Anxiety and Separation Disorders

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Dr Bagnell has disclosed no financial relationships relevant to this article. This commentary does contain a discussion of an unapproved/investigative use of a commercial product/device.

Objectives

After completing this article, readers should be able to:

1. Describe the basic neurobiology of anxiety and fear.
2. Know the epidemiology of anxiety disorders in children and adolescents.
3. Differentiate separation anxiety disorder from other forms of school refusal and know how to approach it therapeutically.
4. Know the signs and symptoms of anxiety disorders in children and adolescents.
5. Understand the pharmacologic and nonpharmacologic management of anxiety disorders.

Definition

Anxiety is a physiologic response necessary for all human beings to survive. It helps protect individuals in dangerous situations and prepares them for challenges. Fears are the emotional response to a given stimuli or situation that is identified as threatening or scary. Fears are a normal part of development throughout childhood and adolescence, and they change throughout the life course (Table 1). Worries are the cognitive or thinking manifestations of fear and anxiety.

Anxiety disorders are diagnosed when fears, worries, or anxiety occur outside the range of normal developmental responses or are extreme and cause significant distress or impairment in functioning (school, home, social settings). In anxiety disorders, the fear response is no longer adaptive and is either out of proportion to a stressor or occurs when there is no threat. Due to the physiologic mechanisms activated with the anxiety and stress response in the body, individuals who have chronic anxiety and stress have a greater risk of both physical and mental health problems. Individuals who have anxiety often present to their primary clinicians with frequent physical complaints, not necessarily reporting anxiety. Parents also may report significant changes in behavior, with increased opposition and tantrums in certain situations that are triggered by anxiety.

Epidemiology

Anxiety disorders are the most common psychiatric illnesses in children and adolescents, affecting 8% to 10% of this population. (1) The age of onset of anxiety disorders can be as early as the preschool years, but the condition generally does not cause substantial impairment until school age. Anxiety disorders can occur throughout the lifespan, but most adult anxiety disorders begin by early adolescent years. (2) Girls have twice the likelihood of developing anxiety disorders as boys. (1) Anxiety disorders can cause family distress and dysfunction, school refusal and avoidance, and social isolation. Untreated anxiety disorders increase the risk of developing further anxiety disorders, depression, and substance abuse. The long-term social impact of untreated anxiety disorder includes decreased academic and occupational achievement and poorer social and relationship outcomes. Anxiety disorders can be accompanied by comorbid conditions, such as medical illnesses, secondary anxiety disorders, attention-deficit/hyperactivity disorder, disruptive behavior disorders, learning disorders, and mood disorders.

Anxiety disorders tend to run in families, and this finding is believed to be related to a combination of genetic predisposition and environmental factors. The reasons children develop an anxiety disorder are complex, but genetics, temperament, modeling, physiologic factors, and exposure to psychosocial and environmental stressors all can contribute. Some young children have temperament styles that cause them to be more anxious and

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Table 1. Common Childhood Fears

Infant/Toddler: Loud noises, dark, strangers, large objects, separation
Preschool: Separation, dark, monsters and ghosts, animals, storms
School age: Bodily injury and death, school performance, natural disasters and storms
Adolescent: Public speaking, social situations, school performance, health

avoidant in new or unfamiliar situations, also known as behavioral inhibition. This temperament style increases the risk of developing an anxiety disorder in childhood, (3) but many children have no identifiable predisposing factors and still develop anxiety disorders. Some individuals have a heightened physiologic arousal to stressful or anxiety-provoking situations, which also can increase the risk of developing an anxiety disorder. Maternal depression and anxiety have a significant influence on attachment, affecting the early environment and brain development of children. Maternal depression and anxiety can influence appropriate emotion regulation and stress responses, the effects of which can manifest as psychiatric illnesses, such as disruptive behavior disorders, anxiety disorders, and mood disorders. Environmental and psychosocial stressors, including school issues, social difficulties, family dysfunction, trauma, and loss, can contribute to anxiety disorders.

Pathogenesis

Anxiety is a physiologic response that is essential to the survival of human beings, involving fright/flight neurobiology and the stress response system. (4) The fright/flight response in the brain is regulated through sensory input (thalamus), context and memory (hippocampus), and emotion regulation (amygdala) systems, often referred to as components of the limbic system. This system is activated under stress and danger and prepares the body physiologically by activating the sympathetic adrenal medullary system and the hypothalamic-pituitary-adrenal axis. The prefrontal cortex helps to modulate this response in the brain and to modify fear responses.

In anxiety disorders, the fright/flight mechanism is activated in situations that are not a threat or overresponds in reaction to the stressor without appropriate response modulation. The release of stress hormones and adrenaline in the body inappropriately or in excess (given the situation) without appropriate regulation causes the feelings of fear and physical symptoms of anxiety (eg, stomachaches, nausea, headaches, increased heart rate, dizziness, sweating, shortness of breath, paresthesias, chest pain). Avoidance, tantrums, aggression, crying, trembling, somatic complaints, and seeking of reassurance all are common manifestations of anxiety. The avoidance and reliance on others to help manage fears may help to decrease anxiety temporarily but can become extreme and interfere with functioning at home, school, and socially and cause anxiety to worsen over time.

Clinical Aspects

Anxiety for some children may occur only in very specific situations or environments and for others can be more generalized. It is important to distinguish between appropriate and adaptive anxiety and stress and an anxiety disorder. An anxiety disorder is of long duration (usually lasting for many months), interferes substantially with functioning, and is out of synch with the magnitude of the stressor and developmental stage of the child. Adaptive anxiety and stress occur after a substantial change or transition (eg, starting school) and are expected responses to change or adversity. Anxiety disorders usually require intervention by a clinician; stress usually is of short duration (fewer than 2 weeks) and is likely to resolve spontaneously or be substantially ameliorated by social support or environmental modification alone.

Diagnosis of the many types of anxiety disorders is based on criteria outlined according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV TR). (5) Separation anxiety disorder and specific phobia are the most common childhood anxiety disorders, and social phobia (or social anxiety disorder) is the most common anxiety disorder in adolescence. Several anxiety disorder screening tools have been well validated for use in children and adolescents. The Multidimensional Anxiety Scale for Children (MASC) is a self-report screen for identifying anxiety disorders in children and adolescents. The Screen for Child Anxiety Related Emotional Disorders (SCARED) and the Spence Children's Anxiety Scale (SCAS) both have parent and self-report versions to screen for anxiety disorders in youth. These three scales are helpful for identifying youth at risk for anxiety disorders and for monitoring response to treatment. (6)

Separation Anxiety Disorder

Separation anxiety disorder is one of the most common anxiety disorders in school-age children. Separation anxiety is a normal stage of early development in preschoolers and during the initial few months of first attending school. It is considered a disorder if it continues past

these stages or causes substantial distress for the child and family and interferes with normal functional developmental tasks. Children who have separation anxiety disorder fear something bad will happen to them or someone they love (usually parent or caregiver) when they are apart. This fear causes children to avoid being out of sight from the parent or caregiver or to have substantial distress and anxiety when they are separated or in anticipation of separation. By definition, the duration of the anxiety must be at least 4 weeks. Anxiety symptoms can manifest as physical complaints on school mornings that usually do not occur on weekend mornings or as behavior outbursts. The symptoms generally improve if the feared situation (eg, school) is avoided.

Children who have separation anxiety disorder often are unable to be left with a babysitter, are not able to fall asleep on their own (parent falls asleep with them or they sleep in parents' room), and avoid school. The affected child demands substantial attention and time, which can lead to less parental time for other children in the family. Mothers usually are the caregivers demanded, which can result in a parent-child dyad that can exclude other members of the family to manage the child's anxiety. The child becomes dependent on the mother for reassurance and management of the anxiety and fear, thereby losing confidence in his or her ability to manage situations independently.

Parents of children who have separation anxiety describe loss of their adult relationships and occupational consequences because at least one parent is home with the child who has not gone to school. Children who have separation anxiety disorder miss out on social opportunities with friends because they do not want to be away from their home and parents. This disorder can cause substantial distress and dysfunction for the child and family and interfere with the development of age-appropriate independence and academic success. One of the important functional impairments commonly associated with this disorder is school phobia or school refusal. (7)

School refusal is described as a persistent pattern of not wanting to go to school, avoidance of school, or high distress associated with going to school. Although it is not a specific psychiatric diagnosis, school refusal can be a symptom of underlying psychiatric illness, most commonly an anxiety disorder. School refusal often is a complex problem that requires genuine understanding of individual and family factors to develop a successful treatment approach. One of the key treatment goals in school refusal derived from separation anxiety disorder is getting the child back into the school environment as soon as possible.

It is important to differentiate school refusal related to anxiety from conduct problems and subsequent truancy. Youth who exhibit truancy generally do not report other symptoms of anxiety or issues of separation from parents. They are not at school, but the reason is not that they need to be with a parent or caregiver due to fear and anxiety. Truancy is characterized by a pattern of skipping school, lack of concern or embarrassment about not attending school, refusal to do any school work, and frequently hiding school absences from parents.

Specific Phobia

Specific phobia is the most common type of anxiety disorder, but it often is managed by avoidance of the specific feared situation and less often presents for treatment. Many people have fears, with common ones including heights, spiders, snakes, blood, and needles. A specific phobia is fear of an object or situation that is not developmentally expected and is out of proportion to the actual danger and manifests as an anxiety response that is extreme and unreasonable (eg, avoidance or intense anxiety and panic). The specific fear must be present for at least 6 months and cause the child substantial distress or impairment in functioning to be considered a true phobia. Although many specific phobias do not come to medical attention, fear of needles in a child requiring vaccination and fear of choking with restriction of oral intake are two examples of situations requiring treatment due to associated health risks. Specific phobias sometimes are preceded by a traumatic event (such as becoming afraid of dogs after being bitten by a dog). Onset also can be associated with genetic predisposition, increased stress in the environment, and modeling behaviors in the environment (such as a parent's fear response to a situation).

Social Phobia

Social phobia (social anxiety disorder) is the most common anxiety disorder in teens, likely because of the increased importance of peers and social context in adolescent development. Youth who suffer from social anxiety disorder have severe anxiety in social situations that is extremely distressing and can lead to avoidance and substantial deterioration in overall function. Youth who have social anxiety disorder describe an overwhelming fear of drawing attention to themselves or saying something stupid or embarrassing around others, especially peers. This fear can lead to not being able to ask questions in class, not being able to talk in front of others,

avoidance of the phone, not ordering in restaurants, and not using public bathrooms. Severe social anxiety disorder can result in isolation to the point of rarely leaving home, not having contact with friends, and not attending school.

Generalized Anxiety Disorder

Generalized anxiety disorder can have its onset in childhood and adolescent years. The anxiety centers around everyday events and responsibilities in the child's life, such as school, friends, health, future, and finances, but the distress and worry are excessive, unrealistic, or unhelpful and persist for at least 6 months. Children may report feeling tense and irritable; have frequent muscle aches and pains; and experience poor sleep, tiredness, and difficulty concentrating due to the intensity and chronicity of the worried thoughts and feelings. Affected individuals may have academic performance anxiety that interferes with starting and completing assignments and taking tests due to fear of failure or that the result will not be good enough. A pattern of avoidance can develop to prevent a feared event or the youth may seek excessive reassurance from others that nothing bad will happen, leading to increased anxiety, decreased enjoyment, and avoidance of everyday activities.

Obsessive Compulsive Disorder

Obsessive compulsive disorder (OCD) is an anxiety disorder involving obsessions (distressing intrusive thoughts or images) and/or compulsions (repetitive behaviors or rituals performed to relieve distress and anxiety associated with the obsessions) that are unwanted, cause substantial anxiety, and interfere with functioning (consuming more than 1 hour per day). The most common obsession themes are illness, contamination, and danger-related, and the most common compulsions are cleaning, washing rituals, and checking behaviors. OCD does not always involve observed compulsions, and the individual can suffer from repetitive images or thoughts (eg, of violent, religious, or sexual nature) that are extremely distressing. Children who have OCD generally have poor insight into their illness and may not recognize the obsessions and compulsions as irrational. They may have trouble going to school, find they are unable to concentrate in class, have difficulty getting out of the house or getting dressed, and have decreased food intake related to obsessions and compulsions. Parents commonly are involved in OCD routines and compulsions with children and teens, and the illness can have a substantial negative impact on family functioning.

Table 2. Panic Attack Symptoms

- Chest pain and discomfort
- Heart racing and palpitations
- Shortness of breath
- Feeling of choking
- Nausea
- Shaking and sweating
- Terror
- Numbness and tingling of extremities
- Dizziness and lightheaded
- Fear of dying
- Derealization (patient perceives outside world as unreal)
- Depersonalization (patient perceives self as unreal)
- Perceptual changes

Panic Disorder

Panic disorder usually has its onset in adolescent years but can occur in children. Although not the most common anxiety disorder, this illness can become debilitating rapidly. Children who have panic attacks (Table 2) most commonly present initially to an emergency department or urgent care center because the physical symptoms are acute and escalate quickly, similar to having a heart attack, asthma attack, or even a stroke or seizure. Panic attacks can occur in any anxiety disorder or high-stress situation when the patient is presented with a feared stimulus. However, in panic disorder, the attacks occur "out of the blue" without clear precipitants or warning. Such unpredictability causes extreme fear and anxiety about having another attack, particularly in a place where others might see them or where escape or help might not be possible. Affected individuals avoid any situation they associate with having a panic attack as well as places where they fear that if they did have an attack they would not be able to manage it or get help. Teens who have panic disorder may stop all extracurricular activities, refuse to go anywhere without their parents, and stop going to school (or have extreme distress with school attendance).

Management

Anxiety disorder treatment in children and adolescents is one of the best-researched areas in child and adolescent mental health. Treatment of childhood anxiety includes both specific and nonspecific treatment approaches. Specific approaches are evidence-based treatments for anxiety disorders and include structured psychotherapies (cognitive behavioral therapy [CBT]) and pharmacotherapy (selective serotonin reuptake inhibitors [SSRIs]).

Table 3. Therapeutic Plan for Managing Separation Anxiety Disorder With School Refusal

Education: Explain anxiety symptoms and how avoidance and reassurance-seeking related to fears and worries makes anxiety worse.
Coping Strategies: Review healthy living strategies, including good sleep, regular exercise, maintaining a routine, and healthy eating.
Cognitive: Have the child identify realistic and helpful thoughts. For example, "I feel sick to my stomach because of my anxiety. It always gets better once I am in school. I can handle this and I have to go to school. I like seeing my friends and I have fun once I am there."
Behavioral: Teach relaxation strategies (deep breathing, muscle relaxation, visual/mental imagery) to use at times of anxiety, such as when preparing to go to school.
Exposure: Develop a plan for school attendance. Youth need to take small steps in decreasing avoidance of anxiety situations. If they have not been attending school for more than a few weeks, school supports and gradual increase in school time is recommended. The goal is to tolerate the anxiety and make it through the school time successfully on their own. School staff can be helpful in finding a place youth can go in the school if they feel anxious. Rewards can be put in place for school attendance, and any indirect reinforcement occurring at home should be minimized (eg, no video games or computer time during school hours).

Nonspecific treatments include activities that decrease stress, improve mood, and support well-being, including sleep hygiene, healthy eating, regular exercise, predictable routine, and social supports.

Standard evidence-based anxiety disorder treatment guidelines recommend the use of CBT as first-line treatment for children who have anxiety disorders when this therapy is available. (8)(9) Many CBT programs and books are available, and the skills often are taught to both parents and child to support the implementation of the strategies and decrease indirect reinforcement of anxious behaviors and thinking. CBT includes psychoeducation and cognitive and behavior skills training to help individuals understand and better manage anxiety. Anxious children think catastrophically or overexaggerate the negative outcomes of situations and generate avoidant solutions, leading to significant distress and avoidance behaviors.

The cognitive strategies include identifying anxiety symptoms and somatic symptoms related to anxiety, developing realistic thinking, and problem-solving. Behavioral strategies consist of relaxation and stress management techniques as well as gradual exposure to the feared situation to modify the anxiety response through systematic desensitization and habituation (Table 3). Many children experience improvement in their anxiety with CBT alone and do not require medication. In some cases, children and teens are unable to learn and use CBT strategies to manage their anxiety without pharmacologic treatment.

Medications help decrease overall anxiety symptoms and panic response and should be considered if the anxiety is moderate to severe. The best evidence, supported by both meta-analyses (10) and a Cochrane review, (11) for pharmacologic treatment of childhood anxiety disorders favors the SSRIs. (9) Although some SSRIs have been approved for treating children who have depression (fluoxetine, escitalopram) and OCD (fluoxetine, fluvoxamine, sertraline), SSRIs do not have United States Food and Drug Administration (FDA) approval for the treatment of anxiety disorders. However, considerable evidence supports their efficacy. CBT in combination with an SSRI is recommended for moderate-to-severe anxiety disorders. (9)(12) Randomized, controlled trials of SSRI medications (sertraline, fluoxetine, fluvoxamine, and paroxetine) show effectiveness in treating children and adolescents who have anxiety disorders. (9)(10)(11)

Evidence is insufficient to recommend non-SSRI antidepressants such as venlafaxine for treatment of pediatric anxiety disorders. (9)(10)(11) Strong evidence supports the efficacy of clomipramine in treatment of OCD, but the adverse effect profile does not support its use as first-line treatment. (9)(11) Benzodiazepines have been used for acute management of anxiety, but there is no evidence of their effectiveness for treatment of anxiety disorders in children. (9)(11)

The risk/benefit ratio of initiating a medication trial should be considered in each situation, and the adverse effects should be disclosed fully, including the FDA black box warning for all antidepressants (the rare but increased risk for youth of experiencing suicidal ideation and behaviors while taking antidepressant medications). Initial doses should be minimal, with very gradual increases, as tolerated, according to symptom response and adverse effects, remembering that the medications take several weeks to start working and improvement continues for several months at a given dose. Although suicidal ideation and suicide attempts are not as common in childhood anxiety disorders as in depressive disorders,

Summary

- Based on strong research evidence, anxiety disorders are the most common psychiatric illness in children and adolescents. (1)(2)
- Based on some research evidence, the neurobiology of anxiety disorders is linked to dysregulation in the fear and stress response system in the brain. (4)
- Based on strong research evidence, separation anxiety disorder is one of the most common causes of school refusal, and addressing both the function of the behavior and returning to school as soon as possible is recommended. (7)
- Based on strong research evidence, CBT is the first-line treatment for anxiety disorders in children and adolescents. (8)(9)
- Based on strong research evidence, SSRIs are effective for treatment of moderate-to-severe anxiety disorders in children and adolescents. (9)(10)(11)(12)

they may occur, and children should be monitored. (10) Medication should be viewed as helping the child decrease overall anxiety symptoms to allow success in learning and using anxiety management strategies. Given the adverse effects and risks of SSRI medication in children and the limited long-term safety data of these medications in the developing brain, medication intervention should be combined with CBT and healthy living strategies, with the goal of trying to taper the child off the medication within 1 year if he or she is doing well.

Prognosis

Anxiety has the best chance of improving when both youth and family are educated about anxiety disorders and when there is support of the treatment plan. Numerous randomized, controlled trials support CBT and SSRIs as effective treatments for pediatric anxiety disorders. (8)(9)(10)(11)(12) The goal of treatment is to ameliorate symptoms and reduce anxiety, with improvement in overall function.

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Parent Resources From the AAP at HealthyChildren.org

The reader is likely to find material to share with parents that is relevant to this article by visiting this link: http://www.healthychildren.org/English/health-issues/conditions/emotional-problems/pages/default.aspx.

PIR Quiz

Quiz also available online at: http://pedsinreview.aappublications.org.

NOTE: Beginning in January 2012, learners will only be able to take *Pediatrics in Review* quizzes and claim credit online. No paper answer form will be printed in the journal.

18. When evaluating anxiety in children, it is important to distinguish adaptive anxiety from an anxiety disorder. Which of the following clinical features is *more* likely to be indicative of an anxiety disorder than adaptive stress and anxiety?

    A. Anxiety is likely to resolve spontaneously.
    B. Anxiety lasts for 2 weeks or less.
    C. Anxiety occurs after a key transition event, such as a new sibling or new school.
    D. Daily functioning is substantially impaired.
    E. Environmental modification is often sufficient to resolve symptoms.

19. Which of the following statements regarding anxiety disorders is true?

    A. Anxiety disorder is best defined as a physiologic response to a physical threat.
    B. Boys develop anxiety disorders more often than girls.
    C. Comorbid conditions such as mood disorders and learning disorders are common.
    D. Most anxiety disorders begin in middle adulthood.
    E. There is no genetic predisposition for developing an anxiety disorder.

20. You are evaluating a 4-year-old boy for anxiety. His mother reports that since beginning school 5 months ago, he refuses to separate from her when she takes him to school. In addition, he has begun to insist that she sleep with him and cries for hours if he is left with a babysitter. Which of the following is the *most* likely diagnosis?

    A. Adaptive anxiety and stress.
    B. Generalized anxiety disorder.
    C. School phobia.
    D. Separation anxiety disorder.
    E. Social phobia.

21. A 16-year-old girl presents with her second episode of severe chest pain and shortness of breath in the past 4 weeks. Both episodes occurred at school without warning and were not associated with exercise. The previous episode resolved spontaneously. She admits that she is afraid that she will have an attack that does not resolve. She is clearly fearful, but results of her heart and lung examinations, chest radiography, and electrocardiography are normal. Which of the following is the *most* likely cause of her symptoms?

    A. Generalized anxiety disorder.
    B. Obsessive compulsive disorder.
    C. Panic disorder.
    D. School phobia.
    E. Social phobia.

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