Management of Anxiety Disorders in the Pediatric Primary Care Setting

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EDUCATIONAL OBJECTIVES

1. Use cognitive behavioral therapy techniques to manage mild to moderate anxiety disorders within the primary care clinic.
2. Review when to prescribe medications for pediatric anxiety disorders and to learn the current evidence-based psychopharmacological options.
3. Learn about self-help resources available to patients and families for anxiety disorders.

Anxiety disorders are common in children and adolescents and typically present first in the pediatric primary care office. While anxiety disorders can become chronic and debilitating, they generally can be treated within the outpatient setting. Psychotherapy varies for each specific anxiety disorder but cognitive behavioral therapies have the strongest evidence base across disorders.

From the cognitive behavioral therapy (CBT) perspective, avoidant behaviors develop in response to the physiological, emotional, and cognitive symptoms of anxiety. For example,
CBT for anxiety disorders typically includes five treatment components:1

1. Psychoeducation — providing information about the anxiety disorder and the treatment process in language that both children and parents can understand;

2. Somatic management skills training — introducing and practicing various relaxation techniques (see Table 1);

3. Cognitive restructuring — helping patients become aware of thought patterns that justify avoidant behaviors and offering and encouraging alternative concepts (see Sidebar 1);

4. Exposure methods — the patient exposes him/herself to the feared thought, object, or situation;

5. Relapse prevention — continued practice and development of a plan to face future stressors.

CBT for various anxiety disorders involves adapting these treatment components to best fit the child’s particular anxiety symptoms.

TABLE 1.

<table>
<thead>
<tr>
<th>Technique</th>
<th>Illustration of Adaptations for Children/Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep breathing</td>
<td>• Place hand on belly to feel the inhale.</td>
</tr>
<tr>
<td></td>
<td>• To exhale, pretend to blow out a birthday candle or bubbles.</td>
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<tr>
<td>Progressive muscle</td>
<td>• Imagine squeezing a lemon while tensing hands.</td>
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<tr>
<td>relaxation</td>
<td>• Imagine chewing on a candy to tense the mouth.</td>
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<tr>
<td></td>
<td>• Imagine squishing feet into the mud.</td>
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<tr>
<td>Visualization exercises</td>
<td>• Think of a “peaceful” color and “send it” throughout the body.</td>
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<tr>
<td></td>
<td>• Imagine swimming in the ocean with schools of beautiful fish.</td>
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<tr>
<td></td>
<td>• Imagine floating on a cloud on a warm day.</td>
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</tbody>
</table>

Source: Brewer S, et al.

In children, this disorder is characterized by excessive anxiety related to the separation from major attachment figures. Separation anxiety disorder (SAD) often leads to disability in sleep, school attendance, and socialization with peers. Studies examining SAD have shown an extremely strong response rate to CBT for SAD (65% to 70%), even stronger (80% to 95%) when psychoeducation and specific training for parents was added.3

Primary care providers may prepare the child and family for psychotherapy by explaining some key cognitive behavioral principles. In therapy, children are asked to learn to recognize anxious feelings and physical sensations of anxiety in situations that generate separation fears. Parents can help their children name their feelings and let them know that if they practice enduring the feelings, they will ease.

In addition, primary care providers can help parents manage their own anxiety in response to seeing anxiety in their child. Parents can assist their children by staying as calm as possible so they model coping skills for their children. Parents can practice relaxation exercises with their children and help them withstand small exposures to their fears. For example, if a child is distressed about remaining home while a particular caregiver leaves the house, scheduled phone check-ins can be arranged during practice separations until the child is able to tolerate longer periods of separation. Workbooks and guides are available for parents of children with SAD and other anxiety disorders (Table 2, see page 543).

GENERALIZED ANXIETY DISORDER

Children with generalized anxiety disorder (GAD) are preoccupied with a range of worries that impair concentration and involvement in activities, often leading to psychosomatic symptoms and distress. This disorder has a strong familial component; parents with anxiety are more likely to have children with anxiety. The relationship is thought to be both genetic and environmental, and this condition is frequently comorbid with attention-deficit/hyperactivity disorder (ADHD), depression, and other anxiety disorders.13

a student with dyslexia might develop high anxiety levels when confronted with reading assignments at school; these may include physical symptoms, such as rapid heartbeat, headache, and “butterflies in the stomach,” as well as worry thoughts, such as, “I can’t read this,” “Everyone thinks I’m stupid,” or “I hate school.”

These symptoms are relieved when the student stays home from school. The student therefore learns to manage anxiety by avoiding school, and a school phobia (a form of simple phobia) develops. The treatment for anxiety, based on this model, is to expose the individual to the feared experience until the avoidant behavior is unlearned and new, healthier coping skills are learned in its place.
A variety of CBT treatment variations have been studied in GAD; remission rates range from 50% to 80%.14 Treatments with a parental component have generally yielded the highest remission rates. Because GAD has a strong cognitive component (ie, children are often preoccupied with various distorted thoughts [see Table 3]), bringing these distortions to light and helping children challenge their thoughts is a key component of treatment.

As in SAD, providers can ask parents to help children name their feelings associated with worry, identify their cognitive distortions, and consider alternatives. Useful at-home techniques include asking children to set aside their worries by using a visualization, such as a worry box, where the worries from the day can reside until bedtime, when they can be talked through with family. Another helpful technique is to set a time and place for daily worry, such as 10 minutes in the car on the way home from school. This can help children stay present for the rest of the day.

### PANIC DISORDER

The core symptoms of panic disorder are physiological, including: palpitations; chest pain; sweats; headache; stomach ache; dyspnea; and dizziness. These symptoms often appear to come out of nowhere and are associated with intense anxiety or dread. Panic disorder involves a persistent fear of an unprovoked panic attack, which is most disabling when associated with agoraphobia. Isolated panic attacks often first occur in adolescence; community studies have found that between 35% and 63% of teens have experienced at least one episode of panic.15

Relaxation techniques can help reverse maladaptive physiological responses during a panic attack. For example, since deep breathing can often counteract hyperventilation during panic, parents can practice this technique with their children during times of calm and at the onset of a panic attack. Once parents see their child begin to hyperventilate, they can alert the child (“You’re starting to look panicked.”) and help them initiate a coping skill (“Let’s breathe together.”)). CBT therapists conduct a variety of exposures during the therapy, including desensitization to the

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**TABLE 2.**

<table>
<thead>
<tr>
<th>For Young Children</th>
<th>For Adolescents</th>
<th>For Parents</th>
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</table>

Source: Brewer S, et al.

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**TABLE 3.**

<table>
<thead>
<tr>
<th>Type of Cognitive Distortion</th>
<th>Example</th>
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<tbody>
<tr>
<td>Overestimation of the likelihood of dangerous events and catastrophic conclusions about the outcome. “If the sky gets dark, there will be a tornado, we’ll lose our house, and I’ll never be with my parents again.”</td>
<td></td>
</tr>
<tr>
<td>High perception of threat and low perception of control. “I know if a dog comes near me, it will bite me.”</td>
<td></td>
</tr>
<tr>
<td>Overgeneralization of small errors to complete failure and subsequent loss of self-esteem. “If I make an error on this worksheet, that proves I’m stupid.”</td>
<td></td>
</tr>
</tbody>
</table>

Source: Brewer S, et al.
proposed treatment algorithm for pediatric anxiety disorders in the primary care setting

- For mild to moderate anxiety, offer families psychoeducation, referrals to psychotherapy, and/or a list of workbooks that can be reviewed and implemented at home.
- For moderate anxiety, refer for psychotherapy. If inadequate benefit is achieved after 4 to 6 months, discuss and offer medication.
- For severe anxiety, initiate medication along with psychotherapy upon diagnosis of the anxiety disorder. First-line choices include fluoxetine, fluvoxamine, and sertraline.
- For any of the above levels of severity, assess parents for current anxiety disorders and refer for appropriate treatment, either directly or with the assistance of the parent’s primary care provider.

source: Brewer S, et al.

specific phobia

Phobias are common in children. In one study, up to one-third of parents described their children as having specific fears, most commonly of animals, blood/injections, and the dark;16 however, only 1% of those children met the severity criteria for a specific phobia. Parents typically wonder whether their child’s fears are normal or signs of a disorder; a primary care provider can either reassure the parents or recognize that the child’s fears are excessive and warrant treatment.

CBT for phobias involves gradual exposure to the feared object or experience. For example, a child with a disabling fear of dogs may spend time reading stories about dogs, watching movies about or looking at pictures of dogs, and learning about different colors, sizes, and breeds of dogs. A child may be encouraged to handle dog toys or touch a dog bed. He/she could then be exposed to particular dogs known to be gentle and slow-moving until the child’s comfort level increases.

In a recent study of children, exposure treatment was superior to psychoeducation alone.13 Primary care providers can guide parents through the theory and practice of exposure treatment. This process can help families move from feeling helpless in the face of a child’s phobia to courage and support.

social anxiety disorder

Also called social phobia (SP), social anxiety disorder typically begins in mid-adolescence. Prevalence estimates range from 3% to as high as 15% in US studies.18,19 Although many treatment studies group SP with other anxiety disorders, several authors suggest that the social skills deficits and social isolation in social anxiety disorder require specific social skills training as part of CBT.20,21

As in the other anxiety disorders, exposure is a key component to therapy for social anxiety disorder. Teens may be asked to generate a list of situations that provoke anxiety, ranked from least uncomfortable to most uncomfortable. They work with a therapist on each item, moving up the list. Examples include: social activities, such as making a phone call; initiating a conversation with an unknown staff member in the clinic; or rehearsing an oral presentation for school in front of an imagined audience.

Social anxiety disorder is often difficult to diagnose. Symptoms are frequently hidden behind behavioral problems, such as lack of participation in academic and social activities. Primary care physicians can help tease out the anxiety symptoms. Parents can help children practice exposure exercises at home and can assist their children by increasing their involvement in social activities such as sports, clubs, or church-based activities that allow more structured social skill development.

selective mutism

Children with selective mutism (SM) speak fluently in certain settings, generally at home and with close friends, but are mute in public; many of these children exhibit speech and language delays. SM is thought to share many characteristics with SP, and many young children with this problem develop symptoms consistent with SAD later in adolescence.22

Unlike the treatment of other anxiety disorders, in SM, the child’s lack of verbal responsiveness to the therapist often requires a more purely behavioral treatment approach.23 An exposure hierarchy is created, listing situations from least anxiety-provoking (eg, making noises in the presence of an unfamiliar person) to the most anxiety-provoking (eg, a speaking role in a school play). These tasks are then practiced in sequence starting with the lowest level of difficulty. Integration of the treatment into the educational setting is important, and parents can help bring the exposure techniques into the child’s school. Primary care providers can help rule out a concurrent developmental or language-based disorder and can also help educate schools about the disorder, as well as guide them in ways to participate in the treatment.

obsessive-compulsive disorder

As many as 80% of people with obsessive-compulsive disorder (OCD) develop it in childhood, with a mean age of onset at 10 years. Left untreated, this disorder can be disabling and lifelong.24
OCD is characterized by intrusive, troubling thoughts (obsessions) and repetitive, ritualistic behaviors (compulsions). For children, common obsessions include fears of harm or contamination, religious fears, and need for symmetry; associated compulsions may include excessive hand washing and cleaning, repetition of routines, reassurance seeking, and ordering and arranging. Research support for CBT in adult OCD is strong, and a similar literature is emerging in children. The treatment is called Exposure and Response Prevention (ERP) and includes three components: exposure, response prevention, and cognitive restructuring.

To illustrate, a child with anxiety about germs (obsession) and excessive hand washing (compulsion) will be asked to touch feared contaminated objects and suppress the hand washing urge for increasing lengths of time, until the urge is diminished. Exposures occur at increasing levels of difficulty. The child then creates a sequence of exposures, from least difficult to most difficult. Several treatment workbooks are available for children with OCD (Table 2, see page 543).

OTHER THERAPEUTIC APPROACHES

Many different therapeutic approaches are used to treat anxiety disorders. Case studies and a few small group studies have documented the effectiveness of psychodynamic techniques in anxiety disorders; however, few controlled studies exist. A 1994 review of psychodynamic psychotherapy cases in GAD showed improvements in children after 6 months of treatment. Of note, children with more focused anxiety symptoms (such as panic) were more likely to remit than were those with more pervasive symptoms.

Manualized parent management treatments have also been explored for anxiety disorders. A recent pilot study of four young children with SAD showed efficacy for Parent Child Interaction Therapy (PCIT), which focuses on the parent-child dyad. In this treatment, the therapist coaches the parent (often using a small microphone from behind a one-way mirror) while the parents and children interact. Unfortunately, this therapy, originally designed for children with oppositional and conduct problems, is not widely available.

Families should be encouraged to ask therapists about their theoretical orientation and style of treatment.

PSYCHOPHARMACOLOGICAL APPROACHES

Selective serotonin reuptake inhibitors (SSRIs) are the medication treatment of choice for anxiety disorders in children and are indicated in cases of moderate to severe anxiety and in cases of inadequate response to psychotherapy. Short-term efficacy of SSRIs has been documented for selective mutism, GAD, social phobia, and SAD. No controlled studies of SSRIs in child or adolescent panic disorder have been published, though several uncontrolled studies have shown benefit.

A recent meta-analysis of randomized controlled trials found a pooled responsiveness to SSRIs in pediatric and non-OCD anxiety disorders of 69% compared with a 39% response to placebo (number needed to treat [NNT] = 3). The response rate was smaller: 52% compared with 32% for placebo (NNT = 6). By comparison, the NNT for pediatric major depression was 10, indicating that SSRIs are more effective for pediatric anxiety than for depression. Controlled studies have used fluoxetine, fluvoxamine, paroxetine, and sertraline, and no data favor any particular agent. Generally, greater severity of illness and a positive family history of anxiety disorders predict a diminished response to medications.

The 2007 Practice Parameters from the American Academy of Child and Adolescent Psychiatry suggested a trial of discontinuing medication after a positive treatment lasting a year, with reinstitution of the medication in the event of relapse. Although there are no established SSRI dosing guidelines for children and adolescents with anxiety disorders, flexible dose studies suggest starting low, monitoring closely for side effects, titrating to a minimally effective dose, and then increasing the dose after 4 to 6 weeks if there is no continued significant improvement. The black box warning for SSRIs in children should be discussed with families.
Additional recent guidelines suggest that after two failed SSRI trials, clomipramine should be considered for OCD, and a serotonin-norepinephrine reuptake inhibitor (SNRI), such as venlafaxine, for non-OCID anxiety. Third-line agents include buspirone or mirtazapine.

**SPECIAL POPULATIONS**

Anxiety disorders are often comorbid with other psychiatric disorders, most commonly ADHD, major depression, learning disorders, and substance abuse. Autism and psychotic disorders are less common, but often present with high anxiety levels.

Between 28% and 33% of children with ADHD have comorbid anxiety disorders. Fortunately, SSRIs and stimulant medications generally can be prescribed together safely and effectively. More caution is advised when combining atomoxetine with SSRIs because of a small risk of drug-drug interactions. Overall, given the robust data concerning SSRI treatment for anxiety, this class is recommended for anxiety with ADHD despite a lack of systematic evidence.

Data from a large empirical study on outcomes with ADHD suggested a psychosocial treatment component (in this study, parental management training and social skills training for the children) in addition to stimulants for children with comorbid anxiety.

There is some evidence to support using modified CBT for children with autism spectrum disorders. SSRIs are commonly used to reduce compulsive behavior, difficulty with transitions, and/or more specific anxiety symptoms in children on the autistic spectrum; however, clinical practice suggests lower effectiveness for these agents and higher rates of side effects than in typically developing children.

Although anxiety symptoms have been shown to increase functional impairment in adolescents with depression, there is little specific information to guide treatment of comorbid anxiety and depression in children and adolescents. Some evidence suggests that untreated anxiety in young children may lead to depressive symptoms in adolescence. CBT and SSRIs remain first-line treatments for both depression and anxiety as single and dual diagnoses. A proposed treatment algorithm is outlined in Sidebar 2 (see page 544).

**CONCLUSION**

Anxiety disorders are commonly seen in pediatric practice. Psychotherapies are first-line treatments for mild to moderate anxiety, and CBT is an evidence-based therapy commonly used in these disorders. Medications are generally second-line treatments. Primary care physicians familiar with pediatric anxiety disorders can provide education to patients and their parents about the nature of these disorders and coach them in some of the key elements of recovery.

**REFERENCES**


