
Issues in Differential Diagnosis: Phobias and Phobic Conditions

2

Marjorie Crozier, Seth J. Gillihan, and Mark B. Powers

The purpose of this chapter is to summarize the current status of research with respect to the clinical features, course, and prognosis of specific phobia, social phobia, panic disorder, and separation anxiety disorder (SAD) in children. In this context we will consider the salient factors involved in the differential diagnosis of these four disorders. Finally we will provide some directions for improvement in the assessment of these disorders in children.

Specific Phobia

Description of the Disorder

Specific phobias are the most prevalent anxiety disorder according to nearly all epidemiological studies of the general population (e.g., Kessler et al., 2005). Defined in Diagnostic and Statistical Manual-IV-TR (DSM-IV-TR; American Psychiatric Association, 2000) as intense fears of specific objects or situations, specific phobias (formerly simple phobia in DSM-III-R) can develop in response to nearly anything (Marks, 1987) (Table 2.1). Commonly occurring fears include animals, heights, enclosed spaces, or darkness. Because children naturally experience developmentally appropriate fears, it is important to

distinguish phobias from those fears that are typical for the developmental stage of the child. A phobia diagnosis should be considered when the fear is excessive and causes marked interference in the child's life. In children the fear must be present for at least 6 months. According to DSM-IV-TR, specific phobia should be diagnosed when all of the following criteria are met: These symptoms should not be better explained by other mental disorders, such as obsessive-compulsive disorder, posttraumatic stress disorder, social phobia, or panic disorder.

The criteria listed above are those for diagnosing specific phobias in children and have been slightly modified from the criteria for diagnosis in an adult. The ICD-10 has similar diagnostic criteria but identifies fewer subtypes. The DSM-IV-TR categorizes specific phobias into five subtypes: Animal type (e.g., spiders, dogs, snakes), natural environment type (e.g., storms, heights, or water), blood-injection-injury type, situational type (e.g., bridges, elevators, flying), and another category for fears that do not fit into one of these specific categories (e.g., choking, vomiting, loud sounds, costumed characters).

Avoidance behaviors in children often take the form of tantrums, crying, and hiding. When the feared stimuli are present, the severity of the fear response and avoidance behaviors indicate the extent of the child's distress. Often the child is brought in for treatment not because of the fear itself but rather due to severity of the disruption to the family's daily routine as a result of the avoidance and distress-related behaviors.

M.B. Powers (✉)
Anxiety Research and Treatment Program, Southern
Methodist University, Dallas, TX 75206, USA
e-mail: Trauma@Smu.Edu

Table 2.1 DSM-IV-TR diagnostic criteria for specific phobia

Marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation (criterion A)

Exposure to the phobic stimulus almost invariably provokes an immediate anxiety reaction, which might reach the severity threshold of a situationally bound panic attack. In children the anxiety reaction may be expressed in crying, tantrums, freezing, or clinging (criterion B)

The person recognizes that the anxiety is excessive or unreasonable, although this recognition is not always present in children (criterion C)

The situations or objects are avoided or endured with intense anxiety or distress (criterion D)

The avoidance, anticipatory anxiety, or distress in the feared situations(s) interferes significantly with the person's normal routine, academic functioning, or social activities or relationships, or there is marked distress about having the phobia (criterion E)

Note. Adapted from American Psychiatric Association (2000, pp. 410–411)

Epidemiology

Prevalence. In international community samples, prevalence rates for specific phobias in children and adolescents are 2.6–9.1% with the average near 5% (Ollendick, King, & Muris, 2002). Some of the higher prevalence rates have been found in the United States but it is likely that these differences are a result of variations in assessment methods. Along with generalized anxiety disorder and SAD, specific phobias are one of the more commonly diagnosed anxiety disorders in children (Costello & Angold, 1995). Additionally, Costello and Angold found that specific phobias in a community sample occur more frequently without comorbid diagnoses than any other anxiety disorder in children. Community samples have also shown that adults with a specific phobia are significantly more likely to have had a specific phobia as an adolescent but no other previous anxiety diagnoses (Gregory et al., 2007).

Comorbidity. Clinical samples have shown different rates of co-occurring anxiety and

internalizing disorders in children. A sample of children referred to an outpatient anxiety center showed a prevalence rate of 15% with specific phobia as the primary diagnosis; 64% of children with a primary specific phobia met diagnostic criteria for a secondary diagnosis (Last, Strauss, & Francis, 1987). A similar study found that 72% of children between the ages of 6 and 16 that were referred to a phobia treatment clinic had at least one comorbid diagnosis (Silverman et al., 1999); some of the more common comorbid conditions included an additional specific phobia (19%), separation anxiety (16%), and ADHD (6%) (Silverman et al., 1999). Additionally, there has been some evidence that phobias, specifically fears of the dark, in children and adolescents increase the likelihood of a co-occurring major depressive disorder (Pine, Cohen, & Brook, 2001).

Cultural differences. The rates for specific phobias have been reported to be higher in African Americans and Mexican Americans born in the US when compared to Caucasians (Karno et al., 1989; Robins & Regier, 1991). There have also been higher rates of specific phobias reported in Brazil than in the US (Da Motta, de Lima, de Oliveira Soares, Paixao, & Busnello, 2000). Lower risk for specific phobias has been reported among Asians and Hispanics (Stinson et al., 2007) compared to Western countries. A number of factors, including differences in operational definitions and ages sampled, may have contributed to differences in sampling, so it is difficult to determine whether these results reflect true cultural differences or methodological differences.

Age and gender differences. Studies indicate that the prevalence of specific phobias tends to be higher in children and adolescent than in adults (Emmelkamp & Wittchen, 2009). Most adults that meet diagnostic criteria for a specific phobia report an early age of onset but little longitudinal research has been done to confirm these reports. However, there is research suggesting that the typical age of onset for specific phobia is between

10 and 13 years of age (Strauss & Last, 1993). For animal, environmental, or blood-injury-injection type phobias the age of onset is typically 12 years or younger (Becker et al., 2007; Kessler et al., 2005; Wittchen, Lieb, Schuster, & Oldehinkel, 1999). Stinson et al. (2007) replicated this result in the largest epidemiological study ($n=43,093$) to date for specific phobias, finding that the highest prevalence rates were in children and adolescents.

Research on gender effects in children with specific phobias has generally shown few significant differences under the age of 10 years (Strauss & Last, 1993). However, Anderson, Williams, McGee, and Silva (1987) reported that boys were six times more likely than girls to meet DSM-III criteria for a simple phobia. Contrary to this finding, a more recent German study found that more girls than boys were diagnosed with specific phobia in a community adolescent sample (Essau, Conradt, & Petermann, 2000). Strauss and Last (1993) have suggested that this gender difference may be either based on methodological differences or a reflection of the different rates of referral for treatment in boys vs. girls.

Despite the varied results of gender prevalence across studies, there have been some consistent findings related to the prevalence of specific subtypes of phobias. Environmental phobias tend to have an earlier age of onset in boys, though they are not necessarily more prevalent in males vs. females (Wittchen et al., 1999). The blood-injury-injection subtype has been shown to be significantly more prevalent in females (Marks, 1988). Animal phobias are also more common in girls with a 3:1 ratio clearly present by age 10 years (Wittchen, Nelson, & Lachner, 1998). Though not specific to children and adolescents, phobias involving lightning, enclosed spaces, and darkness have all been found to be more prevalent in females (Goisman et al., 1998). In her book on gender differences in anxiety disorders, Craske (2003) described adolescence as a period during which women develop fears and phobias more rapidly than men do. While several environmental factors may contribute to this difference, it is clear that

gender differences in prevalence rates of specific phobia become apparent in adolescence (Craske, 2003).

Specific phobias and subtypes. Some of the more commonly occurring phobias in children include fear of heights, darkness, injections, dogs, loud noises, small animals, and insects (Essau et al., 2000; King, 1993; Silverman & Rabian, 1993; Strauss & Last, 1993). However, there have been few studies specifically examining the prevalence of subtypes, and most studies have focused on adult populations. Most recently, the National Epidemiological Study on Alcohol and Related Conditions examined prevalence rates among adults. The most commonly reported phobias involved animals and heights and comprised more than half of the diagnosed cases of specific phobia. Claustrophobia and fear of flying were found to be significant in about one third of the individuals diagnosed with a specific phobia, while blood-injury-injection phobias were among the least common (Stinton et al., 2007).

Structure of Fear

A recent study (Cox et al., 2003) using both exploratory and confirmatory factor analyses examined the factor structure of all the specific phobias and found the following factors:

- *Agoraphobia*: Public places; crowds; being away from home; travel by car, train, or bus
- *Speaking*: Public speaking; speaking to a group; talking to others
- *Heights/water*: Flying; heights; crossing a bridge; water
- *Being observed*: Public eating; public toilet use; writing in front of others
- *Threat*: Blood/needles; storms/thunder; snakes/animals; being alone; enclosed spaces

Higher-order analyses showed two second-order factors: social fears and specific fears.

Another factor analytic study of specific phobia subtypes used data from a large sample of young adults from 11 countries. Results of this study

showed some evidence for blood-injection-injury subtypes and also an animal subtype of phobia (Arrindell et al., 2003). Environmental (e.g., storms, heights) and situational (e.g., flying, elevators) phobias were grouped together on one factor in this sample. Additional studies have found similar results suggesting that there may be few differences between environmental and situational phobias (Fredrikson, Annas, Fischer, & Wik, 1996). While these studies have been primarily with adults there has been some research specifically examining children. Muris, Schmidt, and Merckelbach (1999) found similar results in a sample of children, indicating that environmental and situation types of phobias tend to cluster together in factor analyses. These consistent results across samples indicate that phobia subtyping may need to be refined.

Genetic Patterns

There has been some evidence in family studies that there is a moderate degree of concordance for specific phobia diagnosis among family members. Another consistent finding has been the relationship between the fears of a mother and her child (Emmelkamp & Scholing, 1997). For example, mothers who fear insects may also have children who exhibit fear in the presence of insects. While there are a variety of factors such as temperament and modeling that may contribute to the familial relationship among anxiety disorders, genetic factors may also be responsible for some of the co-occurrence of this diagnosis.

Bolton et al. (2006) studied over 4,500 6-year-old twins to determine genetic and environmental influences on the development of early-onset anxiety disorders. For specific phobias the heritability was around 60% with the remaining 40% of variance attributed to differences in environment. As this study was conducted on young children and differs in results from other studies done on older children or adults, it is likely that early-onset phobias may be more genetically determined than are those developing later in childhood or adulthood (Bolton et al., 2006). These findings provide

support for a non-associative model of phobias which suggests an evolutionary basis to fears rather than a conditioned fear model (Menzies & Clarke, 1995). Another study examining heritability of specific phobias used a sample of 319 sets of twins between the ages of 8 and 18 (Stevenson, Batten, & Cherner, 1992). The results of this study suggested that differences in genes accounted for 29% of the variance in specific phobia diagnosis, with shared and non-shared environmental factors each accounting for a remaining third of the variance.

While there has been a range of results found for the heritability of specific phobias, the heritability of anxiety more generally has been demonstrated consistently in the literature. Fyer et al. (1995) found moderate aggregation for specific phobias in families where one family member had an anxiety disorder. Hettema, Neale, and Kendler (2001) found similar results in a meta-analysis of the heritability of anxiety disorders in both family and twin studies. Hettema, Prescott, Myers, Neale, and Kendler (2005) examined anxiety disorders in a community sample of twins and determined that for all the anxiety disorders there appears to be two genetic factors that contribute to the development of symptomology. One of these factors is specifically associated with situational and animal phobias but no other forms of anxiety. Because these two subtypes of phobias are loaded together but separated from other forms of anxiety, it suggests that there may be a unique genetic factor related to the development of these two specific types of phobia making them distinct from the etiology of other forms of anxiety. Additional evidence has shown that individuals with the blood-injection-injury subtype of specific phobia have more relatives with similar problems indicating that this subtype may be a separate category (Marks, 1987; Öst, 1992). The presence of unique physiological attributes in blood-injection-injury phobia, including the risk for fainting which is rare in other phobia subtypes (Connolly et al., 1976), also supports differentiating this subtype from other specific phobia subtypes.

Contrary to the above results, the VATSPSUD study (Kendler & Prescott, 2006) found the lowest

rates of *specific* heritability for blood-injection-injury phobias (7%). That is, those with a relative with this specific type of phobia are not as likely to inherit that particular phobia. Kendler and Prescott also found similarly low rates for the specific heritability of situational phobias (15%). However, this study did find common genetic factors contributing to all phobias, with the largest contribution for animal (21%) and blood-injection-injury (22%).

Disgust Sensitivity

Disgust sensitivity refers to the propensity for experiencing disgust in a wide variety of settings. This sensitivity has been proposed to contribute to the development of a variety of disorders, particularly blood-injection-injury phobias, animal phobias, and OCD (Olatunji & Deacon, 2008). Individuals with phobias related to spiders frequently report feelings of disgust rather than fear (Davey, 1992). In fact, disgust responses to images of spiders have been shown to be present even when fear is not present (Olatunji, 2006). While little research has examined disgust responses to in vivo spider exposure, the results have shown that people with spider phobias report more disgust than do non-phobic individuals (e.g., Olatunji & Deacon, 2008). There is also some evidence that disgust predicts avoidance of spiders better than does anxiety (Olatunji & Deacon, 2008; Woody, McLean, & Klassen, 2005). There are a few studies suggesting that disgust sensitivity may be related more to concerns about cleanliness and potential for disease rather than concern related to physical harm in the presence of spiders and other small animals and insects (Davey, 1992; Olatunji & Deacon, 2008).

Despite the general conception that disgust sensitivity is a genetically based vulnerability there is little evidence of a genetic component. Correlations in twin studies have shown very small genetic contribution ($r=0.29$ for monozygotic twins and $r=0.24$ for dizygotic twins; Rozin, Haidt, & McCauley, 2000). While a significant relationship exists between parent and child levels of disgust ($r=0.52$; Rozin et al., 2000),

there are environmental factors that could be contributing to this relationship other than genetics. Additionally, some researchers have suggested that gender differences in specific phobias may be related to gender differences in disgust sensitivity (Davey, 1994). While early studies in this area have been inconclusive, a recent study (Connolly, Olatunji, & Lohr, 2008) found that disgust sensitivity mediated the association between gender and specific phobias.

Social Phobia

Description

Social phobia is characterized by intense fear or discomfort in social situations. This fear can be limited to one specific situation (e.g., eating in front of others) or it can be generalized to all social settings. Individuals with this type of anxiety fear embarrassment in these situations which often includes fear of being ridiculed, laughed at, or disliked by peers. Individuals often have an overestimated perception of how anxious they appear physically. In children symptoms must persist for at least 6 months and must result in significant interference in the child's social functioning. In addition to these criteria DSM-IV-TR (pp. 416–417) requires that there be:

- A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing.
- Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed panic attack.
- The feared social or performance situations are avoided or else are endured with intense anxiety or distress.

These symptoms vary slightly from those necessary for an adult diagnosis, according to DSM-IV-TR. Adults additionally are required to see

their symptoms as excessive. In children, these symptoms must be present in social situations involving similarly aged peers and not only around adults. In addition, the child must demonstrate the capacity to engage in age-appropriate social interactions with individuals with whom the child is familiar. The distress and avoidance seen in social settings is often demonstrated in tantrums, crying, clinging to caretakers, and hiding.

Social phobia in children and adolescents is associated with a number of long-term negative outcomes. Children and adolescents with social phobia are at a high risk for developing substance use earlier than their peers and tend to have a shorter interval between first use of substances and problems associated with substance use (Marmorstein, White, Loeber, & Stouthamer-Loeber, 2010). There is some evidence that those who receive treatment for an anxiety disorder in childhood are less likely to have problems with substance use in later adolescence (Kendall, Safford, Flannery-Schroeder, & Webb, 2004). Children with social anxiety are also at a much higher risk for major depression (Last, Perrin, Hersen, & Kazdin, 1992) and educational problems particularly in later adolescence (Kessler, Foster, Saunders, & Stang, 1995).

Epidemiology

The lifetime prevalence of social phobia in an adolescent population has been reported as 1.6% (Essau, Conradt, & Petermann, 1999b). Prevalence rates of social phobia in children in the general population range from 1 to 6% (Verhulst, van der Ende, Ferdinand, & Kasius, 1997). One possible reason for this large range in prevalence rates is the way certain forms of social anxiety are coded by researchers. For example, both school phobia and fear of public speaking could be classified under either social anxiety or specific phobia. Different studies have chosen to categorize these types of fears differently which may contribute to the inconsistent prevalence rates across studies. In a more recent study conducted with

8–13-year-olds in Norway, 2.3% of all children were reported to have significant symptoms of social anxiety (Van Roy, Kristensen, Groholt, & Clench-Aas, 2009). The rates of social phobia among a clinical population have been reported around 15% (Last et al., 1987). As with all anxiety disorders there is a high level of comorbidity in social phobia with one sample reporting that 63% of children with social anxiety had a comorbid anxiety disorder (Last et al., 1987).

Additionally, there is some evidence of socio-demographic differences in the prevalence of social phobia. Inconsistent findings have been reported for gender differences in social phobia. One study of a clinical sample found that boys were more likely to have social anxiety than were girls (Compton, Nelson, & March, 2000), while other studies have found that up to 70% of clinical samples of social phobia are females (Beidel & Turner, 1988). There has been little cross-cultural research or research related to racial background in social phobia. There is some evidence, however, that European American children are more likely to report more symptoms of social anxiety than are African American children in a community sample (Compton et al., 2000) but these findings have not yet been replicated.

Panic Disorder with and Without Agoraphobia

Description

The hallmark symptom of panic disorder is the presence of recurrent and spontaneous panic attacks that cause the individual great anticipatory anxiety. Panic attacks themselves are brief periods of numerous physiological symptoms accompanied by intense fear. For a majority of individuals experiencing panic disorder there is also agoraphobic avoidance – that is, avoidance of situations from which escape might be difficult in the event of a panic attack. Panic disorder was once thought to be a disorder found only in adults and very rarely in adolescents. This notion was based on the idea that there is a strong cognitive component

to panic disorder that children were incapable of experiencing (Nelles & Barlow, 1988). However, there is now a large body of evidence showing that panic disorder does occur in children (e.g., Kearney, Albano, Eisen, Allan, & Barlow, 1997). Despite the evidence showing that it does occur in children (Wittchen et al., 2008), the typical age of onset for panic disorder is late adolescence into adulthood (Kessler et al., 2005). For many individuals with panic disorder the first panic attack occurred during a time of psychosocial stress (Craske, 1999).

Symptoms of Panic

According to DSM-IV (pp. 395) a panic attack is a “discrete period of intense fear or discomfort, in which four (or more) of the following symptoms developed abruptly and reached a peak within 10 minutes (See Table 2.2).

In order for panic attacks to be considered part of panic disorder they must be recurring with persistent concern about having another attack, worry about the implications of the attacks, or a significant behavior change related to having these attacks. In children, making a diagnosis of panic disorder can be challenging as some of the fears may present differently. For example, young children may report a fear of becoming ill without any clear physical symptoms reported.

Table 2.2 DSM-IV-TR symptoms of panic attacks

Palpitations, pounding heart, or accelerated heart rate
Sweating
Trembling or shaking
Sensations of shortness of breath or smothering
Feeling of choking
Chest pain or discomfort
Nausea or abdominal distress
Feeling dizzy, unsteady, lightheaded, or faint
Derealization (feelings of unreality) or depersonalization (feeling detached from oneself)
Fear of losing control or going crazy
Fear of dying
Chills or hot flushes

Note. Adapted from American Psychiatric Association (2000, p. 395)

In older children reports of anxiety about becoming sick are common, as are fears of uncontrollable vomiting. Only in adolescence do individuals tend to start reporting fears related to specific physiological symptoms.

In a study examining the frequency of panic symptoms in children aged 8–17 years, results showed that heart palpitations, nausea, shakiness, dizziness, sweating, headaches, and depersonalization/derealization were the most frequently experienced symptoms (Kearney et al., 1997). The study found no age differences in the frequency of reported panic symptoms. Essau, Conradt, and Petermann (1999a) studied adolescents in an epidemiological study in Germany and found similar results. This sample found that palpitations, shakiness, nausea, chills, and abdominal distress were the most commonly reported symptoms of panic attacks. A third study examining symptom frequency found that depersonalization/derealization is less common in younger children but reported no other significant trends in symptom presentation (Moreau & Follett, 1993).

Agoraphobia

According to the DSM-IV-TR, agoraphobia can occur with or without the presence of panic disorder and is defined by extreme anxiety in situations where escape is difficult or in which help may not be readily available in the event of an emergency. Usually this anxiety leads to avoidance of situations that provoke the anxiety. These situations often include large crowded places, public transportation, going out alone, crossing bridges, and standing in line. Generally in agoraphobia these “situations are either avoided (e.g., travel is restricted) or else endured with marked distress or with anxiety about having a panic attack or panic-like symptoms, or require the presence of a companion” (p. 396). Phobic avoidance may be motivated by unrealistic fears of the consequences of having panic symptoms in particular situations where the person feels trapped or far from help.

Agoraphobia is common in children and adolescents with panic disorder and in some cases is also diagnosed in adolescents without the presence of panic attacks (Wittchen, Reed, & Kessler, 1998). In a study of US adolescents, Roberts, Ramsay, and Yun Xing (2007) found a 1-year prevalence rate of 4.5% which was significantly higher than the rates found in adults. In fact, this study found that agoraphobia was the most frequently occurring anxiety disorder in their sample although the prevalence dropped to 1.6% when impairment was required for a diagnosis. Wittchen et al. (2008) used a large community sample of German adolescents to examine the prevalence of agoraphobia in the community. Adolescents with panic disorder or panic attacks were only moderately more likely to develop subsequent agoraphobia, while the majority of adolescents meeting criteria for agoraphobia had never experienced a panic attack.

Separation Anxiety Disorder

Description

SAD is a somewhat unique diagnosis in that it is the only anxiety disorder limited to children and adolescents. Previous versions of the DSM had other childhood anxiety disorders; however, SAD is the only one to have survived the revisions made for DSM-IV. SAD is defined in DSM-IV-TR (p. 113) as: “developmentally inappropriate and excessive anxiety concerning separation from home or from those to whom the individual is attached, as evidenced by three or more of the criteria listed in Table 2.3.

To be considered clinically significant these symptoms must be present for at least 4 weeks and be developmentally inappropriate for the age of the child. Many of these symptoms would be considered developmentally appropriate in children aged 7 months to 6 years (Bernstein & Borchardt, 1991), and thus it is important to consider both age and developmental level when making a diagnostic determination. The underlying fear found in SAD is an exaggerated fear of

Table 2.3 DSM-IV-TR diagnostic criteria for separation anxiety disorder

Recurrent excessive distress when separation from home or major attachment figures occurs or is anticipated
Persistent and excessive worry about losing, or about possible harm befalling, major attachment figures
Persistent and excessive worry that an untoward event will lead to separation from a major attachment figure (e.g., getting lost or kidnapped)
Persistent reluctance or refusal to go to school or elsewhere because of fear of separation
Persistently and excessively fearful or reluctant to be alone or without major attachment figure at home or without significant adults in other settings
Persistent reluctance or refusal to go to sleep without being near a major attachment figure or to sleep away from home
Repeated nightmares involving the theme of separation
Repeated complaints of physical symptoms (such as headaches, stomachaches, nausea, or vomiting) when separation from major attachment figures occurs or is anticipated

Note. Adapted from American Psychiatric Association (2000, p. 113)

losing or becoming separated from parents or other primary caregivers. In addition to these fears, many children experience nightmares related to becoming separated from caregivers (Bell-Dolan & Brazeal, 1993).

Symptom differences have been found between ages but not between genders (Francis, Last, & Strauss, 1987). Young children (ages 5–8 years) are most likely to report fears of harm to self or caregivers, nightmares, and school refusal. Children between the ages of 9 and 12 years present with more excessive distress at the time of separation, while adolescents are more likely to experience somatic symptoms and school refusal. Additionally, older children and adolescents are most likely to experience a smaller number of symptoms than younger children.

Epidemiology

While SAD can be present in children of all ages, it is most common in preadolescent age ranges. Typically, the onset is acute and follows a

significant change in the child's life (e.g., start of school, moving, death of a parent or close relative) or developmental changes (Last, 1989). Several studies have shown that SAD follows an intermittent course over time. Children often experience remissions and relapses around times of school holidays, vacations, and life stressors (Hale, Raaijmakers, Muris, van Hoof, & Meeus, 2008). When followed over a period of 4 years, 96% of children initially diagnosed with SAD no longer met diagnostic criteria, the highest recovery rate of any anxiety disorder studied (Last, Perrin, Hersen, & Kazdin, 1996).

Prevalence rates in community samples for SAD ranged from 2.0 to 12.9% (Anderson et al., 1987; Kashani & Orvaschel, 1988). The range in rates may be attributable to the age at which symptoms were assessed. The lower rates of prevalence were in studies examining adolescents, while the higher rates were found in community samples of younger children. Rates among clinical populations are higher, with 33% of a sample of anxious children meeting diagnostic criteria for SAD (Last, Francis, Hersen, Kazdin, & Strauss, 1987). Results of this study also indicated that 41% of the children with a primary diagnosis of SAD had a comorbid anxiety diagnosis of some sort.

A number of sociodemographic variables have been associated with SAD. Most samples examining SAD have been primarily with children of European descent, although this finding may reflect biased sampling rather than true cultural differences (Strauss & Last, 1993). As with most other anxiety disorders, rates of SAD are higher in females than males (Compton et al., 2000); however, a few published reports found no gender differences (Bird, Gould, Yager, Staghezza, & Canino, 1989; Last et al., 1992). Additionally, lower SES and parental education levels have been associated with higher rates of SAD in children (Bird et al., 1989; Last et al., 1987).

Role of Avoidance

In addition to the many fears that children with SAD experience, avoidance plays a large role in

the symptom presentation of this disorder. There is a large range of avoidance behaviors common to children with SAD. Types of avoidance may also vary by the age of the child. Milder forms of avoidance can be hesitation to leave the house, requesting that the caregiver be accessible via phone during outings, and frequent questions about schedules. More moderate forms of avoidance in younger children can include clingy behaviors with parents or caregivers. They may also follow the parents or other caregivers around the house to avoid being alone in a room. Older children may be more likely to have difficulty leaving the house without caregivers or refuse to participate in social activities with peers if the caregiver is not present. More serious forms of avoidance can include faking illnesses, school refusal, or refusal to sleep alone at night.

Avoidance behaviors may slowly increase over time. Albano, Chorpita, and Barlow (2003) describe a pattern of increasing avoidance that starts with occasional nightmares and subsequent requests to sleep with parents. From this relatively mild behavior change, the child can become increasingly avoidant until he or she is sleeping with one or both parents every night. Similarly, Livingston, Taylor, and Crawford (1988) describe a pattern of increasingly serious physical complaints on the part of the child. This behavior often progresses from very vague complaints of not feeling well to frequent complaints of stomach or headaches. Frequently it is these avoidance behaviors that will prompt the parent to bring the child in for treatment.

Differential Diagnosis

Developmentally Appropriate Fear vs. Anxiety Disorders

An important diagnostic issue to consider in children is whether the anxiety is developmentally appropriate or is part of a disorder. Anxiety and its various associated physiological symptoms are considered to be basic human emotions (Barlow, 2002). In young children common developmental fears include: fear of the dark, fear of new

situations including the first day of school, fear of separation from parents or other caretakers, and fear of large animals. In adolescents common developmental fears include: anxiety related to job interviews, college applications, and dating.

An important distinction between developmentally appropriate fears and phobias is both the duration and severity of the anxiety. In order for the anxiety to become clinically significant it must persist for a period of at least 6 months and include significant avoidance and interference in daily functioning (Albano, Causey, & Carter, 2001). While this distinction often is based on clinical judgment, there has been research showing that a specific phobia diagnosis can be reliably achieved through the use of structured clinical interviews and standardized self-report measures (Schniering, Hudson, & Rapee, 2000). One common assessment used for the diagnosis of anxiety disorders in children is the Multi-dimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997). This self-report scale is used to differentiate clinical from nonclinical samples as well as distinguish different forms of anxiety. It has been found to be sensitive to the differences in these groups (Dierker et al., 2001). The Anxiety Disorders Interview Schedule for Children (ADIS-C; Silverman & Albano, 1996) is another useful structured interview for diagnosis of anxiety disorders in children.

Distinguishing Between Different Anxiety Disorders

Given the substantial overlap in symptoms across the disorders presented in this chapter, it may be difficult at times to identify which diagnosis a given child's symptom presentation warrants. The task can be all the more challenging in light of children's difficulty at times in reporting clearly what they are experiencing. Even if they are willing to discuss their experiences, at times they have limitations in their vocabulary or their concept formation to fully describe their fears. Accurate diagnosis is important for case conceptualization such that the most appropriate treatment can be administered. For example, a

cognitive-behavioral clinician would expose an individual with panic disorder to interoceptive cues (e.g., pounding heart) but would follow a different treatment plan for an individual with SAD. The following section covers common distinctions that must be made in the differential diagnosis of specific phobia, social phobia, panic disorder, and SAD. In most cases the correct diagnosis can be derived by understanding what is at the core of the patient's fears.

Specific phobia vs. social phobia. Of the disorders under consideration, the two that share the most symptom criteria may be the most straightforward to distinguish, based simply on the content of the fears. Specific and social phobia overlap in nearly all of their diagnostic criteria except that social phobia involves a fear of social situations (e.g., talking to a group, answering questions in class), whereas specific phobia involves a fear of other stimuli. In cases where the distinction may be somewhat difficult – for example, fear of clowns – the differential diagnosis is based on whether the fear is primarily social (e.g., being publicly embarrassed by the clown) or involves fear of the stimulus itself (e.g., being attacked by the clown).

Specific phobia vs. panic disorder. Children with specific phobias often will experience many physiological symptoms of panic, and may even develop a panic attack, when confronted with the feared stimuli. The presence of panic attacks is not sufficient to warrant the diagnosis of panic disorder, given that only a small minority of individuals who experience panic attacks go on to develop panic disorder; results from the National Comorbidity Survey Replication revealed a 22.7% lifetime prevalence estimate for panic attacks vs. a 3.7% rate for panic disorder (Kessler et al., 2006). Specific phobia is indicated when the child's fear, including panic attacks, is provoked by the phobic stimulus itself – for example, a dog. The content of the fear in this case would have to do with the possibility of injury as a result of contact with the dog. At the core of panic disorder, on the other hand, is a fear of the panic attacks themselves (the so-called “fear of fear”; e.g., Chambless, Caputo, Bright, & Gallagher, 1984).

Differential diagnosis can be more difficult when the feared stimulus or situation is one that commonly is associated with panic disorder – for example, a fear of elevators. In these cases it is imperative that the diagnosing clinician ascertain whether the patient is afraid of panicking in these situations or simply is afraid of the situations themselves (e.g., fears that the elevator will fall). Finding that the individual fears several situations that provoke panic attacks (e.g., car trips, elevators, crowds) makes a diagnosis of panic disorder more likely than diagnosis of a specific phobia to multiple situations.

Specific phobia vs. SAD. Specific phobia and SAD both may include significant levels of avoidance. The primary distinction between these disorders is based on whether the avoidance is driven by fear of the avoided stimulus, as in specific phobia, or by fear of separation from attachment figures, which defines SAD. Although children with specific phobia may cling to their caregivers when confronted with the phobic stimulus, the clinging behavior represents the child's looking to the caregiver for safety and protection. In contrast, the core fear in SAD is separation from the caregiver in and of itself. For this reason the fear of separation is likely to be more pervasive than in specific phobia in which fear of separation is provoked by the presence of a relatively limited range of stimuli (e.g., dogs).

Social phobia vs. panic disorder. A child who presents with panic attacks and a fear of social situations could be suffering from either panic disorder or social phobia. Both conditions also lead to avoidance of social situations, such as school refusal. It is relatively common in panic disorder for a person to fear embarrassing him/herself in some way by panicking in public. Indeed, the Panic Appraisal Inventory (Telch, *The panic appraisal inventory*. University of Texas, Unpublished manuscript, 1987), which is commonly used to measure panic-related concerns, comprises a subscale of panic consequences that include social concerns. For example, a child may fear that he will panic in school, faint, and have to be carried out of the classroom while the whole class watches. In this case the

child is unlikely to fear social situations per se, but rather the possibility of having a panic attack in a social setting. Children with social phobia similarly may fear embarrassing themselves in public due to their anxiety response – for example, that they will shake, trip over their words, or blush. In this case the child will fear the social situation itself, not his possible public panic response.

Social phobia vs. SAD. As with panic disorder, SAD also can resemble social phobia in some respects. For example, school refusal may be driven by social anxiety or by the distress associated with separating from one's caregiver. Careful questioning of the child and, if necessary, the parents may reveal what the underlying fear is. For example, if the child has no trouble socializing with peers when the parents are present but refuses to go to school, sleepovers, and other events where the parents are not present, a diagnosis of SAD is likely. On the other hand, if the child still is terribly afraid of social settings even in the presence of the parents, the accurate diagnosis likely is social phobia.

Panic disorder vs. SAD. The final differential diagnosis, between panic disorder and SAD, can be one of the more difficult distinctions to make. In fact, there is strong evidence that SAD is a risk factor for panic disorder (for a review see Silove, Manicavasagar, Curtis, & Blaszczynski, 1996). Both disorders may include clinging to "safe" persons, often the parents. Once again, making the right diagnosis depends on identifying the child's specific fear. In panic disorder, the strong desire to be close to a safe person is driven by fears related to panic – for example, the agoraphobic's concern that she will have a panic attack when help is not available. In this case the safe person provides a sense of comfort in the face of a potential panic attack, similar to the function of having a bottle of benzodiazepines always nearby. With SAD, the fear is related to separation from the caregiver in its own right. Unwanted separation from the caregiver may trigger a bout of anxiety that leads to a panic attack, but the root of the anxiety is the separation and not the panic symptoms.

Diagnostic Reliability

In light of the often difficult differential diagnosis of the disorders described in this chapter, it is imperative that these diagnoses can be made reliably. Our current diagnostic system was adopted in an attempt to increase the reliability of diagnosis across clinicians. Attempts to determine diagnostic reliability often rely on test–retest or interrater reliability approaches. Studies on criteria for panic disorder and specific phobia have shown that the test–retest reliability is between good and excellent (Williams et al., 1992) on the established ranges for reliability (Di Nardo, Moras, Barlow, Rapee, & Brown, 1993). Interrater reliability for these disorders is also in the excellent range (Brown, Di Nardo, Lehman, & Campbell, 2001). The reliability of diagnosis specifically in children has also been found to be good when using structured diagnostic interviews (Schniering et al., 2000). This high level of reliability has improved the ease of communication between mental health professionals about a given patient’s clinical status.

While there are positive aspects of the current diagnostic system, there also are significant limitations of the way that disorders are defined. First, many diagnoses contain words like “persistent,” “clinically significant,” and “excessive” without defining the threshold for such criteria. This vagueness can lead to disagreement across clinicians. With respect to children specifically, the current DSM does not address developmental norms that can be expected across ages. It also does not address how specific disorders may present themselves differently in different age groups. Therefore, the clinician often must make a judgment call as to whether a particular behavior falls outside the realm of developmentally appropriate behavior in a child, creating a lack of reliability in diagnosis. By improving this definition, a clearer threshold would be established that would ideally incorporate developmental norms for diagnosis in children. A clearer definition of this threshold would dramatically improve diagnostic reliability as much of the lack of diagnostic agreement in this area is caused by differing definitions of

what is “developmentally appropriate” (Albano et al., 2003).

Second, diagnosis could be improved by increasing the reliability of subtypes of specific phobias. There is significant co-occurrence of multiple subtypes in individuals diagnosed with specific phobias and a lack of empirical support for the current subtypes. Blood-injection-injury phobias seem to have both different physiological responses and psychometric properties and likely represent a clear subtype. However, the other subtypes do not seem to have the same psychometric differentiation. As with social phobia, it may make sense to refer to specific phobias in terms of simple type (one specific phobia), and generalized type (more than one specific phobia) (Piqueras, Olivares, & López-Pina, 2008).

Third, symptoms of panic disorder should more clearly be differentiated by age range. There is evidence that children of different ages report different types and numbers of symptoms. This developmental variability needs to be reflected in the diagnostic criteria for children. There may also be a need for the addition of several symptoms currently missing from the diagnostic criteria for children.

Finally, there have been criticisms of the validity of the current diagnostic categories. There is high comorbidity of the current diagnostic criteria which often results in multiple diagnoses, although it is unclear whether the current disorders represent distinct entities. One proposed option is for a quantitative hierarchical model for diagnosis (Watson, 2005). Under this model, diagnoses are categorized by empirically supported phenotypic and genotypic similarities. This system would decrease the overlap of diagnosis and aim to increase the validity of the diagnostic system while maintaining reliability.

Summary

Anxiety disorders, including specific phobia, social phobia, panic disorder, and SAD, are common in children. Correct diagnostic assignment requires an understanding of the core fears in each of these

disorders and the various ways that children may manifest these fears. In specific phobia and social phobia, anxiety is provoked by confronting the feared stimulus. Panic disorder is defined by fear of having panic attacks and of what their implications might be, whereas SAD is driven by fear of being separated from one's parents or other attachment figures. While the current diagnostic system represents an improvement over previous versions of the DSM, changes in several areas of the system could lead to more reliable diagnosis and clearer differentiation between anxiety disorders.

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