# 2 Issues in Differential Diagnosis: Phobias and Phobic Conditions

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

## Specific Phobia

### Description

Specific phobias are the most prevalent anxiety disorder according to nearly all epidemiological studies of the general population (e.g., Kessler et al., 2012). Defined in the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5; American Psychiatric Association, 2013) 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). Commonly occurring fears include animals, heights, flying, enclosed spaces, darkness, receiving an injection, and seeing blood. 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 and to recognize their different forms of expression (e.g., tantrums, crying, freezing, clinging). 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-5, specific phobia should be diagnosed when all of the following criteria are met (Table 2.1).

These criteria for diagnosing specific phobias in children have been slightly modified from the criteria for the diagnosis in adults. The DSM-5 categorizes specific phobias into five subtypes: animal phobias (e.g., spiders, dogs, snakes), natural environment phobias (e.g., storms, heights, or water), blood-injection-injury phobias (e.g., seeing blood, receiving an injection/needles), situational phobias (e.g., enclosed spaces, elevators, flying), and other phobias for fears that do not fit into one specific category (e.g., choking, vomiting, loud sounds, costumed characters). The ICD-10 has similar diagnostic criteria but identifies fewer subtypes.

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**Table 2.1** DSM-5 Diagnostic criteria for specific phobia

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|---|
| Pronounced fear or anxiety about a specific object or situation (e.g., blood, animals, getting a shot). *In children, the fear or anxiety may be expressed by crying, tantrums, freezing, or clinging* (criterion A) |
| The phobic object or situation almost always causes fear or anxiety immediately following exposure (criterion B) |
| The phobic object or situation is avoided or suffered through with intense fear or anxiety (criterion C) |
| The fear or anxiety is disproportionate to the actual danger presented by the specific object or situation and to the sociocultural context (criterion D) |
| The symptoms are not transient lasting 6 months or more (criterion E) |
| The fear, anxiety, or avoidance causes clinically significant distress or disability in important areas of functioning (e.g., social, education, development) (criterion F) |
| Difficulties are not better explained by symptoms of another mental disorder, including fear, anxiety, and avoidance of situations associated with panic like or other embarrassing or incapacitating symptoms (as in agoraphobia), obsession-related objects or situations (as in obsessive-compulsive disorder), traumatic event reminders (as in posttraumatic stress disorder), separation from home or attachment figures (as in separation anxiety disorder), or social situations (as in social anxiety disorder) (criterion G) |

Note: Adapted from American Psychiatric Association (2013, pp. 197)

Avoidance behaviors in children often take the form of tantrums, crying, anger attacks, clinging, 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.

## Epidemiology

***Prevalence*** In international community samples, the prevalence rate for specific phobias in children is 2.6–9.1% with the average near 5% (Ollendick et al., 2002; APA, 2013). In 13- to 17-year-olds, however, the prevalence rate is approximately 16%, with 0.6% reporting severe impairment (APA, 2013). 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 or cultural differences (Wardenaar et al., 2017). Along with generalized anxiety disorder and separation anxiety disorder, specific phobias are one of the more commonly diagnosed anxiety disorders in children (Costello & Angold, 1995). Additionally, Costello and Angold (1995) 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 et al., 1987b). A similar study found that 72% of children between the ages of 6 and 16 years, who 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 et al., 2001). Literature has also demonstrated specific phobias in children can be a predictor of later internalizing disorders, particularly if there are multiple phobias present (de Vries et al., 2019). For example, a retrospective study showed that out of participants who reported childhood-specific phobias with one or more subtypes, lifetime prevalence of an internalizing disorder was 46.3%; comparatively,

those without childhood phobias had a prevalence of 18.2%, while those with four or more phobia subtypes had an increased prevalence of 75.6% (de Vries et al., 2019).

***Cultural differences*** The prevalence for specific phobias has been reported to be higher in African-American children as compared to white children (Last & Perrin, 1993); however, rates may vary due to differences in specific phobia domains. Fears indicated by African-American young adults differ from their Caucasian American counterparts, with the former endorsing more specific phobias (Chapman et al., 2008). Mexican American adults born in the USA also report higher rates of specific phobia when compared to immigrant Mexican Americans as well as native non-Hispanic whites (Karno et al., 1989). There have also been higher rates of specific phobias reported in Brazil than in the USA (Da Motta et al., 2000). Lower risk for specific phobias has been reported among Asians and Hispanics (Stinson et al., 2007) as well as in Japan (Kawakami et al., 2005) compared to Western countries. In a study of children and adolescents in Seoul, Korea, the prevalence rate reported was 7.9% (Kim et al., 2010). In Uganda, the prevalence rate was much higher at 15.8%, with the highest rates in children under 5 years of age (Abbo et al., 2013). A number of factors include operational definitions, ages sampled, and the manner and content in which specific phobias present may contribute to differences in sampling and bias. Lastly, research including children in non-Western countries remains sparse, making it difficult to determine whether these results reflect methodological differences or a true cultural disparity. Diagnostic criteria in the DSM-5 address cultural differences by stipulating that the fear and anxiety caused by the specific phobia must be out of proportion to the sociocultural context (APA, 2013).

***Age and gender differences*** The prevalence of specific phobias tends to be higher in children and adolescents than in adults (Emmelkamp & Wittchen, 2008). Most adults who meet diagnostic criteria for a specific phobia report an early age of onset (Stinson et al., 2007); however, there is a paucity of longitudinal research beginning in early childhood. A meta-analysis (Lijster et al., 2016) revealed specific phobia had a mean onset at 11 years of age. This, along with separation anxiety and social phobia, is significantly earlier than other anxiety disorders which begin, on average, between 21.1 and 34.9 years of age (Lijster et al., 2016). Other studies have reported even earlier age of onset around 7 and 8 years of age (Kessler et al., 2005; Wardenaar et al., 2017), often ranging across specific phobia domains. For instance, animal, environmental, and blood-injection-injury phobias typically begin in early childhood (Kessler et al., 2005; Wittchen et al., 1999), while situational phobias may start much later (Becker et al., 2007). Furthermore, several studies (Burstein et al., 2012; de Vries et al., 2019) demonstrate that individuals who present with multiple types of phobias at an early age experience increased severity and impairment and have higher rates of additional psychiatric disorders. Considering its early onset and high psychiatric comorbidity rates, specific phobia may be a useful indicator for subsequent psychopathology (Wittchen et al., 2003).

Research on gender effects in children with specific phobias has generally shown few significant differences under the age of 10 years (Strauss & Last, 1993). According to the DSM-5, females experience specific phobia twice as frequently as males (Bekker & van Mens-Verhulst, 2007), although this varies by phobia type. Literature on gender differences has remained mixed, though most support a higher prevalence in females than males (Beedso-baum et al., 2009; Fredrikson et al., 1996). For instance, a German study with a community adolescent sample found that more girls than boys were diagnosed with specific phobia (Essau et al., 2000). Researchers have posited that this gender distinction may follow differences in how boys and girls are socialized and how the expression of fear is often viewed as more acceptable from females than males (Kane et al., 2014). Strauss and Last (1993) have also suggested that this gender disparity may be either based on methodological variations or a reflection

of the different rates of referral for treatment in boys versus girls.

Despite the varied results of gender prevalence across studies, there have been some consistent findings related to gender differences across subtypes of phobias. The DSM-5 indicates higher rates of females than males experience animal, environment, and situational-specific phobias, while blood-injection-injury phobia affects both males and females equally. Environmental phobias tend to have an earlier age of onset in boys (Wittchen et al., 1999), but are overall more prevalent in females (Beesdo-baum et al., 2009). Animal phobias are also more common in girls with a 3:1 ratio clearly present by age 10 years (Wittchen et al., 1998a, b). Craske (2003) described adolescence as a period during which women develop fears and phobias more rapidly than men do. McLean and Anderson (2009) posit that this may be attributed to the effects of gender socialization during adolescence, where boys are encouraged to face their fears, whereas girls are permitted to avoid them. Whatever factors contribute, it is clear that gender differences in prevalence rates of specific phobia become apparent during 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 found that fear of animals and heights were the most commonly reported phobias among adults, comprising more than half of the diagnosed cases of specific phobia. This observation is consistent with Stinson et al.' (2007) finding that animals are among the more commonly feared stimuli in children, whereas blood-injury-injection phobias are among the least common. While much attention is placed on the subtype of specific phobia (LeBeau et al., 2010), many researchers assert the number of specific phobias present is more predictive of severity and impairment (Burstein et al., 2012; Stinson et al., 2007), regardless of the domain.

## Structure of Fear

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

- 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 supported blood-injection-injury phobia and animal phobia as two of the major classes of fears across cultures (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 et al., 1996). While these studies have been primarily with adults, there has been some research specifically examining children. Muris et al. (1999) found similar results in a sample of children, indicating that environmental and situation types of phobias tend to cluster together in factor analyses. In a study examining mental disorders on a three-factor model consisting of "anxious-misery," "fear," and "externalizing,"

Wittchen et al. (2009) discovered that animal and natural environment subtypes were routinely attributed to the same factor, while blood-injury-injection subtype could not be precisely assigned to a single factor. These consistent results across samples indicate that phobia subtyping may need to be refined.

## Genetic Patterns

There has been some evidence in family studies of 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 4500 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 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 et al., 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. Van Houtem et al. (2013) go on to suggest that unique environmental factors (i.e., individual events) account for most of the variance beyond genetic factors, whereas common environmental factors (i.e., events affecting multiple individuals) only contribute a small effect on 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 et al. (2001) found similar results in a meta-analysis of the heritability of anxiety disorders in both family and twin studies. Hettema et al. (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 separate 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). A more recent meta-analysis examined five studies and largely found similar results to previous literature (Van Houtem et al. (2013). The heritability rate range was 28–63% for blood-injury-injection phobias, 22–44% for animal phobias, 0–41% for miscellaneous phobias, and 0–33% for situational phobias (Mean = 33%, 32%, 25%, and 25%, respectively). 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 (2006) 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 obsessive-compulsive disorder (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, people with spider phobias report more disgust than non-phobic individuals (e.g., Olatunji & Deacon, 2008). There is also some evidence that disgust, more so than anxiety, is a better predictor of avoidance of spiders (Olatunji & Deacon, 2008; Woody et al., 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). Disgust sensitivity has also shown to be significantly associated with certain psychopathological symptoms in children, including blood-injection-injury phobia, animal phobia, and agoraphobia (Muris et al., 2008). There is evidence that having both spider and blood-injection-injury phobias may have a compounding effect, such that people with both to exhibit greater disgust sensitivity compared to those having a single phobia (Bianchi & Carter, 2012).

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 et al., 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 have been inconclusive, a recent study (Connolly et al., 2008) found that disgust sensitivity mediated the association between gender and specific phobias.

## Social Anxiety Disorder (Social Phobia)

### Description

Social anxiety disorder (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, the DSM-5 (pp. 202–208) requires the following:

- Marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others. Examples include social interactions (e.g.,

having a conversation, meeting unfamiliar people), being observed (e.g., eating or drinking), and performing in front of others (e.g., giving a speech). *Note: In children, the anxiety must occur in peer settings and not just during interactions with adults.
- The individual fears that he or she will act in a way or show anxiety symptoms that will be negatively evaluated (i.e., will be humiliating or embarrassing; will lead to rejection or offend others).
- The social situations almost always provoke fear or anxiety. *Note: In children, the fear or anxiety may be expressed by crying, tantrums, freezing, clinging, shrinking, or failing to speak in social situations.
- The social situations are avoided or endured with intense fear or anxiety.
- The fear or anxiety is out of proportion to the actual threat posed by the social situation and to the sociocultural context
- The symptoms are not transient lasting 6 months or more.

For children and adults alike, the fear or anxiety is considered excessive in relation to the actual threat posed by the social situation. 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. Moreover, the fear and avoidance situations or objects experienced by children tend to be narrower in range compared to those experienced by adults (APA, 2013).

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 et al., 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 et al., 2004). Children with a primary anxiety disorder (including social anxiety disorder) are also at a much higher risk for OCD and mood disorders, such as MDD or dysthymic disorder (now persistent depressive disorder; Waite & Creswell 2014) and educational problems, including decreased academic performance and early discontinuation (Kerns et al., 2013), particularly in later adolescence (Kessler et al., 1995). These heightened risks could be explained by consistent negative self-perceptions (Alfano et al., 2006).

## Epidemiology

The lifetime prevalence of social phobia in an adolescent population has been reported as 1.6% (Essau et al., 1999b), although more recent literature has suggested the lifetime prevalence rates to be higher, between 4.20% for men and 5.67% for women (Clauss & Blackford, 2012). A meta-analysis reported social anxiety disorder prevalence in 28 countries to be 4.0% (Stein et al., 2017). The 12-month prevalence rate in US children is approximately 7% and is comparable to the rate among adults (APA, 2013). Prevalence rates of social phobia in children in the general population range from 1% to 6% (Verhulst et al., 1997), although, again, more recent reviews have suggested the rates to be higher, between 9.1% (Xu et al., 2012) and 12.1% (Ruscio, 2008). 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- to 13-year-olds in Norway, 2.3% of all children were reported to have significant symptoms of social anxiety (Van Roy et al., 2009). The rates of social phobia among a clinical population have been reported around 15%

(Last et al., 1987b). 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., 1987b).

Additionally, there is some evidence of sociodemographic 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 et al., 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. Social phobia is correlated with individuals who are single, never married or divorced, and without children (APA, 2013).

## Panic Disorder

### Description

The hallmark symptom of panic disorder is the presence of recurrent and unexpected 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 et al., 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), and the prevalence rate among children younger than 14 years old is less than 0.4% (APA, 2013). 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-5 (pp. 208), a panic attack is an "abrupt surge of intense fear or intense discomfort that reaches a peak within minutes, and during which time four (or more) of the following symptoms occur: palpitations, pounding heart, or accelerated heart rate; sweating; trembling or shaking; sensations of shortness of breath or smothering; feelings of choking; chest pain or discomfort; nausea or abdominal distress; feeling dizzy, unsteady, light-headed, or faint; chills or heat sensations; paresthesias (numbness or tingling sensations); derealization (feelings of unreality) or depersonalization (being detached from one-self); fear of losing control or 'going crazy'; and fear of dying" (Table 2.2).

In order for panic attacks to be considered part of panic disorder, at least one must be followed by a month or more of one or both of the follow-

**Table 2.2** DSM-5 Symptoms of panic attacks

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|---|
| 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 |
| Chills or heat sensations |
| Paresthesias (numbness or tingling sensations) |
| Derealization (feelings of unreality) or depersonalization (feeling detached from oneself) |
| Fear of losing control or going crazy |
| Fear of dying |

Note: Adapted from American Psychiatric Association (2013, pp. 208)

ing: (1) persistent concern or worry about having another attack or their consequences (e.g., losing control, a heart attack, going crazy) and (2) a significant maladaptive 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. 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.

Children and adolescents report many of the same physiological symptoms as adults, such as heart palpitations, nausea, shakiness, dizziness, sweating, headaches, and chills or heat sensations (Masi et al., 2000; Essau et al., 1999a; Kearney et al., 1997). Somatic symptoms are more common than cognitive complaints, which are reported more frequently among adolescents than children (Moreau & Follett, 1993). Nevertheless, there is evidence that some children and adolescent experience cognitive symptoms, such as the fear of dying, the fear of going crazy (e.g., "I feel I am losing control"), or depersonalization/derealization (e.g., "I don't know who I am" or "I don't know where I am"). Twin studies have demonstrated that panic disorder is moderately heritable with a concordance rate of 73% among monozygotic twins compared to 0% in dizygotic twins (Perna et al., 1997). The Virginia Adult Twin Study of Psychiatric and Substance Use Disorders (2005) found a panic disorder heritability of 28%, revealing that environmental factors also play a considerable role. However, two recent genome-wide association studies on panic disorders did not produce significant associations (Na et al., 2011).

## Agoraphobia

### Description

In the DSM-5, agoraphobia was designated as its own diagnostic category independent of panic disorder. The defining feature is "marked, or intense, fear or anxiety triggered by the real or anticipated exposure to a wide range of situations" (pp. 218). However, there remains some overlap in symptoms and diagnostic criteria (Asmundson et al., 2014). A diagnosis of agoraphobia requires marked fear or anxiety about at least two of five situations:

- Using public transportation (e.g., automobiles, buses, trains, ships, planes)
- Being in open spaces (e.g., parking lots, marketplaces, bridges)
- Being in enclosed spaces (e.g., shops, theaters, cinemas)
- Standing in line or being in a crowd
- Being outside of the home alone (DSM-5, pp. 217)

Generally, these "situations are actively avoided, require the presence of a companion, or are endured with intense fear/anxiety" (pp. 218). Phobic avoidance may be motivated by unrealistic fears of the *consequences* of having panic symptoms, particularly in situations where the person feels trapped or far from help. For children, commonly feared situations are being outside the home and becoming lost (DSM-5, pp. 220). There are some concerns for children failing to meet the new DSM-5 criteria and not receiving proper treatment, mainly due to criterion A (requiring symptoms elicited from two or more of the situations listed above; Cornacchio et al., 2015). However, the result and impact of this needs to be researched further.

### Epidemiology

Agoraphobia is diagnosed in about 1.7% of adolescents and adults each year, with a "substantial incidence risk in late adolescence and early adulthood" (DSM-5, pp. 219). In a study of US adolescents, Roberts et al. (2007) found a 1-year prevalence rate of 4.5% (significantly higher than the rates found in adults). In fact, this study found that agoraphobia was the most frequent anxiety disorder in their sample, although the prevalence

dropped to 1.6% when impairment was required for a diagnosis. In a 2010 study of mental disorders in US adolescents (aged 13–18), the lifetime prevalence of agoraphobia was 2.4%, with higher rates for females than males (3.4% versus 1.4%) (Merikangas et al., 2010). Wittchen et al. (2008) examined the prevalence of agoraphobia in German adolescents. 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. While cultural/racial groups do not seem to have different prevalence rates, cultural context is considered in the DSM-5 when determining if symptoms are "out of proportion to the actual danger posed" (pp. 219).

## Separation Anxiety Disorder

### Description

Separation anxiety disorder is a somewhat unique diagnosis in that, up until the DSM-5, it was the only anxiety disorder limited to children and adolescents. Separation anxiety disorder is defined in DSM-5 (pp. 190) as "developmentally inappropriate and excessive fear or anxiety concerning separation from those to whom the individual is attached, as evidenced by three or more of the following (Table 2.3):

- Recurrent excessive distress when anticipating or experiencing separation from home or from major attachment figures
- Persistent and excessive worry about losing major attachment figures or about possible harm to them, such as illness, injury, disasters, or death
- Persistent and excessive worry about experiencing an untoward event (e.g. getting lost, being kidnapped, having an accident, becoming ill) that causes separation from a major attachment figure
- Persistent reluctance or refusal to go to out, away from home, to school, to work, or elsewhere because of fear of separation
- Persistent and excessive fear of or reluctance about being alone or without major attachment figures at home or in other settings
- Persistent reluctance or refusal to sleep away from home or to go to sleep without being near a major attachment figure
- 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."

**Table 2.3** DSM-5 Diagnostic criteria for separation anxiety disorder

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|---|
| Recurrent excessive distress when anticipating or experiencing separation from home or major attachment figures occurs or is anticipated |
| Persistent and excessive worry about losing major attachment figures or about possible harm to them, such as illness, injury, disasters, or death |
| Persistent and excessive worry about experiencing an untoward event (e.g., getting lost, being kidnapped, having an accident, becoming ill) that causes separation from a major attachment figure |
| Persistent reluctance or refusal to go to out, away from home, to school, to work, or elsewhere because of fear of separation |
| Persistent and excessive fear of or reluctance about being alone or without major attachment figures at home or in other settings |
| Persistent reluctance or refusal to sleep away from home or to go to sleep without being near a major attachment figure |
| 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 (2013, pp. 190–191)

To be considered clinically significant, these symptoms must be present in children and adolescents for at least 4 weeks. Comparatively, adults must present these symptoms for 6 or more months. Particular to children, the symptoms must be developmentally inappropriate for the child's biological age. Many of these symptoms would be considered developmentally appropriate in children ages 7 months to 6 years old

(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 separation anxiety disorder is an exaggerated fear of 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 et al., 1987; Paulus et al., 2015). 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. Similarly, children tend to exhibit physical symptoms such as headaches and nausea, whereas adolescents and adults tend to experience cardiovascular symptoms (APA, 2013). Some children have also described perceptual experiences. Additionally, older children and adolescents are most likely to experience a smaller number of symptoms than are younger children.

## Epidemiology

While separation anxiety disorder can 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 separation anxiety disorder follows an intermittent course over time. Children often experience remissions and relapses around times of school holidays, vacations, and life stressors (Cantwell & Baker, 1988; Hale et al., 2008). When followed over a period of 4 years, 96% of children initially diagnosed with separation anxiety disorder no longer met diagnostic criteria, the highest recovery rate of any anxiety disorder studied (Last et al., 1996).

Prevalence rates in community samples for separation anxiety disorder ranged from 2.0% to 12.9% (Anderson et al., 1987; Kashani & Orvaschel, 1988; McGee et al., 1990). Among children 12 years old and younger, separation anxiety disorder is the most prevalent disorder and has been found to decrease throughout the lifespan (APA, 2013), consistent with previous literature. The range in rates may be attributable to the age at which symptoms were assessed. The lower rates of prevalence were found in studies examining adolescents, while the higher rates were found in community samples of younger children. Rates among clinical populations are higher than the general population, with 33% of a sample of anxious children meeting diagnostic criteria for separation anxiety disorder (Last et al., 1987b). Results of this study also indicated that 41% of the children with a primary diagnosis of separation anxiety disorder had a comorbid anxiety diagnosis, the most common being GAD or specific phobia (APA, 2013).

A number of sociodemographic variables have been associated with separation anxiety disorder. Most samples examining separation anxiety disorder have been primarily with children of European descent, although this finding may reflect biased sampling rather than true cultural differences (Strauss & Last, 1993). However, one study in Uganda found a child/adolescent prevalence rate of 5.8% (Abbo et al., 2013). As with most other anxiety disorders, rates of separation anxiety disorder are higher in females than males (Compton et al., 2000); however, there is evidence of equal rates in a clinical sample (APA, 2013). Contrarily, a few published reports found no gender differences (Bird et al., 1989; Last et al., 1992; Paulus et al., 2015). Additionally, lower SES and parental education levels have been associated with higher rates of separation anxiety disorder in children (Bird et al., 1989; Last et al., 1987b). In a study examining separation anxiety disorder heritability, researchers estimated a heritability rate of 73% in a community sample of 6-year-old twins (Bolton et al., 2006).

## Role of Avoidance

In addition to the many fears that children with separation anxiety disorder experience, the avoidance of situations is a key element of this disorder. Additionally, avoidance behaviors play an important sustaining role in anxiety disorders (Foa & Kozak, 1986). There is a large range of avoidance behaviors common to children with separation anxiety disorder, and types of avoidance may vary by age. Reluctance to be being alone or without an adult and reluctance to sleep away from caregivers or from home are the most frequently reported avoidance behaviors (Allen et al., 2010). Milder forms of avoidance include hesitation to leave home, 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 (e.g., following the adult around the house). Older children may be more likely to have difficulty leaving home 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. According to the DSM-5 (2013), girls may exhibit more reluctance or avoidance to attend school than boys.

Avoidance behaviors may slowly increase over time. Albano et al. (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 et al. (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 stomachaches or headaches. It is often these avoidance behaviors that will prompt the parent to bring the child in for treatment.

## Differential Diagnosis

### Developmentally Appropriate Fear Versus 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. 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 et al., 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 et al., 2000). One common assessment used for the diagnosis of anxiety disorders in children is the Multidimensional Anxiety Scale for Children Second Edition (MASC; March et al., 1997; March, 2012). 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. The updated ADIS-5-C/P is under development. The structured Clinical Interview for DSM-5 (SCID-5) specifically tailored for children and adolescents is also currently under development.

## 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, there may be limitations in their vocabulary or 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 separation anxiety disorder. The following section covers common distinctions that must be made in the differential diagnosis of specific phobia, social phobia, panic disorder, agoraphobia, and separation anxiety disorder. 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 versus a 3.8% rate for panic disorder (Kessler et al., 2006, 2012). 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 et al., 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. separation anxiety disorder*** Specific phobia and separation anxiety disorder 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 separation anxiety disorder. 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 separation anxiety disorder 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).

***Specific phobia vs. agoraphobia*** Specific phobia and agoraphobia share similar criteria, particularly regarding feared situations. DSM-5 guidelines state that if the individual fears one situation, specific phobia should be considered, as agoraphobia requires two or more feared situations. Additionally, the motive for the feared situation is an important factor in distinguishing the two diagnoses. For example, an individual who displays crowd phobia tendencies due to fear of being harmed may be diagnosed with specific phobia, whereas an individual who fears crowds due to fear of displaying panic-like symptoms would be appropriate for an agoraphobia diagnosis.

***Social anxiety disorder (social phobia) vs. panic disorder*** A child who presents with panic attacks and a fear of social situations could be living with either panic disorder or social anxiety disorder. Additionally, both conditions lead to avoidance of social situations, such as school refusal. Indeed, the Panic Appraisal Inventory (Telch, 1987), which is commonly used to measure panic-related concerns, comprises a subscale of panic consequences that include social concerns. Though frequently co-occurring (Schneier et al., 1992), social anxiety disorder and panic disorder can be distinguished by the primary fear driving the anxiety. While social anxiety disorder is characterized by fear of negative evaluation, panic disorder is characterized by fear of the panic attacks themselves (APA, 2013). For example, a child may fear that they 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. Similarly, children with social phobia 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 their possible public panic response.

***Social anxiety disorder (social phobia) vs. separation anxiety disorder*** As with panic disorder, separation anxiety disorder can also resemble social anxiety disorder in some respects. For example, school refusal may be driven by social anxiety or by the distress associated with separation from one's caregiver. Careful questioning of the child and, if necessary, the parents may reveal the underlying fear. Whereas social anxiety disorder is characterized by the fear of being judged negatively by others, separation anxiety is defined by the fear of being separated from attachment figures (APA, 2013). 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 separation anxiety disorder is likely. On the other hand, if the child is still terribly afraid of social settings even in the presence of the parents, the accurate diagnosis is likely social anxiety disorder.

***Social anxiety disorder (social phobia) vs. agoraphobia*** The main factor differentiating social anxiety disorder from agoraphobia is the stimulus triggering symptoms and the cognitive ideation (DSM-5). A diagnosis of agoraphobia will be defined by marked by fear, anxiety, and avoidance of certain places or situations. Conversely, fear of negative evaluation will be at the core of a social anxiety disorder diagnosis.

***Panic disorder vs. separation anxiety disorder*** The final differential diagnosis, between panic disorder and separation anxiety disorder, can be one of the more difficult distinctions to make. In fact, there is strong evidence that separation anxiety disorder is a risk factor for panic disorder (Kossowsky et al., 2013). 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 person with agoraphobia who is concerned 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 separation anxiety disorder, 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.

***Panic disorder vs. agoraphobia*** Agoraphobia should only be diagnosed when avoidance behaviors associated with panic attacks extend to two or more agoraphobic situations.

***Agoraphobia vs. separation anxiety disorder*** Much like with panic disorder, the differentiation between agoraphobia and separation anxiety disorder lies in the specific cognitive ideation. In agoraphobia, the focus is on panic-like or other incapacitating or embarrassing symptoms in feared situations, whereas the cognitive ideation in separation anxiety disorder is more likely thoughts on detachment from parents or other attachment figures.

## Diagnostic Reliability

In light of the often-challenging differential diagnosis of the disorders described in this chapter, arriving at a reliable diagnosis is imperative to provide treatment recommendations. The current diagnostic system was adopted in an attempt to increase the reliability of diagnoses across clinicians. Attempts to determine diagnostic reliability often rely on test-retest or interrater reliability approaches, including the audio/video-recording method. Knappe et al. (2013) demonstrated high test-retest reliability of the dimensional anxiety scales, including social anxiety disorder, agoraphobia, and panic disorder. In accordance with previous research (Lebeau et al., 2012), Knappe et al. (2013) reported low test-retest reliability for specific phobia. Interrater reliability for these disorders is also in the excellent range (Brown et al., 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 to the current diagnostic system, there also are significant limitations to the way 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, diagnoses 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 et al., 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. Not only does this present issues for diagnostic reliability, but this causes challenges for conducting research on the etiological and treatment differences among disorders (Asmundson et al., 2014). 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 anxiety disorder (social phobia), panic disorder, agoraphobia, and separation anxiety disorder, 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 anxiety disorder, anxiety is provoked by confronting the feared stimulus. Anxiety in those with agoraphobia is triggered by the fear of anticipated or real exposure to feared places or situations. Panic disorder is defined by fear of having panic attacks and of what their implications might be. Separation anxiety disorder 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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