Implementing Cognitive-Behavioral Therapy in Children and Adolescents with Anxiety Disorders

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This article provides an introduction and overview of the cognitive-behavioral treatment approach to anxiety disorders in children and adolescents. We first provide an introduction to the cognitive-behavioral conceptualization of anxiety, emphasizing the tripartite model of emotions: cognitions, physiological arousal, and avoidance behaviors. We then provide an overview of the basic principles of cognitive behavioral treatment for anxiety disorders in children and adolescents, including generalized, social, and separation anxiety, and specific phobia. We follow this introduction and overview with a discussion of the structure and goals of treatment, including the three phases of treatment (psychoeducation, application, and relapse prevention). In the context of discussing application, we focus primarily on implementation strategies relating to behavioral exposures and cognitive restructuring. We conclude with a summary of different formats wherein cognitive-behavioral treatment can be implemented, including child-only, peer-group, parent-involved, and telehealth.

Keywords: Anxiety disorders, children, adolescents, cognitive behavioral therapy.

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Проведение когнитивно-поведенческой терапии с детьми и подростками с тревожными расстройствами

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В этой статье представлены введение и обзор когнитивно-поведенческого подхода к лечению тревожных расстройств у детей и подростков. Сначала мы представляем введение в когнитивно-поведенческую концептуализацию тревоги, выделяя тройственную модель эмоций: когнитии, физиологическое возбуждение и избегание. Затем мы представляем обзор основных принципов когнитивно-поведенческой терапии тревожных расстройств у детей и подростков, включая генерализованное тревожное расстройство, социальную тревожность, страх разлуки, а также специфические фобии. Затем мы приводим структуру и цели лечения, включая три этапа лечения: психообразование, практическое применение навыков и предотвращение рецидивов. В контексте практического применения мы фокусируемся в первую очередь на стратегиях поведенческой экспозиции (exposure) и когнитивной перестройки. В заключение мы приводим краткое описание различных форматов, в которых может быть реализована когнитивно-поведенческая терапия, включая индивидуальную работу с ребенком, групповой формат, терапию с участием родителей и телемедицину.

Ключевые слова: тревожные расстройства, дети, подростки, когнитивно-поведенческая терапия.

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Despite decades of research into the efficacy of cognitive-behavioral treatment (CBT) for child anxiety [18; 46], there is a continued limited accessibility to evidence-based treatments, including CBT, and an insufficient number of trained providers for child anxiety worldwide [23]. The limited access and training on evidence-based treatments for child anxiety impact novice clinicians interested in implementing CBTs. Therefore, the purpose of this article is to present the cognitive-behavioral conceptualization of anxiety disorders and an overview of the CBT approach to anxiety disorders in children for clinicians with little exposure or access to training in evidence-based treatments. For a more in-depth discussion of CBT for child anxiety, we refer readers [3; 21; 41].

**What are Anxiety Disorders?**

Anxiety disorders in childhood and adolescence (child) are characterized by excessive, developmentally inappropriate fears and worries [1]. While anxiety is a universal, rational emotion that may be experienced in response to threatening stimuli [48], anxiety disorders persist beyond developmentally appropriate periods and are associated with significant distress and interference with daily functioning [1]. About 10–20% of children meet the Diagnostic and Statistical Manual of Mental Disorders [1] diagnostic criteria for an anxiety disorder [14], with the most prevalent being specific phobias and separation, social, and generalized anxiety disorders. If left untreated, anxiety disorders often run a chronic course and persist into adulthood [12; 19].

**Cognitive-Behavioral Conceptualization of Anxiety**

The cognitive-behavioral conceptualization ascribes to a tripartite model of emotions: cognitions, physiological arousal, and avoidance behaviors [e.g., 24; 25; 34; 35]. Activation of these components may occur concurrently (all components are active) or not (one or two components are active) [25; 31; 35]. For example, a child with high separation anxiety may believe that parents will have a car accident and die and they will never be able to see parents again (cognition), cry, sweat or tremble upon separation from parents (physiological arousal), and beg parents not to leave them (avoidance behavior).

CBT focuses primarily on increasing approach and decreasing avoidance behaviors by conducting exposures wherein the child faces fear- or anxiety-provoking stimuli; and challenging the child’s anxious thoughts and beliefs. A key premise of exposure-based CBT is that fear and anxious avoidant behaviors develop through the formation of associations between stimuli or situations and negative outcomes. These associations, referred to as excitatory associations [10], can form through direct and indirect experience, vicarious observation, and information transmission [15]. Once formed, associations generalize to other, similar stimuli and situations. Avoidance of the feared stimuli/situations strengthens associations and maintains anxiety. Evidence from experimental studies and clinical trials supports the cognitive-behavioral treatment of anxiety [e.g., 12; 46; 51].

**Basic Principles of CBT for Anxiety**

CBT is time-limited, problem-focused, and requires active participation of the therapist and child. The role and level of parent involvement vary across cases, as discussed briefly later. A typical CBT course is 12 to 16 sessions. This limited time frame
highlights the importance of identifying the primary areas of interference or impairment relating to the child’s anxiety (i.e., accurate differential diagnosis) and case formulation. In CBT, the therapist is akin to a coach, providing psychoeducation about anxiety and support throughout treatment [21; 41]. Like any coaching context, there ought to be some level of consensus among all team players — in this context, therapist, child, and parent. The consensus relates to the primary anxiety areas of interference (e.g., separation anxiety from caretaker), which then are targeted in treatment. Consensus is important to foment the therapeutic alliance and family motivation to work on these areas to attain success in accomplishing treatment tasks and reaching treatment goals. It further serves to increase adherence to treatment and child completion of in-session and out-of-session tasks [8; 28]. To foster the therapeutic alliance, it is important the therapist displays warmth, genuineness, concern, and active listening — a keystone of all psychotherapeutic endeavors [37].

The above must all be considered within the context of factors relevant to the particular child, including family structure, race, ethnicity, socio-economic status, gender orientation, and development. For example, parents may participate actively in the child’s treatment [9; 39], and therapists should consider how race, ethnicity, and socio-economic status impact barriers to accessing mental health care and feasibility of parents to provide tangible rewards [2; 30]. It is also important for therapists to be aware of how gender stereotypes affect symptom expression [17]. Developmental considerations are of similar importance, such as the possible clinical benefits of using play with younger children versus engaging in age-appropriate conversation with older children and adolescents.

**CBT Structure and Goals**

Initial sessions, typically the first three, involve providing psychoeducation about anxiety and setting treatment goals (i.e., psychoeducation phase); the next 6 to 8 sessions entail the therapist working with the child in devising and completing in- and out-of-session behavioral exposures or experiments, and practicing cognitive or self-control strategies to manage anxiety (i.e., application phase); the final two or three sessions emphasize termination and preparing the child to manage anxiety upon termination (i.e., relapse prevention phase). The precise number of sessions may need to vary depending on, for example, anxiety severity [33]. Some children may need extra time practicing skills; others may pick up skills and strategies early in treatment and require fewer sessions. Even when the emphasis is working with the child individually, it is still common to include the parents in the first meeting, a middle meeting, and a final meeting to ensure parents understand the key concepts underlying the child’s CBT and whether parents might need to help facilitate the child’s successful completion of CBT (e.g., participate with the child in an exposure task).

**Phase I: Psychoeducation**

During the psychoeducation phase, the therapist orients the child and parent to the treatment program, explaining that treatment is a joint effort. As noted, the therapist can use the coaching analogy to explain that the therapist initially takes an active coach-like role in explaining how anxiety occurs and how to use CBT skills to manage it. This is
followed by the child taking a more active role by practicing facing their fears and implementing the skills. The therapist emphasizes there is no “magic wand” that will completely eliminate anxiety. Rather, the emphasis is on the child improving their management of or coping with their anxiety [16; 41]. For treatment to be effective, it is important that the child practice what they learn during sessions. To facilitate practice, the therapist assigns out-of-session tasks and explains that the more the child practices, the more likely they will learn to manage their anxiety.

After orienting the child to treatment, the therapist provides psychoeducation. The therapist explains that anxiety is designed to 1) draw our attention to immediate threats and 2) to keep ourselves safe by activating the fight-or-flight system, and signals may be activated in dangerous and non-dangerous situations. A smoke alarm metaphor is helpful to explain this concept. A smoke alarm signals that there is a fire in the building, and people must get out to remain safe. Sometimes alarms are helpful in signaling real danger, but sometimes alarms go off when there is no real danger, such as when someone burns toast. The alarm makes the same sound when there is an actual fire and when there is only smoke. Anxiety works similarly by alerting people to possible danger even when they are not in a dangerous situation. Nonetheless, it feels “real” because it activates aspects or even all of the tripartite signals (cognitions, physiological, behavioral).

The therapist introduces the tripartite concept of anxiety as follows. Anxiety shows itself in three ways: thoughts, bodily responses, and behaviors, and these components may show at the same time, one or two at a time, and/or one of them may not appear at all. For example, if a child with social anxiety needs to give a presentation in front of the class, they may think, “I will mess up in front of everyone, and everyone will make fun of me,” and they may cry and complain of stomachaches but may not avoid giving the presentation. The therapist helps the child identify the way that the tripartite anxiety response shows itself in anxiety-provoking situations to improve the child’s management of the response. Visual aids often help children with learning the tripartite concept, such as cartoon drawings of children with thought bubbles and spaces for the child to write in the bubbles regarding how their anxiety shows itself [4; 41].

Another relevant concept to explain in psychoeducation is the negative reinforcing pattern that occurs with anxiety, what we often refer to as the ‘cycle of anxiety’ [41]. Avoidance of stimuli/situations brings about short-term transient relief from anxiety, providing negative reinforcement. This serves to maintain continued avoidant behavior due to the negative reinforcing pattern that results. An analogy can be provided with wearing sunglasses. The sun in individuals’ eyes can be aversive. People learn to put on sunglasses, and this behavior is maintained because it leads to a continued reduction of sunlight in the eyes. So too does continued behavioral avoidance because it leads to continued reduction of fear and anxiety reactions. It is hard to break this cycle without prescribing exposures to experience the feared anxious reaction and to learn that harm will not occur. Related to parental behavior is the ‘protection trap’ [41]. This occurs when parents and loved ones protect the child from experiencing anxiety by allowing them to avoid the situation that brings about distress. For example, when the child is permitted to stay home rather than go to school, in the short term, the child’s anxiety is reduced, and the parent feels they are protecting the child from the anxiety of school attendance. But here
too, avoidance serves to maintain the negative reinforcement cycle. In this case, both child- and parent-behavior are negatively reinforced by distress- or anxiety-reduction (the child because they do not need to attend school; the parent because they feel relieved by ‘protecting’ their child from anxiety). To help break the cycle of anxiety and the protection trap when involving parents in the child’s treatment, a child is asked during CBT to face the fear- or anxiety-provoking stimuli/situations; the parent is asked to reduce their use of negative reinforcement (i.e., discourage avoidance, encourage approach). This is what the child practices during the application phase: exposures.

**Phase II: Application**

*Behavioral strategies: Exposures*

Exposure is a key therapeutic component for anxiety reduction. Exposures involve facing the stimuli/situations that provoke anxiety in a planned and controlled way. A common view of exposure implementation in CBT is the habituation model, in which a child gradually faces feared stimuli. As such, each exposure task is designed to represent increased anxiety intensity and be more challenging to complete. In habituation, the child is therefore asked to stay in the situation as long as they can to experience the fearful or anxious reactions until they decrease, with the idea that continued exposure will reduce anxiety. Another common view is the inhibitory learning model, in which a child faces feared stimuli that are associated with the nonoccurrence of the feared outcome, or the occurrence of the feared outcome is experienced at a lower rate and intensity than expected (i.e., a mismatch between what is expected to happen and the outcome) [10]. According to this view, exposure tasks are designed so that facing the feared or anxious stimuli violates the (feared) expectations. This approach is thus tied to violating expectations of outcomes and not to habituating fear or anxiety levels [11].

Exposure tasks vary with the assigned diagnosis and require careful planning to target the specific maladaptive avoidant behaviors and accompanying thoughts or cognitions. That is, a child with a specific phobia of needles will complete exposure tasks involving needles or similar objects; a child with separation anxiety disorder will complete exposure tasks involving being apart from their parent. To facilitate the identification of specific behaviors to target during treatment, the child (and the parent, as appropriate) are asked to create a list of situations that the child avoids.

Because facing a stimuli or situation that induces strong emotions can be difficult, in habituation, the exposure is conducted gradually, starting with facing low fear- or anxiety-provoking situations or stimuli, with increasingly more challenging exposures as the child progresses. Children are usually reassured when they know that the exposure will be broken down into smaller, achievable steps so that they increase their confidence, mastery, and ability before moving on to more challenging tasks. It is important for the child to experience anxiety and to stay in the situation until it decreases. The therapist can explain to the child that the anxiety is akin to a wave. At first, the child will have intense, unpleasant feelings when facing their fear, but the longer they stay in the situation and with repeated practice, the unpleasant feelings will decrease. As noted, in the inhibitory learning model, exposure tasks are designed to violate individuals’ expectations of the
aversive outcomes [11], with less regard for the intensity of the fear. For example, a child with social anxiety may expect to be laughed at when ordering food at a restaurant; so, a helpful exposure could be to order food in a restaurant. The therapist can further use the analogy of a scientist or detective. That is, with each exposure task, the child can look for evidence or clues about whether their expectation (hypothesis) is warranted or not. Exposures may be conducted with the hierarchy in random order, at varying durations and stimuli [11].

It is helpful for the therapist to be concrete and specific when assigning exposures, including delineating the duration, frequency, and if a parent needs to be present. For example, parents of a child with a specific phobia of dogs may accompany their child to the pet store to practice being near dogs; parents of a child with separation anxiety disorder may leave the house for 10 minutes so that child is exposed to being alone. With children who are able to complete exposures independently, parents can be involved by prompting the child to complete the assigned tasks or providing rewards.

To complete an effective exposure, the child and therapist need to agree on the task to be completed, and there should be no unplanned or unexpected activities. Although anxiety ought to be experienced in each exposure task, there is therapeutic value in the child feeling competent and confident in accomplishing the exposure. Toward this end, if a step of the ladder is too difficult, the therapist can break that step down into smaller and easier steps. Reminder: CBT is collaborative between therapist and child, so the child may also contribute to developing tasks.

Of note, a common obstacle in completing exposures is child compliance. Often, involving parents and teaching them contingency management strategies may be helpful. This is done by contracting with the child (i.e., making a concrete plan by setting a specific date and time, discussing steps to prepare for the task) and providing a reward contingent upon completion of the task [36; 42].

After each exposure task is conducted, it is important to debrief. Debriefing helps the child to process with the therapist the experience, what was easy and hard, and to describe their tripartite reactions before, during, and after the exposure. It is important for the therapist to praise the child for attempting and/or successfully completing each task, though as important is for the child to learn to praise themselves (i.e., self-reinforcement; [42]). With younger children, this might take the form of tangible and nontangible rewards, such as going to the child’s favorite restaurant or extra time playing video games. Importantly, rewards need to be provided after a successful attempt or completion of an exposure; not before. This is what distinguishes rewards or reinforcers from bribes. Rewards, especially with young children, may function to keep motivation high and encourage the child to further engage in exposures.

*Cognitive strategies: Cognitive restructuring*

Anxious thoughts are not always accurate but can elicit strong emotions and maintain anxiety [41]. Anxious thoughts occur typically in the form of negative self-talk in anticipation of or during anxiety-provoking situations. To address these thoughts, the
therapist introduces cognitive strategies and practices them with the child in the context of exposure tasks. The acronym STOP (scared, thoughts, other thoughts, praise) can be used to explain this strategy [41]. “Scared” (S) can be identified with the tripartite view of anxiety explained previously.

Anxious thoughts (T) can occur in the form of self-talk. These thoughts can also be called “thinking traps” because they are unhelpful ways to think about situations that elicit strong emotions and avoidance. These traps include catastrophizing (thinking the worst possible outcome will happen), overgeneralizing (using words such as “always” or “never”), and mind-reading (assuming what others are thinking), among others. The therapist can help the child identify their pattern of negative thinking that they engage in, particularly before or during exposure tasks. For young children or children who have difficulty identifying anxious thoughts, the therapist shifts the focus to maladaptive behaviors that the child displays in anxiety-provoking situations (such as avoidance or reassurance-seeking).

To address negative thoughts, the child is asked to challenge each of them by generating "other" thoughts (O) and asking to gather evidence that supports and contradicts the anxious thought (T). Younger children may understand this concept better by using the analogy of detectives that are looking for clues. Some questions to ask the child include, “How likely it is to happen?” “How do you know for sure that it is going to happen?” or “What other things may happen?” The therapist may also ask the child to think about past experiences where the thought became true. For example, a child with social anxiety may be asked how many times in the past someone laughed at them after something they said, could the person have laughed at something else, or maybe the person thought they had said something funny and laughed at their joke. As treatment progresses, the child should be able to generate these responses on their own. In the example of the child with social anxiety, they might generate the thought, “I might feel nervous, but people probably won’t notice,” or “If I say something wrong, people may forget about it.”

The last step for managing thoughts is for the child to praise (P) or reward themselves for the effort of identifying anxious thoughts (T) and generating coping thoughts (O). Children should feel hopeful that they are making progress in managing their anxiety.

**Phase III: Relapse prevention**

During the relapse prevention phase, the therapist discusses strategies with the child for preventing the reoccurrence of avoidant behaviors [44]. By sessions 12–14, the child will have completed most, if not all, of the items on the fear ladder. The therapist now reviews the child’s progress in treatment and highlights the situations that the child is now able to face. Although the child may have made progress, it is not unusual for them to “slip” after treatment. Slipping refers to engaging in pretreatment avoidant behaviors and/or pretreatment maladaptive thinking. A key to avoid slipping is to emphasize the importance of practice prior to termination. Specifically, the therapist places emphasis on practicing to prevent slipping by explaining to the child that the more they practice facing their fears, the
less afraid they will be and the less likely they are to slip. Also important is to explain to children and parents how to interpret slips. Specifically, slipping may occur, but it does not mean that they have lost all the progress made. If a child encounters a situation that proves difficult, they can break it down into smaller steps and work their way up, just like they did in treatment. The use of retrieval cues where individuals carry cues, such as a wrist band, can serve as reminders of what they learned in therapy when encountering an anxiety-provoking situation [11].

CBT Formats

CBT is flexible in that the core elements may be administered in different formats, including child-only, peer-group, parent-involved, or telehealth. In individual-child CBT, only the child meets with the therapist, and parents are given progress updates out of the session. A benefit of individual CBT is tailoring treatment, given the emphasis on individual progress [38]. In group-CBT, children of a similar age are placed together. One of the advantages of group CBT is that the group provides an opportunity to practice exposures in front of peers of similar age, to normalize anxiety, and provide peer modeling and social support [43; 45]. Past comparative efficacy trials of individual CBT with group-CBT did not find that one modality outperformed the other in terms of symptom severity or diagnostic outcome [50], although this requires further study in community effectiveness trials, including further analysis of group-CBT’s likely improved cost-effectiveness [50].

In parent-involved CBT, the parent takes a more active role, particularly in the application phase. Some discussion may be devoted to how the parent-child relationship influences child anxiety. For example, the therapist can discuss how parental negative reinforcement of the child’s avoidant behaviors maintains anxiety and how parental positive reinforcement (such as providing rewards or words of encouragement after facing an anxiety-inducing situation) can encourage child independence and competence [47]. There has also been recent work demonstrating the efficacy of parent-based treatment only, by reducing parent accommodation, which overlaps to some extent with reducing parent use of negative reinforcement [26; 27]. Some children may benefit from their parent being involved in treatment; others may not. For example, the parent-child relationship may be strained due to over-controlling or over-involved parent behaviors [6]. Parents may have difficulties with psychopathology themselves, such as anxiety or depression, which also may be associated with child treatment response [e.g., 5]. However, this factor, like most, has been inconsistently demonstrated as being a significant predictor of treatment response [20; 36]. In the absence of conclusive data, we suggest therapists rely on evidence-informed judgments, including whether other approaches such as medication [10] or attention bias modification training [32], might be useful adjuncts to CBT.

Telehealth is another promising option for decreasing barriers to mental health care and increasing the retention of families who may otherwise find it difficult to access treatment [7; 49]. Telehealth interventions may include computerized self-guided interventions with supplemental telephone calls from a therapist (e.g., Cool Teens; [13]) or videoconference calls with real-time live therapists. During real-time videoconference calls, exposures can be adapted to fit the setting and be similarly anxiety-producing for the child.
as if it were an outside situation. For example, exposures to social anxiety can include having the child read a story and make mistakes on purpose, answer a question incorrectly in class, or give a 3-minute oral presentation during the session [22; 29]. There are ongoing efforts to develop and test digital technology, including by the authors, to enhance engagement and facilitate the completion of out-of-session tasks (e.g., [40]).

Conclusion

In this article, we described the cognitive-behavioral conceptualization of anxiety and presented an overview of cognitive-behavioral treatment for child anxiety disorders. From a cognitive-behavioral perspective, anxiety is conceptualized as a learned phenomenon and treatment, therefore, emphasizes learning of other behaviors, and thoughts as a means of reducing anxiety. This is accomplished through the provision of psychoeducation, exposure to feared stimuli/situations, and cognitive restructuring.

References


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