Application of Cognitive Behavioral Therapy for Insomnia in the Pediatric Population

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KEYWORDS

• Child and adolescent • Insomnia • Cognitive behavioral therapy • Pathophysiology
• Sleep problems

KEY POINTS

- There is a significant gap in the literature defining child and adolescent insomnias and their pathophysiology.
- Developing clinically useful definitions is particularly important because there is evidence that a significant number of children have sleep problems. Definitions of the disorder and pathophysiology may also provide important insights into the origin of insomnia in adults.
- Four categories of child and adolescent insomnia are proposed: idiopathic insomnia, insomnia associated with hyperarousal and mild affective disturbance, acquired insomnia, and insomnia associated with persistent medical and mental health problems.
- Although there have been no published reports on the efficacy of cognitive behavior therapy for insomnia (CBTI) in children, many components are applicable to children and are described in detail.
- Future directions for research on child and adolescent insomnia include basic definitions of the disorder, pathophysiology, and the efficacy of CBTI and modifications adapted for this age group.

INTRODUCTION

The behavioral insomnias of childhood (BIC) are a distinct category of sleep disorders that have been extensively studied and are, for the most part, well defined. Over the past several decades, several well-validated and highly efficacious treatment protocols for the BIC that focus on young children (ages 6 months to 5 years) have also been developed,[1] and the use of cognitive behavior therapy for insomnia in adults (CBTI) has been well documented.[2] However, the definitions, pathophysiology, and treatment of insomnia in school-aged children and adolescents are still evolving and there is some controversy about how they should be defined and whether they differ fundamentally from adult insomnia.

Given that numerous studies have found a high prevalence of insomnia both in healthy children and in those with psychiatric comorbidities such as anxiety, depression, and autism spectrum disorders,[3,4] there is clearly a need both for a better understanding of the nature of and causal factors in childhood and adolescent insomnia (CHAI) and for evidence-based treatments. However, there have been few studies that have evaluated the efficacy of protocols or individual techniques for the treatment of insomnia in older children and adolescents.[5] This article focuses on proposed definitions of CHAI and theories about its origin and

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pathophysiology. These are followed by a review of the components of the CBTI intervention and their usefulness in treatment of CHAI. Methods of delivery and cases are used as examples of the approaches to intervention. In addition, future directions for intervention modalities and research are discussed.

DEFINITIONS OF CHAI

In both the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition,[6] and the International Classification of Sleep Disorders, Third edition (ICSD-3), the traditional definition of insomnia remains essentially unchanged (ie, persistent difficulty with sleep initiation, duration, consolidation, or quality that occurs despite adequate opportunity and circumstances for sleep, and resulting in some form of daytime impairment). However, in the ICSD-3, compared with previous versions, the designation of primary versus secondary insomnias is no longer included and the complex and specific insomnia subtype classification scheme has been abandoned. There are now 3 basic diagnostic categories for insomnia largely based on duration of symptoms: chronic insomnia disorder, short-term insomnia disorder, and other insomnia disorder. These diagnoses apply to patients with and without comorbidities. Although BIC and its subtypes (limit setting sleep disorder and sleep onset association disorder) have been subsumed under the general category of insomnia, the definition of insomnia has now been expanded to include parent/caregiver report of sleep disturbances and associated impairments in daytime function in the child and caregiver(s).

As an alternative conceptualization of diagnostic categories of CHAI, and recognizing their diverse causes and pathophysiology, some general subtypes may be proposed, such as idiopathic, affective, learned, and comorbid with a medical/psychiatric/neurodevelopmental condition or trauma. The first category may be viewed as the one that is closest to previous definitions of idiopathic insomnia, namely difficulties with sleep onset, maintenance, and quality that have their origin in childhood and are not clearly linked to some precipitating cause. Although all insomnias involve psychophysiologic activation or hyperarousal both during the sleep period and across the day, idiopathic insomnia may be construed as more trait based rather than learned hyperarousal. The idiopathic subtype should be differentiated from insomnias that have their origin in affective disturbance. The affective subtype includes nighttime anxiety and mild daytime anxiety and includes worries and rumination about sleep, performance in school, social interactions, and so forth, which do not meet criteria for an affective disorder. These patients may also have a history of more significant mood disturbance that has resolved. The third subtype is learned or acquired insomnia. Here the initial presentation may be that of behavioral insomnia of childhood, a circadian rhythm disorder that emerges during adolescence, or a life event that leads to acute changes in sleep habits that then persist over time. These changes may in turn result in the patient and/or parents adopting compensatory sleep-related strategies that are ultimately counterproductive (eg, lying in bed awake for long periods, daytime napping) and result in a deterioration of sleep quality. The fourth subtype is characterized by persistent insomnia symptoms that are secondary to medical, psychiatric, and developmental disorders (eg, autism spectrum disorders) and/or iatrogenic (eg, psychotropic medication) effects.

The discussion of CBTI in children and adolescents in this article is based on this conceptual nosology of CHAI subtypes: idiopathic insomnia, learned/acquired insomnia, insomnia associated with mild affective disturbance, and comorbid insomnia with the recognition that there is often overlap among these categories. Based on clinical experience, a CBTI treatment package or selected elements may be efficacious for all these subtypes of insomnia. However, the presence of additional symptoms and causal factors may require the use of more focused assessments, selected intervention targets based on associated treatment outcome variables, and adjunctive treatment modalities.

ASSESSMENT OF CHAI

The specific targets of treatment of CHAI include (1) presleep habits that interfere with wake-to-sleep transitions and sleep onset; (2) dysfunctional beliefs and cognitions associated with sleep; (3) psychophysiologic arousal associated with bedtime; and (4) other behaviors negatively affecting sleep continuity and daytime functions such as caregiver-child interactions during the sleep period, multiple arousals during sleep, early morning awakenings, daytime sleep, and irregular sleep-wake schedules. A thorough clinical interview should target all of these domains.

Standardized questionnaires for child and adolescent sleep problems can assist in diagnosis and identification of specific problem areas. However, there are gaps in age groups covered by these questionnaires, particularly in children more than 12 years of age. The most widely used questionnaires in pediatric clinic settings are the Children's Sleep Habits Questionnaire[7] and the