drug use, and social adjustment problems.^{5,6} Thus, the extent, impact, and long-term

sequelae of childhood depression highlights the need for effective treatment.

Currently, several international guidelines recommend that psychological treatments, especially cognitive behavioral therapy (CBT) and interpersonal therapy, are still considered the first-line treatments for depression in children and adolescents,^{7,8} and CBT is the most studied psychosocial intervention for the treatment of depression in children and adolescents.^{9–12} Nonetheless, few systematic reviews and meta-analyses have focused on the effect of CBT in children.^{13–15} The degree of cognitive maturity is less in children than in adolescents, and debate continues as to what degree of cognitive maturity is required for successful engagement in CBT in children. Hence, the aim of the current meta-analysis was to compare the efficacy and acceptability of CBT with wait list, nontreatment or psychological placebo in the treatment of depression in children.

METHODS

DATA SOURCES AND SEARCHES

Seven relevant electronic databases (PubMed, Embase, CENTRAL, Web of Science, PsycINFO, CINAHL, and LILACS) were searched up to September 2015 for use of the following keywords: “depression” or “dysthymia”, and “children” or “pediatric” and “cognitive behavioral therapy” or “CBT”. A comprehensive search of unpublished theses and dissertations via ProQuest Dissertation Abstracts was completed. We also screened ClinicalTrials.gov, the World Health Organization’s trial portal, and relevant reports on the US Food and Drug Administration Web site, and we hand-searched key scientific journals in the field for published studies. Additional randomized controlled trials (RCTs) were obtained by scanning the reference lists of identified initial searches and relevant review articles. All relevant authors were contacted to supplement incomplete information. No language restrictions were applied.

STUDY SELECTION

Any RCTs that compared CBT with control conditions in the treatment of children with depression were identified. Two independent reviewers (LY and XZ) selected studies for inclusion with divergences resolved by consensus. They scanned citations at the title/abstract level and then retrieved a short list of potentially relevant studies in full text. Potentially relevant articles were reviewed in full to ensure that they satisfied all of the inclusion criteria as follows: 1) any RCTs, including crossover and cluster RCTs; 2) child patients (aged no more than 13 years when initially enrolled onto the primary study); 3) child patients who either had a diagnosis of major depression, minor depression, intermittent depression, or dysthymia based on standardized diagnostic interviews, or exceeded a predefined threshold for depressive symptoms using a validated depression severity measure; 4) a CBT intervention; and 5) was compared with control condition, such as nontreatment (NT), wait list control (WL), and psycholog-

ical placebo (PBO). PBO is a control condition that was regarded as inactive by the researchers but was not regarded as such by the participants. Trials in which both children and adolescents were treated were eligible for inclusion, if data on the children could be extracted separately or obtained from the trial authors. Comorbidity with secondary medical or other mental health conditions, or comorbidity with suicidal ideation/attempt were not used as exclusion criteria; however, we excluded studies including participants with a secondary diagnosis of Axis I psychiatric disorders (eg, schizophrenia and bipolar disorder), because the effectiveness of psychotherapy might be affected by these comorbidities. We also excluded RCTs recruiting participants with treatment-resistant depression.

OUTCOME MEASURES

Our primary efficacy outcome was defined as mean change scores of depressive symptoms in depressive rating scales, eg, Hamilton Rating Scale for Depression (HRDS),¹⁶ Children’s Depression Inventory (CDI),¹⁷ and Beck depression inventory (BDI),¹⁸ from baseline to post-treatment. Where depression symptoms were measured using more than one continuous scale in a trial, we chose a scale on the basis of frequency in this meta-analysis. The secondary efficacy outcome was defined as remission, which measured as a score below the threshold for a diagnosis of depression (eg, CDI score ≤ 12 , HRDS score ≤ 9 , BDI score ≤ 10). In addition, we assessed the efficacy outcomes at the end of follow-up in order to examine the possible delayed or maintenance effects of psychotherapy.

The acceptability of treatment was defined as all-cause discontinuation, as measured by the proportion of participants who discontinued treatment up to the posttreatment time point.

DATA EXTRACTION AND QUALITY ASSESSMENT

Two independent reviewers (LY, JP) extracted the data and assessed the risk of bias. The reviewers extracted key characteristics of studies using a standardized data abstraction form, which included study characteristics (eg, first listed author, publication year, journal, country, institution, sponsor), patient characteristics (eg, diagnostic criteria for depression, the number of patients), intervention details (eg, session of treatment, duration of treatment, treatment pattern) and outcome measures (eg, posttreatment outcomes, follow-up outcomes). We assessed the risk of bias in studies using the Risk of Bias Assessment Tool from the Cochrane Handbook.¹⁹ Any disagreements were discussed with a third reviewers (XZ).

STATISTICAL ANALYSIS

We performed pairwise meta-analyses by synthesizing studies that compared the same interventions with a random-effects model when significant heterogeneity existed or a fixed-effects model when no significant heterogeneity existed. The effect sizes were expressed as standardized mean difference (SMD) with 95% confidence intervals (CIs) for continuous outcomes and odds ratios

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