



*Special Collection: Short Report*

**Attention-Deficit/Hyperactivity Disorder in Children: Cognitive Behavioral Therapy**

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**QUESTION**

What is the effectiveness of cognitive behavioral therapy (CBT) on the executive function of children with attention-deficit/hyperactivity disorder (ADHD)?

**CLINICAL BOTTOM LINE**

ADHD is considered the most prevalent neurodevelopmental disorder among children, affecting 5-8% of the global population.<sup>1,2</sup> It is characterized by difficulties in attention, hyperactivity, impulsivity, and executive functioning, often affecting various aspects of daily living.<sup>2,3</sup> Executive function encompasses cognitive processes such as planning, organizing, and regulating behavior.<sup>1,2</sup> Given the significant impact of executive function on academic achievement, social interactions, and overall quality of life, exploring effective interventions to address related problems is crucial. CBT addresses executive function difficulties in

children with ADHD.<sup>1-3</sup> This evidence summary evaluates the effectiveness of CBT in addressing executive function difficulties in children with ADHD, focusing on potential therapeutic avenues to enhance their cognitive and functional outcomes.

- A systematic review and meta-analysis examined the neuropsychological effects of CBT on executive function difficulties in children with ADHD. CBT was found to improve executive functions such as adaptive attention and strategic adaptability, self-control, planning, and working memory, thereby reducing ADHD-related impairments. Integrating CBT that focuses on organization, planning, time management skills, cognitive restructuring techniques, and mindfulness meditation into ADHD treatment regimens offers promising outcomes. Select interventions based on specific cognitive deficits to optimize treatment outcomes and enhance the well-being of individuals with ADHD.<sup>1</sup> (Level 1)
- A systematic review analyzed the effectiveness of CBT in improving executive function in children with ADHD, comparing it

to usual care (i.e., waitlist control group on medications). The review found that CBT significantly improved executive functioning and ADHD-related symptoms in children aged 7-17, including inattentive symptoms (e.g., difficulty with attention to detail, easy distractibility) and hyperactivity/impulsivity symptoms (e.g., being "on the go," difficulty waiting for one's turn). Participants receiving CBT showed significant improvements in outcome measures both after initial treatment and at 12 months compared to the control condition. Despite these positive findings, the evidence strength is considered low due to the limited number of high-quality studies and imprecise results. Therefore, further research is necessary to explore the relative effectiveness of CBT in enhancing executive functioning in children with ADHD, either as a standalone treatment or in combination with pharmacological interventions.<sup>2</sup> (Level 1)

- A clinical practice guideline provided recommendations based on expert opinion and clinical experience for using CBT to mitigate the daily impacts of ADHD symptoms in children and adolescents. Effective CBT should be tailored to individual needs, balancing strengths, values, and interests with addressing challenges. Key components include education on ADHD, environmental modifications for a structured setting, behavior modifications to reduce symptom impacts, and cognitive restructuring. These interventions enhance executive function, improving symptom management and overall functioning, and suggest that a comprehensive, individualized CBT approach can significantly benefit individuals with ADHD in daily and academic/professional settings.<sup>3</sup> (Level 1)

### CHARACTERISTICS OF EVIDENCE

This evidence summary is derived from a systematic literature review and selected evidence-based healthcare databases. The sources of evidence included are:

- A systematic review and meta-analysis of three RCTs on CBT for executive functions involving 137 participants.<sup>1</sup>
- A systematic review synthesized two RCTs on CBT for executive functions, involving 278 participants.<sup>2</sup>
- A clinical practice guideline formulated recommendations on CBT based on expert opinion and clinical experience, offering practical insights and recommendations on implementation concerns such as safety, adverse effects, and potential hazards.<sup>3</sup>

### BEST PRACTICE RECOMMENDATIONS

- CBT may be integrated into ADHD treatment regimens, focusing on organization, planning, time management, cognitive reappraisal, and mindfulness, tailored to specific cognitive deficits such as attentional and strategic flexibility, inhibition, planning, and working memory. (Grade B)
- CBT may be delivered for ADHD in individual or group formats based on service availability and family preference. Prioritize group sessions for social support and use individual sessions for personalized care, ensuring interventions include parent/family training for effective implementation and optimal outcomes. (Grade B)

*Disclaimer: This evidence summary adheres to the JBI format. However, it was independently created and is not part of the JBI EBP Database.*

### References:

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3. Australian ADHD Guideline Development Group. Australian evidence-based clinical practice guideline for attention deficit hyperactivity disorder. 1st edition [Internet]. Australian ADHD Professionals Association (AADPA). 2022; Available from <https://adhdguideline.aadpa.com.au/wp-content/uploads/2022/10/ADHD-Clinical-Practice-Guide-041022.pdf>

**Note:** This article is part of a special collection of articles by some graduate students of the Master of Science in Occupational Therapy degree of the University of Santo Tomas. The peer-review was facilitated by the respective course, from which these articles arose from. PJAHS was not involved in the peer-review process of this article. Nevertheless, this article underwent editorial review of PJAHS prior to online publication.