CHAPTER 10

Panic Disorder and Agoraphobia

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The evolution of our understanding of panic disorder with agoraphobia (PDA) and its treatments over the last two decades has been rapid and exciting. Since it was formally recognized as a discrete disorder in the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; American Psychiatric Association [APA], 1987), PDA has become the most investigated of the anxiety disorders. Conceptualizations of PDA in the first edition of this book (Barlow, 1988)—panic disorder as anxiety focused on somatic sensations associated with panic attacks, and agoraphobia as a strategy for coping with panic attacks by avoiding unsafe situations where attacks might occur—are increasingly supported today. In addition, evidence continues to accumulate supporting the efficacy of cognitive-behavioral and drug treatments for PDA. In this chapter we review the modern developments in the conceptualization, assessment, and treatment of PDA. The chapter begins with an overview of the clinical presentation and diagnostic classification of PDA, followed by our model of etiology and development. After a discussion of effective methods for diagnosis and assessment, we review the empirically supported psychological and drug treatments for PDA—including the cognitive-behavioral treatment (CBT) protocol developed in our clinic, "panic control treatment" (PCT). We conclude by highlighting our recent efforts to improve long-term outcome for patients with PDA, and by discussing areas in need of further research.

A HISTORICAL CONTEXT

Westphal (1871) coined the term "agoraphobia" in the late 1800s; however, the condition known as agoraphobia only became well known during the late 1970s and the 1980s. Since that time, PDA has become one of the most widely recognized and publicized anxiety disorders. The earlier views of agoraphobia as a fear of venturing into crowded areas are inconsistent with the model alluded to in previous chapters, which highlights the centrality
of panic in generating agoraphobia. In fact, the term “agoraphobia” is somewhat misleading, based on our current model of PDA. Were it not for an accident of history, this seeming misdirection might not have occurred. In 1870, a year before Westphal, Benedikt (1870) suggested another name for what was certainly the same condition. The German term platzschwindel, referring to the sensation of dizziness in public places, conveys what now seems to be a more accurate conception of the disorder. We now know that individuals with this disorder focus on and attempt to avoid internal physical sensations associated with panic, and dizziness is indeed one of the primary symptoms of panic. Over the years, clinicians have suggested alternative labels to capture this essential feature of PDA, as did Roth (1960) when he referred to agoraphobia as the “phobic anxiety–depersonalization syndrome.” In any case, what these clinicians were communicating was that the central problem in PDA is anxiety focused on the symptoms of panic; hence the well-known and commonly accepted characterization of agoraphobia as “fear of fear.”

Since that time, evidence has indeed accumulated (reviewed below) supporting our basic assumption that agoraphobic avoidance behavior is a secondary but associated feature of unexpected panic. This avoidance behavior is multiply determined and maintained, and it is closely associated (at least initially) with the escapist action tendencies of the basic emotion of fear (i.e., panic). Over time, agoraphobic avoidance may become one way of coping with anxiety over the possibility of additional unexpected panics.

DIAGNOSTIC CLASSIFICATION AND CLINICAL OVERVIEW

Panic Disorder and the Nature of Panic Attacks

As detailed in DSM-IV (APA, 1994) and in Chapter 4, a “panic attack” is an intense, discrete episode of fear or discomfort accompanied by various somatic and cognitive symptoms; these may include palpitations, chest pain, sweating, trembling, shortness of breath, and paresthesias (i.e., numbness or tingling), as well as fears of dying, losing control, or going crazy. Although panic attacks can occur as a part of all anxiety disorders, panic disorder is distinguished by the occurrence of unexpected, often seemingly uncued or “out-of-the-blue” panic attacks. The DSM-IV diagnostic criteria for panic disorder require recurrent panic attacks (operationalized as a minimum of two unexpected attacks). The attacks must peak in severity within 10 minutes and must be followed by 1 month or more of persistent worry about future attacks, worry about the consequences of the attacks (e.g., dying, having a heart attack, going crazy, losing bowel control), or a behavioral change because of the attacks (e.g., cutting back on work, more frequent medical check ups, placing the phone next to the bed at night). This “behavioral change” criterion covers “noffearful” panic attacks in which the individual does not report anxiety about future attacks, but seems to manifest this anxiety through changes in behavior (see Chapter 4). And, as with the other anxiety disorders, the symptoms cannot be the direct result of the effects of a substance (e.g., caffeine) or a general medical condition (e.g., hyperthyroidism, hypoglycemia). This is usually determined by noting whether the onset and offset of symptoms is directly related to the onset and offset of the medical condition.

Agoraphobia

Panic disorder may occur with or without the presence of agoraphobia, although at least mild agoraphobia is almost always present (see Chapter 9). “Agoraphobia” refers to the
avoidance or endurance with distress of situations that might be difficult to escape or in which help is unavailable in the event of a panic attack or panic-like symptoms. As a result of anxiety concerning panic-like sensations, the individual with agoraphobia may avoid travel outside the home or may require the accompaniment of a companion when away from home. The experience of agoraphobia can range from mild to severe restriction in lifestyle, and a severe case may result in the individual's being completely housebound or unable to leave home unaccompanied. Avoided activities may include driving (locally or long distance); traveling over bridges; going to grocery stores, malls, theaters, churches, or temples; being in crowds; going to restaurants; using public transportation; going to the barber or hairdresser; or being in enclosed or being in wide-open spaces. It is not uncommon for patients with agoraphobia to define a “safe zone” around their homes, and to be unable to venture outside this radius.

In addition to these situational clusters of avoidance, the patient may manifest avoidance of substances (e.g., caffeine, alcohol, taking medication) or physical activities (e.g., exercise, sexual activity) that produce somatic sensations resembling the symptoms associated with panic. We have referred to this cluster of responses as “interceptive avoidance” (Raice, Craske, & Barlow, 1995; Shear et al., 1997), and it seems clear that it is every bit as important as more classical agoraphobic avoidance. Examples of interceptive activities typically avoided by individuals with agoraphobia are presented in Table 10.1. These persons may also engage in “safety behaviors” (e.g., carrying a bottle of water, mints, or anxiolytic medications) that they believe may prevent or protect them in some way in the event of a panic.

Although most persons with panic disorder also have agoraphobia, when agoraphobia is not accompanied by panic attacks, it is diagnosed as agoraphobia without history of panic disorder (AWOPD; APA, 1994). Individuals suffering from AWOPD typically present with panic-like sensations or other embarrassing symptoms (e.g., vomiting, loss of bladder control), but have never met criteria for panic disorder (e.g., never experienced a full-blown panic attack, panic attacks have not peaked within 10 minutes, no recurrent unexpected panic attacks). Occurrences of “limited-symptom attacks” that do not meet full diagnostic criteria for panic attacks (i.e., fewer than four panic symptoms) are usually what distinguish patients with AWOPD from patients with PDA. Indeed, 57% of patients with AWOPD report limited-symptom attacks (Goldsman, Warshaw, et al., 1995). Because the

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<th>TABLE 10.1. Common Interceptive Activities Avoided by People with Agoraphobia</th>
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<tr>
<td>Running up flights of stairs</td>
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<td>Walking outside in intense heat</td>
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<td>Hot, stuffy rooms</td>
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<td>Hot, stuffy cars</td>
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<td>Hot, stuffy stores or shopping malls</td>
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<td>Walking outside in very cold weather</td>
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<td>Aerobics</td>
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<td>Dancing</td>
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<td>Sexual relations</td>
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<td>Watching horror movies</td>
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pattern of agoraphobia in AWOPD is quite similar to that of PDA, some have posited that this condition occurs on a continuum with PDA rather than as a distinct disorder (Goisman, Warshaw, et al., 1995).

The Connection between Panic Attacks and Agoraphobia

The long-standing controversy regarding the nature of the relationship between agoraphobic avoidance and panic attacks continues today. As late as 1980, when DSM-III was published, agoraphobia was considered a separate phobic disorder that may or may not be accompanied by panic attacks (APA, 1980). However, due in large part to Klein’s (1981) argument, agoraphobia came to be viewed as a conditioned avoidance response to the aversive stimulus of spontaneous attacks, and the diagnostic view of agoraphobia changed considerably. By the time DSM-III-R (APA, 1987) was published, panic disorder was viewed as diagnostically primary with or without the existence of agoraphobia (secondary), based largely on clinical research. An important factor in this change was the early observation by Klein and others (Craske & Barlow, 1988; Turner, Williams, Beidel, & Mezzich, 1986) that agoraphobia rarely develops without being preceded by panic attacks or limited-symptom attacks in clinical samples. Although some have found otherwise (Fava, Grandi, & Canestrari, 1988; Marks, 1987), most clinical research supports Klein’s contention that the occurrence of panic attacks generally precedes agoraphobia (Katerndahl & Realini, 1997; Swinson, 1986; Thyer & Himle, 1985), and that patients with panic disorder are more likely to develop agoraphobic avoidance of situations or locations that were associated with the first panic attack (Faravelli, Pallanti, Biondi, Paterniti, & Scarpato, 1992). Several explanations have been put forward for the temporal sequence of panic and agoraphobia. First, the expectation of a panic attack while in a particular situation predicts the development of agoraphobic avoidance (Craske, Rapee, & Barlow, 1988; Kenardy & Taylor, 1999; Telch, Brouillard, Telch, Agras, & Taylor, 1989). This expectation appears to be more critical in predicting agoraphobia than the severity, frequency, or duration of the panic attack (Craske, Sanderson, & Barlow, 1987). With few exceptions (Turner et al., 1986), this finding has been supported by others (Cox, Endler, & Swinson, 1995; Telch, Brouillard, et al., 1989). Similarly, Cox et al. (1995) found no relationship between anxiety sensitivity and the presence of catastrophic cognitions across levels of agoraphobia, contradicting findings of such associations by others (Norton, Pidlubny, & Norton, 1999). Second, factors such as social embarrassment resulting from the panic attack (Amering et al., 1997) and occupational status at panic attack onset (de Jong & Bouman, 1995) have also predicted the development of agoraphobia. Such findings are consistent with earlier theorizing in this area (Craske & Barlow, 1988) that secondary gain (positive or negative reinforcement) may contribute to development of agoraphobia.

Prevalence

Contributing to the enduring controversy over the relationship between panic attacks and agoraphobia are the large differences between clinical and community study estimates of prevalence of PDA and AWOPD, and the changes in these estimates over time. The prevalence of agoraphobia was formerly estimated at approximately 0.5% on the basis of probability samples of the population as late as the 1960s (Agras, Sylvester, & Oliveray, 1969); however, more recent epidemiological studies have documented significantly higher prevalence rates of panic disorder, PDA, and AWOPD. Lifetime prevalence of PDA is estimated to be between 1.5% and 3.5%, with 1-year prevalence rates estimated between 1% and
2% (APA, 1994; see Chapter 1). This increase in population prevalence probably does not reflect an actual increase in prevalence, but is likely due to variability in definitions of agoraphobia, assessment techniques, and the geographic areas and age ranges sampled. In addition, research design differences may affect the results (e.g., cross-sectional vs. longitudinal). The National Comorbidity Survey conducted in the United States reported a 3.5% lifetime prevalence for PDA or panic disorder without agoraphobia, and a 5.3% lifetime prevalence of AWOPD (Kessler et al., 1994).

The diagnosis of AWOPD is a controversial category about which we know very little. Years ago, when DSM-III-R was being compiled, a difference of opinion arose between the clinicians on the one hand and the epidemiologists on the other. Whereas clinicians reported almost never seeing a case of agoraphobia without panic (Barlow, 1988; Swinson, 1986; Thyer, Himm, Curtis, Cameron, & Nesse, 1985), epidemiologists reported a substantial percentage of people with extensive avoidance who did not present with panic attacks (Weissman, 1985; Weissman, Leaf, Blazer, Boyd, & Florio, 1986). This discrepancy continues to date. Whereas epidemiological studies report high rates of agoraphobia without panic (2.8% last 6 months, 5.3% lifetime; Kessler et al., 1994), clinical samples show that individuals with agoraphobia who seek treatment almost always have a precipitating history of panic (Craske, Miller, Rotunda, & Barlow, 1990; Noyes et al., 1986; Pollard, Bronson, & Kenney, 1989). For example, in the Harvard-Brown Anxiety Disorder Research Program (mentioned briefly in Chapter 1) — a naturalistic, longitudinal study of anxiety disorders that included 562 patients with panic disorder — Goisman, Warshaw, et al. (1993) found that only 6% of patients with agoraphobia met criteria for AWOPD. Community studies, however, have found that a substantial proportion of subjects with agoraphobia do not report a history of panic attacks (Thompson, Bland, & Orn, 1989; Faravelli, Degl'Innocenti, & Giardinelli, 1989; Joyce, Bushnell, Oakley-Brown, Wells, & Hornblow, 1989). The Epidemiologic Catchment Area (ECA) study conducted with more than 18,000 Americans (and based on DSM-III criteria) found that the majority of individuals with agoraphobia did not report panic attacks (Eaton, Dryman, & Weissman, 1991).

Recent research by Wittchen, Reed, and Kessler (1998) also showed AWOPD to be more prevalent than PDA. Attempts to reconcile these discrepant findings have led researchers to conclude that (1) individuals with panic are more likely to seek treatment (Boyd, 1986); (2) clinical samples have higher rates of comorbidity than samples of untreated individuals (Berkson, 1946); and/or (3) epidemiological studies may have overestimated prevalence because of misdiagnosis, particularly misdiagnosis of specific phobia (Horwath, Lish, Johnson, Hornig, & Weissman, 1993). For example, it seems that lay interviewers in the ECA study mistook fear of venturing out in an unsafe area among people living in a poor neighborhood for AWOPD. Nevertheless, it is clear that not all patients with panic develop agoraphobia, and that the magnitude of agoraphobic avoidance is quite variable (Craske & Barlow, 1988).

Age of Onset

Panic disorder is generally a disorder of adulthood. The disorder has a median age of onset of 24 years (Burke, Burke, Regier, & Rae, 1990). The ECA study found a bimodal distribution in age of onset occurring between ages 15-24 years and 45-54 years (Eaton, Kessler, Wittchen, & Magee, 1994). The average age at which people seek treatment for panic is 34 years (Breier, Charney, & Heninger, 1985; Craske et al., 1990). Prepubertal children are known to experience panic attacks and occasionally PDA, although this is rare (Albano, Chorpita, & Barlow, 1996; Kearney, Albano, Eisen, Allen, & Barlow, 1997; Moreau &
Weissman, 1992). The interesting observation has been made that most unexpected panic attacks begin during or after puberty. In fact, puberty seems a better predictor of unexpected panic attacks than age, since higher rates of panic attacks are found in physically mature girls (Hayward et al., 1992). In addition, many prepubertal children seen by pediatricians present with symptoms of hyperventilation that may well be unrecognized panic attacks. It may be that these children do not report fears of dying or losing control (which might look more like panic to pediatricians), since they are not at a stage of their cognitive development where they can make these attributions (Nelles & Barlow, 1988). In general, PDA seems less pervasive among the elderly, but estimates are not yet firm (e.g., Beck & Stanley, 1997). Lindsay (1991) studied 60 cases of phobic disorders in the elderly, mostly PDA; they found that PDA had a late onset (after age 30) and was often related to a particularly severe stressful life event, usually an illness or injury.

Clinical Course and Correlates

Several noteworthy naturalistic longitudinal investigations have revealed the clinical course of PDA to be chronic and disabling. Rate of remission for PDA or panic disorder without agoraphobia at 5 years has been reported to be 39% and is equivalent in men and women; however, recurrence of panic symptoms is higher in women (82%) than men (51%; Yonkers et al., 1998). The Harvard-Brown project found 1-year remission rates of 37% for panic disorder and 17% for PDA. Perhaps more important, however, was the finding that among patients who attained remission, relapse was common (Keller et al., 1994). At the 3-year follow-up, the cumulative probability of symptom recurrence was very high: For panic disorder the probability was .65 for women and .39 for men, and for PDA the probability was .75 for women and .47 for men (Keller et al., 1994). Findings like these demonstrate the importance of longitudinal studies for adequately and most accurately capturing the course of PDA. With the Harvard-Brown study as a model, longitudinal investigations of clinical course may actually show increased prevalence estimates, because they capture relapse and/or symptom recurrence (unlike more limited cross-sectional evaluations). Nevertheless, inferences about the true natural course of the disorder must be drawn with prudence, because of the inherent limitation of examining course in a clinical sample where events may in fact be influenced by participating in the study.

Stress has been identified as a clinical correlate of panic onset, most likely due to its strong relationship with the initial unexpected panic attack. The large majority (70%) of individuals describe identifiable stressors at panic attack onset, particularly relating to interpersonal difficulties or physical well-being; stressors of the latter type include frightening experiences with drugs (either legitimate, such as anesthesia, or illegitimate, such as marijuana). But the triggering role of stress seems similar across all anxiety disorders, and is not unique to panic disorder (Craske, Miller, Rotunda, & Barlow, 1990, see Chapter 8 for an extended discussion).

Gender and Cultural Factors

One of the most fascinating mysteries about PDA is the marked gender difference in presentation: Women report more than twice times greater incidence than men (Katerndahl & Readini, 1993). This 2:1 sex ratio has been consistently found in both community and clinical studies around the world (Wittrich, Essau, Von Zerssen, Krieg, & Zaudig, 1992; Bland, Orn, & Newman, 1988), and it appears to hold up whether patients are presenting for treatment (Mathews, Gelder, & Johnson, 1981) or are participating in random samples of
the population (Myers et al., 1984; Thorpe & Burns, 1983). In fact, one meta-analysis found three-fourths of treatment research participants to be women (Gould, Otto, & Pollock, 1995). Similarly, other reports (Myers et al., 1984; Thorpe & Burns, 1983), including the National Comorbidity Study (Kessler et al., 1994), found lifetime prevalence of panic disorder and AWODP to be almost twice as high among women (5% and 7%, respectively) as among men (2.0% and 3.5%, respectively). Increasing severity of agoraphobia is also associated with a higher proportion of women. At the most severe level of agoraphobia in our clinic at Boston University, fully 89% are women.

Various reasons have been offered to explain this gender discrepancy, including greater cultural acceptability of avoidance for women and/or a difference in coping strategies between men and women. The cultural acceptability explanation is based on the assumption that in most cultures around the world, it is generally more culturally acceptable for women to report fear and to act by avoiding a large number of situations because of it, whereas men are expected to minimize fears and to overcome them through avoidance. Chambliss and Mason (1986) found that the tendency to avoid situations while alone for individuals with agoraphobia, whether male or female, was significantly correlated with masculinity scores on a sex role scale. That is, the less “masculine” one’s scores on a sex role scale, the more agoraphobic avoidance, regardless of gender. Pierce and Kirkpatrick (1992) and Ginsburg and Silverman (2000) reported similar findings in which males (in samples of college students) and children (with anxiety disorders) undereport fear, respectively. This supports the notion that agoraphobic avoidance behavior is in large part culturally determined, and it highlights the potential importance of associated personality characteristics described below.

In addition, many more men than women cope with anxiety and panic by self-medicating with alcohol or other substances, as reviewed in some detail in Chapter 1 (e.g., Kushner, Abrams, & Borchardt, 2000). Essentially, men may self-medicate (e.g., with alcohol or nicotine) more than women in an attempt to endure rather than to avoid the feared situations. Recent research has indeed found substantially higher prevalence of nicotine use among patients with panic disorder, although gender differences were not found (Amering et al., 1999). In addition, panic symptoms may be influenced by certain phases of the female reproductive cycle, and symptoms may worsen during the premenstrual and/or the postpartum period, due to increased unexplained somatic symptoms.

Consideration of the social and cultural context of anxiety and panic can have important implications for assessment and treatment of panic. Although population-based studies have not found any differences in PDA prevalence among African American, Hispanic American, and European American groups (Eaton et al., 1991; Horwath, Johnson, & Hornig, 1993), African Americans are largely underrepresented in treatment outcome programs (Paradis, Hatch, & Friedman, 1994). Additional clinical characteristics for African Americans with PDA include a later age of onset and different modes of coping relative to European Americans; specifically, African Americans tend to use coping strategies like counting one’s blessings and religiosity more often than European Americans do. However, they show less self-blame (L. C. Smith, Friedman, & Nevid, 1999). Friedman, Paradis, and Hatch (1994) found similar characteristic panic symptoms among European American and African American individuals with anxiety in general, but African Americans had more health care utilization (i.e., psychiatric hospitalizations, emergency department visits) and life stress (i.e., childhood trauma). Furthermore, higher rates of fears of dying have been reported among African American patients than among majority group patients (L. C. Smith et al., 1999). To date, it is unclear to what extent potential confounds such as socioeconomic status or social support factors may be operating in this discrepancy, and future research could help to elucidate these factors.

FIGURE 10.1. Summary of aetiology of panic disorder (PD), (2) ot 1. Panic Disorder conditions 1 and 4, in African Americans or Not surp Societal and Communication sty assessment, at illustrate this to a syndrome co and Latin Am et al., 1994). 1 bling, numbne may respond v Like panic dis stances (e.g., c acceptabe resps Second, a what is genera panic-like atta somatic arous 60% were dia though most d
research conducted to examine these cross-cultural differences is needed. As noted in Chapters 1 and 4, the occurrence of panic-like isolated sleep paralysis is also significantly higher in African Americans with PDA, with rates as high as 59.6%, compared to European Americans or other groups with PDA (see Figure 10.1).

Not surprisingly, the characterization of PDA differs across the cultural landscape; societal and cultural variables (e.g., ethnic identity, gender roles within the family, communication styles, and level of acculturation) play significant roles in clinical presentation, assessment, and treatment, as described in Chapter 1 (Friedman, 1997). Two examples illustrate this differential clinical presentation of panic disorder. First, ataque de nervios is a syndrome commonly reported in Hispanic populations, including those from Caribbean and Latin American areas (Guarnaccia, Canino, Rubio-Stipec, & Bravo, 1993; Liebowitz et al., 1994). This condition includes somatic symptoms similar to panic, including trembling, numbness, palpitations, as well as heat mounting in the head; also, the individual may respond with cursing, falling to the ground, and/or memory loss following the attack. Like panic disorder, ataque de nervios generally occurs concurrent with stressful circumstances (e.g., death of a loved one, familial conflict) and is considered to be a culturally acceptable response to difficult circumstances (Guarnaccia, Rubio-Stipec, & Canino, 1989).

Second, a common panic-like experience reported in Cambodian populations involves what is generally referred to as “sore neck syndrome.” This syndrome is characterized by panic-like attacks consisting of headache, dizziness, disturbed vision, and other forms of somatic arousal (e.g., increased heart rate, trembling). In a study of 89 Khmer patients, 60% were diagnosed with panic disorder (Hinton, Ba, Peou, & Um, in press-a), and although most did not endorse panic attacks per se, patients reported common triggers for

![Figure 10.1](image-url) Figure 10.1. Isolated sleep paralysis in (1) African Americans (AA) and whites with panic disorder (PD), (2) other anxiety disorders (AD) but not panic disorder, and (3) community volunteers with no disorder. From Paradis, Friedman, and Hatch (1997). Copyright 1997 by John Wiley & Sons, Ltd. Reprinted by permission.
the attacks that included orthostatically induced olfactory stimuli, hunger, and dizziness. Most of these patients identified a fear of dying during the attack from a rupture of blood vessels in the neck resulting from increased wind pressure and blood flow. This fear reflects the cultural belief in “wind overload” (kyo goen) as a cause of somatic symptoms that could signal a blockage of an important vessel in the neck carrying wind and blood to the body. In spite of some differences, it seems clear that these attacks resemble Western concepts of panic attacks.

Functional Impairment and Costs

Patients with panic disorder, especially those with PDA, suffer high levels of social, occupational, and physical disability (Klerman, Weissman, Ouellette, Johnson, & Greenwald, 1991; Leon, Portera, & Weissman, 1995; Markowitz, Weissman, Ouellette, Lush, & Klerman, 1989; Siegel, Jones, & Wilson, 1990). Moreover, numerous studies have shown that panic disorder is associated with persistent general medical health consequences as well as poor perceived physical health (Antony, Roth, Swinson, Huta, & Devins, 1998; Barsky, Delamater, & Orav, 1999; Klerman et al., 1991; Markowitz et al., 1989; Sherbourne, Wells, & Judd, 1996). Individuals with panic are among the highest users of ambulatory medical services, including emergency departments, and are more likely than other psychiatric patient groups to be hospitalized for physical problems (Klerman et al., 1991). In comparison to people with other psychological disorders, individuals with panic disorder have the highest use of emergency services for problems with an emotional basis (Rees, Richards, & Smith, 1998; Weissman, 1991). Siegel et al. (1990) found that their patients with panic disorder had up to seven times the number of medical visits expected for the general population, and missed up to twice as many work days. Antony et al. (1998) found that individuals with panic disorder reported more subjective impairment than individuals with chronic medical conditions such as end-stage renal disease or multiple sclerosis. On the other hand, in comparison to those with other anxiety disorders (e.g., social phobia, obsessive-compulsive disorder), research has generally found that individuals with panic disorder do not report higher levels of impairment (Antony et al., 1998), although there are some exceptions to this finding (e.g., Rees et al., 1998).

The costs of panic disorder extend beyond individuals' suffering to include tremendous direct (e.g., hospitalizations, medications) and indirect (e.g., work productivity) costs to the healthcare system (Salvador-Carulla, Segui, Fernandez-Cano, & Canet, 1995). As detailed in Chapter 1, the estimated cost of anxiety disorders as a group was estimated to be in excess of $46 billion, of which panic disorder accounted for a substantial part (Katon, 1996). In light of these striking findings, it is not surprising that efforts to improve identification and treatment of patients with panic disorder in medical settings have attracted much recent attention and are increasingly becoming goals of investigation (Mostofsky & Barlow, 2000; Roy-Byrne & Katon, 2000).

Diagnostic Comorbidity

The diagnosis of panic disorder rarely occurs in isolation. As noted in Chapter 9 (see Table 9.5), over half of individuals with PDA present with comorbid psychological disorders (60%, Brown, Campbell, Lehman, Gresham, & Mancill, 2001; 51%, T. A. Brown, Antony, & Barlow, 1995), and this has been a consistent finding. Common psychological disorders comorbid with panic disorder include other anxiety disorders (Goisman, Goldenberg, Vasilie, & Keller, 1995; Sanderson, Di Nardo, Raper, & Barlow, 1990), mood dis-
orders (Chen & Dilsaver, 1995; Lesser et al., 1988), substance use disorders (Cox, Norton, Swinson, & Endler, 1990), and personality disorders (Chambless, Ronneberg, Goldstein, & Gracely, 1992; Diaferia et al., 1993). The large study described in Chapter 9 (Brown et al., in press) obtained patterns of comorbidity for 360 patients carefully diagnosed with PDA according to the Anxiety Disorders Interview Schedule for DSM-IV: Lifetime (ADIS-IV-L), and found 59% with a comorbid anxiety or mood disorder and 46% with a comorbid anxiety disorder alone. Among specific disorders, 23% presented with a comorbid major depressive disorder, 16% with generalized anxiety disorder, and 15% each with social phobia or specific phobia. Other studies have found similar high rates of comorbidity (First, Spitzer, Gibbon, & Williams, 1996). Several studies have reported that most nonpanic psychological conditions usually preclude panic disorder in individuals with multiple psychological disorders (Katerndahl & Realini, 1997; Starcevic, Uhlenhuth, Kellner, & Pathak, 1993).

It has been estimated that from 25% to 65% of individuals with PDA also meet criteria for an Axis II personality disorder, usually dependent, avoidant, or histrionic personality disorder (Brooks, Balfazar, & Munjack, 1989; Chambless, Goldstein, Gallagher, & Bright, 1986; Chambless et al., 1992; Diaferia et al., 1993; Reich, Noyes, & Troughton, 1987). Estimates of comorbidity and the nature of the association between PDA and the personality disorders are imprecise and remain to be fully investigated. Indeed, the validity of the “personality disorder” diagnoses is disputed in light of findings by some investigators (e.g., Black, Monahan, Wesner, Gabel, & Bowers, 1996; Mavissakalian & Hamman, 1987), who found that abnormal personality traits improved and some “personality disorders” even remitted following successful treatment of PDA.

Suicide Risk

Issues of diagnostic comorbidity have complicated past investigations of suicide risk in panic disorder and PDA. Indeed, a high occurrence of suicidal attempts and ideation has been reported in individuals with panic disorder (Cox, Direnfeld, Swinson, & Norton, 1994), and the presence of panic attacks is reportedly predictive of suicide risk (Clayton, 1993). However, the original report that 20% of individuals with panic disorder had attempted suicide (Johnson, Weissman, & Klerman, 1990; Weissman, Klerman, Markowitz, & Ouellette, 1989) was reanalyzed with statistical controls for comorbidity. This reanalysis failed to find this connection (Hornig & McNally, 1995). In a retrospective review of patients with panic disorder, where it was observed that 25% of patients with panic disorder and comorbid borderline personality disorder reported a past suicide attempt, only 2% of individuals with panic disorder alone reported past attempts (Friedman, Jones, Chernen, & Barlow, 1992). Thus, among individuals with panic disorder, suicide attempts tend to occur more often when a comorbid condition is present (e.g., depressive disorders, borderline personality disorder, substance use disorders; Cox et al., 1994; Friedman et al., 1992; Warshaw, Massion, Peterson, Pratt, & Keller, 1995). In fact, among individuals who commit suicide, a diagnosis of panic disorder is rare (Henriksson et al., 1996), but among those with panic disorder who have attempted suicide, the attempt generally preceded the panic disorder onset (Mannuzza, Aronowitz, Chapman, Klein, & Fyer, 1992).

What is the cause of this discrepancy? Among several possibilities, the method of assessment and the type of interview used in the various studies differed considerably. The epidemiological studies reported by Weissman et al. (1989) were conducted by lay interviewers who were not necessarily trained in determining suicidal risk. Also, the lay interviewers were interviewing a random sample of the population rather than a sample drawn from
A MODEL OF PANIC DISORDER AND PDA

In Chapters 7 and 8, independent models for the development of panic attacks and anxiety have been presented that integrate neurobiological and psychological vulnerabilities and experiences. These chapters have reviewed the necessity of a generalized biological (heritable) vulnerability that seems to account for between 30% and 50% of the variance in developing anxious apprehension. They have also noted that this nonspecific biological vulnerability may be expressed as undifferentiated somatic outputs, heightened stress-responsive arousal, and labile emotionality, but that this vulnerability may well lie dormant unless activated by early psychological experiences. Specifically, early experiences with uncontrollability and unpredictability (based in large part, but not exclusively, on interactions with caregivers) may lead to low perceptions of control. This sense of uncontrollability then acts as a diathesis in the context of stressful life events, creating a generalized psychological vulnerability to experience anxious apprehension. The synergism of these two generalized vulnerabilities is essential for the development of anxiety disorders, as outlined in Figure 8.7.

An extensive review of data on the heritability of panic disorder is presented in Chapter 6. Whereas early family and twin studies suggested an independent genetic contribution to panic disorder (see Table 6.2), more comprehensive analyses (e.g., Kendler et al., 1993) support a nonspecific genetic contribution to emotionality or negative affect generally, as noted above, with environmental factors determining whether panic disorder develops specifically. The exception to this formulation is evidence for differential heritability for panic attacks and other depressive reactions relative to anxiety (e.g., Martin, Jardine, Andrews, & Heath, 1988). Thus one may possess a heritable tendency to react to stress with panic attacks (e) and panic attacks (f) of a generalized biological vulnerability and psychological diathesis of these two vulnerabilities the threshold in those.

Chapter 7 has reviewed a function of stressful events in high levels of implicated in a clinical one's life is dangerous. As Barlow (2001) notes, focus on acute and severe events may be experienced as dangerous and perhaps even life-threatening can and requires one's full attention.

In this fertile context, somatic cues seem to set off panic attacks (e.g., Bufka & Hofmann, 1999).
with panic attacks (versus some other reaction such as headaches), which, in the context of a generalized biological vulnerability to experience emotionality or negative affect, creates a neurobiological diathesis for the development of panic disorder. The hypothetical relationship of these four separate heritabilities, in which heightened negative affect lowers the threshold in those vulnerable to stress-related attacks, is presented in Figure 7.2.

Chapter 7 has reviewed in some detail the origins of false alarms, which may occur as a function of stressful life events in biologically vulnerable individuals and may be facilitated by high levels of negative affect. But these false alarms in and of themselves are not implicated in a clinical disorder unless a more specific layer of psychological vulnerabilities exists. In other words, individuals must be taught early what specific objects or events in life are dangerous. As reviewed in some detail in Chapter 8 and in Bouton, Mineka, and Barlow (2001), individuals who go on to develop panic disorder manifest a clear tendency to focus anxiety on somatic events that are perceived to be unpredictable and dangerous. It is for this reason that many patients with panic disorder end up in the emergency department, or in the offices of cardiologists or other nonpsychiatric physicians, whereas individuals with other anxiety disorders do not. That is, individuals who go on to develop panic disorder seem to be exposed early in life to adults who evaluate physical symptoms as dangerous and perhaps encourage sick role behavior. Ehlers (1993) found that observing physical suffering can also contribute to the idea that somatic symptoms are dangerous and require one’s full attention.

In this fertile context, the association of an initial false alarm with interoceptive or somatic cues seems particularly crucial in the development of panic disorder. In the case of PDA in particular, two principal types of avoidance behavior then develop to these feared cues: classical agoraphobic avoidance, and a cluster of behaviors with the purpose of avoiding activity that produces somatic cues, termed “interoceptive avoidance.” Subsequently, the degree and extent of avoidance behavior seem to be functions of particular coping skills employed by the individual to cope with unexpected panic. The development of avoidance behavior to deal with panic is determined at least partly by experiential and cultural factors as outlined above. Fluctuation in agoraphobic and interoceptive avoidance behavior is largely a function of perceptions of safety on the part of the individual. That is, does a place exist where it is relatively safe to have a panic attack, or does an individual exist with whom it is relatively safe to have a panic attack (Rachman, 1984; Craske, 1999)?

Thus patients with panic disorder or PDA are biologically predisposed to react to negative life events with emotionality, negative affect, and perhaps false alarms (panic attacks). They are psychologically predisposed to develop anxiety with its sense that events are proceeding out of control, and they are predisposed specifically to focus this anxiety on internal somatic events associated with a false alarm. The arrangement of these triple vulnerabilities in the context of panic disorder in general and PDA in particular is illustrated in Figure 10.2.

ASSESSMENT

A comprehensive multimodal approach to the assessment of PDA includes a clinical interview, functional behavioral analysis, medical evaluation, self-monitoring, self-report measures, and behavioral tests. Each of these techniques examines specific aspects of PDA, and the different instruments often tap unique aspects of the disorder that are important for treatment planning and evaluation.
Semistructured Diagnostic Interviews

The value of semistructured interviews lies in their contribution to reliable differential diagnosis and systematic assessment of issues important to consider in any functional analysis of a disorder. Such structured interviews are especially important in assessing PDA, because panic attacks can occur across the full range of anxiety disorders. Use of structured clinical interviews is highly recommended in both clinical and research settings, because they insure that the clinician follows systematic assessment procedures to obtain critical information. Previous research has shown that approximately one-third of diagnostic disagreements are related to inconsistencies on the part of the diagnostician rather than in the diagnostic criteria (cf. Blanchard & Brown, 1998). Moreover, in a National Institute of Mental Health consensus development conference on the treatment of panic disorder, it was recommended that all research on the treatment of this disorder include a semistructured diagnostic interview (Shear & Maser, 1994).

A commonly used and empirically supported semistructured interview developed in our Clinic is the ADIS-IV (Brown, Di Nardo, & Barlow, 1994; for the Lifetime Version [ADIS-IV-L], see also Di Nardo, Brown, & Barlow, 1994; see Chapter 9 for a full description). As detailed in Chapter 9, the ADIS-IV assesses the full range of anxiety disorders as well as mood, substance use, and other commonly comorbid disorders (e.g., hypochondriasis). The interview includes a medical history as well as brief screens for the presence of psychotic disorders. The ADIS-IV-L is particularly useful for understanding the nature, course, and manifestations of the disorders that may influence treatment response.

The ADIS-IV is a clinician-administered interview that follows a hierarchical structure in which those symptoms central to a disorder are queried first, followed by additional inquiry if the basic, defining criteria for that disorder are met. Among the data obtained are the frequency, intensity, and duration of panic attacks; their antecedents; and patterns of avoidance behavior or other coping responses. Variability across time in the pattern of panic and avoidance behavior is also examined. Since many patients with PDA

FIGURE 10.2. A model of the etiology of panic disorder and PDA.

Functional An

An initial diagno for further assessment and idiosyncratic features of panic disorder can provide the functional assessment. Manner to make the diagnostic criteria for their age, social functioning, and presence or absence of comorbid disorders.

The most important relationships between maladaptive behaviors, such as panic attacks and resumption of the condition, and their affective state. It can be helpful to consider the response system and its physiological or biological nature, as well as the cognitive aspect of the various assessment factors in diagnosing panic disorder.
often (initially) identify many of the attacks they experience as triggered and predictable, and deny unexpected or spontaneous panic attacks, utilizing the ADIS assists in identifying unexpected panic attacks.

Psychometric qualities of the ADIS-IV are good. A recent study using the ADIS-IV-L to examine diagnostic agreement on 362 individuals with anxiety disorders reported a strong kappa coefficient of .79 for panic disorder and PDA (Brown, Di Nardo, Lehman, & Campbell, 2001). Moreover, the interrater reliability of the ADIS-IV-L dimensional ratings for number of panic attacks, anxiety focused on future panic attacks, agoraphobic avoidance, and clinical severity rating were very good at .58, .53, .66, and .83, respectively. The full ADIS-IV or ADIS-IV-L is used mostly in clinical research settings. Since it is impractical in many nonresearch settings due to the length of administration (usually 2-4 hours), clinicians often systematically administer sections of interest to arrive at diagnoses and to obtain necessary information. Other commonly used semistructured interviews with promising diagnostic reliability are the Schedule for Affective Disorders and Schizophrenia—Lifetime version modified for anxiety disorders (Fyer, 1995) and the Structured Clinical Interview for DSM-IV Axis I Disorders (First et al., 1996).

Functional Analysis

An initial diagnostic classification of PDA will point the clinician in the proper directions for further assessment. A functional analysis is commonly used to elaborate on the characteristic and idiosyncratic responses of each individual patient. Although diagnostic classification provides the clinician with clues about which problematic behaviors to assess, the functional analysis allows the clinician to assess each patient individually to determine the manner in which the disorder presents itself. For example, two people who meet diagnostic criteria for PDA may present with very different clinical pictures, depending on their age, social support system, gender, and socioeconomic status, as well as on the presence or absence of other associated problems.

The most important part of a behavioral assessment of PDA is to determine the functional relationship among panic, avoidance, and cognitive patterns, as well as their relationship to internal and external cues. In a functional analysis, the clinician will assess how maladaptive behaviors and feelings are related to specific events that result in an individual pattern of responding. For example, one patient may have health-related concerns (such as apprehension over possible heart attacks) that may be cued directly by unexpected panic attacks and result in immediate increases in avoidance behavior. In another patient, health concerns and avoidance behavior may be more independent of unexpected panic, resulting in a more functionally autonomous pattern of responses. It is this determination, over and above the initial diagnostic classification, that is necessary if the clinician is to tailor a standardized set of therapy principles to the individual patient.

It can be helpful to organize a comprehensive assessment according to the three major response systems of anxiety and panic: behavioral or motoric, cognitive or subjective, and physiological or somatic (Barlow, 1981; Lang, 1968, 1977b). Within the behavioral response system, avoidance and or other behavioral attempts at coping with panic are assessed. Cognitive aspects requiring assessment include reports of subjective disturbance or intensity of the various symptoms and feared consequences of panic. Physiological or somatic assessment often involves monitoring and report of autonomic nervous system reactivity accompanying anxiety and panic, such as increased heart rate, respiration, and other physiological signs of arousal that may underlie action tendencies associated with these emotions or affective states. The principal goal of behavioral assessment in PDA is to examine the
three components of anxiety and panic as they relate to each other and to the individual’s environment—with the ultimate goal being to arrive at an appropriately tailored treatment strategy for that individual patient. For example, an elderly woman residing in a four-floor walk-up apartment in an urban area will inevitably present with different problems and goals for treatment than will a young male living with a large family in a rural area who must drive 35 miles to work each day.

Cognitive Components

The cognitive components of PDA relate to the patient’s thoughts and beliefs about the presumed deleterious nature of panic attacks. Panic-related cognitions can vary considerably among individuals. Common attributions that may develop include fears of having a heart attack, a seizure, or a stroke; suffocating, fainting, or losing control (e.g., unable to drive a car, unable to make a decision); going crazy (e.g., attacking someone, running around screaming); or dying as a result of a panic attack. These appraisals often emerge from attacks that appear to be uncaused or apparently from “out of the blue.” Thus, because an external trigger does not readily explain the symptoms, patients are likely to turn inward and develop such erroneous beliefs based on preexisting vulnerabilities (see Chapter 8). In addition to assisting the clinician in making an accurate diagnosis, understanding the nature of cognitions related to panic attacks is an important aid in treatment (as discussed later in this chapter).

Behavioral Components

Behavioral components of PDA relate to those behaviors a patient may engage in or refrain from doing that are believed to “protect” him or her from experiencing panic attacks. These “protective” behaviors fall into four categories: agoraphobic avoidance, interoceptive avoidance, distraction, and safety behaviors.

Agoraphobic Avoidance. Agoraphobic avoidance can include avoiding public transportation, driving, theaters, crowds, and sporting events. The general theme involves being unable to reach a safe place or safe person quickly and without embarrassment; feeling trapped is also particularly difficult (see “Agoraphobia” section above).

Interoceptive Avoidance. “Interoceptive avoidance” refers to a strong sensitivity to physical sensations associated with anxiety and panic. Anxiety about experiencing these sensations may lead patients to avoid activities that naturally elicit sensations similar to panic attacks. For example, exercising, drinking caffeine, and having sexual relations are commonly avoided activities. Assessing the various feared physical sensations and resulting avoidance is particularly important, since, as discussed in detail later, this assessment provides the foundation for designing interoceptive exposure exercises—a fundamental treatment component for decreasing a patient’s anxiety and sensitivity to physical sensations. Similarly, those activities that are avoided because of the sensations they create are often added to the patient’s situational fear and avoidance hierarchy in the treatment program.

Distraction. Distraction involves subtle forms of avoidance that are often insidious. For example, patients with PDA may attempt to thwart a panic attack by distracting themselves away from the anxiety—often by turning up the radio, engaging in conversations,
watching television, or reading a newspaper. These behaviors can undermine treatment if not identified and eliminated, as we discuss later.

**SAFETY BEHAVIORS.** Safety behaviors are those actions that a patient engages in to help him or her feel more secure or protected in the event that a panic attack should occur. Safety behaviors often represent long-standing habits. Thus the clinician will want to pay particular attention to the degree of reliance on safety signals, such as a “safe” place, person, or thing (Rachman, 1984). Examples of common safety behaviors include going places only with a safe person or carrying a cell phone, a water bottle, a lucky charm, or a bottle of medication. A safe person is commonly a significant other whose company enables the patient to feel more comfortable going places than he or she can be either alone or with other people. Usually, this person is considered “safe” because he or she knows about the panic attacks. Notably, even if the safe person does not approve of the panics (as is the case with some spouses), the patient feels that this person would take him or her to the hospital or help in other ways if the patient became incapacitated by panic. A summary of safety signals (excluding safe people) used by 125 consecutive patients with PDA seen in our Boston clinic is presented in Table 10.2. Although other safety behaviors have more substantial “safety” value, the most common talisman is the medication bottle, often unused or even empty. A thorough assessment of safety behaviors is integral to successful treatment as patients are gradually weaned from these ritualistic props, and an ongoing assessment of these behaviors may be beneficial to insure that no new safety behaviors are picked up as old ones are eliminated.

**Physiological Components**

Research studies on PDA have often examined psychophysiological responding. A number of different psychophysiological functions can be measured (e.g., electrodermal response,

<table>
<thead>
<tr>
<th>Safety signal</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety medication</td>
<td>60</td>
<td>48</td>
</tr>
<tr>
<td>Food/drink</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Bags, bracelets, objects</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Smelling salts/antacid</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Paper bag</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Religious symbols</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Flashlight/money/CB radio</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Reading material</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Alcohol</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Relaxation tapes/coping statements/therapist’s phone number</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Pets</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No safety signals (excluding a safe person)</td>
<td>32</td>
<td>26</td>
</tr>
<tr>
<td>One safety signal</td>
<td>58</td>
<td>46</td>
</tr>
<tr>
<td>Two safety signals</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Three safety signals</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>
respiration rate, blood pressure, heart rate), and such an assessment can be effectively combined with a behavioral avoidance test (BAT) or other components of treatment. Also, the psychophysiological techniques can be used to confirm a complex differential diagnosis or to observe a patient’s anxiety response. Such techniques are generally difficult to administer and interpret, because multiple factors affect arousal; moreover, the various psychophysiological indicators often do not correlate, since they target different bodily response systems. Nevertheless, such approaches can serve a unique function in the assessment and treatment of panic disorder.

**Behavioral Assessment Strategies**

Behavioral assessment approaches can be used to individually tailor treatments, to systematically track progress in treatment, and to continually evaluate the success of the treatment.

**Symptom Induction Tests**

Perhaps the most compelling behavioral tests for FDA are symptom induction tests. The primary goal of these tests is to work with the patient to identify sensations that have become triggers of anxiety or fear, even when provoked deliberately in the safe context of a clinician’s office. Symptom induction tests involve having the patient purposefully engage in exercises that elicit physical sensations mimicking a patient’s naturally occurring panic attacks. Figure 10.3 presents a therapist’s record of in-session symptom induction tests. Exercises are performed for a fixed duration (usually 30 seconds to 2 minutes) and are ordered in such a way as to reduce the amount of carryover symptoms from one exercise to the next. Patients are encouraged to bring on the sensations as strongly as they can tolerate, but are also told that they may discontinue the test at any time. Common induction tests include breathing through a coffee straw for 2 minutes, spinning in a chair for 1 minute, and running in place for 2 minutes. Exercises can be tailored to imitate a patient’s attacks more closely (e.g., tying a scarf around the patient’s neck to induce feelings of choking sensations). Anxiety is rated before, during, and after the exercise, and the intensity of the sensations of panic and their similarity to natural panics are rated. These tests serve a twofold purpose for assessment: They objectively confirm the presence of the anxiety and panic response, and they help to identify the specific physical sensations that elicit anxiety and panic. Moreover, these symptom induction tests are the foundation on which interoceptive exposure practices are based in treatment.

Although highly specialized, additional panic provocation procedures described in some detail in Chapter 4, such as inhalation of a mixture of CO₂ and air or lactate infusions, can be used to profile panic symptoms and track responses to treatment on a pre-post basis (Biber & Alkin, 1999; Coplan, Goetz, et al., 1998; Forsyth, Lejuez, & Finlay, 2000; Fyer et al., 1989; Sanderson, Rapee, & Barlow, 1989; Schmidt, Trakowski, & Staab, 1997).

**Behavioral Avoidance Tests**

A behavioral assessment technique that assesses the classic behavioral markers of agoraphobia is a BAT (Craske, Barlow, & Meadows, 2000). The BAT affords many advantages to the clinician; perhaps most importantly, it provides a solid foundation on which to build and tailor the treatment program. Advantages of the individualized BAT for assessment purposes include (1) a direct observation of the patient’s anxiety response system; (2) an objective indication through behavioral markers; (3) an identification of more objective an self-report. The BAT the tests are quantitative. To objectively systematically in assess more person in the home for example,交替 to take place. A typical BA feared situations, such as [1985], items sho
For each test you do in session, have the patient rate (0 = none, 8 = extreme) the overall intensity of the sensations, how anxious or afraid the patient felt during the procedure, and the similarity of the sensations to those the patient experiences during naturally occurring panic attacks.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Sensations experienced</th>
<th>Intensity</th>
<th>Anxiety/Fear</th>
<th>Similarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shake head from side to side, 30 sec.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head between knees (30 sec.), then lift quickly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Run in place, 1 min.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hold breath, 30 sec.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete body muscle tension, 1 min.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breathe through a thin straw, 2 min.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spin in a chair or twirl in place, 1 min.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperventilate, 1 min.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stare at a light (&lt;40 watt bulb) for 1 min., then read a paragraph</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIGURE 10.3.** Therapist's record of in-session symptom induction tests. Reprinted by permission of the Center for Anxiety and Related Disorders, Boston University.

Objective indication of the degree of distress, anxiety, and avoidance of certain situations; (3) an identification of any safety behaviors or other idiosyncratic behaviors; and (4) a more objective and perhaps more accurate measurement of agoraphobic avoidance than self-report. The BAT is also particularly useful in evaluating treatment outcome, because the tests are quite sensitive to treatment effects and are broadly generalizable to other situations. To objectively assess the degree or severity of agoraphobia, BATs are often used systematically in a variety of naturalistic situations and are often individually tailored to assess more personally relevant behaviors or situations. BATs range from those conducted in the home for the most personal relevance (Barlow, O'Brien, & Last, 1984; Mathews et al., 1981; Mathews, Teasdale, Mambey, Johnston, & Shaw, 1977) to those tasks contrived to take place at the clinic (Mavissakalian & Michelson, 1983).

A typical BAT entails the selection of about five items from the patient's hierarchy of feared situations, chosen to cover a range of difficulty levels. As recommended by Williams (1985), items should be chosen to reach a high ceiling to account for potential demand
characteristics (i.e., the tendency of patients to "push" themselves for a clinician), and to be sensitive to any treatment-produced change. Examples of items may include driving to a local market or riding a subway for 10 minutes. The assessment generally takes place over a time period of 1–2 hours. Patients are asked to rate their anticipatory anxiety concerning the upcoming test on a 0–8 scale (with 0 indicating little or no anxiety and 8 indicating the most anxiety they have ever experienced). All situational tests are structured for a specified duration, and patients are strongly encouraged to persevere as long as possible; however, they are also instructed that they may discontinue the task at any time. A caveat: To evaluate the confound between behavioral and subjective components of anxiety, patients should be instructed to stay in the situation as long as they possibly can. Throughout the task, patients report their anxiety ratings approximately every 30 seconds. A patient is instructed to attempt all five items in the order of difficulty, and each item is scored on a 3-point scale as follows: 0, “refused item (complete avoidance)”; 1, “partial completion of item (partial avoidance)”; and 2, “successful completion of item (no avoidance).”

Some additional caveats: First, it is ideal that the patient complete the BAT independently of the clinician. As discussed above, individuals with agoraphobia are often able to perform certain behaviors quite successfully when accompanied by someone who perceives as "safe" (cf. Baker, Patterson, & Barlow, in press; Barlow & Waddell, 1983; Rachman. 1984). Thus, if at all possible, the assessor should not accompany the patient on the test itself. The patient's behavior can be unobtrusively monitored by clinical personnel or verified by other means, including observation (e.g., Williams & Rappoport, 1983) or other means (e.g., Williams & Rappoport, 1983), often as a component to evaluate treatment outcome. Common standardized BATs include the behavioral walk (Verbeek et al., 1984), driving on a progressively difficult route (Williams & Rappoport, 1983), and other behavioral assessments across multiple areas of functioning (Bandura et al., 1980; Craske et al., 2000). Importantly, one common use of the BAT at our Boston center is to pair it with a symptom induction exercise (i.e., an interoceptive exposure exercise). It is not uncommon for patients to report minimal anxiety related to symptom induction exercises—largely because of the purposeful, planned nature of bringing on the symptoms themselves, as well as because they feel safe in the clinician's office. This paired approach has the distinct advantage of inducing anxiety symptoms in a naturalistic setting that affords the opportunity to assess avoidance of both situations and symptoms. The anxiety ratings on these tests can then be used to track the patient's progress in treatment and to identify sensations and situations for exposure therapy.

Fear and Avoidance Hierarchy

Although it is not a psychometrically established assessment, a fear and avoidance hierarchy (FAH) can be a useful clinical tool for assessment, for guiding treatment, and for evaluating

Panic Disorder and A progress in treatment of assessing treatment collaboratively develop agoraphobic fears (c

visualized FAH for o a ranked-order list of situations to higher from the initial struct provided by the patients in treatment may compel them to being "forced" to do the patient is instruct a 0–8 scale, where 0 treme anxiety, panic, a full range of anxious to be broken down into willingness to engage to include the most of the most important interoceptive cues, s behavior, the list shi a guide to treati a systematic plan for

Standardized Self-

Other instruments de

Measures of the Sev

Because PDA often f that may vary indep avoidance), it is impo Several clinician-rat rates these are the Panic E Agoraphobia Scale (I

PANIC DISORDER dimensions of PDA d focused on future pat ance, and interfere
Panic Disorder and Agoraphobia

progress in treatment. The FAH is one of the most convenient and convincing indicators of assessing treatment progress from the patient's point of view. The clinician and the patient collaboratively develop a FAH, and its structure is organized around the patient's specific agoraphobic fears (cf. Craske et al., 2000). Figure 10.4 presents an example of an individualized FAH for one patient. Broadly speaking, constructing a FAH involves compiling a rank-ordered list of the patient's feared situations, covering the range of lower or easier situations to higher or more difficult situations. The clinician should utilize information from the initial structured interview and assessment, as well as any additional information provided by the patient during the initial appointment. Although the FAH plays a prominent role in treatment, patients are not specifically informed about this beforehand, as it may compel them to withhold reporting difficult items in their environments for fear of being "forced" to deal with the situations before they are ready. Once the list is compiled, the patient is instructed to rate both his or her fear of and avoidance of each situation on a 0–8 scale, where 0 represents no anxiety, panic, and/or avoidance, and 8 represents extreme anxiety, panic, and/or avoidance. It is important to develop a FAH that encompasses a full range of anxiety and avoidance; therefore, particularly difficult situations may need to be broken down into components early in the assessment process, to enhance the patient's willingness to engage in exposure to the items later in the treatment process. It is also critical to include the most difficult or severe situations on the hierarchy, as these constitute some of the most important goals for therapy. All FAH items also include liberal reference to interoceptive cues, such as dyspnea and palpitations. If the patient denies any avoidance behavior, the list should be made up of situations that may provoke panic attacks. By providing a guide to treatment, the FAH is a useful, and perhaps essential, tool for developing a systematic plan for confronting feared situations.

Standardized Self-Report and Clinician-Rated Measures

Other instruments designed to assess PDA and its components are valuable in understanding individual aspects of a patient's clinical presentation. Measures that tap unique aspects of the disorder and its key features from both the patient's and the clinician's perspective are equally useful to confirm the initial diagnosis, but are also used to gauge severity of the disorder and to design a tailored treatment plan. Below is a review of several measures with good psychometric properties that have been designed to assess the key features of PDA and may be used to track the disorder over time. For an exhaustive description of all extant measures, see Baker et al. (in press).

Measures of the Severity of Panic and Avoidance

Because PDA often follows a variable course and consists of loosely related components that may vary independently of one another (e.g., severity of panic attacks, agoraphobic avoidance), it is important to assess comprehensively the components of PDA over time. Several clinician-rated and self-report scales have been developed for this purpose. Among these are the Panic Disorder Severity Scale (PDSS; Shear et al., 1997) and the Panic and Agoraphobia Scale (PAS; Bandelow, 1995).

Panic Disorder Severity Scale. The PDSS (Shear et al., 1997) assesses seven key dimensions of PDA during the past month, including frequency of panic attacks, anxiety focused on future panic, distress during panic, interoceptive avoidance, situational avoidance, and interference related to social realms and work. It can be clinician-administered
<table>
<thead>
<tr>
<th>Activity</th>
<th>Anxiety Rating*</th>
<th>Avoidance Rating*</th>
<th>Conditions That Would Make My Anxiety Worse</th>
<th>Conditions That Would Make My Anxiety Less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying</td>
<td>8</td>
<td>8</td>
<td>Longer flight, esp. over-seas, smaller plane, over water or mountains</td>
<td>Short flight, smaller plane, not over water</td>
</tr>
<tr>
<td>Being out of the city</td>
<td>8</td>
<td>8</td>
<td>Farther from home, unfamiliar city, overnight</td>
<td>Closer to home, familiar city, back home the same day</td>
</tr>
<tr>
<td>Driving on the highway</td>
<td>7</td>
<td>5</td>
<td>In traffic, fewer exits, unfamiliar area, certain stretches of road, bridges, tunnels, narrow environs</td>
<td>Less traffic, more exits, driving more slowly, familiar area, wide lanes, no bridges or tunnels</td>
</tr>
<tr>
<td>Taking a bus</td>
<td>7</td>
<td>8</td>
<td>Crowded, standing, certain routes</td>
<td>Not many people, walking, other routes</td>
</tr>
<tr>
<td>Being in a shopping mall</td>
<td>7</td>
<td>3</td>
<td>Bigger mall, more people, being farther from an exit, the store, or the snack bar</td>
<td>Smaller mall, closer to home, more exits, more people, being in center or near exit while in the mall</td>
</tr>
<tr>
<td>Being at home alone</td>
<td>6</td>
<td>4</td>
<td>At night, without a car, fights out, radio and TV off</td>
<td>Daytime, car available, radio and TV on</td>
</tr>
<tr>
<td>Eating in a restaurant</td>
<td>6</td>
<td>6</td>
<td>More formal and expensive, with people who don’t know about my panic, drinking coffee</td>
<td>Smaller, more casual, quicker, no coffee, eating alone, sitting at counter</td>
</tr>
<tr>
<td>Going to a movie</td>
<td>5</td>
<td>4</td>
<td>Scary movie, farther from home, unfamiliar theater, at night</td>
<td>Funny movie, familiar theater, closer to home, during the day</td>
</tr>
<tr>
<td>Doing something physically strenuous</td>
<td>5</td>
<td>3</td>
<td>Outside on a hot day or at the beach club, with my clothes in a locker, more stressful, tired</td>
<td>At home, cool day, less stressful, less tired</td>
</tr>
<tr>
<td>Going for a walk</td>
<td>4</td>
<td>3</td>
<td>Farther from home or in a busy downtown area, in open spaces like parks, not day, no houses nearby</td>
<td>Near home, near houses, cool day, familiar area</td>
</tr>
</tbody>
</table>

*The 0-8 rating of anxiety or avoidance when activity is done alone and without any other safety behavior.*

**FIGURE 10.4.** Individualized fear and avoidance hierarchy (FAH) for one patient. Reprinted by permission of the Center for Anxiety and Related Disorders, Boston University.

in about 10-15 minutes, and the seven items are rated on 5-point Likert scales that can be totaled for an overall score. Psychometrically, the PDSS has demonstrated excellent inter-rater reliability (kappa = .87) and promising internal consistency (alpha = .63), and the total score has been found to correlate with the clinical severity ratings for PDA on the ADIS (r = .55; Shear et al., 1997). Furthermore, in a recently reported large multicenter clinical trial described later, the PDSS proved to be the one comprehensive outcome measure with the most sensitivity to change. Given these promising findings, the PDSS appears to have considerable utility for efficiently assessing the major components of PDA and Panic Disorder and its treatment. A selected evaluation.

**PANICAPPRA$$^2$$**

designed to assess the panic-related avoidant two versions, panic version of the the clinician-rated scale has been found with the Panic-Associated Symptomnaire (Clum, Broy Questionnaire (Ca

**Measures of Par**

A number of questi extent to which the causes and cons measures assessments Questionnaire Appraisal Inventor

**AGORAPHOBIA** perhaps the best-knowing or maladaptive 14-item self-report: "I am going to panic" consistency (alpha other related const

**PANICAPPRA$$^2$$** three domains perceived ability to cc of panic attack in the use of any safety received ability to cc scale has five subs the subscales, and (r = .80) and with

Other instru (Hoffart, Friis, & McLean, 1997), the Panic A Questionnaire (Gr
its treatment. A self-report version of the PDSS has been developed and is currently under evaluation.

PANIC AND AGORAPHOBIA SCALE. Much like the PDSS, the PAS (Bandelow, 1995) was designed to assess the severity of PDA as well as the frequency and duration of panic attacks, panic-related avoidance, functional impairment, and anticipatory anxiety. The scale has two versions, patient report and clinician-rated, and consists of 13 items. The self-report version of the scale has demonstrated good internal consistency (alpha = .88), and the clinician-rated scale has demonstrated satisfactory interrater reliability (kappa = .78). The scale has been found to correlate with other measures of similar constructs (e.g., r = .82 with the Panic-Associated Symptom Scale; Argyle et al., 1991). Other scales with similar goals, but more limited objectives or less developed psychometrics, include the Panic-Associated Symptoms Scale (Argyle et al., 1991), the Panic Attack Symptoms Questionnaire (Clum, Broyles, Borden, & Watkins, 1990), and the Panic-Agoraphobia Spectrum Questionnaire (Cassano et al., 1997).

Measures of Panic-Related Cognitions
A number of questionnaires exist for assessing cognitions associated with PDA and the extent to which the patient believes them. Cognitions include maladaptive thoughts about the causes and consequences of panic as well as perceived ability to cope with panic. Among measures addressing various cognitive components of PDA are the Agoraphobic Cognitions Questionnaire (AgCQ; Chambless, Caputo, Bright, & Gallagher, 1984) and the Panic Appraisal Inventory (PAI; Feske & de Beurs, 1997).

AGORAPHOBIC COGNITIONS QUESTIONNAIRE. The AgCQ (Chambless et al., 1984) is perhaps the best-known measure of its type. The ACQ assesses the frequency of frightening or maladaptive thoughts about the consequences of panic and anxiety. The ACQ is a 14-item self-report scale that contains 6 behavioral-social and 8 physiological items (e.g., “I am going to pass out”), rated on a 5-point Likert format. The ACQ has good internal consistency (alpha = .80) and good test-retest reliability (r = .86), and it is correlated with other related constructs, including the Body Sensations Questionnaire (BSQ) (r = .67).

PANIC APPRAISAL INVENTORY. The PAI (Feske & de Beurs, 1997) is designed to measure three domains of panic appraisal: anticipation of panic, consequences of panic, and perceived ability to cope with panic. Patients rate the perceived likelihood that they will have a panic attack in 15 different situations that would be confronted alone and without the use of any safety signals. Ratings are also obtained on the perceived distress and the perceived ability to cope in each of the situations. Feske and de Beurs (1997) report that the scale has five subscales that comprise the three domains identified; the Consequences of Panic subscale is further divided into three subscales, including Physical Consequences, Social Consequences, and Loss of Control. Internal consistency ranges from .86 to .90 for the subscales, and the PAI was found to correlate with physiological concerns on the AgCQ (r = .80) and with the BSQ (r = .44).

Other instruments with similar goals include the Agoraphobic Cognitions Scale (Hoffart, Friis, & Martensson, 1992), the Cognition Checklist (Taylor, Koch, Woody, & McLean, 1997), the Catastrophic Cognitions Questionnaire—Modified (Khawaja & Oei, 1992), the Panic Attack Cognitions Questionnaire (Clum et al., 1990), and the Panic Belief Questionnaire (Greenberg, 1988).
Measures of Anxiety Focused on Emotions or Physical Sensations

ANXIETY CONTROL QUESTIONNAIRE. The Anxiety Control Questionnaire (AnxCQ; Rapee, Craske, Brown, & Barlow, 1996) assesses perceived control of reactions in emotional situations (e.g., "When I am put under stress, I am likely to lose control," "Whether I can successfully escape a frightening situation is always a matter of chance with me"). The scale contains 30 items rated on a 6-point Likert scale ranging from "strongly disagree" to "strongly agree." The AnxCQ has shown considerable promise psychometrically in clinical samples: It has demonstrated good internal consistency (alpha = .87), good convergent and discriminant validity, and adequate sensitivity to change following CBT.

ANXIETY SENSITIVITY INDEX. "Anxiety sensitivity" refers to the belief that beyond any immediate physical discomfort, anxiety and its accompanying symptoms may cause detrimental physical, psychological, or social consequences (McNally & Lorenz, 1987; Reiss, Peterson, Gursky, & McNally, 1986; Taylor, Koch, McNally, & Crockett, 1992). The Anxiety Sensitivity Index (ASI; Reiss et al., 1986), the most widely used scale of its type, consists of 16 items rated on a 5-point Likert scale. The ASI has good internal consistency (Cronbach’s alpha = .88; Peterson & Heilbroner, 1987) and promising discriminant validity for distinguishing patients with PDA from patients with other anxiety disorders (Telch, Shermis, & Lucas, 1989). The construct of anxiety sensitivity appears to be multidimensional (Cox, Parker, & Swinson, 1996), and recent research supports the hierarchical structure of the ASI as containing three lower-order factors loading onto a single higher-order factor (Zinbarg, Barlow, & Brown, 1997). The three lower-order factors include physical concerns, mental incapacitation, and social concerns. Notably, although anxiety sensitivity is most often associated with PDA and plays a small role in predicting onset of initial panic attacks (see Chapter 7), it has also proven to be an important construct in several other clinical disorders (i.e., depression, chronic pain, substance abuse) (Asmundson, 1999; Cox, Borger, & Enns, 1999; Stewart, Samouluk, & MacDonald, 1999). Thus the ASI may tap a trait-like construct reflecting a specific psychological vulnerability—namely, the belief that unexplained somatic sensations are dangerous (see Chapter 8). Taylor and Cox (1998) recently expanded the ASI to include 20 additional items; however, this revised version awaits further psychometric evaluation. Using the expanded version of the ASI, these researchers (Taylor & Cox, 1998) found the ASI—Revised to distinguish patients with panic disorder from patients with other anxiety or nonanxiety psychological disorders.

BODY SENSATIONS QUESTIONNAIRE. The BSQ (Chambless et al., 1984) is the oldest scale to assess anxiety focused on bodily sensations. Seventeen items are rated on a 5-point scale; patients are asked to rate the degree to which they experience anxiety related to specific bodily sensations (e.g., heart palpitations, pressure in chest, numbness in arms). The scale has been shown to correlate with the ASI (r = .66; McNally & Lorence, 1987) and the AgCQ, as noted above. Test-retest reliability is fair (.67), and the scale has good internal consistency (.87).

BODY VIGILANCE SCALE. The 4-item, Body Vigilance Scale (BVS; Schmidt, Lerew, & Trakowski, 1997), asks individuals to rate how closely they pay attention to bodily sensations, how sensitive they are to those sensations, how much time they spend checking for symptoms, and how much attention they pay to a range of panic sensations (e.g., chest pain, numbness, palpitations). Published data support the internal consistency of the BVS (alpha = .82); it has adequate test-retest reliability (r = .58); and some promising findings support the discriminating power of the BVS.

Panic Disorder

Measures of Avoidance

ALBANY PANIC SUMMARY (APPS); Rap, a cognitive or somatic anxiety disorder, is an anxiety disorder that involves a fear of being in or near a public place or other situations of which the individual fears being observed, being embarrassed, or being unable to escape or to get help in the event of an unexpected or uncontrollable situation. The APPS has shown high validity and reliability, with a Cronbach's alpha of .87.

MOBILITY INV

Fear Questionnaire

Jasin, & Williams, 2000). The 15-item scale—9-point scale, with a range from 1 to 9—has been shown to be sensitive to acute and chronic phobic anxiety, and the scale has an internal consistency of .90 and above.

Self-Monitoring

Self-monitoring involves the monitoring of anxiety and panic levels (Craske, 2000). Anxiety, and duration of exposure to various modes of self-report questionnaires, is characterized by changes in frequency and severity, and potentially mitigated and sensitive.
support the discriminant validity of the scale, with patients with panic disorder showing significantly higher levels of body vigilance than nonclinical samples.

**Measures of Avoidance**

**ALBANY PANIC AND PHOBIA QUESTIONNAIRE.** The Albany Panic and Phobia Questionnaire (APQ; Rapee et al., 1995) is designed to measure anxiety and avoidance focused on interoceptive or more traditional agoraphobic situations. Using a 9-point Likert scale, patients rate their fear in a variety of situations (e.g., running up stairs, playing a vigorous sport on a hot day). Three subscales are derived from the 27 items: Interoceptive Avoidance (alpha = .87), Situational Agoraphobia (alpha = .90), and Social Phobia (alpha = .91). The APQ has shown promising psychometric properties.

**MOBILITY INVENTORY.** The Mobility Inventory (MI; Chambless, Caputo, Gracely, Jasin, & Williams, 1983) is a 27-item questionnaire designed to assess agoraphobic avoidance behavior. The scale is made up of 26 situations commonly avoided by patients with agoraphobia (e.g., driving, restaurants). The instructions include ratings of the severity of avoidance when alone and when accompanied—two related but often very different aspects of avoidance behavior. Ratings of panic frequency during the past week are also obtained. Adequate reliability and validity data are reported for this inventory, which has been shown to discriminate between patients with agoraphobia and patients with other anxiety disorders (Craske, Rachman, & Tallman, 1986). The two subscales, Avoidance Alone and Avoidance Accompanied, have shown excellent internal consistency (Cronbach’s alpha = .90 and .96 respectively).

**FEAR QUESTIONNAIRE.** The Fear Questionnaire (FQ; Marks & Matthews, 1979) is commonly used to monitor changes in phobic avoidance. It yields three subscales (Agoraphobia, Blood Injury Phobia, and Social Phobia) derived by Marks (1981), as well as a total score. The 13-item scale requires patients to rate their avoidance of a variety of situations on a 9-point scale, where 0 indicates “no avoidance” and 8 indicates “total avoidance.” The FQ has been shown to have adequate reliability and validity with patients with agoraphobia (Cox, Swinson, Parker, Kuch, & Reichman, 1993), and the results of a confirmatory factor analysis of the scale with data from patients with PDA provide further empirical support for the three factors of the scale (Cox et al., 1993). Normative data have also been published on this scale (Gillis, Haaga, & Ford, 1995), and these may be useful for comparison.

**Self-Monitoring**

Self-monitoring involves continuous monitoring of behavioral and emotional events related to anxiety and panic, and is an important component of behavioral assessment (Barlow & Craske, 2000). Adequate self-monitoring includes a daily record of the frequency, intensity, and duration of panic and general anxiety. Because self-monitoring does not rely on extensive memory recall of events, it is considered more accurate and reliable than other modes of self-report assessment. Retrospective reports of anxiety (e.g., answers to the question “How many panic attacks have you had in the past week?”) have been shown to be characterized by marked distortion and exaggeration (Turner, Beidel, & Jacob, 1988), and simple frequency data on the number of panic attacks experienced are inadequate and potentially misleading (Chambless et al., 1986). For example, after becoming educated and sensitive to the components of anxiety, patients often record transient, less in-
tense “bursts” of anxiety as full-blown panic attacks. Alternatively, a patient may record only the most severe episodes of prolonged panic, thereby recording a misleading clinical picture. Because self-monitoring is used both as a treatment outcome measure and as a measure of ongoing progress in treatment, it is most important to use measures that capture the true clinical picture of each patient at a particular time.

Years of research in this area have led to the development and refinement of the Daily Panic Attack and Anxiety Record (DPAAR; see Figure 10.5, modified from Craske & Barlow, 2000). As illustrated, this self-monitoring form assesses the time of onset, frequency, intensity, and duration of panic attacks, as well as the average and peak levels of general anxiety each day. In addition, the patient indicates medication use (i.e., dosages, if appropriate) and whether the panic attack was “unexpected” or “cued” (i.e., expected). Importantly, we retain use of the distinction between “unexpected” and “cued” panic attacks. A panic attack, whether it occurs within the context of panic disorder or a specific phobia, may be expected or unexpected (Barlow, Brown, & Craske, 1994); however, in specific phobias, all panics are cued by definition. In PDA multiple cues can often be identified, including interoceptive cues as well as situational cues (e.g., crowds, shopping malls), and the latter may be more properly considered as discriminative stimuli or “learned settings” where safety signals are not present (Rachman, 1984). In the early stages, panic may not be associated with obvious cues (which is the origin of the often-used term “spontaneous”). Thus the “expected” and “cued” nature of panic attacks may vary independently, and both factors should be noted and recorded (see Chapter 4 for an extended discussion).

Patient compliance with self-monitoring presents a common practical challenge. Many suggestions have been offered to improve compliance and the reliability of the data obtained (cf. Barlow, Hayes, & Nelson, 1984). Among these, we recommend the following to clinicians in regard to self-monitoring: (1) Educate the patient on the importance of maintaining accurate daily records throughout the course of treatment; (2) train the patient in the monitoring procedure; (3) encourage the patient to complete monitoring records for several weeks prior to treatment, for training and practice; and (4) systematically review, reinforce, and provide corrective feedback to the patient on the accuracy and completeness of the records at each treatment session.

Psychophysiological Assessment Techniques

Uses of Psychophysiological Assessment

Although research in past decades on the importance of physiological assessment in PDA suggested that physiological assessments are generally unreliable measures of change, as noted above (Arena, Blanchard, Andrasik, Cotch, & Myers, 1983; Holden & Barlow, 1986), and are not necessarily valid indicators of treatment response (Michelson & Mavissakalian, 1985), there are several reasons to assess the physiological component of anxiety and panic (Agras & Jacob, 1981; Barlow & Wolfe, 1981; Hofmann & Barlow, 1996; Jansson & Ost, 1982). The panic attack, with its surge of physiological activity, is the defining characteristic of panic disorder; important results from physiological monitoring of panic attacks have been presented in Chapter 4. Physiological responding may well underlie the all-important action tendencies associated with any emotional or affective state (Barlow et al., 1994). Physiological assessment can also be used to provide objective evidence of physiological responding to the patient and improve interoception. Finally, demonstration of habituation may be indicative of therapeutic change and serve to reassure the patient (Hofmann & Barlow, 1996).
Panic Disorder and Agoraphobia

Initials: ______ ID: ______ Date: ____/____/

Part 1. Did you have any panic or limited symptom attacks on this day?
( ) Yes (Please complete a column for each attack.)
( ) No (Please skip to Part 2.)

<table>
<thead>
<tr>
<th>Attack Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>About the attack</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time it began</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.M./P.M.</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
<td>A</td>
<td>P</td>
</tr>
</tbody>
</table>

Check which symptoms you experienced during the attack

- Pounding heart
- Chest tightness or pain
- Short of breath
- Dizzy
- Trembling
- Sweating
- Choking
- Nausea
- Feeling of unreality
- Numbness or tingling
- Hot or cold flash
- Fear of dying
- Fear of going crazy
- Fear of losing control

Part 2. On this day (circle a number):
- What was your average anxiety? 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8
- What was your maximum anxiety? 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8
- How much did you fear a panic attack? 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

Part 3. Please list any medications you took on this day that were prescribed for your panic disorder or that you took because of panic or anxiety symptoms, muscle tension, or difficulty sleeping:

**FIGURE 10.5. Daily Panic Attack and Anxiety Record (DPAAR).** From Craske and Barlow (2006). Reprinted by permission of the Center for Anxiety and Related Disorders, Boston University.