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ANXIETY DISORDERS

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Introduction

Anxiety disorders are those disorders that cause children and adolescents to feel frightened, distressed and uneasy for no apparent reason. Although most youth experience fears and worries which can be labeled as anxiety, those which are present in anxiety disorders actually impede daily activities or functioning (Christophersen & Mortweet, 2001). When symptoms of both anxiety and impairment are evident, an anxiety disorder may be present.

Problems related to anxiety are relatively common in youth, with the lifetime prevalence rates of clinical problems ranging from 6 to 15% (Silverman & Ginsburg, 1998; U.S. Public Health Service, 2000). The prevalence of anxiety disorders in youth is higher than almost all other mental disorders (U.S. Department of Health and Human Services, 1999). Youth with anxiety problems experience significant and often lasting impairment, such as social problems, family conflict, and poor performance at school and work (Langley, Bergman, McCracken & Paiacentini, 2004). Anxiety often occurs with other disorders, including behavioral problems, depression and even additional anxiety disorders (Albano, Chorpita & Barlow, 2003). Thus, youth with anxiety disorders can experience substantial problems (Costello, Angold & Keeler, 1999; Pine, Cohen, Gurley, Brook & Ma, 1998).

Categories

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* (2000) defines the anxiety disorders which both children and adolescents experience. Separation anxiety disorder (SAD) is the only one which applies specifically to children. Other diagnoses may be applied to both children and adolescents if their behavior is consistent with the criteria set forth in the *DSM-IV*. Table 1 outlines anxiety disorders affecting youth, except for Obsessive-compulsive Disorder (OCD), which is described in a separate section.

Research suggests that there are patterns of gender differences, depending on the disorder. For example, more females are diagnosed with specific phobia than males (Beidel & Turner, 2005). For social anxiety disorder and GAD, rates are similar in childhood but, during adolescence, females having these problems outnumber males (Beidel & Turner). Data on gender differences for SAD, PTSD, and panic disorder have been less conclusive (Beidel & Turner).

Causes and Risk Factors

Much attention has been given to the risk factors for developing an anxiety disorder in childhood (Albano, Chorpita & Barlow, 2003). Some researchers have described a "triple vulnerability" model of anxiety development (Barlow, 2002). This model describes how three separate risk factors work together to increase the child's chance of having an anxiety problem. First, a child may have some biological predisposition to anxiety; that is, some children are more likely to experience higher amounts of anxiety than others (Eaves et al., 1997; Eley et al., 2003). The second risk factor is a psychological vulnerability related to "feeling" an uncontrollable/ unpredictable threat or danger. Thus, some children may be more likely than others to experience a situation as threatening. There are many reasons a child may experience the world in this way, including family or other social modeling, e.g., peers. Finally, the third risk factor is direct

experiences with anxiety-provoking situations. This means that a child is at risk for anxiety problems if that child is more anxious or inhibited by nature, interprets many situations as threatening, and has already experienced anxiety-provoking situations.

It is also important to note that it has not been determined whether biology or environment plays the greater role in the development of these disorders.

Table 1

DSM-IV Anxiety Disorders Affecting Children & Adolescents

Disorder	Description
Separation Anxiety Disorder (SAD)	A disabling and irrational fear of separation from caregivers
Social Anxiety Disorder/Social Phobia	A disabling and irrational fear of social encounters with non-family members
Post-traumatic Stress Disorder (PTSD)	Re-experiencing, avoidance, and hyper-arousal symptoms following a traumatic event
Specific Phobias (SP)	A disabling and irrational fear of something that poses little or no actual danger
Generalized Anxiety Disorder (GAD)	Chronic, exaggerated, and overwhelming worries about multiple everyday, routine life events or activities
Panic Disorder	Chronic fears of having panic attacks after having at least one uncued panic attack

Source: American Psychiatric Association (APA), 1994.

Assessment

Any attempt to define problematic anxiety in youth must clearly define what constitutes normal anxiety. The information discussed in the following paragraphs is obtained from a personal communication with Michael Southam-Gerow and Shannon E. Hourigan on May 11, 2009. Anxiety and fear are defined as a complex combination of three types of reactions to a perceived threat:

1. overt behavioral responses, e.g., running away, closing one's eyes, or trembling voice;
2. physiological responses, e.g., changes in heart or breathing rate, muscle tension, or upset stomach; and
3. subjective responses, e.g., thoughts of being scared or thoughts of bodily harm.

Another important consideration in assessing anxiety disorders in youth is development. For example, separation anxiety is a normal phenomenon for an 18-month old child. Similarly, fear of the dark is normal for children around age four. Thus, assessing anxiety in children requires knowledge of normal child development. Because anxiety is a natural and normal human experience, assessment of anxiety in youth requires attention to the level of impairment that a youth experiences because of anxiety. Accordingly, intense levels of anxiety do not constitute anxiety disorders without the presence of impairment.

Assessment for anxiety disorders should include a medical history and a physical examination within the past 12 months, with special focus on conditions that may mimic anxiety disorders (American Academy of Child & Adolescent Psychiatry [AACAP], 1997). As noted by Huberty (2002), in diagnosing anxiety disorders, the provider should ensure that youth meet the appropriate diagnostic criteria, as set forth in the *DSM-IV* (2000). The provider must also identify those symptoms especially pertinent to children and adolescents. Structured diagnostic interviews can be extremely useful in assessing youth, particularly when administered independently to the youth and the parent.

A thorough assessment is critical since there are numerous anxiety-related problems and because anxiety is often comorbid with other disorders. Two particularly effective diagnostic interviews—the Anxiety Disorders Interview Schedule for Children (ADIS-C) and the Schedule for Affective Disorders and Schizophrenia-Children's Version (K-SADS)—have demonstrated strong psychometric characteristics for anxiety disorders across many studies (Southam-Gerow & Chorpita, 2007). Assessing anxiety may require using multiple methods to gather information in order to understand a child or adolescent's behavior across the many settings in which he functions (e.g., school and home). Typically, questionnaires and interviews are used to assess anxiety. Questionnaires that measure anxiety disorders include the Revised Children's Anxiety and Depression Scale, the Screen for Children's Anxiety and Related Disorders (SCARED), and the Spence Children's Anxiety Scale (SCAS). The Multidimensional Anxiety Scale for Children (MASC) does not assess *DSM* disorders. All four measures have strong psychometric profiles (Southam-Gerow & Chorpita).

Comorbidity

Youth diagnosed with an anxiety disorder may also have other mental health disorders. Studies have revealed anxiety disorders to be comorbid with attention deficit hyperactivity disorder (ADHD), conduct disorder (CD), depression, and dysthymia (Southam-Gerow & Chorpita, 2007). In addition, studies show that one-third of youth having one anxiety disorder meet the criteria for two or more anxiety disorders (AACAP, 1997). Further, it has been found that anxiety appears to precede depression; research indicates that between 28 and 69% of youth with anxiety disorders have comorbid major depression (AACAP).

Substance use disorder may also co-occur with anxiety disorders (Compton, Burns & Egger, 2002; Grant et al., 2004). Some research has found that older youth may use alcohol and other substances to reduce the symptoms of anxiety (Jellinek, Patel & Froehle, 2002). Use of substances, however, can ultimately worsen symptoms and certain substances may actually generate symptoms of anxiety.

Evidence-based Treatments

The treatment of anxiety disorders in youth is usually multimodal in nature. Wide-ranging treatments have been described in the literature, but only two primary treatments have been designated as evidence-based: Cognitive Behavioral Therapy (CBT) and treatment with selective serotonin reuptake inhibitors (SSRIs). It is worth noting that CBT has been tested and found to be effective for anxiety disorders in youth in over 25 separate randomized trials.

For this review, evidence-based treatments are divided into three groups: What Works, What Seems to Work, Not Adequately Tested. These treatments are outlined in Table 2.

Table 2

Summary of Treatments for Youth with Anxiety Disorders

What Works	Description
Behavioral & Cognitive Behavioral Therapy (CBT)	Treatment that involves exposing youth to the (non-dangerous) feared stimuli with the goal of the youth's learning that anxiety decreases over time
Selective serotonin reuptake inhibitors (SSRI) Treatment	Treatment with certain SSRIs
What Seems to Work	Description
Educational support	Psychoeducational information on anxiety provided to parents, usually in a group setting
Not Adequately Tested	Description
Play Therapy	Therapy using self-guided play to encourage expression of feelings and healing
Non-SSRI Medication	Treatment with antihistamines, neuroleptics, or herbs
Psychodynamic Therapy	Therapy designed to uncover unconscious psychological processes to alleviate the tension thought to cause distress
Biofeedback	Minimal support

Sources: Chorpita & Southam-Gerow, 2006; Silverman, Pina & Viswesvaran, 2008; Bernstein & Kinlan, 1997; Coghill, 2002; Kearney & Silverman, 1998; Velosa & Riddle, 2000; AACAP, 1997; AACAP 2000; Walkup et al., 2008.

Psychological Treatments

The many psychological treatments available to treat youth with anxiety disorders are described in the paragraphs which follow.

Behavioral and Cognitive Behavioral Therapy

Behavioral and Cognitive Behavioral Therapy (CBT) is the most studied and best supported treatment for helping youth diagnosed with an anxiety disorder (Chorpita & Southam-Gerow, 2006; Silverman, Pina & Viswesvaran, 2008). These approaches, though diverse, typically include what is called exposure therapy. Exposure treatment involves exposing youth to the non-dangerous situations that they fear, with a focus on having them learn that their anxiety will decrease over time. As an example, youth afraid of talking to peers

would practice conversations numerous times until they felt less anxious about doing so. Often, exposure therapy involves using a hierarchy, or fear ladder, such that youth may be exposed to moderately stressful situations and work towards more difficult ones. This approach allows these youth to experience mastery and increases their self-confidence.

Other elements common to behavioral and CBT include psychoeducation, relaxation, and cognitive skills. Psychoeducation entails teaching older youth and parents about the effects of anxiety, how to distinguish between problematic and non-problematic anxiety, and how to overcome problematic anxiety. Psychoeducation also teaches youth and parents to monitor levels of anxiety across a variety of situations. Both forms of therapies often use praise and/or rewards to encourage the youth's progress in exposure of tasks. Both also include relationship-building between the parent and child. Relaxation entails teaching youth how to relax through breathing exercises or by alternating muscle tension and release. Cognitive skills involve teaching youth how to observe and change their thinking in order to then change how they feel and to reduce their feelings of anxiety.

Most versions of behavioral therapy and CBT include parental involvement. Some versions even involve the parents attending all sessions with their child. In these approaches, parents learn the same skills as their children so that they can help them outside the therapy session. In addition, the parent is involved in the exposure situations.

Behavioral therapy and CBT, both of which have been found to be helpful to youth of all ages, can be administered in individual and group settings (Chorpita & Southam-Gerow, 2006; Silverman, Pina & Viswesvaran, 2008). They have also been delivered with good effects in schools, clinics, hospitals, daycare centers, and homes. Evidence supporting CBT has been found across a variety of racial and ethnic groups, including Caucasian, African American, Latino, Asian, and Multiethnic.

Other Therapies with Research Support

There are several other treatments with modest levels of support. For example, educational support treatment, which involves providing support and education about anxiety to parents and youth with anxiety problems, has shown some promise in a several studies. There is also some support in one study for the use of hypnosis in youth having high levels of test-taking anxiety (Chorpita & Southam-Gerow, 2006).

Pharmacological Treatments

Before the mid-1990's, evidence about the effectiveness of the variety of medications (e.g., tricyclic antidepressants, benzodiazepines) used to treat most childhood anxiety disorders was mixed (Bernstein & Kinlan, 1997; Coghill, 2002; Kearney & Silverman, 1998; Velosa & Riddle, 2000). The AACAP has suggested that pharmacotherapy should not be used as the sole intervention when being used to treat anxiety disorders in youth, but used instead in conjunction with behavioral or psychotherapeutic treatments (1997). One recent, large, multi-site controlled study found that, in the treatment of GAD, SAD, and social anxiety disorder, a combination of pharmacotherapy and CBT was superior to either treatment alone or a placebo (Walkup et al., 2008).

Unproven Treatments

There are treatments that either are unproven in treating anxiety disorders or lack research supporting their effectiveness for youth (e.g., research on the use of play therapy or psychodynamic therapy). There is also minimal support for the use of biofeedback. Although there is very little support for these treatments at this time, future research may demonstrate their positive effects on youth with anxiety.

Regarding psychopharmacological interventions, there are several medications with either little evidence or with high levels of risk. For example, there are no controlled studies evaluating the efficacy of antihistamines for anxiety disorders in youth (AACAP, 1997). Furthermore, due to the risks of impaired cognitive functioning and tardive dyskinesia (an involuntary movement disorder caused by the long-term use of neuroleptic drugs), neuroleptics are not recommended for treating anxiety symptoms in youth who do not have a co-occurring diagnosis of Tourette's syndrome or psychosis (AACAP, 1997; AACAP, 2000). The benefit of herbal remedies is also considered unproven.

Cultural Considerations

The understanding of anxiety disorders may vary significantly from culture to culture. Studies with participants from diverse ethnic backgrounds have become more common in recent years; however, literature in the field is greatly lacking (Austin & Chorpita, 2004; Safren et al., 2000). For instance, some

studies have found differing levels of anxiety symptoms between African American and Caucasian youth, although the differences have not been consistent across studies (Compton, Nelson & March, 2000; Last & Perrin, 1993).

Culture and ethnicity are important considerations for the clinician assessing anxiety in youth because of how child behaviors are perceived within a cultural group. For instance, not all cultural groups use the term "anxiety". Chen, Reich & Chung (2002) noted that, within some Asian populations, the term "anxiety" is rarely used, whereas terminology such as "being nervous" or "being tense" are more commonly used. The cultural and ethnic background of a family will impact emotional development, and not all cultures share the same views on emotional expression and regulation (Matsumoto, 1990; Fredrickson, 1998; Friedlmeier & Trommsdorff, 1999). For example, Asians may describe symptoms of anxiety as physical complaints, since physical ailments are more acceptable. Furthermore, the authors claim people in those cultures may understand their symptoms as a defined illness known only to that specific native culture, which can make diagnosis more complex.

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Additional Resources

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Organizations

American Academy of Child & Adolescent Psychiatry (AACAP)

Anxiety Disorders Resource Center

<http://www.aacap.org/cs/AnxietyDisorders.ResourceCenter>

Anxiety Disorders Association of America (ADAA)

<http://www.adaa.org>

Mental Health America (MHA) (formerly National Mental Health Association)

<http://www.nmha.org/go/information/get-info/anxiety-disorders/anxiety-disorders-and-kids/anxiety-disorders-and-kids>

National Anxiety Foundation

<http://www.lexington-on-line.com/naf.html>

National Institute of Mental Health (NIMH)

<http://www.nimh.gov/health/topics/anxiety-disorders.index.html>

Social Phobia/Social Anxiety Association

<http://www.socialphobia.org>

U.S. Department of Health and Human Services

Substance Abuse and Mental Health Services Administration (SAMHSA)

<http://mentalhealth.samhsa.gov/publications/allpubs/ca-0007/default.asp>

Office of the Surgeon General

Mental Health: A Report of the Surgeon General

<http://www.surgeongeneral.gov/library/mentalhealth/chapter3/sec6.html>

Virginia Resources

Family Help in Virginia

Focus Adolescent Services

<http://www.focusas.com/Virginia.html>

University of Virginia Health System

http://www.healthsystem.virginia.edu/uvahealth/peds_mentalhealth/anxhub.cfm

Virginia Commonwealth University (VCU)

Center for Psychological Services and Development

Anxiety Clinic

<http://www.has.vcu.edu/psy/cpsd/anxiety/index.html>

VCU Medical Center

Virginia Treatment Center for Children

<http://www.vcuhealth.org/vtcc>

Virginia Polytechnic Institute and State University (VA Tech)

Psychological Services Center

<http://www.psyc.vt.edu/centers/psc>

Child Study Center

<http://www.psyc.vt.edu/centers/csc>