

Chapter 4

GENERALIZED ANXIETY DISORDER

Timothy A. Brown
Tracy A. O'Leary
David H. Barlow

Generalized anxiety disorder has been called the “basic” anxiety disorder, in the sense that generalized anxiety is, by definition, a component of other anxiety disorders. But only recently have we begun to delve into the nature of generalized anxiety disorder. Only recently have we begun to evaluate effective psychological treatments for this problem, and only in the past several years has evidence begun to appear that we can in fact treat this problem successfully. This is no small feat, since generalized anxiety disorder, although characterized by marked fluctuations, is chronic. Some have even considered that generalized anxiety disorder might be better conceptualized as a personality disorder, since many individuals with this problem cannot report a definitive age of onset; rather, they note that it has been with them all their lives. Drug treatments, although often tested, have also not produced robust results. For this reason, further study of new treatment protocols is all the more pressing.

The protocol presented in this chapter, developed in our Center, illustrates the procedures of “worry exposure” and “worry behavior prevention.” These therapeutic procedures are derived from new theoretical conceptualizations of generalized anxiety disorder. In many ways, these procedures depart radically from more traditional treatment approaches to generalized anxiety.—D. H. B.

OVERVIEW: DEFINITION AND FEATURES

Since its inception as a diagnostic category in 1980, the definitional criteria for generalized anxiety disorder (GAD) have been revised substantially in each edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM). In DSM-III (American Psychiatric Association, 1980), GAD was a residual category (i.e., diagnosis was permitted only if criteria were not met for any other Axis I disorder); it was defined as the presence of generalized, persistent anxiety (continuous for a period of at least 1 month) as manifested by symptoms from at least three of four categories: (1) motor tension (e.g., muscle aches,

restlessness); (2) autonomic hyperactivity (e.g., sweating, dizziness, accelerated heart rate); (3) apprehensive expectation (e.g., anxiety, worry, fear); and (4) vigilance and scanning (e.g., concentration difficulties, irritability).

However, subsequent evidence (see Barlow & Di Nardo, 1991) indicated that a considerable proportion of patients presenting to anxiety clinics reported persistent symptoms of anxiety and tension emanating from worry and apprehension that were unrelated to other emotional disorders (e.g., worry about finances, job performance, minor details of everyday life). Accordingly, the diagnostic criteria for GAD were revised substantially in DSM-III-R (American Psychiatric Association, 1987). Major changes to GAD were as

follows: (1) The criterion excessive and/or unrealistic worry in two or more areas unrelated to another Axis I disorder was established as the key definitional feature of the disorder; (2) the associated symptom criterion was revised to require the presence of at least 6 symptoms from a list of 18 forming the three clusters of motor tension, autonomic hyperactivity, and vigilance and scanning; (3) the duration criterion was extended from 1 to 6 months, in part to assist in the differentiation of GAD from transient reactions to negative life events (e.g., adjustment disorders; Breslau & Davis, 1985); and (4) GAD was no longer considered a residual category.

In DSM-IV (American Psychiatric Association, 1994), the criteria for GAD were revised further to make them more user-friendly and to emphasize the *process* of worry/apprehensive expectation (see Brown, Barlow, & Liebowitz, 1994). As shown in Table 4.1, DSM-IV GAD is defined by the key feature of excessive, uncontrollable worry about a number of life events/activities, accompanied by at least three of six associated symptoms of negative affect/tension. Thus the DSM-III-R require-

ment of two or more spheres of worry was eliminated and replaced by excessive worry about a number of life events/activities (i.e., intensity, duration, and frequency of the worry are out of proportion to the likelihood or impact of the feared event). Moreover, the DSM-IV definition specifies that the worry is perceived by the individual as *difficult to control*. This revision was based on evidence from comparisons of patients with GAD to persons with other or no mental disorders that although no appreciable differences are noted on the *content* of worry (e.g., both patients with GAD and nonanxious controls report worry about family matters, work, finances, etc.), considerable differentiation exists on measures reflecting the *controllability* of the worry process (e.g., percentage of the day worried, frequency of unprecipitated worry, self-perceptions of controllability of worry, number of worry spheres; see Borkovec, 1994; Borkovec, Shadick, & Hopkins, 1991; Craske, Rapee, Jackel, & Barlow, 1989). For example, in a study comparing patients with DSM-III-R GAD to nonanxious controls on various potential DSM-IV criteria, 100% of the patient

TABLE 4.1. Diagnostic Criteria for DSM-IV Generalized Anxiety Disorder

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- A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).
- B. The person finds it difficult to control the worry.
- C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms present for more days than not for the past 6 months). **Note:** Only one item is required in children.
- (1) restlessness or feeling keyed up or on edge
 - (2) being easily fatigued
 - (3) difficulty concentrating or mind going blank
 - (4) irritability
 - (5) muscle tension
 - (6) sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep)
- D. The focus of the anxiety and worry is not confined to features of an Axis I disorder, e.g., the anxiety or worry is not about having a panic attack (as in Panic Disorder), being embarrassed in public (as in Social Phobia), being contaminated (as in Obsessive-Compulsive Disorder), being away from home or close relatives (as in Separation Anxiety Disorder), gaining weight (as in Anorexia Nervosa), having multiple physical complaints (as in Somatization Disorder), or having a serious illness (as in Hypochondriasis), and the anxiety and worry do not occur exclusively during Posttraumatic Stress Disorder.
- E. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- F. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism) and does not occur exclusively during a Mood Disorder, Psychotic Disorder, or a Pervasive Developmental Disorder.
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group reported difficulties controlling their worry, compared to only 5.6% of the comparison group (Abel & Borkovec, 1995). The distinguishability of the uncontrollable/excessive dimension of worry has also been upheld by findings that patients with GAD obtain significantly higher scores than patients with other anxiety disorders (including obsessive-compulsive disorder, or OCD) and non-anxious controls on the Penn State Worry Questionnaire (PSWQ), a psychometrically validated measure of the trait of worry (Brown, Antony, & Barlow, 1992; Brown, Moras, Zinbarg, & Barlow, 1993; Meyer, Miller, Metzger, & Borkovec, 1990).

In addition, the number of symptoms forming the associated symptom criterion in DSM-IV was reduced from 18 to 6, by retaining many of the symptoms that resided in the DSM-III-R motor tension and vigilance and scanning clusters and eliminating the symptoms from the DSM-III-R autonomic hyperactivity cluster (see Table 4.1). This change was based on converging evidence that GAD may be allied with a set of associated symptoms that fosters its distinction from the other anxiety disorders. For instance, studies using DSM-III-R criteria indicated that on structured interviews, patients with GAD endorsed symptoms from the autonomic hyperactivity cluster (e.g., accelerated heart rate, shortness of breath) less frequently than symptoms from the other two clusters (see, e.g., Brawman-Mintzer et al., 1994; Marten et al., 1993; Noyes et al., 1992). Indeed, the associated symptoms reported by patients with GAD at the highest frequency are irritability, restlessness/feeling keyed up, muscle tension, easy fatigability, sleep difficulties, and concentration difficulties (Marten et al., 1993). Additional research has indicated that although patients with GAD report autonomic symptoms with some frequency, these patients could be most strongly differentiated from patients with other anxiety disorders (panic disorder, social phobia, specific phobia, OCD) by the frequency and intensity of symptoms from the motor tension and vigilance and scanning clusters (Brown, Marten, & Barlow, 1995). In addition, these symptoms correlate more strongly with measures of worry and GAD severity than do symptoms of autonomic arousal (Brown, Chorpita, & Barlow, 1998; Brown, Marten, & Barlow, 1995).

These self-report-based findings are consistent with the results of several recent psychophysiological studies. For example, the one psychophysiological measure on which patients with GAD have been found to evidence *greater* responsiveness than nonanxious controls at baseline and in response to psychological challenge is muscle tension (as assessed via frontalis and gastrocnemius electromyograms; Hazlett, McLeod, & Hoehn-Saric, 1994; Hoehn-Saric, McLeod, & Zimmerli, 1989; see also Hoehn-Saric & McLeod, 1988). Conversely, initial studies failed to detect differences between worriers and non-worriers (or patients with GAD and normal controls) on cardiovascular indices collected while participants were at rest or were engaging in laboratory-induced worry challenges (see, e.g., Borkovec, Robinson, Pruzinsky, & DePree, 1983). Thus the collective findings of these investigations suggested that although patients with GAD and chronic worriers evidence elevated muscle tension (both while at rest and in response to laboratory challenges), they do not display a sympathetic activation response that is typically found in other anxiety disorders (see Hoehn-Saric & McLeod, 1988).

Subsequent research has indicated that GAD and worry are indeed associated with autonomic inflexibility (Borkovec & Hu, 1990; Borkovec, Lyonfields, Wisner, & Diehl, 1993; Hoehn-Saric et al., 1989). That is, relative to nonanxious controls, persons with GAD evidence a restricted range of autonomic activity (e.g., lowered heart rate variability) at baseline and in response to laboratory stressors (e.g., periods of worry or exposure to aversive imagery). Moreover, a significant reduction in cardiovascular variability has been observed in nonanxious controls from baseline to aversive imagery induction; however, this reduction in variability was most dramatic during a period of worrisome thinking (Lyonfields, Borkovec, & Thayer, 1995). Although findings of autonomic rigidity in GAD were initially attributed to an inhibition in sympathetic nervous system activity (Hoehn-Saric et al., 1989), more recent findings suggest that this phenomenon may be due to chronic reductions in parasympathetic (vagal) tone (see, e.g., Lyonfields et al., 1995). Regardless of the underlying mechanisms, these findings are consistent with the results of clinical assessment studies (see, e.g., Brown,

Marten, & Barlow, 1995) indicating that GAD is associated with a predominance of symptoms of negative affect/tension (e.g., muscle tension, irritability) and a relative infrequency of autonomic symptoms (e.g., accelerated heart rate). In addition to perhaps fostering the distinction between GAD and other anxiety disorders, these findings are emphasized in current conceptual models of GAD and pathological worry, discussed later in this chapter.

Finally, differential diagnosis guidelines for DSM-IV GAD specify that the disorder should not be assigned if its features are better accounted for by another mental or medical disorder (e.g., worry about future panic attacks in panic disorder should not be counted toward the diagnosis of GAD). In addition, the DSM-IV definition of GAD states that the disorder should not be assigned if its features occur exclusively during the course of a mood disorder, posttraumatic stress disorder, a psychotic disorder, or a pervasive developmental disorder. Thus, although GAD has not been a residual disorder since DSM-III, diagnostic hierarchy rules continue to exist for GAD in the context of some disorders. This is in part reflective of the continued controversy among researchers as to whether there is sufficient empirical justification for GAD as a distinct diagnostic category (Brown et al., 1994). The question of acceptable discriminant validity is particularly salient for mood disorders (major depression, dysthymia), in view of evidence of their high comorbidity and symptom overlap with GAD (see, e.g., Brown, Marten, & Barlow, 1995; Starcevic, 1995).

PREVALENCE, COURSE, AND COMORBIDITY

Prevalence

Studies of the lifetime prevalence for GAD in the general population have provided estimates ranging from 1.9% to 5.4%. The most recent prevalence data for GAD have come from the National Comorbidity Survey (NCS), where over 8,000 persons in the community (aged 15 to 54 years) were evaluated with structured interviews. This study obtained prevalence estimates of 1.6% and 5.1% for current and lifetime GAD, respectively, as defined by DSM-III-R criteria (Wittchen,

Zhao, Kessler, & Eaton, 1994). A consistent finding in these community surveys is a 2:1 female-to-male preponderance of GAD (see, e.g., Blazer, George, & Hughes, 1991; Wittchen et al., 1994). The prevalence of GAD in older populations awaits future research (see Beck, Stanley, & Zebb, 1996; Wisocki, 1994). However, there is some evidence suggesting that GAD may be one of the more common disorders in the elderly. For example, Himmelstam and Murrell (1984) found that 17% of elderly men and 21.5% of elderly women had sufficiently severe anxiety symptoms to warrant treatment, although it is not clear how many of these individuals actually met criteria for GAD. Another indicator of the potential prevalence of GAD symptoms in the elderly comes from more recent evidence showing that the use of minor tranquilizers is very high (ranging from 17% to 50%) in this population (Salzman, 1991).

Onset and Course

Patients with GAD often present with a lifelong history of generalized anxiety. For example, several studies have found that a large proportion of patients with GAD cannot report a clear age of onset or report an onset dating back to childhood (see, e.g., Anderson, Noyes, & Crowe, 1984; Barlow, Blanchard, Vermilyea, Vermilyea, & Di Nardo, 1986; Butler, Fennell, Robson, & Gelder, 1991; Cameron, Thyer, Nesse, & Curtis, 1986; Noyes, Clarkson, Crowe, Yates, & McChesney, 1987; Noyes et al., 1992; Rapee, 1985; Sanderson & Barlow, 1990). Thus, whereas several other anxiety disorders (such as panic disorder) tend to have a later onset and more acute presentation characterized by exacerbations and remissions, initial evidence suggests that GAD has a more characterological presentation (although fluctuations in the course of GAD are often noted corresponding to the presence or absence of life stressors). These findings have contributed to Axis II conceptualizations of GAD (Sanderson & Wetzler, 1991).

However, GAD is not exclusively associated with an early age of onset. For instance, in the NCS, the lowest prevalence of GAD occurred in the 15- to 24-year age group (Wittchen et al., 1994). Yet, because prevalence estimates were based on the diagnostic

level, they do not necessarily contradict the aforementioned findings indicating that many patients with GAD report symptoms dating back to childhood (i.e., the extent to which the features of GAD were present at subclinical levels was not examined in this study). Nevertheless, some people with GAD do report an onset in adulthood (Beck et al., 1996; Blazer et al., 1991; Blazer, Hughes, & George, 1987; Brown, O'Leary, Marten, & Barlow, 1993; Ganzini, McFarland, & Cutler, 1990; Hoehn-Saric, Hazlett, & McLeod, 1993). It has been suggested that compared to early-onset GAD, stressful life events may play a stronger role in onsets of GAD occurring later in life. This suggestion is bolstered by the findings of Blazer and colleagues (1987), who noted that the occurrence of one or more negative life events increased by threefold the risk of developing GAD in the following year. However, comparison of early- versus late-onset cases has revealed no consistent differences on variables such as GAD severity or comorbid symptoms or conditions (Beck et al., 1996; Brown et al., 1993; Hoehn-Saric et al., 1993).

Comorbidity

Although GAD was once thought to be a relatively minor problem that was not associated with a high degree of distress and impairment, recent data indicate that this is not the case. In the NCS, 82% of persons with GAD reported that their problem was associated with significant impairment, as indexed by past treatment-seeking behavior (either drugs or psychotherapy) or substantial lifestyle interference (Wittchen et al., 1994; see Massion, Warshaw, & Keller, 1993). In addition, research has routinely shown that GAD rarely presents in isolation. Community surveys indicate that 90% of persons with GAD have a history of some other mental disorder at some point in their lives (Wittchen et al., 1994); the NCS estimated that 65% of persons with current GAD had at least one other disorder at the time of their assessment. Studies of clinical samples have found that over 75% of patients with a current principal diagnosis of GAD have other co-occurring anxiety or mood disorders (Brawman-Mintzer et al., 1993; Brown & Barlow, 1992; Massion et al., 1993). The high comorbidity rates obtained

in patient samples may actually be *underestimates*, given that the presence of certain disorders (e.g., substance use disorders, disorders involving current suicidality) is an exclusion criterion in many investigations. Indeed, epidemiological data from the NCS suggest that substance use disorders are common (16%) in current GAD. In studies of patient samples, panic disorder, mood disorders (major depression, dysthymia), social phobia, and specific (formerly simple) phobia are typically found to be the most common additional diagnoses.

Some studies indicate that GAD is the most common comorbid diagnosis in patients seeking treatment for another anxiety or mood disorder (Brown & Barlow, 1992; Sanderson, Beck, & Beck, 1990). In addition, initial findings suggest that, relative to other anxiety and mood disorders, GAD may be the most commonly occurring disorder in persons presenting for treatment of physical conditions associated with stress (e.g., irritable bowel syndrome, chronic headaches; Blanchard, Scharff, Schwarz, Suls, & Barlow, 1990). The high comorbidity rate of GAD has also been construed in support of claims that it may not represent a distinct disorder, but rather a "prodrome" or symptoms better accounted for by other disorders such as major depression (see Brown et al., 1994). This concern is seemingly upheld by evidence that comorbid GAD often remits upon focused treatment of another anxiety disorder (Brown, Antony, & Barlow, 1995). This issue awaits empirical investigation (e.g., study of the temporal sequence of the emergence of GAD in relation to comorbid disorders).

CONCEPTUAL MODELS OF GAD

Although many of the findings discussed above may be taken as evidence of the questionable discriminant validity of GAD, conceptual models of the anxiety disorders have emerged that regard GAD as the "basic" anxiety disorder, because its core features may represent the fundamental processes of all emotional disorders (Barlow, 1988; Barlow, Chorpita, & Turovsky, 1996). Barlow (1988) has termed this fundamental process "anxious apprehension." Anxious apprehension refers to a future-oriented mood state in which one becomes ready or prepared to attempt to cope with upcoming negative events. This mood

state is associated with a state of high negative affect and chronic overarousal, a sense of uncontrollability, and an attentional focus on threat-related stimuli (e.g., high self-focused attention, hypervigilance for threat cues). Whereas the *process* of anxious apprehension is present in all anxiety disorders, the *content* (focus) of anxious apprehension varies from disorder to disorder (e.g., anxiety over future panic attacks in panic disorder, anxiety over possible negative social evaluation in social phobia). Nevertheless, the process of anxious apprehension is viewed to be key in the progression of initial symptoms into a full-blown disorder (e.g., isolated unexpected panic attacks are apt to develop into panic disorder in the context of worry/anxious apprehension over the possibility of having future panic attacks).

Indeed, the features of GAD are considered to be vulnerability dimensions in leading etiological models of emotional disorders (Clark, Watson, & Mineka, 1994). For instance, GAD is associated with high levels of negative affect (Brown et al., 1998), a construct that is increasingly considered to be a higher-order trait serving as a vulnerability dimension for anxiety and mood disorders (Clark et al., 1994). In addition, in view of evidence that GAD is most likely to have an early onset and to precede the disorders with which it co-occurs (see the "Prevalence, Course, and Comorbidity" section), it has been posited that the high comorbidity rate associated with GAD may be due to the fact that its constituent features contribute to the predisposition for the development of other anxiety and mood disorders (Brown et al., 1994). Furthermore, studies have often found GAD to be relatively less responsive to psychosocial and pharmacological interventions—a result that could be construed as consistent with a characterological or vulnerability conceptualization of this disorder (Sanderson & Wetzler, 1991).

As for the origins of GAD itself, the data point to a confluence of genetic, biological, and psychosocial factors, as with the other emotional disorders. Although initial studies failed to find a clear role of genetic factors in GAD (see, e.g., Andrews, Stewart, Allen, & Henderson, 1990; Torgersen, 1983), more recent findings have indicated otherwise (Kendler, Neale, Kessler, Heath, & Eaves, 1992a, 1992b; Kendler et al., 1995; Roy, Neale,

Pedersen, Mathé, & Kendler, 1995; Skre, Onstad, Torgersen, Lygren, & Kringlen, 1993). For example, in a study of 1,033 female–female twin pairs assessed by evaluators unaware of the nature of the research, Kendler and colleagues (1992a) concluded that GAD is a moderately familial disorder, with a heritability estimated at about 30% (the remainder of variance in GAD liability may result from environmental factors not shared by the adult twins). Further research in both all-female (Kendler et al., 1992b) and mixed-sex (Roy et al., 1995) twin samples has indicated that whereas a clear genetic influence exists in GAD, the genetic factors in GAD are completely shared with major depression. However, although GAD and major depression share the same genetic factors, their environmental determinants appear to be mostly distinct. These findings are consistent with the aforementioned conceptual models of emotional disorders (Barlow et al., 1996; Clark et al., 1994), which view the anxiety and mood disorders as sharing common vulnerabilities, but differing on important dimensions (e.g., focus of attention, degree of psychosocial vulnerability arising from environmental experiences) to the extent that differentiation is warranted.

Relative to genetic/biological influences, psychosocial factors have received less attention in the empirical study of the origins of GAD. Current conceptual models suggest that early experiences of uncontrollability represent a psychological vulnerability for the disorder (Barlow, 1988; Borkovec, 1994). For instance, although the nature of these early experiences may be multifold, Borkovec (1994) has asserted that childhood histories of psychosocial trauma (e.g., death of parent, physical/sexual abuse) and insecure attachment to primary caregivers may be particularly salient to the origins of this psychological vulnerability.

Although the aforementioned models are helpful to the understanding of the potential causes of GAD and its relation to other emotional disorders, they are of limited value to development of effective treatments for this condition. Nonetheless, psychosocial models of pathological worry have been devised that have assisted greatly in this endeavor. The most widely recognized model of this nature has been provided by Borkovec (1994; Borkovec et al., 1991). Borkovec regards worry as

a predominantly conceptual, verbal/linguistic attempt to avoid future aversive events and aversive imagery (i.e., cognitive avoidance of threat); this process is experienced by the worrier as negative-affect-laden and uncontrollable. Pathological worry (GAD) is associated with diffuse perceptions that the world is threatening and that one may not be able to cope with or control future negative events (Barlow et al., 1996; Borkovec, 1994). A number of studies have confirmed the notion that worry is characterized by a predominance of thought activity and low levels of imagery (see, e.g., Borkovec & Inz, 1990; Borkovec & Lyonfields, 1993; see also East & Watts, 1994). Borkovec (1994) further postulates that worry is negatively reinforcing because it is associated with the avoidance of or escape from more threatening imagery and more distressing somatic activation. Support for the position that worry may prevent certain somatic experience comes from the host of studies reviewed earlier showing that worry suppresses autonomic activity (see, e.g., Lyonfields et al., 1995).

According to Borkovec's model, although the avoidant functions of worry provide short-term relief from more distressing levels of anxiety, the long-term consequences of worry include the inhibition of emotional processing and the maintenance of anxiety-producing cognitions (see Mathews, 1990). For example, whereas patients with GAD may regard worry as an effective problem-solving strategy that has other benefits (e.g., it prevents catastrophe or prepares one to cope with future negative events), it maintains clinical anxiety for a number of reasons. For example, if worry does indeed serve to foster the avoidance of imagery, then emotional processing of threatening material will be prevented because worry inhibits the complete activation of fear structures in memory—a process considered to be *necessary* for permanent anxiety reduction (Foa & Kozak, 1986). The failure to fully access these fear structures may also account for the autonomic inhibition associated with GAD. The avoidant nature of worry will hinder effective problem solving of true life circumstances (e.g., the content of worry often jumps from topic to another without resolution any particular concern). However, because pathological worry is perceived as uncontrollable and because it prevents emotional processing, the afflicted individual is prone to

experience heightened negative affect and cognitive intrusions in the future. For instance, research has shown that uncontrollability of negative thinking correlates with the intensity and frequency of such thoughts (see, e.g., Clark & DeSilva, 1985; Parkinson & Rachman, 1981). Moreover, although the underlying mechanisms are not clear (see Borkovec, 1994), evidence indicates that worry inductions prior to and/or following exposure to laboratory stressors (e.g., viewing aversive films, giving a speech) preclude emotional processing (anxiety reduction) and increase subsequent intrusive thinking about these stressors (Borkovec & Hu, 1990; Butler, Wells, & Dewick, 1995).

Summary of GAD Features: Targets of Treatment

On the basis of the evidence reviewed above, the two principal components that should form the targets of a treatment intervention for GAD are excessive, uncontrollable worry and its accompanying persistent overarousal (primarily tension-related, central nervous system symptoms). As the ensuing literature review will attest, these cognitive and somatic features have been most frequently addressed with cognitive therapy and some form of relaxation treatment, respectively. Moreover, following recent conceptualizations of the nature of pathological worry (see Borkovec, 1994), the utility of targeting GAD worry via an exposure-based paradigm has recently emerged as a potentially effective treatment component for GAD (see, e.g., Craske, Barlow, & O'Leary, 1992). For instance, as noted above, worry has been conceptualized as a negative reinforcer that serves to dampen physiological reactivity to emotional processing (Borkovec & Hu, 1990). In a sense, worry may serve to hinder complete processing of more disturbing thoughts or images. This is often evident during the process of decatastrophizing—a form of cognitive restructuring described later, where the patient is reluctant to elaborate on the worst possible outcome of a feared negative event. Instead, the patient may feel more comfortable ruminating over his/her anxious thoughts and then distracting from the catastrophic thought or image.

Perhaps due in part to the effects of some of the aforementioned characteristics of GAD (e.g., its "characterological" nature, the high

rate of comorbidity), studies have noted only modest treatment gains following cognitive-behavioral or pharmacological interventions. This is particularly true in relation to the efficacy of these forms of treatments for other anxiety disorders (see Brown, Hertz, & Barlow, 1992). In addition, whereas most studies have found the treatments examined to be effective to some degree, comparative outcome studies have rarely observed differential efficacy among active treatment conditions. Another factor that may have contributed to these modest treatment gains and lack of differential efficacy concerns the types of treatments that have been examined thus far. Given that GAD did not possess a key diagnostic feature (i.e., excessive worry) until the publication of DSM-III-R, the majority of outcome studies conducted through the late 1980s examined the effectiveness of rather nonspecific interventions (e.g., relaxation training). By comparison, extant treatments for other anxiety disorders contain elements specifically tailored to address essential features of the disorder in question. For example, in panic control treatment for panic disorder, components of breathing retraining and interoceptive exposure address hyperventilation and fear of physical sensations, respectively (see Craske & Barlow, Chapter 1, this volume). However, as will be noted later in this chapter, new treatments have recently been developed that specifically target the key feature of excessive, uncontrollable worry. Prior to delineating these treatments, we provide an overview of the treatment literature on GAD.

OVERVIEW OF TREATMENT OUTCOME STUDIES

Early treatment studies for GAD typically entailed the examination of the efficacy of relaxation-based treatments or biofeedback. Whereas the majority of these earlier studies used analogue participants (e.g., mildly anxious college students), the few studies utilizing clinical samples observed quite modest treatment effects when using these forms of treatment in isolation from other procedures. For instance, LeBoeuf and Lodge (1980) reported that only 4 of 26 patients showed more than marginal improvement in response to relaxation alone.

Only within the past 15 years have studies emerged that examined the efficacy of treatments for GAD with rigorous methodology (e.g., use of structured interviews to establish diagnoses, inclusion of control or comparison groups, assessment of short- and long-term effects of treatment via multiple measures). The types of "active" treatments examined in these studies have typically included cognitive therapy, relaxation training, anxiety management training, or some combination of these procedures. Most often, these treatments have been compared to nondirective treatments and/or wait-list control conditions. With regard to the use of wait-list comparison groups, these active treatments have been shown to produce greater improvement than no treatment (see, e.g., Barlow et al., 1984; Barlow, Rapee, & Brown, 1992; Blowers, Cobb, & Mathews, 1987; Butler, Cullington, Hibbert, Klimes, & Gelder, 1987; Lindsay, Gamsu, McLaughlin, Hood, & Espie, 1987). Moreover, studies reporting long-term outcome data (i.e., clinical functioning 6 or more months after treatment) have generally shown a maintenance of treatment gains (see, e.g., Barlow et al., 1992; Borkovec & Costello, 1993; Borkovec & Mathews, 1988; Butler et al., 1987, 1991).

Another important finding observed in recent studies providing long-term outcome data is the substantial reduction in anxiolytic medication usage in treated subjects over the follow-up period (see, e.g., Barlow et al., 1992; Butler et al., 1991; White & Keenan, 1992). For instance, Barlow and colleagues (1992) noted that whereas many of their patients were using benzodiazepines at pretreatment (33%–55%), virtually all had discontinued medication usage by the 2-year follow-up. This finding is salient in light of the fact that benzodiazepines are particularly refractory to discontinuation (see Schweizer & Rickels, 1991), and it may indicate that psychosocial treatments of the nature examined in Barlow and colleagues (1992) may have utility as an approach to discontinuation of these types of medications.

However, as noted above, most studies have failed to observe clear evidence of differential efficacy when comparing two or more active treatments (see, e.g., Barlow et al., 1992; Borkovec & Mathews, 1988; Durham & Turvey, 1987; Lindsay et al., 1987), although there are a few exceptions to this general find-

ing (see, e.g., Butler et al., 1991). Perhaps even more discouraging is the finding showing no differences between cognitive-behavioral treatments and credible nondirective treatments (Blowers et al., 1987; Borkovec & Mathews, 1988; White et al., 1991), although one study is a notable exception (Borkovec & Costello, 1993). Despite the lack of evidence for differential efficacy in most of these studies, both the "active" and nondirective treatments produced significant (relative to a wait-list control) and durable gains. Nevertheless, the collective findings indicating a lack of differential efficacy among active treatments or between active and nondirective treatments in most studies underscore the importance of continuing the search for effective mechanisms of action (see Butler & Booth, 1991).

Moreover, research on the development and effectiveness of psychosocial interventions for childhood and adolescent GAD is sorely needed. The virtual absence of research in this area is due mainly to the fact that GAD was not considered a childhood/adolescent disorder until publication of DSM-IV (replacing the category "overanxious disorder of childhood"). Currently, the most pertinent work in this area has focused on cognitive-behavioral and familial treatments targeting heterogeneous childhood anxiety samples (see, e.g., Barrett, Dadds, & Rapee, 1996; Kendall, 1994).

Prior to outlining the application of specific techniques pertaining to the assessment and treatment of GAD, we review, in greater detail, a few noteworthy treatment outcome studies (i.e., studies producing evidence for differential efficacy among active treatments and/or observing quite encouraging treatment gains). For example, in the first of a series of studies, Butler et al. (1987) evaluated an anxiety management package for GAD that was loosely based on the early important work on anxiety management by Suinn and Richardson (1971). Treatment consisted of teaching patients to cope with various aspects of their anxiety via such methods as self-administered relaxation procedures and distraction procedures to deal with cognitive aspects of anxiety. The subtle types of avoidance of both somatic and situational cues often found in patients with GAD were also addressed. Patients were encouraged to take control of their lives by scheduling more pleasurable activities and noting areas in their lives in which they

were functioning well. Patients receiving this treatment were compared to a wait-list control group. Relative to the wait-list controls ($n = 23$), patients receiving the anxiety management package ($n = 22$) evidenced greater improvement on all measures of anxiety (e.g., Hamilton rating scales, State-Trait Anxiety Inventory). At a 6-month follow-up, improvement on these measures was either maintained or increased further. For example, in the active treatment group, Hamilton Anxiety Scale scores showed an average 59% reduction immediately following treatment (from a mean of 16 to a mean of 6.6) and a 69% reduction by the 6-month follow-up (to a mean of 5.0). As we have noted elsewhere, the latter figure exceeds the greatest benefit reported in any study evaluating the short-term effects of benzodiazepines on generalized anxiety (Barlow, 1988; Brown et al., 1992). However, this observation should be tempered by the facts that direct comparisons to a medication group were not made and that the investigators only included patients who suffered substantial anxiety for 2 years or less, thereby eliminating any patients with "chronic" anxiety.

In their second study, Butler and colleagues (1991) compared a more extensive cognitive therapy based on the work of Beck, Emery, and Greenberg (1985) with a version of their anxiety management treatment stripped of any cognitive therapy. The investigators opted to evaluate cognitive therapy in this manner, because they hypothesized that this approach might have a more dramatic effect on the prominent symptom of worry in GAD. Treatment consisted of weekly sessions lasting up to 12 weeks. Booster sessions were also provided at 2, 4, and 6 weeks after treatment. At posttreatment, whereas both treatment groups evidenced significant improvement relative to a wait-list control group ($n = 19$), patients receiving cognitive therapy ($n = 19$) were significantly better on most measures than patients receiving the intervention without cognitive therapy ($n = 18$). At a 6-month follow-up, both treatment groups maintained their gains, with the cognitive therapy group continuing to show greater improvement than the behavior therapy group on most measures. Consistent with the findings of Barlow and colleagues (1992), treatment had a substantial impact on medication usage in this sample. Whereas 40% of patients in the two treatment groups were taking anxiolytic and/or hypnotic

medication at pretreatment, only 24% were still taking medication at posttreatment. Six months later, this had fallen to 15%, with every patient reducing his/her usual dosage.

Butler and colleagues (1991) evaluated the clinical significance of treatment gains via the application of rather stringent criteria of end-state functioning (i.e., scoring within the "normal" range on three measures of anxiety: Hamilton Anxiety Scale, Beck Anxiety Inventory, Leeds Anxiety Scale). At posttreatment, the percentages of patients falling within the normal range on all three measures were 32% and 16% for the cognitive therapy and behavior therapy groups, respectively. At the 6-month follow-up, this percentage had risen in the cognitive therapy group (42%), but fallen markedly in the behavior therapy group (5%). These modest findings demonstrate once again that GAD can be a chronic and severe problem, and that there is much room for improvements in our treatments. Moreover, whereas the Butler and colleagues (1991) study represents one of the few providing evidence of differential efficacy among active treatment conditions, Borkovec and Costello (1993) noted that the behavior therapy condition in this study produced the lowest amount of change among the extant treatment studies on GAD. Thus, regardless of the reasons for the limited efficacy of this condition, the negligible gains produced by behavior therapy provided a liberal standard for detecting between-groups differences with another active treatment condition (e.g., only 5% of patients treated with behavior therapy met high end-state functioning criteria at 6-month follow-up).

The most recently published major psychosocial outcome study for GAD was authored by Borkovec and Costello (1993). In this investigation, the comparative efficacy of applied relaxation (AR), cognitive-behavioral therapy (CBT), and nondirective treatment (ND) was examined in a sample of 55 patients carefully diagnosed as having DSM-III-R GAD. AR consisted of teaching patients progressive muscle relaxation (PMR) with slow breathing. PMR initially entailed 16 muscle groups gradually reduced down to 4 groups, with the learning of cue-controlled relaxation and relaxation-by-recall to facilitate the deployment of relaxation procedures quickly and early in the process of anxiety activation. CBT included the elements of AR as well, but

also included the components of coping desensitization and cognitive therapy. Coping desensitization involved the generation of a hierarchy listing each patient's anxiety-provoking situations and his/her cognitive and somatic responses to these situations. After the patient was deeply relaxed, the therapist would present external and internal anxiety cues and instruct him/her to continue to imagine these cues while, at the same time, imagining himself/herself using relaxation skills in that situation. Each scene in the hierarchy was repeated until it no longer elicited anxiety. The cognitive therapy component of CBT was modeled after the procedures outlined in Beck and colleagues (1985), aimed at the generation of situation-specific cognitive coping responses.

Patients in the ND condition were told that the goals of treatment were to enhance self-understanding and to discover, through their own efforts, things that they could do differently to affect how they feel. Therapists did not provide specific information about GAD, nor did they provide direct advice or coping methods for dealing with anxiety; instead, their role was to provide a time of self-reflection while assisting patients to clarify or focus on their feelings.

Results indicated that despite the lack of differences among conditions in credibility, expectancy, and patient perception of the therapeutic relationship, the AR and CBT conditions were clearly superior to ND at posttreatment. This was evidenced by between-group comparisons, within-group change, and the proportion of patients meeting high end-state functioning criteria. Differences at posttreatment were particularly noteworthy because they indicated that elements of AR and CBT contained active ingredients independent of nonspecific factors. Whereas no clear evidence of differential efficacy was obtained for the AR and CBT conditions at posttreatment, 12-month follow-up results indicated that in addition to a maintenance of treatment gains across this follow-up period in both conditions, more patients treated with CBT met high end-state criteria (57.9%) than those in the AR condition (37.5%). Conversely, 12-month follow-up results indicated losses in treatment gains in the ND condition (percentage meeting high end-state criteria = 26.7%); in fact, a significantly greater number of patients (61.1%) treated in this condition re-

quested further treatment at the end of the active treatment phase than subjects in the AR and CBT conditions (16.7% and 15.8%, respectively). Borkovec and Costello (1993) noted that the AR and CBT treatments in this study produced some of the largest treatment effect sizes noted in the GAD treatment literature to date; however, they acknowledged the fact that because only one-third and roughly one-half of patients in the AR and CBT groups, respectively, met high end-state functioning criteria at 12-month follow-up, the evolution of psychosocial treatments for GAD must continue.

Nevertheless, in a separate report based on this sample, Borkovec, Abel, and Newman (1995) observed that psychosocial treatment of GAD resulted in a significant decline in comorbid diagnoses (social phobia and specific phobia were the most commonly co-occurring conditions). Although treatment condition (AR, CBT, ND) was not found to have a differential impact on decline in comorbidity, a significantly higher drop in additional diagnoses was noted in patients who were classified as treatment successes. Specifically, whereas 45% of the treatment success group had at least one additional diagnosis at pretreatment, the comorbidity rate declined to 14%, 4%, and 4% at posttreatment, 6-month follow-up, and 12-month follow-up, respectively. In contrast, 83% of the treatment failure group had at least one additional diagnosis at pretreatment; this rate dropped to 67%, 40%, and 10% at posttreatment, 6-month follow-up, and 12-month follow-up, respectively.

We have developed a treatment for GAD that includes a component that addresses worry directly (i.e., worry exposure), taking advantage of the knowledge gained in the development of exposure-based treatments for panic disorder. In a pilot study (O'Leary, Brown, & Barlow, 1992), the efficacy of worry exposure in its pure form (i.e., without other elements such as relaxation training or cognitive therapy) was evaluated in three patients via a multiple-baseline across-subjects design. Worry exposure was completed in both intersession and intrasession exercises. Patients self-monitored daily levels of mood and worry; they also completed several questionnaires weekly, including the PSWQ (Meyer et al., 1990), the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995),

and an earlier version of the Anxiety Control Questionnaire (ACQ; Rapee, Craske, Brown, & Barlow, 1996).

Results indicated that two of the three patients evidenced clinically significant decreases in daily levels of anxiety and depression, along with dramatic declines in PSWQ scores. Although the third patient did not show as dramatic a decline in her levels of worry and anxiety, elevations in her ACQ scores over the course of treatment showed increased self-perceptions of control over worry and other emotional states. In addition, an examination of all patients' anxiety ratings after generating the worst possible feared outcome (peak anxiety) and then after having generated alternatives to that outcome (postanxiety) revealed habituation effects: Peak anxiety ratings were consistently higher than postanxiety ratings, suggesting that the intervention was indeed effective as a deconditioning strategy, as had been originally hypothesized. Over the past several years, our research has focused on a number of variables relevant to the process of worry (e.g., negative affect, attentional allocation, self-focused attention, autonomic arousability) and methods of effectively treating worry and related features of GAD (Brown, Marten, & Barlow, 1995; Brown et al., 1998; DiBartolo, Brown, & Barlow, 1997). At the same time, we have continued to administer our treatment protocol to patients with a principal diagnosis of GAD.

The remainder of this chapter is devoted to a description of this treatment and to our approach to the assessment of GAD. A combined treatment protocol for GAD is described that includes worry exposure, as well as cognitive therapy, relaxation training, and other strategies (e.g., worry behavior prevention, problem solving).

THE CONTEXT OF THERAPY

Setting

Assessment and treatment of patients with GAD occur within the Center for Anxiety and Related Disorders at Boston University. Presently at the center, we have close to 400 new admissions per year. GAD is roughly the fourth most frequent principal diagnosis in our center (behind panic disorder with agoraphobia, social phobia, and specific phobia,

and occurring at about the same frequency as major depression), accounting for approximately 8% of our new admissions. "Principal" means that although a patient may have several comorbid diagnoses, GAD is the most severe. Patients requesting assessment and/or treatment at our center first undergo a brief screening (usually conducted over the telephone) to ascertain their eligibility (i.e., appropriateness) for an evaluation at our center. At this time, eligible patients are scheduled to undergo the standard intake evaluation. This evaluation entails the administration of one or two structured interviews, the Anxiety Disorders Interview Schedule for DSM-IV: Lifetime Version (ADIS-IV-L; Di Nardo, Brown, & Barlow, 1994), and a battery of questionnaires. Once a patient has completed the intake evaluation and has received a principal diagnosis (determined at a weekly staff meeting in which consensus diagnoses are established), he/she is contacted by the center staff member who conducted the initial ADIS-IV-L. At that time, the patient is provided the results of the evaluation and given a treatment referral. The majority of patients receiving a DSM-IV anxiety or mood disorder as their principal diagnosis are offered a referral to one of the ongoing treatment programs in our center. After acceptance in the program, patients typically complete additional assessments specific to the treatment program and their presenting, principal disorder (e.g., pretreatment self-monitoring of anxiety and worry; see below).

In the past, our treatment programs for GAD have been conducted in both individual and small-group (i.e., five to eight patients) formats. Whereas the GAD treatment protocol described in this chapter has been administered in both formats, at the present time we feel that it is best suited to be delivered in one-on-one hourly treatment sessions, given some of the practical difficulties of implementing the "worry exposure" component in a small-group format (see below). We have not found the integrity of the relaxation and cognitive restructuring components to be compromised substantially by the small-group format; in fact, in some cases this format may have certain advantages, depending on the composition of the group (e.g., group assistance in cognitive restructuring). Nevertheless, the extent to which the format of treatment is associated with treatment outcome is an area that awaits future investigation.

Patient Variables

The earlier section concerning the nature of GAD provides some indication of features of patients with GAD that may have an impact on the treatment process. Beyond the features constituting the DSM-IV criteria for the disorder, one characteristic that is particularly salient to the process of treatment is the high rate of comorbidity evident in patients with a principal diagnosis of GAD. Although this area has received little empirical attention as of yet (see Brown & Barlow, 1992), the existence of coexisting psychological disorders must be considered by the therapist in treatment planning. For example, given the close boundaries among generalized anxiety, worry, and depression (see Andrews & Borkovec, 1988; Zinbarg & Barlow, 1991), the extent to which the patient with GAD exhibits depression at either the symptom or syndrome level must be acknowledged, as depression has been associated with a poorer treatment response to cognitive-behavioral treatments for GAD (see, e.g., Barlow et al., 1992). Moreover, given that panic disorder and GAD often co-occur (see Brown & Barlow, 1992), the presence of comorbid panic disorder should be acknowledged, given its potential association with the problem of relaxation-induced anxiety.

Another characteristic that may be relevant to treatment outcome is the extent to which the patient's worry is "ego-syntonic." Adding some support for the conceptualization of GAD as a characterological disorder (see, e.g., Sanderson & Wetzler, 1991), we have observed that some patients with GAD evidence resistance in countering or attempting to reduce their worrying—either because they view their worry as adaptive (e.g., worry is perceived as reducing the likelihood of the occurrence of some negative event), or because they consider their worry as such an integral part of themselves that they express concern about how they will be when they no longer have anything to worry about. Often these patients present for treatment to receive help in reducing the somatic component of their disorder, and may not even see worry as related to their symptoms of persistent tension and hyperarousal. This has only been a clinical observation, and, to our knowledge, no evidence exists attesting to the prevalence and salience of this characteristic in predicting treatment outcome.

Therapist Variables

Given that research on the efficacy of cognitive-behavioral treatments for GAD is still in its infancy relative to research in conditions such as panic disorder, to date no data exist regarding therapist variables associated with treatment outcome. Although little can be said about the empirical basis of therapist qualities, we would certainly contend that therapists should possess a firm grounding in the use of cognitive-behavioral techniques, in addition to a thorough understanding of current models of worry and GAD. Moreover, because cognitive therapy is one of the core components of our treatment for GAD, therapists should possess the ability to deliver the active elements of this treatment (see Beck et al., 1985; Young, Weinberger, & Beck, Chapter 6, this volume)—for instance, the use of the Socratic method, collaborative empiricism, and ability to assist the patient in identifying and challenging automatic thoughts. Ideally, they should also possess the “nonspecific” qualities considered to be evident in the most effective cognitive therapists (e.g., ability to communicate trust, accurate empathy, and warmth; ability to reason logically themselves; ability to tailor the principles and techniques of cognitive therapy to the individual needs of the patient).

We find that among the various components of our treatment of GAD, patients have the most difficulty in learning and applying the cognitive techniques in a manner in which they are most effective. In addition, therapists who are training to learn our GAD treatment protocol are apt to require the most supervision and guidance in learning to deliver the cognitive therapy component. In the case of both the patients and the therapists-in-training, the most commonly occurring difficulty is that the methods of identifying and/or countering anxiogenic cognitions are not applied thoroughly (e.g., application of countering prior to identifying the most salient automatic thoughts; insufficient countering of automatic thoughts via the generation of incomplete or inappropriate counterarguments). We return to this issue in a later section.

As we also note later in this chapter, a solid background in cognitive-behavioral theory and therapy is an asset when applying the exposure-based treatment component of our GAD treatment package. This knowledge will

help ensure that the parameters of effective therapeutic exposure are delivered with integrity (e.g., recognition and prevention of patients' distraction, provision of an ample exposure duration to promote habituation in patients' anxiety to images denoting their worry).

ASSESSMENT

Classification

Of the anxiety disorders, GAD remains among the diagnoses most difficult to establish with high reliability (see Di Nardo, Moras, Barlow, Rapee, & Brown, 1993). Whereas the revisions in diagnostic criteria of GAD introduced in DSM-III-R improved diagnostic agreement rates somewhat, in our study examining the reliability of the DSM-III-R anxiety disorders via the administration of two independent ADIS-R interviews, the kappa for GAD when assigned as a principal diagnosis was only fair (kappa = .57; Di Nardo et al., 1993). In our currently ongoing study involving DSM-IV anxiety and mood disorders evaluated with the ADIS-IV-L, reliability of the principal diagnosis of GAD has increased somewhat (kappa = .67; Brown, Di Nardo, Lehman, & Campbell, in press). Nevertheless, the consistent finding of lower diagnostic reliability of GAD relative to other anxiety disorders has led to the call by some investigators to mandate, as an inclusion criterion for studies examining patients with GAD, the confirmation of the GAD diagnosis via two independent diagnostic interviews (see Borkovec & Costello, 1993).

As we have articulated elsewhere (see, e.g., Brown et al., 1994; Di Nardo et al., 1993), many factors may be contributing to the lower rates of diagnostic agreement for GAD. For instance, some recent models noted earlier conceptualize GAD as the “basic” anxiety disorder because its defining features reflect fundamental processes of anxiety (see Barlow, 1988, 1991; Rapee, 1991). If these models are valid, one would expect that the distinctiveness of the diagnosis would be mitigated by the fact that its features are present to some extent in all of the anxiety and mood disorders. Moreover, GAD is defined solely by features involving internal processes (i.e., excessive worry, persistent symptoms of tension

or arousal). Thus the lack of a clear “key feature” defining the disorder may also contribute to lower diagnostic reliability, in contrast to the high rates of diagnostic agreement for disorders in which these features are often, or necessarily, present (e.g., compulsions in OCD, phobic avoidance in specific phobia; see Di Nardo et al., 1993).

Other aspects of the diagnostic criteria for GAD should also be considered in the exploration of potential factors contributing to lower its diagnostic reliability. For example, DSM-IV specifies that GAD should not be assigned when the symptoms defining the disturbance occur only during the course of a mood disorder, psychotic disorder, or a pervasive developmental disorder (see Criterion F in Table 4.1). This diagnostic specification was incorporated in part to facilitate parsimony in the assignment of diagnoses (e.g., to prevent the assignment of both Diagnosis A and B when the features of Diagnosis B can be subsumed as associated features of Diagnosis A, the more debilitating disturbance of the two). However, particularly in the case of the mood disorders (e.g., major depression, dysthymia), many patients report a clinical history marked by a chronic course of alternating or overlapping episodes of depression and persistent anxiety (see Zinbarg & Barlow, 1991). Thus the clinician may often be in the somewhat difficult position of relying on the patient’s retrospective report regarding the temporal sequence and duration of anxiety and depressive episodes to determine whether the diagnostic criteria for GAD have been met in the absence of a mood disorder.

In addition, DSM-IV criteria for GAD specify that “the focus of anxiety and worry is not confined to features of a single Axis I disorder” (see Criterion D in Table 4.1). In many cases, the determination of whether the patient’s worries represent areas of apprehension relating to another disorder can be relatively straightforward (e.g., in a patient with comorbid panic disorder, excluding worry over experiencing a future unexpected panic as a potential GAD worry). Nevertheless, particularly in light of the evidence for the high rate of comorbidity between GAD and other anxiety and mood disorders (see, e.g., Brawman-Mintzer et al., 1993; Brown & Barlow, 1992; Sanderson et al., 1990), these distinctions can occasionally be quite difficult. For example, is persistent worry about being

late for appointments a manifestation of fear of negative evaluation (characteristic of social phobia), or is it reflective of a general tendency to worry about a host of minor matters (often characteristic of GAD)? (See Chorpita, Brown, & Barlow, 1998.) In addition, careful interviewing may be needed to clarify whether an area of worry that appears ostensibly to be prototypical GAD worry is actually an area of worry that has arisen due to another disorder. For instance, has concern about job performance and finances been a long-standing, frequent worry for the patient, or did these concerns arise only after the onset of unexpected panic attacks and now the patient worries that the panics will occur at work, thereby interfering with job performance or attendance?

Under DSM-III-R, another potential source of diagnostic unreliability involved the requirement of the presence of two distinct spheres of worry. In an attempt to discern sources of unreliability of the GAD diagnosis, Di Nardo and colleagues (1993) noted that diagnosticians occasionally disagreed whether a topic of worry should be considered as a single sphere as opposed to two separate spheres (e.g., Interviewer A deems a patient’s worry about the health of his wife and the health and safety of his children as a single sphere, “family concerns,” whereas Interviewer B views these as two distinct spheres of worry). In DSM-IV, this issue may be less salient due to the fact that DSM-IV criteria do not require the presence of two separate spheres of worry (see Criterion A in Table 4.1). However, under DSM-IV, clinical judgment is still required to determine what constitutes excessive worry about “a number of events or activities” (Criterion A; our emphasis).

Finally, to achieve favorable diagnostic reliability of GAD, the criteria for the diagnosis should facilitate the distinction between “normal” and “pathological” worry. To aid in this distinction, the DSM-IV worry criteria state that the worry must be “excessive” and “occur more days than not for at least 6 months,” and perceived by the worrier as “difficult to control” (see Criteria A and B, Table 4.1). As noted earlier, the 6-month duration criterion was specified in part to differentiate GAD from transient reactions to psychosocial stressors, which may be more aptly diagnosed as forms of adjustment disorder. We have pre-

viously reviewed evidence attesting to the ability to distinguish normal and pathological worry on such dimensions as amount of time spent worrying and perceived uncontrollability of the worry process (Borkovec et al., 1991; Craske, Rapee, et al., 1989; Di Nardo, 1991). Despite this evidence, Di Nardo and colleagues (1993) noted that confusion surrounding the excessive/unrealistic judgment requirements contributed to the occurrence of diagnostic disagreements in that study, which used DSM-III-R criteria. Whether or not this source of diagnostic confusion has been reduced by the changes to the worry criteria in DSM-IV (Criteria A and B) that emphasize and better operationalize the controllability and pervasiveness of worry reduce awaits empirical examination.

Collectively, the issues mentioned above suggest that the chances of reliably identifying GAD-related worries are slim. On the contrary, several studies have found that the content and presence of GAD-related worry can be reliably identified (Barlow & Di Nardo, 1991; Borkovec et al., 1991; Craske, Rapee, et al., 1989; Sanderson & Barlow, 1990). Moreover, in the process of revising diagnostic criteria for DSM-IV, researchers noted a possible boundary problem between GAD and OCD (see Turner, Beidel, & Stanley, 1992). This concern was raised following the observation that the features of OCD may have the most overlap with the features of GAD (e.g., pervasive worry vs. obsessions, characterological presentation). In addition, the findings of Craske, Rapee, and colleagues (1989) indicate that many GAD worries are associated with behavioral acts designed to reduce anxiety evoked by worry (e.g., checking the safety of one's child as he/she waits for the bus), thus introducing potential overlap with OCD compulsions. Nevertheless, results from Brown, Moras, and colleagues (1993) indicate that the lower diagnostic reliability of GAD is not due to a boundary problem with OCD. Support for this contention was obtained by contrasting 46 patients with GAD and 31 patients with OCD on the basis of interview (ADIS-R) and questionnaire responses. Of the 55% of patients who received two independent ADIS-Rs, in no case did one interviewer assign a principal diagnosis of GAD and the other OCD; this strongly suggested that GAD versus OCD was not a problematic differential diagnostic decision. More-

over, examination of comorbidity patterns indicated that GAD and OCD rarely co-occurred (OCD with additional GAD = 6.5%; GAD with additional OCD = 2%). As noted earlier, scores on the PSWQ, a 16-item measure of the trait of worry (Meyer et al., 1990), successfully discriminated patients with GAD from those with OCD in this study as well. However, despite evidence that various indices of worry can differentiate patients with GAD from patients with other anxiety disorders (see, e.g., Brown, Antony, & Barlow, 1992; Brown, Moras, et al., 1993; Di Nardo, 1991; Meyer et al., 1990; Sanderson & Barlow, 1990), initial evidence suggests that this may not be the case for major depression (Starcevic, 1995). Indeed, the mood disorders may pose a greater boundary problem for GAD than do the anxiety disorders.

In DSM-IV, the associated symptom criterion was revised considerably via the reduction in the number of symptoms in the list from 18 (in DSM-III-R) to 6 (of which the patient must endorse at least 3; see Criterion C in Table 4.1). Whereas initial evidence indicated difficulty in establishing the DSM-III-R symptom ratings reliably (see, e.g., Barlow & Di Nardo, 1991; Fyer et al., 1989), subsequent data indicated satisfactory reliability when interrater agreement was simply calculated on the presence or absence of a symptom (which was required in DSM-III-R), rather than examining interrater concordance on symptom severity ratings (Marten et al., 1993). However, as noted earlier, Marten et al. observed that the symptoms from the DSM-III-R associated symptom clusters of "vigilance and scanning" and "motor tension" were the most reliable and endorsed most frequently by patients with GAD. Accordingly, of the six symptoms retained in the DSM-IV associated symptom criterion, all were from these two clusters.

When a clinician is establishing these ratings, careful interviewing is required to ascertain whether a symptom reported by the patient is associated with excessive worry or is due to a coexisting condition (e.g., does the patient often experience concentration difficulties when worrying about finances, or does this symptom only occur during panic attacks?). Occasionally this is no small task, especially in light of the aforementioned evidence of high rates of comorbidity between GAD and the other anxiety and mood disorder.

ders (see, e.g., Brown & Barlow, 1992). Data from Marten and colleagues (1993) indicate that these distinctions may be easier for establishing ratings for the symptoms retained in the DSM-IV associated symptom criterion; indeed, these symptoms may also have discriminant validity, at least in comparison to other anxiety disorders (see Brown, Antony, & Barlow, 1992; Brown, Marten, & Barlow, 1995; Hoehn-Saric et al., 1989). However, initial data indicate that these symptoms do not discriminate GAD from the mood disorders (Brown, Marten, & Barlow, 1995).

The Clinical Interview

The section of the ADIS-IV-L (Di Nardo et al., 1994) that focuses on the clinical assessment of current GAD is presented in Figure 4.1. The preceding section has outlined several issues and potential difficulties that the clinician may encounter when attempting to decide whether to assign the GAD diagnosis. With regard to the worry criteria, these issues include the following: (1) Is the worry excessive? (2) Is the worry pervasive (i.e., worry about “a number of events or activities”)? (3) Is the worry perceived by the individual as difficult to control? and (4) Is the focus of worry spheres unrelated to another Axis I condition? After initial screening questions on the possible presence of GAD (e.g., Items 1a and 2a under “Initial Inquiry”), the content of worry and the parameters of excessiveness, pervasiveness, and perceived controllability are assessed via Items 3a through 3j in the “Initial Inquiry” section. Note that all patients, regardless of whether or not GAD is suspected by the clinician, are administered the GAD section through Item 3j. In addition to assisting with assigning or ruling out the GAD diagnosis, this practice is guided by the philosophy that psychopathological phenomena are best regarded and assessed at the dimensional level (e.g., excessive, uncontrollable worry operates on a continuum, not in a dichotomous presence-absence fashion; see Brown et al., 1998).

If evidence of excessive, uncontrollable worry is noted in the “Initial Inquiry” section, the clinician proceeds to the “Current Episode” section for further and more direct assessment of the features bearing on the DSM-IV definition of GAD. This inquiry includes items on the duration and onset of the disorder

(Items 1 and 8), excessiveness (Item 2), the associated symptom criterion (Item 4), interference and distress (Item 5), and items that provide information on whether the GAD features are better accounted for by other conditions (Items 3, 6, and 7). However, differential diagnosis cannot be accomplished reliably by administration of the GAD section alone. For instance, information obtained from the Major Depression, Dysthymia, and Bipolar Disorder sections of the ADIS-IV-L is needed to determine whether a GAD episode occurred during the course of a mood disorder, which would contraindicate the diagnosis.

Although the ADIS-IV-L provides suggested wording to assist the clinician in determining whether a worry area is excessive and uncontrollable, experience indicates that it is often necessary to inquire further to make this determination. Although “prototypical” GAD patients may not require this prompting (e.g., they state that they worry about “everything” upon initial inquiry), some patients consider their worrying to be adaptive or productive, and thus not at all excessive, even though it is associated with considerable tension and arousal (e.g., excessive concern over finances is perceived as ensuring that money will always be available for paying bills or unexpected expenses). Potentially helpful follow-up questions of this nature include the following: (1) “Do you find it very difficult to stop worrying, or, if you need to focus on something else, are you able to successfully put the worry out of your mind?” (2) “Do you find that, if you are attempting to focus on something like reading, working, or watching TV, these worries often pop into your mind, making it difficult to concentrate on these tasks?” (3) “Do you worry about things that you recognize that other people do not worry about?” (4) “When things are going well, do you still find things to be worried and anxious about?” (5) “Does your worry rarely result in your reaching a solution for the problem that you are worrying about?”

Great care is often needed in distinguishing whether the worries identified by the patient represent areas that are independent of a co-existing condition or, in cases where no co-existing diagnosis is present, are more appropriately diagnosed as a disorder other than GAD. As mentioned earlier, some of the more common diagnostic decisions that arise involve distinguishing GAD worry from (1) ap-

GENERALIZED ANXIETY DISORDER**I. INITIAL INQUIRY**

1a. **Over the last several months, have you been continually worried or anxious about a number of events or activities in your daily life?**

YES ___ NO ___

If NO, skip to 1b.

What kinds of things do you worry about? _____

Skip to 2a.

b. **Have you ever experienced an extended period when you were continually worried or anxious about a number of events or activities in your daily life?**

YES ___ NO ___

If NO, skip to 3.

What kinds of things did you worry about? _____

When was the most recent time this occurred? _____

2a. **Besides this current/most recent period of time when you have been persistently worried about different areas of your life, have there been other, separate periods of time when you were continually worried about a number of life matters?**

YES ___ NO ___

If NO, skip to 3.

b. **So prior to this current/most recent period of time when you were worried about different areas of your life, there was a considerable period of time when you were not having these persistent worries?**

YES ___ NO ___

c. **How much time separated these periods?; When did this/these separate period(s) occur?**

3. Now I want to ask you a series of questions about worry over the following areas of life:

If patient does not report current or past persistent worry (i.e., NO to 1a and 1b), inquire about CURRENT areas of worry only. If patient reports current or past persistent worry (i.e., YES to either 1a or 1b), inquire about both CURRENT and PAST areas of worry. Particularly if there is evidence of separate episodes, inquire for the presence of prior discrete episodes of disturbance (e.g., "**Since these worries began, have there been periods of time when you were not bothered by them?**"). Use the space below each general worry area to record the specific content of the patient's worry (including information obtained previously from items 1a and 1b). Further inquiry will often be necessary to determine whether areas of worry reported by patient are unrelated to a co-occurring Axis I disorder. If it is determined that an area of worry can be subsumed totally by another Axis I disorder, rate this area as "0." Use comment section to record clinically useful information (e.g., data pertaining to the discreteness of episodes, coexisting disorder with which the area of worry is related). For each area of worry, make separate ratings of excessiveness (i.e., frequency and intensity) and perceived uncontrollability, using the scales and suggested queries below.

EXCESSIVENESS:

| | | | | | | | | |
|-------------------------|---|-----------------------------------|---|---|---|---|---|--|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No worry/ No tension | | Rarely worried/Mild tension | | Occasionally worried/Moderate tension | | Frequently worried/Severe tension | | Constantly worried/Extreme tension |

(cont.)

FIGURE 4.1. Generalized Anxiety Disorder section of the Anxiety Disorders Interview Schedule for DSM-IV: Life-time Version (ADIS-IV-L). From Di Nardo, Brown, and Barlow (1994). Copyright 1994 by the Psychological Corporation. Reprinted by permission.

CONTROLLABILITY:

0-----1-----2-----3-----4-----5-----6-----7-----8
 Never/ Rarely/ Occasionally/ Frequently/ Constantly/
 No Slight Moderate Marked Extreme
 difficulty difficulty difficulty difficulty difficulty

EXCESSIVENESS:

How often do/did you worry about _____?; If things are/were going well, do/did you still worry about _____?; How much tension and anxiety does/did the worry about _____ produce?

UNCONTROLLABILITY:

Do/did you find it hard to control the worry about _____ in that it is/was difficult to stop worrying about it?; Is/was the worry about _____ hard to control in that it will/would come into your mind when you are/were trying to focus on something else?

| | CURRENT | | COMMENTS | PAST | |
|---|---------|---------|----------|--------|---------|
| | EXCESS | CONTROL | | EXCESS | CONTROL |
| a. Minor matters (e.g., punctuality, small repairs) | _____ | _____ | _____ | _____ | _____ |
| b. Work/school | _____ | _____ | _____ | _____ | _____ |
| c. Family | _____ | _____ | _____ | _____ | _____ |
| d. Finances | _____ | _____ | _____ | _____ | _____ |
| e. Social/interpersonal | _____ | _____ | _____ | _____ | _____ |
| f. Health (self) | _____ | _____ | _____ | _____ | _____ |
| g. Health (significant others) | _____ | _____ | _____ | _____ | _____ |
| h. Community/world affairs | _____ | _____ | _____ | _____ | _____ |
| i. Other | _____ | _____ | _____ | _____ | _____ |
| j. Other | _____ | _____ | _____ | _____ | _____ |

If no evidence of excessive/uncontrollable worry is obtained, skip to **OBSESSIVE-COMPULSIVE DISORDER**

II. CURRENT EPISODE

If evidence of a discrete past episode, preface inquiry in this section with: **Now I want to ask you a series of questions about this current period of worry over these areas that began roughly in _____** (specify month/year).

List principal topics of worry: _____

1. During the past 6 months, have you been bothered by these worries more days than not?
 YES ___ NO ___

(cont.)

-
2. On an average day over the past month, what percentage of the day did you feel worried? _____%
3. Specifically, what types of things do you worry might happen regarding _____
(inquire for each principal area of worry)?
-
-
4. During the past 6 months, have you often experienced _____ when you worried?; Has _____ been present more days than not over the past 6 months? (Do not record symptoms that are associated with other conditions such as panic, social anxiety, etc.)
- 0-----1-----2-----3-----4-----5-----6-----7-----8
None Mild Moderate Severe Very severe
- | | SEVERITY | MORE DAYS THAN NOT | |
|---|----------|--------------------|---|
| a. Restlessness; feeling keyed up or on edge | ___ | Y | N |
| b. Being easily fatigued | ___ | Y | N |
| c. Difficulty concentrating or mind going blank | ___ | Y | N |
| d. Irritability | ___ | Y | N |
| e. Muscle tension | ___ | Y | N |
| f. Difficulty falling/staying asleep; restless/unsatisfying sleep | ___ | Y | N |
5. In what ways have these worries and the tension/anxiety associated with them interfered with your life (e.g., daily routine, job, social activities)?; How much are you bothered about having these worries? _____
-
- Rate interference: _____ distress: _____
- 0-----1-----2-----3-----4-----5-----6-----7-----8
None Mild Moderate Severe Very severe
6. Over this entire current period of time when you've been having these worries and ongoing feelings of tension/anxiety, have you been regularly taking any types of drugs (e.g., drugs of abuse, medication)?
- YES ___ NO ___
- Specify (type; amount; dates of use): _____
-
7. During this current period of time when you've been having the worries and ongoing feelings of tension/anxiety, have you had any physical condition (e.g., hyperthyroidism)?
- YES ___ NO ___
- Specify (type; date of onset/remission): _____
-
- 8a. For this current period of time, when did these worries and symptoms of tension/anxiety become a problem in that they occurred persistently, you were bothered by the worry or symptoms and found them hard to control, or they interfered with your life in some way? (Note: If patient is vague in date of onset, attempt to ascertain more specific information, e.g., by linking onset to objective life events.)
-
- Date of onset: _____ Month _____ Year
- b. Can you recall anything that might have led to this problem? _____
-
-
- c. Were you under any type of stress during this time? _____
- YES ___ NO ___
- What was happening in your life at the time?
-
-

(cont.)

FIGURE 4.1. (cont.)

Were you experiencing any difficulties or changes in:

- (1) Family/relationships? _____
 (2) Work/school? _____
 (3) Finances? _____
 (4) Legal matters? _____
 (5) Health (self/others)? _____

9. Besides this current period of worry and tension/anxiety, have there been other, separate periods of time before this when you have had the same problems?

YES ___ NO ___

If YES, go back and ask 2b and 2c from INITIAL INQUIRY.

If NO, skip to RESEARCH or OBSESSIVE-COMPULSIVE DISORDER.

prehension over future panic attacks or the feared consequences of panic, (2) OCD obsessions, and (3) apprehension over negative social evaluation. Differentiating excessive worry about one's health or contracting a physical illness from hypochondriacal concerns can at times be a difficult task. Follow-up questions beyond those suggested in the ADIS-IV-L are often required toward this end. Of course, the most important factor in correctly making these distinctions is the possession of a thorough knowledge of the diagnostic criteria for all disorders that may pose a boundary problem with GAD. Although it is sometimes difficult to establish this reliably (especially when patients report a long-standing history of two or more disorders), the temporal sequence of the onset of their symptoms can often be helpful in determining whether areas of worry (as well as associated somatic symptoms) have arisen in response to another disorder. As noted earlier, information pertaining to temporal sequence and duration is particularly important in the presence of signs of a coexisting mood disorder.

Item 4 of the "Current Episode" section assesses for the presence of the six associated symptoms. The patient must report that over the past 6 months, three or more of these symptoms have been present more days than not in association with the worry. The task of acquiring these ratings during the clinical interview is usually straightforward. However, care should be taken to ensure that the symptoms endorsed are ones that (1) have occurred often over the past 6 months (i.e., persistent symptoms); and (2) do not occur exclusively or predominantly as symptoms of another disorder (e.g., are not symptoms of a panic attack, generalized social anxiety, or substance use).

In many clinical settings, the administration of entire interview schedules such as the ADIS-IV-L is impractical. Nevertheless, the clinician should comprehensively screen for additional diagnoses (using, perhaps, portions of interview schedules such as the ADIS-IV-L), given (1) the need to determine whether the features of GAD are better accounted for by another disorder, and (2) the fact that patients with GAD rarely present with this as their sole diagnosis. In regard to the latter point, although data are sparse on this issue to date, the presence of comorbid conditions exerts a great influence on the patient's response to treatment (see Brown & Barlow, 1992). A brief medical history should be gathered as well, to determine whether current or past medical conditions (or medications) are contributing to, or even responsible for, symptoms constituting the patient's clinical presentation (e.g., hyperthyroidism, temporomandibular joint dysfunction). Often patients should be encouraged to schedule a physical examination if over 2 years have elapsed since their last medical workup. Moreover, patterns of alcohol and drug use should be evaluated, given that excessive use of or withdrawal from such substances may produce symptoms that are quite similar to those of GAD and other anxiety disorders (Chambless, Cherney, Caputo, & Rheinstein, 1987).

Questionnaires

The administration of a variety of self-report questionnaires is a useful part of the clinical process, both as an aid in the initial diagnostic process and for periodic assessment throughout the course of treatment to evaluate the extent of patients' progress. At our clinic, we

routinely administer a battery of questionnaires as part of the intake evaluation; these measures were selected to assess the range of the key and associated features of the DSM-IV anxiety and mood disorders (e.g., anxiety sensitivity, social anxiety, obsessions, compulsions, worry, negative and positive affect, depression). Although this extensive intake battery is administered in part for research purposes at our clinic, a battery of questionnaires selected to assess several dimensions of the emotional disorders can be useful in purely clinical settings as well. For example, questionnaire results reflecting elevations in dimensions of anxiety or mood, in addition to dimensions constituting the patient's principal complaint, may have important ramifications in the delivery of treatment and the monitoring of treatment outcome. This is particularly true for GAD, which most often co-occurs with other disorders such as panic disorder and social phobia (Brown & Barlow, 1992).

Having noted that a comprehensive questionnaire battery can be an important component of the diagnostic and treatment armamentarium, we now discuss a few measures that we have found to be particularly useful in the assessment of GAD. We have previously mentioned the PSWQ (Meyer et al., 1990) as a measure that we have frequently used in our work with GAD. The PSWQ was developed by Borkovec and his colleagues at Penn State University to address the need for an easily administered, valid measure of the trait of worry. Indeed, at 16 items, the PSWQ can be administered to patients quite conveniently (range of possible scores = 16 to 80). In their initial study introducing this measure, these researchers found the PSWQ to possess high internal consistency and temporal stability, to have favorable convergent and discriminant validity, and to be uncorrelated with social desirability (Meyer et al., 1990). In a study we conducted using a large sample of patients with anxiety disorders ($n = 436$) and 32 non-anxious controls (Brown, Antony, & Barlow, 1992), we replicated the findings of Meyer and colleagues (1990) indicating the favorable psychometric properties of the PSWQ. Most encouraging was the finding in this study indicating that scores on the PSWQ distinguished patients with GAD ($n = 50$) from patients with each of the other anxiety disorders, including OCD. The mean PSWQ score for patients with GAD was 68.11 ($SD = 9.59$).

Means and standard deviations for selected other diagnoses were as follows: panic disorder with agoraphobia, $M = 58.30$, $SD = 13.65$; social phobia, $M = 53.99$, $SD = 15.05$; OCD, $M = 60.84$, $SD = 14.55$; no anxiety disorder, $M = 34.90$, $SD = 10.98$.

Although perhaps less well known than other measures of its kind, another measure (also mentioned earlier) that has proven quite valuable in our work with patients with GAD is the DASS (Lovibond & Lovibond, 1995). The DASS is a 42-item measure that yields three psychometrically distinct subscales reflective of current (i.e., past-week) symptoms. Among the three subscales, the Stress subscale has been particularly helpful in the assessment of GAD. For example, in the Brown, Antony, and Barlow (1992) study, the DASS Stress scale differentiated patients with GAD from those with all the other DSM-III-R anxiety disorders, with the exception of OCD. Of the variety of symptom measures (e.g., questionnaire and clinician ratings of anxiety, depression, stress/tension) in which correlations were calculated in this study, only DASS Stress was the most strongly correlated with the PSWQ (Brown, Marten, & Barlow, 1995).

Self-Monitoring

As will become evident later in the chapter, self-monitoring is an integral part of our treatment program for GAD. When a patient is trained in proper use and completion of the self-monitoring forms, the data obtained from this mode of assessment can be among the most valuable information that the clinician has in the formulation and evaluation of the treatment program. Among the reasons for the importance of self-monitoring are the following: (1) to gauge the patient's response to treatment by obtaining accurate information on relevant clinical variables (e.g., daily levels of anxiety, depression, positive affect, amount of time spent worrying); (2) to assist in acquiring a functional analysis of the patient's naturally occurring anxiety and worry episodes (e.g., situational factors or precipitants, nature of anxiogenic cognitions, methods or behaviors engaged in to reduce worry or anxiety); and (3) to assess integrity and compliance with between-session homework assignments. A filled-in example of a form that we often use in the treatment of GAD, the Weekly

Record of Anxiety and Depression, is shown in Figure 4.2.

Right from the start of therapy, self-monitoring is presented to the patient as an important part of the treatment process. In the spirit of collaborative empiricism (see Young et al., Chapter 6, this volume), the patient is told that both he/she and the therapist will be working together to first try to get a better understanding of the factors contributing to the patient's naturally occurring anxiety, tension, and worry. Accordingly, self-monitoring is introduced as one of the best ways for obtaining the most accurate information about these processes, because if the patient and therapist were to rely solely on retrospective recall of the patient's symptoms, much important information could be lost or distorted.

These forms are introduced to the patient by first defining the type of information that we are attempting to collect (e.g., helping the patient to distinguish anxiety from depres-

sion). Once the form has been explained thoroughly, we will often assist the patient in generating a sample entry on the form (using the current day or a recent episode of anxiety/worry, depending on the type of form being introduced). This is to increase the probability that the patient will use the forms properly between sessions. Whereas this step is critical when first introducing the self-monitoring forms, it is also helpful to repeat this step periodically throughout treatment to prevent drift.

OVERVIEW OF TREATMENT

Our treatment protocol for GAD typically averages 12–15 hourly sessions, held weekly except for the last two sessions (which are held biweekly). For reasons noted earlier, although treatments for GAD have been delivered efficaciously in a small-group format (see

Name: Claire T.

Each evening before you go to bed, please make the following ratings, using the scale below:

1. Your AVERAGE level of anxiety (taking all things into consideration);
2. Your MAXIMUM level of anxiety which you experienced that day;
3. Your AVERAGE level of depression;
4. Your AVERAGE level of pleasantness;
5. The percentage of the day that you felt worried, using a 0–100% scale where 0 means no worry at all and 100 means worried all the waking day.

| Level of Anxiety/Depression/Pleasantness feelings | | | | | | | | |
|---|---|--------|---|----------|---|-------|---|----------------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| None | | Slight | | Moderate | | A lot | | As much as you can imagine |

| Date | Average anxiety | Maximum anxiety | Average depression | Average pleasantness | Percentage of day worried |
|------|-----------------|-----------------|--------------------|----------------------|---------------------------|
| 9/17 | 4 | 6 | 4 | 2 | 60% |
| 9/18 | 5 | 5 | 4 | 3 | 60% |
| 9/19 | 4 | 5 | 3 | 3 | 65% |
| 9/20 | 6 | 6 | 4 | 2 | 75% |
| 9/21 | 6 | 8 | 5 | 1 | 80% |
| 9/22 | 7 | 8 | 5 | 1 | 90% |
| 9/23 | 5 | 7 | 4 | 2 | 75% |

FIGURE 4.2. Weekly Record of Anxiety and Depression.

our review of treatment studies above), at this stage in the development of our GAD treatment protocol we prefer a one-on-one format.

As it currently stands (see Craske et al., 1992), our GAD protocol has components that address each of the three systems of anxiety: (1) physiological (PMR training), (2) cognitive (cognitive restructuring), and (3) behavioral (worry behavior prevention, problem solving, time management). At the heart of our new treatment protocol for GAD is the element of worry exposure, in which the patient is directed to spend a specified period of time daily (usually an hour) processing his/her worry content.

Whereas some evidence points to the possibility that multicomponent treatments may in fact result in lower efficacy, due perhaps to dilution of the constituent treatment elements (see Barlow et al., 1992), we have retained a multicomponent protocol for a variety of reasons (e.g., early evidence reflecting the limited success of single-component treatments; the DSM-IV conceptualization of GAD as a multidimensional disorder). Moreover, whereas a dilution effect may certainly account for the few findings noting diminished efficacy of multicomponent treatments, this factor may be of less concern when combined protocols are delivered in the clinical setting without the time and methodological constraints inherent in controlled treatment outcome studies.

PROCESS OF TREATMENT

Initial Sessions

Table 4.2 provides a general outline of our combined GAD treatment program. The initial sessions are most important, because these are where the groundwork and rationale for what is to follow are delineated. Included in the first two sessions are the following elements: (1) delineation of patient and therapist expectations; (2) description of the three components of anxiety (i.e., physiological, cognitive, behavioral) and application of the three-system model to the patient's symptoms (e.g., discussion of the patient's somatic symptoms of anxiety, content of worry, and worry behaviors); (3) discussion of the nature of anxiety (e.g., the nature of adaptive and maladaptive anxiety, "normalizing" the patient's symp-

toms); (4) rationale and description of the treatment components; and (5) instruction in the use of self-monitoring forms.

The importance of regular session attendance and completion of homework assignments is emphasized to each patient as crucial to treatment. Patients are provided a general idea of what to expect in terms of their response to treatment over the coming weeks (e.g., improvement that is not immediate; possibility of experiencing initial increases in their anxiety due to the nature of therapy, and the reasons for this).

Cognitive Therapy

Cognitive therapy is an integral component of our treatment for GAD. The cognitive component of our treatment protocol is consistent in many ways with the procedures outlined by Beck and colleagues (1985). Early in the process of treatment, the patient is provided with an overview of the nature of anxiogenic cognitions (e.g., the concept of automatic thoughts, the situation-specific nature of anxious predictions, reasons why the inaccurate cognitions responsible for anxiety persist unchallenged over time). As part of this introduction to the tenets behind cognitive therapy, considerable care is taken to help the patient understand that in the case of inappropriate anxiety, a person's interpretations of situations rather than the situations themselves are responsible for the negative affect experienced in response to the situations. Thus, through examples offered by the therapist, as well as patient-generated examples solicited by the therapist, a most important first step in cognitive therapy is to assist patients in realizing that they must be able to identify the specific interpretations/predictions they are making in order to be in a position to challenge these cognitions effectively.

Like Beck and colleagues (1985), we approach the task of automatic thought identification via a variety of techniques. Within a treatment session, these may include any or all of the following: therapist questioning (e.g., "What did you picture happening in that situation that made you tense up?"); imagery (asking the patient to imagine the situation in detail, as a means of providing additional cues for retrieving automatic thoughts occurring in

TABLE 4.2. Outline of GAD Treatment Protocol

| | |
|--|---|
| <p>Session 1</p> <ul style="list-style-type: none"> Patient's description of anxiety and worry Introduction to nature of anxiety and worry Three-system model of anxiety Overview of treatment (e.g., importance of self-monitoring, homework, regular attendance) Provision of treatment rationale Homework: Self-monitoring <p>Session 2</p> <ul style="list-style-type: none"> Review of self-monitoring Review of nature of anxiety, three-system model Discussion of the physiology of anxiety Discussion of maintaining factors in GAD Homework: Self-monitoring <p>Session 3</p> <ul style="list-style-type: none"> Review of self-monitoring forms Rationale for 16-muscle-group progressive muscle relaxation (PMR) In-session PMR with audiotaping for home practices Homework: Self-monitoring, PMR <p>Session 4</p> <ul style="list-style-type: none"> Review of self-monitoring forms, PMR practice In-session 16-muscle-group PMR with discrimination training Introduction to role of cognitions in persistent anxiety (e.g., nature of automatic thoughts, solicitation of examples from patient) Description and countering of probability overestimation cognitions Introduction to Cognitive Self-Monitoring Form Homework: Self-monitoring (anxiety, cognitive monitoring and countering), PMR <p>Session 5</p> <ul style="list-style-type: none"> Review of self-monitoring, PMR, probability overestimation countering In-session 8-muscle-group PMR with discrimination training Description and countering of catastrophic cognitions Homework: Self-monitoring (anxiety, cognitive monitoring and countering), PMR <p>Session 6</p> <ul style="list-style-type: none"> Review of self-monitoring, PMR, cognitive countering (probability overestimation, decatastrophizing) In-session 8-muscle-group PMR with discrimination training; introduction of generalization practice Review of types of anxiogenic cognitions and methods of countering Homework: Self-monitoring (anxiety, cognitive monitoring and countering), PMR <p>Session 7</p> <ul style="list-style-type: none"> Review of self-monitoring, PMR, cognitive countering In-session 4-muscle-group PMR Introduction to worry exposure (e.g., imagery training, hierarchy of worry spheres, in-session worry exposure) Homework: Self-monitoring (anxiety, cognitive monitoring and countering), PMR, daily worry exposure | <p>Session 8</p> <ul style="list-style-type: none"> Review of self-monitoring, PMR, cognitive countering, worry exposure practices Introduction of relaxation-by-recall Review of rationale for worry exposure In-session worry exposure Homework: Self-monitoring (anxiety, cognitive monitoring and countering), worry exposure, relaxation-by-recall <p>Session 9</p> <ul style="list-style-type: none"> Review of self-monitoring, cognitive countering, worry exposure, relaxation-by-recall Practice relaxation-by-recall Introduction of worry behavior prevention (e.g., rationale, generation of list of worry behaviors, development of behavior prevention practices) Homework: Self-monitoring (anxiety, cognitive monitoring and countering), worry exposure, worry behavior prevention, relaxation-by-recall <p>Session 10</p> <ul style="list-style-type: none"> Review of self-monitoring, cognitive countering, worry exposure, worry behavior prevention, relaxation-by-recall Introduction to cue-controlled relaxation Homework: Self-monitoring (anxiety, cognitive monitoring and countering), worry exposure, worry behavior prevention, cue-controlled relaxation <p>Session 11</p> <ul style="list-style-type: none"> Review of self-monitoring, cognitive countering, worry exposure, worry behavior prevention, cue-controlled relaxation Practice cue-controlled relaxation Introduction to time management or problem solving Homework: Self-monitoring (anxiety, cognitive monitoring and countering), worry exposure, worry behavior prevention, cue-controlled relaxation <p>Session 12</p> <ul style="list-style-type: none"> Review of self-monitoring, cognitive countering, worry exposure, worry behavior prevention, cue-controlled relaxation Generalization of relaxation techniques Time management or problem-solving practice Homework: Self-monitoring (anxiety, cognitive monitoring and countering), worry exposure, worry behavior prevention, cue-controlled relaxation, time management/problem-solving practice <p>Session 13</p> <ul style="list-style-type: none"> Review of self-monitoring, cognitive countering, worry exposure, worry behavior prevention, cue-controlled relaxation, time management/problem-solving practice Practice of cue-controlled relaxation Review of skills and techniques Discussion of methods of continuing to apply techniques covered in treatment |
|--|---|

that situation); and role playing. Beginning with the first session of cognitive therapy, patients are trained to use the Cognitive Self-Monitoring Form (see Figure 4.3 for a completed example) to prospectively self-monitor and record their thoughts associated with anxiety. As noted earlier, a common problem with both patients and therapists-in-training is that the process of eliciting anxiogenic cognitions is carried out in an incomplete or superficial manner (e.g., discontinuing the process of questioning to uncover anxiogenic cognitions prematurely, prior to identifying the thought[s] principally responsible for the negative affect).

In addition to the problem of incomplete self-monitoring, the therapist may often need to assist patients in identifying the appropriate times to make entries on the Cognitive Self-Monitoring Form. For instance, one suggestion that we offer to patients is to use any increase in their anxiety level as a cue to self-monitor—for instance, “My anxiety level just went from a 2 to a 6. What was I thinking just then that may have contributed to this?” (Shifts in the patient’s affect noted by the therapist in session are also good opportunities to assist the patient in eliciting automatic thoughts.)

With regard to the problem of identifying the specific thought(s) that are chiefly responsible for a given episode of anxiety, we encourage patients to determine whether the thoughts they have identified would satisfy the criterion of producing the same emotion in anyone if they were to make the same interpretation of the situation. This is also an important guideline for therapists to adhere to when assisting a patient to identify automatic thoughts in the session.

After providing an overview of the nature of anxiogenic cognitions and methods of identifying them, the therapist defines two types of cognitive distortions involved in excessive anxiety: (1) “probability overestimation,” and (2) “catastrophic thinking.” Cognitions involving probability overestimation are defined as those in which a person overestimates the likelihood of the occurrence of a negative event (which is actually unlikely to occur). For example, a patient who is apprehensive over the possibility of job termination, despite a very good job record, would be committing this type of cognitive error in overpredicting the likelihood of losing his/her job. After de-

fining and providing examples of probability overestimation thoughts, the therapist describes some reasons why these types of thoughts may persist over time, even despite repeated disconfirmation (e.g., the belief in having been “lucky” thus far; the belief that worry or its associated “worry behaviors” have prevented the negative outcome from occurring; the tendency to focus habitually on negative outcomes without examining other alternatives).

Catastrophic thinking is defined as the tendency to view an event as “intolerable,” “unmanageable,” and beyond one’s ability to cope with successfully, when in actuality it is less “catastrophic” than it may appear on the face of it. In addition to catastrophic thoughts associated with perceptions of being unable to cope with negative events, regardless of their actual likelihood of occurrence (see the dialogue below between a therapist [T] and a patient called “Chloe” [C]), we would also put under the category of catastrophic thinking thoughts that involve drawing extreme conclusions or ascribing dire consequences to minor or unimportant events (e.g., “If my child fails an exam, it must mean that I have failed as a parent”). Cognitions reflecting a strong need for perfection or personal responsibility (and of drawing extreme negative conclusions of the consequences of not being perfect or responsible) would be apt to fall under this category as well.

Often patients will have some difficulty in making the distinction between probability overestimation thoughts and catastrophic thinking. The therapist should provide examples emphasizing their distinction on the basis of the dimension of likelihood (probability overestimation) and on the dimension of perceived inability to cope or tendency to ascribe overly dire consequences to minor events (catastrophic thinking). Moreover, the therapist should note that the two types of thoughts are often associated with one another in the patient’s chain of worry.

- T: You mentioned that two nights ago it was particularly difficult for you to get to sleep.
- C: Well, it is always difficult, but that night I didn’t fall asleep until 3:30.
- T: Do you have an idea why that night was particularly difficult?

Name: Claire T.

| Trigger/Event | Automatic thought | Anxiety (0–8) | Prob. (0–100%) | Countering (Alternatives, evidence) | Realistic prob. (0–100%) | Anxiety (0–8) |
|---------------------------|------------------------------|---------------|----------------|---|--------------------------|---------------|
| Son's football game today | He'll get hurt or paralyzed. | 6 | 75% | Only had sprained ankle. Never anything major. Might not get hurt. He's tough and a good player, like his dad. Maybe a minor injury | 10% | 3 |

FIGURE 4.3. Cognitive Self-Monitoring Form (worry record).

- C: The phone rang at, I'd say, around 11:30, and as you know by now, the damn phone is always a source of my anxiety. But at that hour, I was worried that something was wrong. As it turned out, it was a wrong number, but by then . . .
- T: What did you think the call might be about?
- C: Well, you know, bad news of some sort, someone dying or something like that. After my visit home this summer, I have often worried that my father is getting up there in years. He turned 55 in July, and, well, since I moved to Boston I haven't seen my folks nearly as much as I would have liked to.
- T: So when the phone rang, were you worried that something may have happened with your father?
- C: I don't think just then, because I picked up the phone real fast, but the phone ringing kind of startled me. But after I hung up, I wondered why I was so anxious, and I realized that I must have thought that something happened to him. Once I realized that, I was worried about him the rest of the night.
- T: If I recall from what you said before, he's in pretty good health, isn't he?
- C: Yeah. He had a mole removed a while ago. Since he's worked outside all of his life, I worry that all that sun will have caused him to get skin cancer some day.
- T: What do you picture happening if your dad did pass away?

- C: What do you mean? Do you mean what would I do? We shouldn't even talk about this unless you want to see me in a real state . . . you know, being an only child and all . . .
- T: Thinking about that really upsets you.
- C: Well, I'm already anxious enough already. Something like that would really set me over the edge. I mean, the fact that I'm this anxious as it is shows that I can't cope well with situations. I imagine that if my dad died, I would really shut down and not be able to cope with anything. And not want to!

Although the therapist in this case example should go further to elucidate the nature of the patient's catastrophic predictions associated with the loss of a parent, he/she would also be making a good point to clarify the distinction between probability overestimation (e.g., overestimating the likelihood of the passing of a parent who is in good health; overestimating the risk associated with sun exposure) and catastrophic thinking (e.g., predicting that the parent's death would result in a permanent breakdown in one's emotions and ability to cope), and to indicate how these two types of thoughts are interconnected in the patient's "worry chain."

Whereas it would be appropriate at this point to provide an overview of the most common examples of probability overestimation and catastrophic thoughts reported by patients with GAD, it should be noted that the few studies that have examined the nature of

GAD worries (see, e.g., Borkovec et al., 1991; Craske, Rapee, et al., 1989; Sanderson & Barlow, 1990) have found that the content of worries obtained using a structured interview (i.e., the ADIS-R or ADIS-IV-L) has not fallen neatly into the a priori categories that have been used thus far (e.g., illness/health, family matters, work/school). Indeed, in each of the studies cited in the prior sentence, the category "miscellaneous" was among the top one or two most commonly categorized sphere of worry. Thus, unlike what has been found regarding the nature of the anxiogenic cognitions reported by patients with panic disorder (see Craske & Barlow, Chapter 1, this volume)—that is, the content of the majority of these patients' cognitions falls within relatively finite categories (e.g., fear of dying, going crazy, losing control)—no such evidence has been obtained pertaining to the content of GAD worries thus far. Nevertheless, to reiterate findings reviewed earlier, the extant data bearing on this issue suggest that the nature of GAD worry reflects an excess of the same process (and content) found in non-clinical individuals; the parameter of uncontrollability of the worry process is the principal feature differentiating pathological and nonpathological worry (see Barlow, 1991; Borkovec et al., 1991).

As with the case of identifying anxiogenic cognitions, the therapist cannot underscore enough the importance of being *thorough* and *systematic* in the countering of these thoughts. The therapist introduces countering not to replace negative thoughts with positive thoughts (e.g., "There is nothing to worry about, everything will be fine"). Instead, it is introduced as part of the process of examining the validity of the interpretations/predictions the patient is making, and in order to help the patient replace inaccurate cognitions with realistic, evidence-based ones. The importance of repeated, systematic countering is emphasized by noting that whereas the thoughts responsible for excessive anxiety can be habit-like and hard to break, they indeed can be unlearned and replaced with more accurate cognitions via practice and repeated application of the techniques of countering.

In addition, the patient is instructed that countering of anxiogenic cognitions involves the following guidelines: (1) considering thoughts as hypotheses (rather than facts) that can be either supported or negated by avail-

able evidence; (2) utilizing all available evidence, past and present, to examine the validity of the beliefs; and (3) exploring and generating all possible alternative predictions or interpretations of an event or situation. In the case of countering probability overestimation thoughts, these guidelines are utilized to evaluate the realistic likelihood (i.e., real odds) of the future occurrence of the negative event.

To counter catastrophic thoughts, the therapist asks the patient to imagine the worst possible feared outcome's actually happening, and then to critically evaluate the severity of the impact of the event. This entails giving an estimation of the patient's perceived ability to cope with the event, if it were to occur. Also, in countering catastrophic thinking, it is extremely useful to have the patient generate as many alternatives to the worst feared possible outcome as possible. The therapist may note difficulty on the patient's part in generating alternatives, as patients with GAD typically manifest a negative attentional bias. The therapist should emphasize that decatastrophizing does not entail trying to get the patient to view a negative event as positive or even neutral (e.g., "It would indeed be upsetting for most people if a parent passes on"); rather, via critically evaluating the actual impact of the negative event, the patient may come to view that its effects would be time-limited and manageable.

Worry Exposure

Guided by new conceptualizations of the nature of pathological worry reviewed earlier (see Borkovec & Hu, 1990; Rapee & Barlow, 1991), worry exposure (see Craske et al., 1992) entails the following procedures: (1) identification and recording of the patient's two or three principal spheres of worry (ordered hierarchically, beginning with the least distressing or anxiety-provoking worry); (2) imagery training via the practice of imagining pleasant scenes; (3) practice in vividly evoking the first worry sphere on the hierarchy by having the patient concentrate on his/her anxious thoughts while trying to imagine the worst possible feared outcome of that sphere of worry (e.g., for a patient who worries when her husband is late from work, this might entail imagining her husband unconscious and slumped over the steering wheel of the car);

(4) once the patient is able to evoke these images vividly, introducing the crux of the worry exposure technique, which entails reevoking these images and holding them clearly in mind for at least 25–30 minutes; and (5) after 25–30 minutes have elapsed, having the patient generate as many alternatives as he/she can to the worst possible outcome (e.g., “If my husband is late, he may have gotten tied up at work, gotten caught in traffic, stopped at the store, etc.”). As indicated on the Daily Record of Worry Exposure (a completed example of this form is presented in Figure 4.4), at the end of the “alternative-generating” phase of the exposure practice, patients record their levels of anxiety and imagery vividness for various points in the

exposure (e.g., maximum anxiety during the 25–30 minutes of worry exposure; anxiety levels after generating alternatives to the worst outcome).

After 30 minutes or more have been spent processing the first sphere of worry according to the preceding procedures, patients are often instructed to repeat these steps for the second worry on the hierarchy. After the therapist is assured that the patient is carrying out the worry exposure technique properly in sessions, the exercise is assigned as daily home practice. Patients are instructed that when the exposure exercise no longer evokes more than a mild level of anxiety (i.e., 2 or less on the 0–8 anxiety scale) despite several attempts of vividly imagining that worry, they should

Name: Claire T. Date: 11/15

Time began: 3 am/pm
 Time ended: 5 am/pm

| Anxiety/Imagery (circle) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------------------|--|---|--------|---|---------------------------|---|-------|---|---------|
| | None | | Slight | | Moderate | | A lot | | Extreme |
| Symptoms during exposure: | Trembling/shaky | | _____ | | Nausea/abdominal distress | | _____ | ✓ | |
| | Muscle tension | | ✓ | | Hot flashes/chills | | _____ | | |
| | Restlessness | | _____ | | Frequent urination | | _____ | | |
| | Fatigue | | ✓ | | Trouble swallowing | | _____ | | |
| | Shortness of breath | | _____ | | Keyed up/on edge | | _____ | ✓ | |
| | Pounding/racing heart | | ✓ | | Easily startled/jumpy | | _____ | | |
| | Sweating/clammy hands | | _____ | | Difficulty concentrating | | _____ | | |
| | Dry mouth | | _____ | | Trouble sleeping | | _____ | | |
| | Dizzy/lightheaded | | _____ | | Irritability | | _____ | ✓ | |
| Worry 1: Content | <u>Friend dropping by later—she'll see my messy house and be shocked. She'll laugh and think less of me.</u> | | | | | | | | |
| Worst possible feared outcome: | <u>She'll call our friends to tell tell them—they'll also laugh, and not respect me.</u> | | | | | | | | |
| Anxiety (0–8): <u>2</u> | Imagery (0–8): <u>2</u> | | | | | | | | |
| Possible alternatives: | <u>She won't even care—she's there to see me, not my house. She might not notice the floors.</u> | | | | | | | | |
| | <u>Even if she does, she might not think it so interesting to call everyone about it. She might be glad not to see me cleaning for a change.</u> | | | | | | | | |
| Anxiety (0–8): <u>2</u> | Imagery (0–8): <u>2</u> | | | | | | | | |

FIGURE 4.4. Daily Record of Worry Exposure.

move on to the next sphere of worry on the hierarchy.

Of course, an important initial step in the application of the worry exposure technique is to prepare the patient adequately by providing a thorough description of the rationale and purposes of the exercise. This should involve, at some level, a discussion of the concept of habituation and the reasons why habituation has not occurred naturally despite repeated exposures to these worries over time (e.g., the natural tendency to shift rapidly from one worry to the next in the worry chain). In addition, worry exposure should be introduced as providing additional opportunities to apply strategies learned thus far in the treatment protocol (i.e., cognitive restructuring and perhaps applied relaxation). Indeed, the therapist may wish to note that repeated exposure to the same worry thought or image may make it easier for the patient to develop a more objective perspective on the worry, thus enhancing the patient's facility in applying cognitive countering techniques.

Several possible difficulties may arise during the application of worry exposure. Theoretically (see Foa & Kozak, 1986), therapeutic exposure to feared thoughts, images, or situations should generally be reflected by the following patterns: (1) Initial exposures elicit at least moderate anxiety levels; (2) protracted in-session exposure to fear cues results in the reduction of the high levels of anxiety elicited at the onset of the exposure (i.e., within-session habituation); (3) across several separate exposure trials, maximum anxiety levels evoked by exposure will decrease until the fear cues no longer elicit considerable anxiety (i.e., between-sessions habituation).

A potential problem is that the worry exposure may fail to elicit more than minimal anxiety during the *initial* exposures. Various reasons may contribute to this phenomenon, including the following: (1) The imagery is insufficiently vivid; (2) the images are too general, thereby hindering the patient's focus on the worst outcome; (3) the images are not salient to the patient's sphere of worry, or the sphere itself does not contribute appreciably to the patient's GAD symptoms; (4) the patient is applying coping techniques (e.g., cognitive restructuring, cue-controlled relaxation) during the 25–30 minutes of worry exposure; or (5) the patient is covertly avoiding the processing of the most salient worry

cues, perhaps via distraction to neutral thoughts or images.

Another difficulty that may arise is that the patient evidences negligible within- or between-sessions habituation of anxiety to the worry exposure cues, despite repeated exposure trials. Again, there may be several reasons accounting for this problem, including (1) covert avoidance when high levels of anxiety are beginning to be experienced; (2) a failure to maintain exactly the same image throughout the exposure (e.g., a tendency to shift continually from one distressing image to another), thereby mitigating habituation to the image; or (3) insufficient exposure time (e.g., the patient maintains the worry image for less than 25 minutes, or, in some cases, 25–30 minutes do not provide ample exposure time for particularly distressing images).

As noted in the discussion of therapist variables that may contribute to treatment outcome, it is important that the therapist possess a thorough understanding of the theoretical parameters of therapeutic exposure. Accordingly, this underscores the importance of the systematic collection of patients' anxiety ratings during the worry exposures (both in sessions and during home practice), as these ratings will be useful indices of progress and potential problems.

Occasionally patients evidence difficulties in generating alternatives to the worst feared outcome. This difficulty may be reflective of a patient's limited facility in applying cognitive countering techniques (covered prior to worry exposure in our GAD protocol), or it may indicate a relatively strong belief conviction associated with the sphere of worry in question. Related to this problem, therapists will sometimes observe that patients' anxiety ratings do not subside after alternatives to the worst feared outcome have been generated. When problems of this nature are noted, a therapist should question a patient for his/her hypotheses about why anxiety reduction did not occur. In accordance with the common pitfalls of cognitive therapy (e.g., failure to challenge anxiogenic predictions thoroughly with evidence-based counterarguments), initially the therapist may need to assist the patient in the generation of alternatives. In our experience, anxiety reduction will begin to occur with this feedback, in tandem with continued worry exposure (e.g., habituation to imaginal cues associated with the worst feared

outcome may enhance the patient's objectivity concerning the sphere of worry in question, thereby facilitating cognitive restructuring).

As noted above, distraction is an issue that should be routinely addressed in GAD treatment. Specifically, a patient may try not to think of the worst possible feared outcome, or may allow his/her thoughts to wander during the procedure. The therapist needs to point out that, although distraction from anxious thoughts or feelings may relieve anxiety in the short term, it is essentially an ineffective long-term strategy for anxiety management. In fact, distraction may reinforce the patient's view that certain thoughts and images are to be avoided, and it has proven detrimental to positive treatment outcome in other anxiety disorders (Craske, Street, & Barlow, 1989). Moreover, distraction will not allow for a proper appraisal of the patient's anxiogenic cognitions and prohibits the rise in anxiety level necessary for adequate emotional processing of worry (see Foa & Kozak, 1986). Therefore, the therapist must be especially watchful for instances of patient distraction, pointing these instances out to the patient and offering reasons why this behavior is not beneficial to long-term anxiety reduction.

Relaxation Training

Relaxation training in our current combined treatment protocol for GAD does not differ appreciably from the manner in which we have administered this treatment component in the past (see, e.g., Barlow, Craske, Cerny, & Klosko, 1989; Barlow et al., 1992). Our relaxation component is based on the procedures outlined by Bernstein and Borkovec (1973). The procedures begin with PMR (16 muscle groups) with discrimination training. Discrimination training entails teaching the patient to discriminate sensations of tension and relaxation in each muscle group during the PMR exercise. The ultimate goal of discrimination training is to increase the patient's ability to detect sources and early signs of muscle tension, and thereby to facilitate the rapid deployment of relaxation techniques to those areas (see below). After the patient has worked through each of the 16 muscle groups, relaxation-deepening techniques are employed during the induction, including slow breathing (i.e., slow dia-

phragmatic breathing, repeating the word "Relax" on the exhale).

Patients are given the rationale that relaxation is aimed at alleviating the symptoms associated with the physiological component of anxiety, partly via the interruption of the learned association between autonomic overarousal and worry. The 16-muscle-group PMR exercise averages 30 minutes in duration. Usually, we have the therapist conduct in-session PMR while simultaneously audiotaping the procedure, so that the patient may practice PMR twice daily at home using the tape. In addition to the practice of audiotaping, we adhere to all the typical guidelines of PMR administration (e.g., directives to the patient to initially practice PMR in quiet, comfortable locations, but not immediately before going to bed).

After the patient has had considerable practice with the 16-muscle-group exercise (typically over a span of 2 weeks), the number of muscle groups is gradually reduced from 16 to 8 and then to 4 (e.g., stomach, chest, shoulders, forehead). During the course of muscle group reduction, the therapist should nonetheless be attuned to the specific body areas that the patient reports to be problematic, consequently adapting the 4-group exercise to target those problem areas.

Of course, the rationale behind muscle group reduction (i.e., 16 to 8 to 4) is to make the relaxation techniques more "portable," such that the patient can rapidly deploy the technique at any time, when needed. Thus, after the patient has practiced the 4-muscle group exercise, "relaxation-by-recall" is introduced. Relaxation-by-recall consists of concentrating on each of the four muscle groups that have been targeted up to this point, and releasing tension in each muscle area in turn, via the recall of the feelings of relaxation achieved in past practices. It therefore does not involve tensing the muscles as in the prior methods, but simply recalling the experience of relaxing the muscles (e.g., "As you concentrate on your stomach, think of your stomach muscles letting go, and feel the warmth of relaxation as your stomach relaxes"). As with the full PMR exercise, patients are instructed to maintain a pattern of slow, regular breathing, covertly repeating the word "Relax" with every exhalation. At this phase, patients are instructed to continue practicing the relaxation exercises daily in nondistracting envi-

ronments, but are also encouraged to begin trying "minipractices" in other situations (e.g., at the workplace).

After the patient has mastered relaxation-by-recall, "cue-controlled relaxation" is introduced. This essentially entails the steps of taking a few slow breaths (about four or five) and repeating the word "Relax" on the exhale. With the exhale, the patient is instructed to release all of the tension in his/her body, concentrating on the feelings of relaxation. Thus cue-controlled relaxation is the most "portable" of the relaxation strategies covered in the protocol, and the patient is directed to employ the technique in a variety of situations, particularly those in which anxiety or tension is frequently experienced (e.g., work, home, waiting in line, talking on the phone, driving). In addition, we encourage patients to continue to go periodically through the full 16-muscle-group PMR exercise, for a variety of reasons (e.g., rehearsing discrimination training, strengthening the association of the cue "Relax" to feelings of relaxation).

Patients will vary in the time it takes them to work through the various phases of relaxation training. When implemented in the clinical setting (i.e., without the confines of protocol treatment in controlled, outcome studies), the therapist should not guide the patient through the phases of the relaxation training too quickly (e.g., reduce from 16 to 8 to 4 muscle groups too rapidly) as the patient's success with implementing subsequent techniques (e.g., relaxation-by-recall, cue-controlled relaxation) may depend largely on his/her mastery of earlier strategies (e.g., discrimination training during 16-muscle-group PMR).

In addition to several practical difficulties that may be associated with patients' relaxation training (e.g., noncompliance with homework due to not finding sufficient time to practice, problems in maintaining a sufficient attentional focus during practice), one problem noted in the research literature associated with these techniques has been referred to as "relaxation-induced anxiety" (RIA). Anxiety induced by the relaxation procedure itself appears to be associated with a heightened sensitivity to internal somatic cues (e.g., feelings of floating, subjective feelings of loss of control; see Borkovec et al., 1987; Heide & Borkovec, 1984). Attesting to the potential relevance of this phenomenon to clinical outcome, Borkovec and colleagues (1987), in a

study comparing cognitive to nondirective therapy in patients who all received PMR as part of the treatment package, found RIA to be significantly and negatively associated with change on the Hamilton Anxiety and Depression Scales.

Thus the therapist should be watchful for signs of RIA, particularly in patients with comorbid panic disorder (see Cohen, Barlow, & Blanchard, 1985), a commonly occurring additional diagnosis in patients with a principal diagnosis of GAD (Brown & Barlow, 1992). When RIA is observed, the therapist should reassure the patient that it is most likely a temporary automatic response to a learned pattern of autonomic overarousal, and that these feelings usually abate with repeated practice.

Worry Behavior Prevention

As noted earlier in the chapter, Craske, Rapee, and colleagues (1989) found that over half of GAD worries recorded in self-monitoring were associated with carrying through some corrective, preventative, or ritualistic behavior. Thus, as is the case with compulsions in OCD, these "worry behaviors" are negatively reinforcing to patients, as they usually result in temporary anxiety reduction (see Brown, Moras, et al., 1993). Examples of worry behaviors include frequent telephone calls to loved ones at work or at home, refusal to read obituaries or other negative events in the newspaper, and cleaning one's house daily in the event that someone drops by. As in the treatment of OCD (see Foa & Franklin, Chapter 5, this volume), a potentially useful intervention in the treatment of GAD is the systematic prevention of responses that are functionally related to worry.

Because patients may not see the contribution of these behaviors to the maintenance of their anxiety, it is useful for the therapist to approach this area as an opportunity to test out patients' beliefs that these behaviors actually prevent dire consequences from occurring (i.e., prediction testing). The procedure begins with the therapist's assisting a patient to generate a list of the patient's common worry behaviors. Once these behaviors have been identified, the therapist will often have the patient self-monitor and record the frequency with which each behavior occurs dur-

ing the week. The next step is to instruct the patient to refrain from engaging in the worry behavior, perhaps engaging in a competing response in its place (e.g., keeping the car radio on a news station during the entire commute home, instead of turning it off to avoid hearing about reports of traffic accidents). Prior to performing the worry behavior prevention exercise, the therapist records the patient's predictions concerning the consequences of response prevention. After the worry behavior prevention exercise has been completed, the therapist assists the patient in comparing the outcome of the exercise to the patient's predictions (e.g., the frequency of engaging in worry behaviors is not correlated with the likelihood of the occurrence of future negative events). As is the case with the treatment of panic disorder (see Craske & Barlow, Chapter 1, this volume), prediction testing can be a very useful adjunct to cognitive restructuring. An example of a completed Worry Behavior Prevention Form is presented in Figure 4.5.

Time Management

Many patients with GAD report feeling overwhelmed by obligations and deadlines, in addition to everyday hassles and stressors. Because of the nature of GAD (e.g., anxious apprehension), these patients are apt to magnify these daily hassles, augmenting the impact of these minor stressors. Accordingly, basic skills in time management and goal-setting are highly useful adjuncts to the treatment of GAD, partly because these techniques

may assist patients to focus their efforts on the tasks at hand rather than worrying about accomplishing future tasks.

Our time management strategies involve three basic components: delegating responsibility, assertiveness (e.g., saying "no"), and adhering to agendas. With regard to responsibility delegation, we often note to our patients that perfectionistic tendencies may prevent them from allowing others to take on the tasks that they typically assume themselves. Moreover, persons with GAD may be reluctant to refuse unexpected or unrealistic demands placed on them by others, preventing them from completing planned activities (this is particularly likely in patients with comorbid social phobia, a commonly occurring additional diagnosis). Usually we target issues pertaining to responsibility delegation and assertiveness via the utilization of worry behavior prevention and prediction-testing exercises, outlined above. For example, this might entail asking the patient to delegate small tasks to coworkers to test the patient's predictions associated with this activity (e.g., "The quality of work will suffer," "It will take longer to explain it to someone than do it myself," "I'll be perceived by other as shirking my responsibilities").

Agenda adherence should first begin with the examination of the patient's daily activities (generated by at least a week of self-monitoring). Next, the therapist can assist the patient in establishing an organized strategy for sticking to agendas and structuring daily activities, so that the patient's most important activities are accomplished. This objective can be facilitated via the generation of a "goal-

Name: Claire T.

| Date | Practice task | Anxiety before task (0-8) | Anxiety after task (0-8) |
|-------|--|---------------------------|--------------------------|
| 11/27 | Ask husband to call only when leaving from work, not earlier | 4 | 3 |
| 11/28 | " " | 3 | 3 |
| 11/29 | " " | 3 | 2 |
| 11/30 | " " | 3 | 1 |
| 12/1 | " " | 2 | 2 |
| 12/2 | " " | 2 | 0 |
| 12/3 | " " | 1 | 0 |

FIGURE 4.5. Worry Behavior Prevention Form.

setting list" in which the activities planned for the day are categorized as follows: "A tasks," extremely important activities that need to be done that same day; "B tasks," very important tasks that must get done soon, but not necessarily on that same day; and "C tasks," important tasks that need to be done, but not very soon. Next, the therapist assists the patient in allotting sufficient time to complete each activity (perhaps by allotting up to twice the amount of time expected to complete the task, if the patient evidences a tendency to rush through tasks or has unrealistic expectations regarding the length of time necessary to get things done).

After time estimates have been established for each task, the patient is instructed to place the A, B, and C tasks into time slots on his/her daily schedule. If a patient's day is so erratic that this strategy is infeasible, the patient is instructed to make a three-header list of A, B, and C tasks and cross each task off upon completion. Although these time management strategies have not been evaluated in controlled treatment trials to date, our clinical experience suggests that they can be quite helpful in reducing patients' daily levels of stress while increasing their sense of mastery and control over their day-to-day lives.

Problem Solving

A final component of our combined GAD treatment protocol is problem solving. As Meichenbaum recommends (see, e.g., Meichenbaum & Jaremko, 1983), we present the technique to patients by noting that individuals often encounter two types of difficulties when problem solving: (1) viewing the problem in general, vague, and catastrophic ways; and (2) failing to generate any possible solutions. The first difficulty is addressed by teaching the patients how to conceptualize problems in specific terms and to break the problem into smaller, more manageable segments (which will have already been addressed to some degree during cognitive therapy).

The second difficulty is addressed by teaching patients to brainstorm their way through the problem. For instance, a patient may report trouble with incurring costly repairs to his/her car. The therapist can assist the patient in generating as many possible solutions to the dilemma as possible, no matter how unreason-

able they may sound at first (e.g., buying a used car, buying a new car, going to a different mechanic, deliberately totaling the car and collecting the insurance money). After a host of potential solutions have been generated, each one is evaluated to determine which are the most practical, with the end goal of selecting and acting on the best possible solution (which may have not been realized prior to brainstorming). Patients are informed that, with practice, brainstorming can be accomplished more efficiently (i.e., it requires less time and effort).

In addition to facilitating reaching a solution for the given problem, another potential benefit of this technique is that it fosters patients' ability to think differently about situations in their lives and to focus on the realistic rather than the catastrophic. In this sense, this benefit of problem solving is similar to the mechanism of action presumed to be partly responsible for the efficacy of worry exposure.

TREATMENT TRANSCRIPTS

The dialogues that follow between a therapist (T) and a patient called "Claire" (C) are representative of our combined treatment protocol for GAD, covering a span of 13 individual hourly sessions. Because both patient and novice therapists may have the most difficulty applying the cognitive strategies, we have highlighted these techniques in the transcripts.

Session 1

As noted in Table 4.2, the first session serves as an introduction of the patient to the therapist, as well as an overview of the treatment program.

T: This treatment program is geared toward helping you learn about generalized anxiety and develop skills that will help you cope with high anxiety. Because the program involves learning and applying skills, there will be some exercises that I will ask you to do both in our sessions and at home. We'll arrange to have 13 sessions, each usually lasting about one hour. In addition, we'll meet periodically through the next 12 months to monitor your pro-

- gress. First, Claire, I'd like to get a sense from you about the kinds of problems you're experiencing that have brought you to the clinic.
- C: I just feel anxious and tense all the time. It all started in high school. I was a straight-A student, and I worried constantly about my grades, whether the other kids and the teachers liked me, being prompt for classes—things like that. There was a lot of pressure from my parents to do well in school and to be a good role model for my younger sisters. I guess I just caved in to all that pressure, because my stomach problems began in my sophomore year of high school. Since that time, I've had to be really careful about drinking caffeine and eating spicy meals. I notice that when I'm feeling worried or tense my stomach will flare up, and because I'm usually worried about something, I'm always nauseous. My husband thinks I'm neurotic. For example, I vacuum four times a week and clean the bathrooms every day. There have even been times when I've backed out of going out to dinner with my husband because the house needed to be cleaned. Generally, my husband is supportive, but it has caused a strain on our marriage. I get so upset and irritated over minor things, and it'll blow up into an argument. I'm here because I'd like to live like normal people do, without all of this unending tension and anxiety.
- T: You've mentioned, Claire, that you suffer from a number of physical symptoms, such as irritability, stomach problems, tension, and the like. In high school, you worried about your grades, whether others liked you, being on time, etc. What sorts of things do you worry excessively about now?
- C: Oh, everything, really. I still worry about being on time to church and to appointments. Now I find I worry a lot about my husband. He's been doing a tremendous amount of traveling for his job, some of it by car, but most of it by plane. Because he works on the northeastern seaboard, and because he frequently has to travel in the winter, I worry that he'll be stuck in bad weather and get into an accident or, God forbid, a plane crash. It's just so scary. Oh, and I worry about my son. He just started playing on the varsity football team, so he's bound to get an injury some time. It's so nerve-wracking to watch him play that I've stopped going to his games with my husband. I'm sure my son must be disappointed that I'm not watching him play, but it's simply too much for me to take.
- T: Earlier you said that minor things get you upset. Give me some examples of those minor things.
- C: When my son leaves his room a mess, or when my husband tracks dirt into the house, that annoys me so much! I pride myself on a neat and clean house, with floors so spotless that you could eat off them. It irritates me when they're not neat, and I let them know about it.
- T: What you've been saying is quite typical of individuals who have generalized anxiety disorder. Let me first give you an overview of the nature of anxiety. Anxiety is one of the basic emotions that all species have, and thus it is a natural and necessary part of life. We as human beings experience anxiety in situations that might be dangerous, threatening, or challenging in some way. For instance, if you were walking in a jungle and heard a twig snap behind you, what would you think?
- C: I suppose I'd imagine that a lion or tiger were behind me. I'd try to be still and listen.
- T: Right. Physically, you'd probably feel your heart race, your breath get shorter and deeper, and some perspiration. Your body is in the process of preparing for fighting or fleeing the potential danger. Your heart races and pounds so that more blood will rapidly go toward your major muscle groups, like your upper thighs and arms. Your breath adjusts in the event that you'll need to exert yourself by running or fighting. Sweating helps you in that a predator will have a harder time grasping onto something slippery. That's where the term "fight-or-flight response" originates. By imagining the worst, you're in a better position to prepare for danger. How do you think you'd respond if, instead of thinking that the snapped twig was due to a tiger or lion, [you were] thinking that it was due to a fallen branch?

- C: I wouldn't be afraid at all.
- T: So you can see how important your thoughts are in determining your level of anxiety. Anxiety can be a productive and driving force in situations that are less dramatic. For instance, when you were in high school, how did you prepare for an exam?
- C: I'd study like a madwoman the week beforehand, and review my notes over and over again until it was imprinted on my mind.
- T: Why?
- C: Fear of failure, I guess. Or more like fear of getting less than an A.
- T: How do you think you would have studied if you didn't have that anxiety?
- C: Like most of my friends, who were perfectly content to study the night before and settle for a B or C.
- T: That's a good example of how anxiety can really help you to achieve goals and accomplish tasks. When anxiety is maladaptive or excessive is when it interferes with your ability to relax when you want to, when it's too intense or too frequent for the situation at hand, or when there's no danger present. In this treatment, we'll focus on removing that excessive anxiety—the anxiety that fuels your worries and those physical symptoms that you have.
- We view anxiety as a reaction to a trigger that might be internal or external. Examples of triggers include your thoughts, physical sensations, certain events or situations, and so on. Because anxiety is a reaction, you can learn to control it through skills and exercises designed to help you manage your high anxiety episodes. Along with viewing anxiety as a reaction, we also break it apart into three distinct components: physical, cognitive, and behavioral. Before I explain each component, let me ask you if anyone's ever told you to just relax and stop worrying as a remedy for your anxiety.
- C: Oh, yeah! That's my husband's favorite line.
- T: Do you find it helpful for you?
- C: Not at all. It doesn't tell me how to relax, or how to stop worrying.

T: Exactly. By looking at anxiety in a global way, it can be difficult to see how to control it. That's where examining your anxiety with the three-component model is useful, as we can break up your anxiety into specific parts and target each individually. The physical component of your anxiety is manifested in the bodily sensations that occur during anxiety and worry. In your case, it might be upset stomach, tension, irritability, etc. The second component, called the cognitive component, is shown in the thoughts you have during anxiety or worry. Finally, the behavioral component is manifested in the specific behaviors that occur during or as a consequence of anxiety. Some examples of these behaviors include leaving very early for appointments, pacing, foot or finger tapping, perfectionism, procrastination, cleaning, safety checks, and so on. As we continue in the sessions, it will be easier to identify some of those behaviors. These behaviors tend to reduce anxiety in the short run, but may actually be maintaining your anxiety over the longer term. In many ways, those behaviors are similar to your anxious thoughts. Through time and repeated practice, they've become second nature or automatic for you.

Worry is a very interesting phenomenon. We as human beings worry so that we can prepare for future danger or threat. It helps us to problem-solve, in a sense, the things that we're afraid might happen in the future. By thinking things completely through, we can come up with a variety of solutions and occasionally alternatives to what we might be predicting in a situation. It's when we don't allow ourselves to think things through and to imagine our worst possible fears coming true that worry can spiral into increased worry and anxiety. You stated earlier, Claire, that you worried about being on time for classes in high school. Why was that?

- C: The teachers were very strict, and would take points off each time you walked in the door late.
- T: What was so bad about that?
- C: It would come off your grade point average for that class. I didn't want to be late so that I could avoid those points taken off, to preserve my 4.0 average.

- T: What if you had arrived to class late a few times?
- C: I wouldn't have graduated with a perfect GPA, and my parents would have been very disappointed in me.
- T: And then what?
- C: I'm not sure. Maybe they wouldn't have paid my college tuition bill or something. I couldn't have afforded college on my own, and would have missed the opportunity to go. That would have been terrible. I would never have met my husband, or gotten my present job, or been able to pay my bills.
- T: I can see how being late was anxiety-provoking for you, given those concerns. But do you really think that your parents would not have paid for college if you hadn't graduated with a 4.0 GPA?
- C: Looking back, probably not. My sisters just partied through school, and my parents footed the bill for them.
- T: By *not* allowing yourself to think through the worst and *not* asking yourself the likelihood of the worst happening, you in effect reinforced your worry over being late to classes. As we continue with the sessions, we'll be examining your worries in a similar fashion and have you systematically experience your worry so that you can overcome this approach-avoidance mode for handling worries. You'll also learn to identify and challenge your anxious thoughts, learn how to physically relax your entire body, and learn to change some of your anxiety- and worry-related behaviors to ones that are more effective in the long run in decreasing your anxiety. Is that clear?
- C: Yes, pretty much.
- T: Good. Another important element in this program is self-monitoring and homework. Self-monitoring of your levels of anxiety and worry will allow you to be a more accurate observer of your experiences. Sometimes our patients tell us that they feel anxious continuously, but when they begin to self-monitor, we discover that some days of the week are better or worse than others. Another advantage of self-monitoring is its ability to give you a more objective understanding of your anxiety. You'll feel less like a victim and more like a scientist, trying to figure out

and examine your anxiety. By monitoring your progress, we can evaluate the effectiveness of this treatment program for you and make any necessary adjustments along the way. Finally, because there will be regular homework assignments, you will learn the strategies much more rapidly if you consistently self-monitor. You may find a temporary increase in your anxiety when you first begin to self-monitor and attempt the homework, which is perfectly normal. This may happen because you're facing your anxiety, perhaps for the first time. It's a good sign that we're on the right track in identifying and targeting your anxiety.

[Claire is then instructed in the use of the Weekly Record of Anxiety and Depression and the Cognitive Self-Monitoring Form.]

Session 2

In this session, the therapist begins with a brief review of the week's self-monitoring and reiterates the treatment rationale provided in Session 1.

- T: Let's start off today by reviewing your forms. It looks as though you had quite a bit of anxiety on the 20th through the 22nd; you gave average anxiety ratings of 6's and a 7 on those days [see Figure 4.2].
- C: Yes, those were tough days. My husband went away on business for a couple of days, and I was pretty worried about him while he was gone. You know, the same old thing of whether he's OK—if he's run into bad weather or has gotten into an accident. He came home in one piece, of course, but it's tough for me to see him go. I had him call when he arrived at the hotel and every night before he went to bed, so that made me feel somewhat better.
- T: I'm glad that you mentioned that you had your husband call you several times during his trip. Does he call you from work regularly?
- C: Yes, he does, because he knows it makes me feel better. But I think sometimes it annoys him to have to keep "checking in" with me, as if I were his mother or something.

T: That's useful information to note, for we'll be on the lookout for those kinds of behaviors that you might do to relieve your anxiety in the short run.

To review items from our last session, we mentioned that the program will last a year. The first 13 sessions will take place over the next 15 weeks, with Sessions 12 and 13 occurring biweekly. It's vital that you regularly practice the strategies covered over the next several meetings in order to make them almost second nature, so that they'll eventually replace the anxious thoughts and behaviors that are fueling your high anxiety and worry. When you get a good checkup from the dentist, you wouldn't stop brushing, right? We use the same principle here: that complete consolidation of these skills takes time and daily practice.

As I mentioned last week, anxiety and worry are normal responses to danger or threat. As such, anxiety's main function is to protect and prepare the body for survival by initiating the fight-or-flight response. The physical component of anxiety is responsible for automatically activating certain sensations to prepare the body for action. This fight-or-flight response is part of the autonomic nervous system, composed of two distinct parts: the sympathetic nervous system and the parasympathetic nervous system. The sympathetic nervous system is activated in the face of danger and is responsible for sending impulses to the adrenal gland. The adrenal gland then releases the neurochemicals adrenaline and noradrenaline, which send impulses to other parts of the body to signal the need to prepare for action. The parasympathetic nervous system, on the other hand, is the restoring branch of the autonomic nervous system and serves to return the body to its natural resting state. When you are anxious, the autonomic nervous system will propel various body systems, such as the cardiovascular, respiratory, and digestive systems. Your heart might race and pound; you might feel slightly short of breath; and your digestion might be disrupted, which results in feelings of nausea and upset.

The second component of the model of anxiety is the cognitive component. This refers to your specific thoughts and pre-

dictions occurring when the fight-or-flight response is initiated. Worrying is an attempt to problem-solve possible future danger or threat. If you are worried or anxious, your attentional focus will be diverted to those possible sources of threat, and it therefore will be difficult to concentrate on other things going on around you that do not pose an imminent threat. Because your concentration is affected, you might experience forgetfulness or a poor memory. This does not mean that you're losing your mind or your faculties. Rather, it indicates that your anxiety and worry are interfering with your ability to attend to sources of incoming information other than threat or danger. This inability to focus attention onto tasks is protective in the sense that when faced with real threat or danger, you need full attention onto what is going on around you.

Behaviorally, when you are anxious, you may engage in certain behaviors designed to reduce or alleviate your anxiety. Moving around a lot by pacing, foot tapping, cleaning, etc., releases extra energy produced by anxiety and aids in distracting you from your thoughts at hand. Similarly, procrastinating on tasks is a common way people attempt to avoid feeling anxious about getting something completed. This can stem from a fear of failure or a fear of not doing something perfectly. You've mentioned before that you often feel irritable. This is another common behavioral manifestation of anxiety. Additionally, when we're anxious we might do other things to help reduce our anxiety and worry. For you, that might be having your husband phone you from work several times a day to make sure he's safe. Another example that you mentioned before, Claire, was that you've stopped going to your son's football games because of your anxiety while watching him play. Although you may feel temporarily better by not watching his games, you simultaneously are reinforcing your anxious belief that something dangerous will happen to your son on the football field.

C: You're right, but I couldn't bear seeing my son hurt or injured. It would really upset me, so it's much easier to avoid going to the games so that if he does get hurt, I won't have to see it.

- T: You seem fairly convinced that your son will be seriously injured while playing football, but in fact the odds of his getting seriously injured are quite low. By not going to the games, you're really telling yourself that the odds of him getting hurt are much higher than they really are. Also, you seem to be predicting that you wouldn't be able to bear seeing him hurt. Has there ever been a time in your life when you did see someone injured?
- C: Umm, yes. My husband collided with another fielder during a softball game and had to get stitches in his forehead.
- T: Were you able to tolerate seeing that?
- C: Barely! I managed to get him to the hospital, but I was pretty shaky while I drove there.
- T: The point is that although you were anxious in that situation, you did in fact cope with your husband's injury. We'll return to some of these concepts in a later session. I'd now like to describe how excessive worry and anxiety can develop.
- C: That should be fairly easy to do in my case. Both of my parents were big worry warts who were always 5 minutes ahead in their thinking. I had to call home any time I went out; I had to keep my room immaculate; and I sometimes told white lies because I knew how little things would set them off, like the time I was pulled over for going 10 miles over the speed limit when I first got my license. Even though I didn't get a ticket from the officer, I knew that if I told them that I got pulled over, my parents would be too worried and upset to ever let me drive on my own again. So I said I went to the library to drop off some books. It's funny, but to this day I never go over the speed limit, and I get this little rush of anxiety if I see a patrol car while I'm driving.
- T: It sounds as though you grew up with parents who modeled anxious behaviors around you. In actuality, having anxious parents does not necessarily guarantee that an individual will be anxious as an adult. Several contributing factors interact to produce excessive anxiety and worry. These factors include a physical responsivity, or generalized overarousal to all kinds of events (both positive and negative). Are you moved to tears easily when watching a sad movie or being at a wedding?
- C: Definitely.
- T: We refer to that tendency as "overarousal" or "being emotional." It appears that part of that overarousal may be inherited, while part of it may be learned from your environment. Other factors that may be responsible for excessive anxiety and worry are a tendency to view the world as a dangerous and threatening place, along with a tendency to feel a need to control things happening in your life.
- Along with these factors, life experiences and stressors may trigger excessive anxiety and worry. In your case, Claire, the experiences of being in high school and stressors of grades and friends may have initially triggered your excessive worry. Of course, because those triggers are no longer in the picture, we will begin to identify current triggers and maintaining factors to your anxiety and worry.
- There are several factors that maintain excessive worry. One is the tendency to try to resist worrying or to try to distract yourself from worrying without feeling as though you've resolved anything in your mind. Do you ever find yourself trying to think about something else when you start worrying?
- C: Sure, all the time. I also try to keep busy, which sometimes helps me take my mind off what's bothering me.
- T: Another factor is due to the interference in the ability to effectively problem-solve due to high emotional arousal. Because you're in a relatively frequent state of high anxiety and overarousal, you may be focusing exclusively on all the possible negative things, while not giving more realistic, less threat-laden alternatives proper attention. Also, worry can serve a superstitious function, in that some individuals who worry excessively believe that worrying can avert negative outcomes, or that worrying is a sign of a conscientious person.
- In the treatment program, we'll target the three components of anxiety, using strategies specifically designed for each. First, you'll learn a technique called "progressive muscle relaxation," involving tensing and releasing your muscles to reduce your

physical anxiety. Next, you'll learn methods designed to counteract your negative predictions and to develop more realistic thoughts while anxious. You'll also learn to break the learned and automatic association between high arousal and specific images or thoughts fueling your worry. This will be accomplished by having you systematically experience your worry in a very controlled way. Finally, you'll develop the ability to engage in certain behaviors or activities that you may be avoiding, and changing the behaviors that reinforce your anxiety, so that you can test out some of your negative predictions if you do or don't carry the behaviors out.

For this week, it will be important to pay special attention to the kinds of thoughts you experience when anxious or worried, and the specific physical sensations and behaviors that accompany those anxious or worrisome thoughts.

Session 3

- T: Today we'll cover progressive muscle relaxation. First, tell me about your anxiety and worry this past week.
- C: It was fairly high. A boy on my son's football team broke his leg in a scrimmage before the game. His leg was broken in two different places, and he'll be out for the rest of the season. That just threw me for a loop. My son was right next to the boy when this all happened. Then, to top it all off, my in-laws dropped by unexpectedly for the weekend, and I was a basket case trying to prepare good meals and make them feel welcome. Naturally, my husband was laid back about both events, saying that I got myself worked up for nothing. I was really worried for a good 3 days in a row—probably for about 75% of each day, as I wrote down on the Weekly Record. You know, I was a bit leery about self-monitoring, because it would take time out of my schedule. But it's not so bad, and I do feel a little bit more in control of my anxiety. It's just sort of pathetic that I wasted my weekend worrying about stupid things like getting dinner on the table and whether my in-laws were comfortable in the guest room, like I wrote on the cognitions form.

T: It's great that you've been monitoring regularly. The amount of time that you invest in monitoring and practicing the skills is directly correlated with the amount of benefit you will gain from the treatment program.

Recall that general tension and overarousal contributes to high anxiety and worry, and may result from excessive worry. By learning how to physically relax your body, you can stop your anxiety to spiral and can help yourself to feel better physically. Progressive muscle relaxation involves tensing and releasing your muscles, with fewer muscle groups being targeted as your skill in the technique increases. We'll first start with 16 muscle groups, then follow with 8 groups, and then down to 4. When you first begin this procedure, it will take about 30 minutes. Gradually, you will require less time to feel fully relaxed. Remember that because relaxation is a skill, it takes time and practice to become an expert in it. However, you should feel some effects almost immediately.

- C: I know that I have to set aside time for homework, but 30 minutes sounds like a lot to me.
- T: It may be that sense of time pressure that adds to your anxiety. Put it to yourself this way: By completing the relaxation every day, you're doing something that will help you physically and emotionally. All the other things that are going on in your life that "have to get done by such-and-such time" can wait. If you try to fit the relaxation in between several things on your daily agenda, you will most likely feel pressured to get it done and over with. So you won't feel relaxed at all! Make sure that you do the relaxation exercise at a time when you won't feel rushed or pressured by other responsibilities.

The procedure entails tensing and then releasing or relaxing your muscles. By tensing, you can accentuate the feeling of release, as well as discriminate when you might be unconsciously tensing your muscles during the day. Tensing your muscles shouldn't produce pain, but rather a sensation of tightness or pressure. You'll progress in sequence by tensing and releasing your lower and upper arms, lower and upper

legs, abdomen, chest, shoulders, neck, face, eyes, and lower and upper forehead.

Be certain to practice in the beginning in quiet, nondistracting places. Concentration is a key element in learning how to relax, so you'll need to be in an environment where you can focus your attention completely on the sensations of tensing and releasing your muscles. This means no phone, TV, radio, or kids around during the exercise. It may help to lie on your bed during the exercise, but be sure not to fall asleep. Loosen or remove tight clothing, eyeglasses, contact lenses, shoes, belts, and the like. This exercise should be practiced twice a day, 30 minutes each time, for the following week.

Now I'll turn on the audiotape and record the relaxation procedure that I'll have you do to my voice in the session. You can use the audiotape at home for your practices. [The therapist then begins the 16-muscle-group relaxation procedure and gives the tape to Claire at the end of the session.]

- T: *(After relaxation has been conducted)*
How was that?
- C: Wow. Great. I don't want to get up. At one point, I felt as though I were floating. It was a little scary, so I opened my eyes, and it went away.
- T: That can happen when you first try relaxation. Sometimes people find the procedure frightening due to the feeling that they're not in control of their feelings, like floating or heaviness. The more you do the relaxation, the less that will occur. [Claire is then given a form called the Relaxation Record, to self-monitor practices and to note any problems with concentration or relaxation.]

Session 4

Following a review of the patient's week and his/her relaxation homework exercises, the 16-muscle-group relaxation is refined to involve discrimination training. After the therapist and patient have rehearsed this technique, the cognitive component of the treatment protocol is introduced.

- T: I'd like to turn now to the cognitive component of anxiety. Remember that your

thoughts are instrumental in determining emotions, like anxiety. Concerning excessive worry and anxious thoughts, the key question to ask yourself is whether your judgment of risk or danger is valid—that is, if it can be supported by existing and available evidence. In many cases, worry over the worst possible feared outcome is out of proportion. To challenge your worries and anxious thoughts, keep in mind several basic principles. First, challenging your thoughts does not mean positive thinking. Instead, when you challenge your anxious cognitions, you'll be thinking more realistically about situations. Second, because thinking is often an automatic process, it may be difficult at first to identify these thoughts when you're anxious. Think back to the very first time you learned how to drive. Was it easy?

- C: Sort of. I enjoyed it, but I had to focus on my turning and braking when I first started to drive.
- T: Do you think about those things now when you drive?
- C: Not at all. I don't focus any attention on my driving. I'm usually thinking about how much time I have to get somewhere, and the shortest way to arrive at my destination.
- T: That's because driving has become automatic for you. You are still thinking when you drive, but because you've driven so many times, your thoughts are more rapid and automatic when you're behind the wheel. The same idea applies to your anxious thoughts. Because you've lived with high anxiety for so long, you may have certain automatic thoughts associated with anxiety. A large part of the treatment will center on identifying and challenging these anxious thoughts in order to reduce your worry and anxiety. It is important to be as specific as possible from now on about the thoughts you have when you're anxious or worried. Try to envision what it is that's making you anxious or nervous.

On one of your cognitive monitoring forms for this week, Claire, you wrote that you were afraid about your son playing in his football game. What specifically were you worried about?

- C: That he'd get seriously hurt. His team was playing last year's state champions, so you know that those boys are big and strong. My son is good, but he hasn't been playing for years and years.
- T: How specifically do you imagine your son getting hurt?
- C: Getting a broken back or neck. Something that will result in paralysis or death. It happened to two NFL players this past year, remember?
- T: What happened to your son when he played in the game?
- C: Nothing, really. He came home that afternoon with a sore thumb, but that went away after a while. He said he scored a touchdown and had an interception. I guess he played really well.
- T: So what you're saying is that you had predicted that he would be injured during the game, but that didn't happen. When we're anxious, we tend to commit a common cognitive error, called "probability overestimation." In other words, we overestimate the likelihood of an unlikely event. While you were feeling anxious and worried, what was the probability in your mind that your son would be hurt, from 0 to 100%?
- C: About 75%.
- T: And now what would you rate the probability of your son getting hurt in a future game?
- C: Well, if you put it that way, I suppose around a 50% chance of him getting injured.
- T: So that means that for every two times that your son plays football, he gets hurt once. Is that correct?
- C: Umm, no, I don't think it's that high. Maybe about 30%.
- T: That would be one out of every three times that your son gets hurt. To counter the tendency to overestimate the probability of negative future events, it's helpful to ask yourself what evidence from the past supports your anxious belief. What evidence can you provide from your son's playing history to account for your belief that he'll get hurt in one out of every three games?
- C: Well, none. He had a sprained ankle during summer training, but that's it.
- T: So what you're saying is that you don't have very much evidence at all to prove that your son has a 30% chance of getting hurt in a game.
- C: Gee, I never thought of it that way.
- T: What are some alternatives to your son getting seriously hurt in a football game?
- C: He might not get hurt at all. But I know he must have some pain, with all those bruises covering his arms and legs. He's a real stoic, just like his father.
- T: What other alternatives can you think of instead of your son getting seriously hurt?
- C: He could get a minor injury, like a sprained ankle or something of that nature.
- T: Right. And what would be the probability of your son getting a minor versus a major injury?
- C: Probably higher, like 60% or 70%.
- T: To go back to your original worry, what would you rate the probability of your son getting seriously injured during a football game?
- C: Low, about 10%.
- T: So 1 out of every 10 times your son will get seriously hurt playing football. How many times has your son played football?
- C: He just started varsity this year, and he's a junior. But he's been playing since he got to high school, about 3 years. All in all, about 25 games.
- T: And how many times in those 3 years has he been seriously injured?
- C: Not once. I see what you're doing. It's so foolish for me to think these irrational thoughts.
- T: Well, it's understandable that your predictions about the future are biased toward negative possibilities. When we're in a state of high anxiety, we naturally focus on the more negative possibilities, in order to prepare for them should they come true. Because you worry excessively, your thoughts will be more negative regarding future events. That's why it's essential that you regularly counter these probability overestimations every time you have a worry. On your Cognitive Self-Monitoring Form, you indicated that your anxiety was a 6 on the 0-8 scale while thinking about your son getting hurt. What

would you rate your anxiety now, after having had gone through the countering?

- C: Much lower. Around a 3 or so. But it could still happen to him, getting paralyzed. And by worrying over that possibility, no matter how small, I can somehow prepare myself emotionally if it were to really happen.
- T: There's always that possibility, however minute. However, every time you tell yourself that "it could still happen," you're effectively throwing out all the evidence disconfirming that belief. You're also saying to yourself that your son's personal chances of paralysis from a football injury are much higher than everyone else's. To counter this tendency, remember that his chances of a serious injury remain the same as that of the rest of the team, every day.

Additionally, worrying about a future event does nothing to change its probability of occurring. What worrying will do, however, is make you feel even more anxious and distressed, along with giving you a false sense of control over the future.

Starting this week, record the countering of your worries on the Cognitive Self-Monitoring Form [see Figure 4.3]. As before, you'll jot down every time you feel moderately anxious or worried about something. In the first column, identify the trigger or event that started the worry or anxiety. Then write down your specific automatic thought, and rate your anxiety from 0 to 8. In the next column, rate (from 0 to 100%) the probability of that automatic thought occurring. However, from now on, counter that thought by asking yourself, "What's the evidence for my belief or prediction? Are there other alternative possibilities that I can think of?" After countering the thought, rerate the probability of your automatic thought and then rate your anxiety. Ask yourself, "What's the worst possible consequence of that automatic thought?" and write it down. If you are still moderately anxious (4 or above on the 0–8 scale), go back to the first column and repeat the procedure, using the worst possible feared consequence that you wrote down in the column headed "Trigger or event." Continue this until your anxiety is 3 or less [see Figure 4.3]. Next time, we'll talk about an-

other cognitive strategy to target your worry and anxiety.

Session 5

Following a review of the patient's week and the relaxation homework exercises, the eight-muscle-group relaxation is introduced in order to begin to make the relaxation strategies more readily applicable in naturalistic settings. When reducing the number of muscle areas, the therapist should instruct the patient to continue to involve areas that are particularly salient (e.g., if the patient reports considerable jaw tension or teeth clenching, the therapist should instruct the patient to spend extra time focusing on the jaw and mouth when doing the exercise). After this exercise is rehearsed, probability overestimation is reviewed and decatastrophizing is introduced.

- T: Last week, we went over the concept of probability overestimation. Tell me in your own words what is meant by probability overestimation.
- C: If I remember correctly, it means that when I'm overly anxious, I will predict some future negative event as more likely than it really is.
- T: That's exactly right. Did you monitor any instances this week when you overestimated the probability of a negative event?
- C: Of course. My husband had to take an unexpected overnight business trip because his coworker caught the flu. It was raining when he drove off, and naturally I assumed the worst, that he'd get into a car accident.
- T: How did you rate the probability of that event?
- C: I gave that an 80%, because it was coming down like cats and dogs. And other drivers aren't necessarily defensive drivers like my husband and I are.
- T: Were you able to come up with any past evidence contrary to your belief that he'd get in an accident?
- C: As a matter of fact, I realized that my husband has never been in a car accident before in his life. He's a great driver, very safe like I am, and he also never speeds. I

- remembered from a driver's ed. class back in high school that most accidents are caused by speeding and drunk driving. That made me feel much better.
- T: Could you think of any alternatives to your husband getting in an accident, Claire?
- C: I wrote that maybe if he did get in an accident, it would be a little fender-bender, like most accidents usually are. Or he'd arrive at the hotel without any incident whatsoever. Or, if it were really dangerous to drive, he'd pull over until the storm passed. My husband has a good head on his shoulders. This exercise made me realize that I don't give him enough credit.
- T: Given what you've just provided in the way of evidence and alternatives, what probability would you assign to your husband getting involved in an accident while driving?
- C: Very low. I'd still give a slightly higher rating, like 10%, because of inclement weather. But really low.
- T: What is your anxiety when you think about it that way?
- C: Practically nothing, a 1 or 2.
- T: Great. Along with probability overestimations, another common cognitive error associated with anxiety is called "catastrophizing." This refers to the tendency to blow things out of proportion, or to "make mountains out of molehills." Using adjectives such as "intolerable," "awful," "terrible," "unbearable," and "horrible" to describe future negative events is one way to catastrophize. Another way to catastrophize is to jump to an extreme conclusion from an unimportant or irrelevant event. For instance, what do you think the nurse at the doctor's office thought of you when you were late a few weeks ago?
- C: She probably thought I wasn't punctual or conscientious. I was a little concerned that she'd think I was irresponsible, and maybe because of that she wouldn't accept a personal check as a form of payment from me. I wouldn't be dependable in her eyes.
- T: In order to *decatastrophize*, you must first imagine the worst possible outcome of what you're worried or anxious about, and then judge its realistic severity. Very often, when people are chronically anxious, they underestimate their ability to cope with future negative events. They also tend to believe that the event might continue forever—for example, that everyone would begin to think of you as undependable. It helps to keep in mind that events cannot continue forever. Even if a very negative event were to happen, like losing a loved one or facing a serious illness, we would still be able to cope with it, despite feeling like we couldn't. How you feel and what you do are two very different things. You might feel in your heart that you wouldn't be able to cope with a negative event, but the fact is that the hallmark of being a human being is having an extraordinary ability to adapt to our surroundings.
- C: Sure, but how do I convince myself of that? I really don't believe that I could cope with losing my son or husband. It scares me so much that I dislike even talking about this.
- T: Which is why we should probably discuss your fears, being that a majority of your worry centers on the safety of your husband and son. What would happen if you lost your son?
- C: I'd be devastated. It really would be terrible. I'd never get over it. Maybe I'd have a breakdown and be placed in the psychiatric ward or something. I don't know, but it would be bad.
- T: How do you know that it would be bad? What evidence can you provide to support your belief that you'd never get over your son's death?
- C: Well, none, but children shouldn't die before their parents. I'm such a nervous wreck already that it would put me over the edge.
- T: Again, you're using your anxious feelings as proof of your belief. We refer to that as "emotional reasoning." Tell me some alternatives to having a breakdown or being placed in a hospital.
- C: I would cope, I guess, but I really can't fathom how I'd do that.
- T: Has anyone in your life died?
- C: Sure. When I was 17, my boyfriend was killed in a motorcycle accident. It was really hard on me. On a certain level, I

- never really got over it. Sometimes I dream about him. He was a great guy, and his poor mother went through hell when he passed away. I never want to experience what she went through.
- T: It must have been a very difficult time for you. An experience like that is unusual for a 17-year-old to have. It's pretty natural to have dreams about loved ones who have died, especially when the death was of a violent nature. Tell me some of the emotions you went through at the time.
- C: I went through a whole range of feelings: anger, disbelief, anxiety, loneliness, pain. It was a tough time for me. He died the summer we graduated from high school, and we were supposed to go to college together.
- T: Do you still feel those emotions?
- C: Not at the same intensity. I sometimes feel anger when I see motorcycles on the road, and of course I get pretty anxious. But now, when I think of Todd, I try to think of the happy memories. He was a wonderful guy, and I was lucky to have known him for the time that I did. He's in heaven right now, I'm sure of it, and looking out for me, like he said he would before he died. I met my husband several months after Todd's death while I was in college, and felt like I met someone who could have been Todd's twin brother. Without Jim, I don't know how I would have ever gotten over Todd's death.
- T: Despite having experienced the unexpected death of Todd, Claire, you did cope with your loss. You experienced the full range of emotions the people go through when they lose someone close, and you were still able to function. Is that right?
- C: Yes, but it was a struggle to get up in the morning for a while there. I cried almost every day for a month or two.
- T: What do you think would happen if you lost your husband or son?
- C: Probably the same thing, maybe even more intense. But you're right. I would be able to cope. It would be a job and a half, but I would have to. Luckily, I have a very supportive and close-knit family who's always there for me.
- T: Let's turn to another example of decatastrophizing. You mentioned that by coming in late, the nurse would think of you as being undependable, and that she wouldn't accept your personal check to pay for the visit. What would happen then?
- C: I'd have to incur a balance, and I would pay it later.
- T: Anything else?
- C: No, other than embarrassment.
- T: Why would that be bad?
- C: I hate being embarrassed like that. People would think badly of me, and I'd lose the respect of others.
- T: Then what?
- C: Then I would lose friends and be lonely.
- T: Then what?
- C: Then I would feel sad and miserable, and lead a miserable little existence.
- T: Tell me how able you would be to cope with that possibility, from 0 to 100%, where 0 equals "completely unable to cope."
- C: 5%.
- T: Now try to think of some ways that you could cope with that possibility.
- C: First of all, a true friend wouldn't lose respect for me because of something as mundane as not having a personal check accepted. And if I did lose friends over that, then what kinds of friends are they? Also, I could use a credit card, or go get a cash withdrawal from the bank if the doctor didn't accept credit cards.
- T: Do you think you'd be miserable and sad for the rest of your life?
- C: Oh, not at all. I'd feel bad for a little while, but it would eventually go away.
- T: And how likely is it that all your friends would remember a minor event like that for years to come?
- C: Not very likely at all.
- T: Have you ever been embarrassed before?
- C: Too many times to count!
- T: How long, on average, does the embarrassment last?
- C: A few minutes at the most. A day in rare instances, but usually not longer.
- T: So, Claire, you see how these catastrophic images can add to your anxiety. To counter your catastrophic thoughts, write your

anxious thoughts and worries down on the Cognitive Self-Monitoring Form as you've been doing for probability overestimations. Then ask yourself, "What's the worst possible consequence that could happen? If it happens, so what? Why would it be bad? How likely would it be to occur? How could I cope with it if it were to occur?" You should notice a substantial decline in your anxiety levels when you use your cognitive strategies regularly for each and every worry and anxious thought.

Session 6

Prior to the review of the types of anxiogenic cognitions (i.e., probability overestimation, catastrophic thinking) and corresponding methods of countering, eight-muscle-group relaxation is reviewed and refined to incorporate discrimination training. In addition, generalization practices are assigned.

- T: By doing the relaxation as frequently as possible, you will enhance your skill in the technique and find it more and more helpful in dampening tension when it arises. So, now I'd like you to begin applying the relaxation procedure in more distracting and challenging situations. In this way, you'll be making the relaxation more portable. You can start applying the relaxation while you're in traffic, waiting in line, at home watching TV, and in the grocery store. OK, why don't we review some of your records on the Cognitive Self-Monitoring Form? You wrote down that you hadn't yet finished doing the laundry at 10:00 p.m. as one of your triggers, and that your automatic thought was that you'll have to stay up late to finish it all. You then rated your anxiety as a 6. Why was that so anxiety-provoking for you?
- C: I really need about 9 hours of sleep every night. If I don't get that amount, I feel dragged out and exhausted the next day, and find it difficult to get anything done at all because of my low energy level.
- T: And what will happen if that takes place?
- C: Well, I'll get behind in all the other things that need to be done in the house, and I won't be able to catch up on it all.
- T: And then what?
- C: It'll just pile up, and my family will be living in a pigsty. It's disgusting to think about it.
- T: Then what will happen?
- C: Then my husband will be embarrassed to bring people over to the house, and get angry with me.
- T: And then?
- C: And maybe he'd want to leave me. Occasionally, we do some entertaining at our home, and so it is important that my husband and I make a good impression. If I can't have the house in presentable condition, then his colleagues and supervisors will think less of him and demote him, all because of my inability to do my job as a homemaker right.
- T: Do you see how you chain these anxious thoughts together so that the end result is really quite negative? That's fairly typical of individuals who have generalized anxiety. It becomes crucial to identify these thoughts specifically so that you can target each one in your chain of worry and anxiety. Let's then begin with the first automatic thought—namely, that you would have to stay up later and lose some sleep, which would make it difficult to get things accomplished the next day. What is the probability of that happening, from 0 to 100%?
- C: Oh, I suppose about 75%.
- T: What evidence can you provide in support of your belief that there's a 75% chance that you won't get things accomplished the next day if you don't get 9 hours of sleep?
- C: Once I had to stay up until 4 in the morning because one of the cakes I was making for our dinner party the following day was burned accidentally. I was so wiped out that I had to ask my husband to take care of setting the table and arranging to pick up the flowers from the florist that next day.
- T: Does that necessarily translate into your not being able to do those things?
- C: Well, no, but I felt I needed to take a nap if I wanted to be alert for the dinner conversation.

- T: So you could have gone to the florist and set the table if you had wanted to. Is that correct?
- C: Yes.
- T: How many times in the past have you had to stay up until 4 a.m.?
- C: Really only that one time.
- T: And how many times have you thrown dinner parties?
- C: Oh, about 20 times so far.
- T: That means that once out of 20 times have you not done something in preparation for a dinner party, and that due to your own choice. Correct?
- C: If you put it that way, yes.
- T: Now, back to the example at hand, how much later did you have to stay up to get your laundry done?
- C: Until midnight.
- T: And what happened the next day?
- C: Nothing much. I felt a little sleepy, but I did manage to get up in time for my 9 a.m. hair appointment.
- T: Did you fall behind on your other household responsibilities?
- C: Not at all. In fact, yesterday I managed to have a very productive day. I was even able to fit in going to a movie in the evening with my husband, and write a letter to my mother later that evening.
- T: So things didn't pile up. Do you think that your husband would be demoted if things did pile up?
- C: You never know with his company! Oh, I just remembered something when we first got married. We were moving into our new apartment, and things still needed to be unpacked. We had some boxes in the corner, and I remember that we had some friends over at the time for the Super Bowl. Instead of commenting on the boxes, they said that they couldn't believe how quickly we settled into our new home. Wow, I really do focus on the negative, don't I?
- T: Tell me some alternatives to your prediction that if things did in fact pile up in your house and his colleagues were over for a dinner party, that your husband would be demoted because of that.
- C: Hmm. Maybe they wouldn't notice, like our friends hadn't noticed in our first home. Or maybe they'd compliment us on the house, which is what they always do anyway. Or maybe they're just interested in having a good meal and a fun time and don't care either way. Perhaps they'd rib my husband a little bit at work about our house if it were messy, because they know how neat and clean we keep it, but that would be it. I guess it wouldn't be as bad as I think it would be.
- T: And your final prediction, that your husband would leave you if he were demoted. Are there alternatives to that consequence?
- C: That he wouldn't leave; that he loves me no matter what; that he would take an early retirement or find another job in a different field, because he's been considering a job change; that he might actually be relieved that I wasn't spending tons of time cleaning the house.
- T: Based on all the evidence and the alternatives that you've just generated, what would you rate the likelihood that if you don't get the laundry done and you have to stay up later in the night, that you wouldn't get things accomplished the next day and that all of these other consequences would follow? Recall that you originally assigned a probability of 75%.
- C: Looking at it in the way you went through it, around 2%.
- T: I think you can see the importance of being highly specific about your anxious thoughts, because more often than not, they are chained together in a larger sphere of worry. By breaking up that chain into its individual components (those thoughts and negative predictions), you can counter your worries more efficiently and effectively. How would you rate your anxiety now about not getting enough sleep?
- C: Really low, a 2 or 1. I don't like feeling sleepy, because it makes me feel that I'm not on top of things in my life if I'm having to go to bed late, but I know that it's my anxiety and overly high standards that make me think that way.
- T: Right. Sometimes it's helpful to consider the pros and cons of holding such high expectations and standards for yourself. It might be useful to write down the advan-

tages and disadvantages of that belief, and then to ask yourself if you're being harder on yourself than other people are. To put it another way, would you think badly of a friend who didn't get everything done that she had wanted to do in a day, or who went to bed a little later one night and was tired the next day?

- C: Oh, no, it's just in regard to myself. I have these standards that have been ingrained in me since childhood, so it's hard to break them, if you know what I mean. I would love to learn how to be less hard on myself.
- T: Great. In a later session we'll discuss some exercises, called "worry behavior prevention exercises," designed specifically for challenging some of your assumptions about your standards and what will or won't happen if you don't always abide by them.

Session 7

The main emphasis in Session 7 is on the introduction and rehearsal of worry exposure. However, this material is preceded by four-muscle-group relaxation (stomach, chest, shoulders, forehead). With this relaxation exercise, the therapist should remind the patient that this refinement is to make the relaxation more "portable," but that the patient should continue to include any muscle groups that represent particular problem areas.

- T: Today we will cover one of the most essential parts of the treatment program: systematic exposure to your worries. Recall that worrying is usually an attempt to problem-solve future threatening or dangerous situations. Often excessive worry gets in the way of effective problem solving, and the individual focuses not on realistic solutions, but rather on anxiety-laden, negative predictions that only serve to increase anxiety. The method that I'll teach you will help you gain a sense of control over these worries, and will also help you to manage them a bit more productively than you might be doing. The reason that these worries persist is because you might not be thinking about them completely, or may not be processing what

you're thinking about completely. You might be trying to distract yourself when you experience these thoughts by saying things like "Oh, I can't think about this now," or by doing some busy work to turn your attention away from the thoughts. You might also be saying, "I can't think about this at all," because the thoughts are so anxiety-provoking. It's natural that you don't want to think about something that makes you upset. At the same time, though, if someone tells you not to think of pink elephants, probably the first thing you think about is pink elephants! That's why it's very difficult to successfully avoid the worries, because you're not allowing yourself to think about what it is that's frightening or scaring you. This technique is designed to help you overcome what we refer to as an "approach-avoidance" pattern. You'll learn to think about your fears and worries in a different manner than the way you currently think about them. I'm going to ask you to think about a worry that we identify for at least 30 minutes a day. You'll do nothing but concentrate on worrying and thinking about this area of worry for 30 minutes. In this way, we're actually reducing the amount of time that you're worrying from 100% of the day, like you had first reported at the interview, to worrying for around 30 minutes a day. Generate the most feared possible outcomes to your worry that you can imagine, and then generate as many alternatives to that worst outcome that you can think of [see Figure 4.4].

Let's use an example from your Cognitive Self-Monitoring Form to illustrate the process of worry exposure. Here you have that your friend called to say that she was dropping by in half an hour without having given you advance notice. What is the very worst image that you can envision when your friend comes over?

- C: She'll have a look of shock on her face when she sees my dirty floors and unvacuumed rugs. She'll laugh at me and she'll go home and tell everyone that I'm not a good housekeeper or mother. I'll lose everyone's respect, and everyone will be laughing at me.
- T: How vivid or clear is that image in your mind, from 0 to 8?

- C: About a 5.
- T: I want you to imagine that you're watching yourself in a movie. You can see very clearly the shock and then the hidden laughter on your friend's face as she comes into your apartment. You also see her dial the phone number of another mutual friend and tell that person in great detail how awful your house looked, and you see and hear her cruel laughter. How vivid is that image?
- C: Very clear. About a 7.
- T: Good. Now hold onto that image for at least another 5 or 10 minutes. Concentrate on what you're seeing and hearing in the situation. It is as though you can feel and touch what is happening around you. What is your anxiety level?
- C: Umm, around a 7.
- T: Continue to hold the image. [Therapist waits until 5–10 minutes have elapsed.] What is your anxiety level now?
- C: Still a 7.
- T: Now continue to hold that image for a bit longer. [Therapist waits another 5 minutes or so.] How is your anxiety?
- C: Approximately a 5.
- T: Very good. Now, Claire, I want you to begin to use your cognitive strategies to counter that catastrophic image in your mind. What are some alternatives to that image, first of all?
- C: My friend won't care about the condition of my house. She's there to see me. Maybe she won't even notice that I haven't vacuumed the rugs or mopped the kitchen floor. She might notice, but not care and not think it so interesting to tell everyone we know that I keep a messy house. My house really isn't messy, according to other people's standards. Compared to her place, my house is a temple anyway. She probably thinks that I'm too preoccupied with keeping the house neat and clean. Maybe she'd be glad or relieved to see that I wasn't cleaning for a change.
- T: Great. How is your anxiety level now?
- C: Wow, it went down to about a 2 or 1. But it feels uncomfortable to do this worry exposure. My stomach was doing little butterflies when you asked me to imagine the worst. I don't know if I can do this at home.
- T: It is to be expected that you'll feel some emotional and physical discomfort, perhaps, while implementing the worry exposure. What you're doing in essence is facing and confronting the very thoughts that you avoid because of those same feelings and emotions that they evoke in you. Like anything else, becoming skilled in this procedure will take time and practice. If you're too anxious to continue the exposure while imagining the worst image, still try as best as you can to stick with the image. Your anxiety will come down, as you saw today. It is absolutely crucial that you allow 25–30 minutes at the very least for focusing on and envisioning the worst possible image of your worry. By giving yourself that much time, you're permitting the process of habituation to occur. Your anxiety will reach a peak and then decline to lower levels, once you acclimate to the image. Remember to use the cognitive strategies *after* you've imagined the worst. Additionally, you can use the relaxation after imagining the worst, if physically you're reactive to this procedure. Just make certain that during the exposure itself, you don't allow any sort of distraction from imagining the worst.

Session 8

In Session 8, worry exposure is reviewed and rehearsed, and relaxation-by-recall is introduced.

- T: You've been doing a tremendous job with the homework, especially with the worry exposure every day. It can be a lot of work, but keep in mind that it will all pay off in the long run, the more investment you make in the program.
- C: Yes, I can see that. My anxiety has really dropped to lower levels, compared to when I first came to the clinic. I feel more relaxed, and although I still worry a lot, it doesn't bother me as much as it used to.
- T: Your efforts are to be commended. This is an intensive program that requires a good deal of motivation and desire to change your negative thought patterns

and worry-related behaviors. How has the relaxation been going?

- C: Very well. I do it every day, all through the day. Sometimes I'll do it in the shower, or when I'm driving, and I try to make a point of relaxing before I get up out of bed in the morning. I still have this scared feeling when I wake up, anticipating the day, I guess. But it's been getting less and less noticeable.
- T: That's good to hear. Because you've seemed to master the relaxation exercise, I think you're ready now to start "relaxation-by-recall." This procedure entails recalling the feelings of relaxation. Instead of tensing the muscles before releasing them, you'll simply relax your muscles through the power of concentration and recall. You can concentrate on each of the four groups that you've been doing, and concentrate on releasing all the tension and pressure as you think back to how it feels to be relaxed in each part of your body. Maintain a regular pattern of fluid, smooth breathing with relaxation-by-recall, as you've been doing for the other forms of progressive muscle relaxation. Try to do this procedure in distracting, noisy, even stressful situations, so that the relaxation becomes a truly portable skill that can be used anywhere you are, in whatever circumstances that may be.

Session 9

In addition to a review of skills introduced in the last two sessions (e.g., worry exposure, relaxation-by-recall), worry behavior prevention is introduced.

- T: As I've mentioned several times in our earlier meetings together, part of the treatment program involves identifying certain behaviors and activities that you may either be doing or avoiding that serve to relieve your anxiety in the short term. What happens, however, is that those behaviors actually reinforce your worry and anxiety in the long term, so that they are counterproductive. Today I'd like to generate a list of some of those behaviors that you might be doing, or activities that you may

be avoiding, due to anxiety and worry. Some examples of such behaviors and activities include avoiding certain parts of the newspaper (like the health section or the obituaries), cleaning the house several times, being early for appointments, etc. Let's come up with some for you, Claire.

- C: I think the most obvious behavior is my total avoidance of my son's football games. He's been begging me to go to the homecoming game, and I would really like to, because it's a big day for the team and there's a lot of pageantry about it. But it'll be tough to do, that I know for sure.
- T: So that's one activity. What is your anxiety about going to the game, from 0 to 8?
- C: Around a 7.
- T: What other things can we put on the list? How about not cleaning for a few days?
- C: Umm, that would also be around a 6 or 7.
- T: How about not making your bed one morning?
- C: Maybe a 4.
- T: And cleaning the bathroom only once that day instead of your usual twice-a-day routine?
- C: That would only be a 3. If I couldn't clean the bathroom at all one day, it would jump up to a 5.
- T: And having your husband call you at work? What if he didn't call one day?
- C: That might be a 6.
- T: What if he didn't call until he left to come home?
- C: Oh, so long as he calls at least once, it's not too bad. Maybe about a 2.
- T: We have a few things that can comprise the list. Here it is: Going to the homecoming game, 7. Not cleaning for a few days, 6 to 7. Not having your husband call home at all, 6. Not cleaning the bathroom at all one day, 5. Not making the bed one morning, 4. Cleaning the bathroom only once one day, 3. Your husband calls only before leaving, 2.

For this week, you can begin the last item on the hierarchy—namely, having your husband call only when leaving work. Rate your anxiety during the day

each week when you know he's not going to call until later, and then rate your anxiety after he calls. Let me know how this goes. If you find yourself worrying about him during the day, be sure to implement your cognitive strategies and the relaxation-by-recall to help you to control your worry and anxiety [see Figure 4.5].

Session 10

In Session 10, the therapist should concentrate on reviewing the worry exposure and cognitive countering, relaxation-by-recall, and the worry behavior prevention exercises. He/she should then assign the next higher item(s) on the worry behavior hierarchy that has been composed in Session 9, depending on how well the patient has mastered the exercise and whether any problems are noted. In addition, cue-controlled relaxation is discussed.

Sessions 11 and 12

These sessions should be devoted to a review of all material thus covered, along with an inclusion of time management and problem-solving principles and strategies. Because these techniques often overlap with some of the cognitive strategies previously covered, they are not covered in this section.

For example, if the patient finds it difficult to fit everything in the day or has problems with meeting deadlines, the therapist should investigate overly high, unrealistic self-standards about performance and the perceived consequences of not getting everything done. Cognitive countering is usually the best intervention, along with teaching the patient how to stick to a daily schedule and allocate ample time for tasks. Similarly, if the patient reports difficulty making decisions due to fear of not making the right decision or choice, the therapist may wish to target the fear of making mistakes and the perceived consequences through decatastrophizing and probability estimations. Of course, introducing the concept of brainstorming, or generating as many alternatives as possible for a given problem situation, is very useful and should have already been fostered by regular practice of worry exposure exercises and use of the Cognitive Self-Monitoring Form.

Session 13

In addition to reviewing the skills covered over the prior 12 sessions and progress that the patient has made, a major objective of Session 13 is to provide an agenda for the patient's continued application and consolidation of the treatment techniques.

- T: Claire, we've covered a great deal of information about generalized anxiety and coping skills for it. As this is our last treatment session together before you go on your own for a while, it would be ideal for us to go over some of the skills you've been faithfully practicing and to talk about the future.
- C: That's reassuring to hear, because I've been feeling a little nervous about stopping therapy.
- T: Why is that?
- C: Well, I'm afraid that if I don't come regularly, I'll lose all the gains that I've made and I'll be right back where I started: a nervous wreck who is miserable and unhappy with life. I don't want to go back to being that way.
- T: Tell me some reasons why that might happen.
- C: I won't be seeing you regularly, and maybe I'll forget the exercises and not know how to control my thoughts and feelings.
- T: How can you be sure of that?
- C: I can't. It's just a fear that I have. I guess I'm doing that "emotional reasoning" that you're always pointing out to me. I've been feeling so much better lately that I don't want it to end.
- T: OK, but how have you accomplished that?
- C: By doing the exercises and trying to change myself, which I think I've done to a big extent.
- T: And where have you done most of the changing?
- C: At home, and by myself! I see where you're getting. I'm not giving myself credit for the work I've done.
- T: And you're discounting the fact that you are responsible for the change that you see. When we meet, our sessions are intended to introduce material and to review

your homework, much like a teacher-student relationship. Except in our case, there's no grade given, just feedback on how you're doing and areas on which you could focus more attention. If you were to experience a resurgence in high anxiety and worry, Claire, what would you do? If you could write a letter to yourself in the future if that were to happen, what would you say?

- C: I would say that I shouldn't let one minor setback color my whole view of myself, that I can always start doing the full hour of worry exposures and relaxation, and take out some of the Cognitive Self-Monitoring Forms, now that I know how to do them like the back of my hand. And I would tell myself, like you've told me, that it's OK and normal to feel anxious sometimes, that it doesn't necessarily mean that there's something wrong with me. It's so easy when I talk to you, but I struggle sometimes when I'm home trying to do these exercises and manage my worry. I am getting better, without a doubt, but it's been hard.
- T: And that is to be expected, because what we're doing in essence is changing some ways of thinking, feeling, and acting when you're anxious that have been automatic reactions for you for some time. As you continue using the strategies, you've seen some changes in how you think about and act in anxiety-provoking situations. Is there any evidence you can provide to show that you won't see further changes so long as you regularly use these techniques?
- C: No, of course not. It's just my fear getting the better of me. I know I can do it on my own.
- T: Let's discuss briefly some of the strategies. First, you learned about the nature of anxiety and worry, and how it is maintained over time. Then we went over relaxation, and now you're managing to relax your body in some highly stressful and distracting situations, like driving and while shopping. We spent a lot of time challenging your negative, anxious thoughts by identifying and countering probability overestimations and decatastrophizing. Next, we went over worry exposure—the daily hour of exposing yourself systematically to your worries and

allowing yourself to fully visualize your anxious images and thoughts and then countering those. We followed this with worry behavior prevention exercises, when you gradually accomplished doing tasks that made you nervous or worried due to your negative predictions. You were even able to go to your son's homecoming game last week, right?

- C: Yes! It wasn't bad at all. He played well, had some major running gains, and really impressed the coach, who complimented him in front of the team after the game. I was so proud of myself. My anxiety was pretty high at first—about a 6—but it went down eventually, and I was doing the relaxation and the cognitive strategies all the while. It was actually a lot of fun for both my husband and I to go, because we sat with some close friends whose son is also on the team.
- T: That's great. Then we talked about time management and problem solving, with which you didn't have too many difficulties. We'll be meeting again a month from now to monitor your progress and to troubleshoot any problems or difficulties you're experiencing. Then we'll meet again several months later to discuss your progress to date. Certainly, if you're having any serious difficulties, you can give me a call. For now, concentrate on trying to use the techniques on your own. You've made tremendous progress, Claire, and there's no evidence to indicate that won't continue.

Claire's Progress

As is customary for patients who complete a treatment program at our clinic (whether it is a research protocol or not), Claire underwent posttreatment and follow-up assessments, each of which entailed administration of the ADIS-IV-L and some self-report questionnaires. At posttreatment and across the follow-up period, Claire continued to experience decreasing levels of general anxiety and worry. When asked what components of the treatment she found especially useful for coping with her anxiety, Claire replied that the daily worry exposure and cognitive monitoring/restructuring were particularly helpful and were strategies that she employed regularly. In ad-

dition, Claire reported that most of her once-debilitating stomach problems had ceased to occur, and that she felt more in control of her worry and anxiety, both cognitively as well as physically. Claire maintained that although she still experienced some worry during the day, she felt more in control of it. Moreover, she stated that she noticed herself engaging in problem solving when she did worry, instead of distracting herself as she had for many years.

In comparison to her initial DSM-IV diagnosis of GAD, with an ADIS-IV-L clinical severity rating of 6, Claire received a post-treatment diagnosis of "GAD in partial remission," with a severity rating of 2, from an independent interviewer who was unaware of her original diagnosis. At 1-year follow-up, Claire was assigned a DSM-IV diagnosis of "GAD in full remission."

A CONCLUDING NOTE

Typically we will see patients a few more times on roughly a monthly basis in order to refine the patients' application of treatment techniques or to assist in the handling of any setbacks. As noted in the review of the treatment literature, patients who have completed a psychosocial treatment program for GAD generally evidence a maintenance of their treatment gains. Moreover, in many instances medication usage (e.g., anxiolytics) is reduced or eliminated (see Barlow et al., 1992). Nevertheless, a substantial number of patients undergoing these program show no more than modest gains. This finding may in part be due to the fact that treatments have only recently been tailored to address specifically the core component of GAD—namely, excessive and uncontrollable worry. Research is continuing at our center and elsewhere to determine whether these highly specialized treatments provide more substantial and lasting improvements in individuals with GAD.

REFERENCES

- Abel, J. L., & Borkovec, T. D. (1995). Generalizability of DSM-III-R generalized anxiety disorder to proposed DSM-IV criteria and cross-validation of proposed changes. *Journal of Anxiety Disorders, 9*, 303-315.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Anderson, D. J., Noyes, R., & Crowe, R. R. (1984). A comparison of panic disorder and generalized anxiety disorder. *American Journal of Psychiatry, 141*, 572-575.
- Andrews, G., Stewart, G., Allen, R., & Henderson, A. S. (1990). The genetics of six neurotic disorders: A twin study. *Journal of Affective Disorders, 19*, 23-29.
- Andrews, V. H., & Borkovec, T. D. (1988). The differential effects of inductions of worry, somatic anxiety, and depression on emotional experience. *Journal of Behavior Therapy and Experimental Psychiatry, 19*, 21-26.
- Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. New York: Guilford Press.
- Barlow, D. H. (1991). The nature of anxiety: Anxiety, depression, and emotional disorders. In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety-depression* (pp. 1-28). New York: Guilford Press.
- Barlow, D. H., Blanchard, E. B., Vermilyea, J. A., Vermilyea, B. B., & Di Nardo, P. A. (1986). Generalized anxiety and generalized anxiety disorder: Description and reconceptualization. *American Journal of Psychiatry, 143*, 40-44.
- Barlow, D. H., Chorpita, B. F., & Turovsky, J. (1996). Fear, panic, anxiety, and disorders of emotion. In D. A. Hope (Ed.), *Perspectives on anxiety, panic, and fear* (Vol. 43, pp. 251-328). Lincoln: University of Nebraska Press.
- Barlow, D. H., Cohen, A. S., Waddell, M., Vermilyea, J. A., Klosko, J. S., Blanchard, E. B., & Di Nardo, P. A. (1984). Panic and generalized anxiety disorders: Nature and treatment. *Behavior Therapy, 15*, 431-449.
- Barlow, D. H., Craske, M. G., Cerny, J. A., & Klosko, J. S. (1989). Behavioral treatment of panic disorder. *Behavior Therapy, 20*, 261-282.
- Barlow, D. H., & Di Nardo, P. A. (1991). The diagnosis of generalized anxiety disorder: Development, current status, and future directions. In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder, and mixed anxiety-depression* (pp. 95-118). New York: Guilford Press.
- Barlow, D. H., Rapee, R. M., & Brown, T. A. (1992). Behavioral treatment of generalized anxiety disorder. *Behavior Therapy, 23*, 551-570.
- Barrett, P. M., Dadds, M. R., & Rapee, R. M. (1996). Family treatment of childhood anxiety: A controlled trial. *Journal of Consulting and Clinical Psychology, 64*, 333-342.
- Beck, A. T., Emery, G., & Greenberg, R. (1985). *Anxiety disorders and phobias: A cognitive perspective*. New York: Basic Books.
- Beck, J. G., Stanley, M. A., & Zebb, B. J. (1996). Characteristics of generalized anxiety disorder in older adults: A descriptive study. *Behaviour Research and Therapy, 34*, 225-234.

- Bernstein, D. A., & Borkovec, T. D. (1973). *Progressive relaxation training*. Champaign, IL: Research Press.
- Blanchard, E. B., Scharff, L., Schwarz, S. P., Suls, J. M., & Barlow, D. H. (1990). The role of anxiety and depression in the irritable bowel syndrome. *Behaviour Research and Therapy*, *28*, 401–405.
- Blazer, D. G., George, L. K., & Hughes, D. (1991). The epidemiology of anxiety disorders: An age comparison. In C. Salzman & B. D. Lebowitz (Eds.), *Anxiety disorders in the elderly* (pp. 180–203). New York: Free Press.
- Blazer, D. G., Hughes, D., & George, L. K. (1987). Stressful life events and the onset of the generalized anxiety disorder syndrome. *American Journal of Psychiatry*, *144*, 1178–1183.
- Blowers, C., Cobb, J., & Mathews, A. (1987). Generalized anxiety: A controlled treatment study. *Behaviour Research and Therapy*, *25*, 493–502.
- Borkovec, T. D. (1994). The nature, functions, and origins of worry. In G. Davey & F. Tallis (Eds.), *Worrying: Perspectives on theory, assessment, and treatment* (pp. 5–33). New York: Wiley.
- Borkovec, T. D., Abel, J. L., & Newman, H. (1995). Effects of psychotherapy on comorbid conditions in generalized anxiety disorder. *Journal of Consulting and Clinical Psychology*, *63*, 479–483.
- Borkovec, T. D., & Costello, E. (1993). Efficacy of applied relaxation and cognitive-behavioral therapy in the treatment of generalized anxiety disorder. *Journal of Consulting and Clinical Psychology*, *61*, 611–619.
- Borkovec, T. D., & Hu, S. (1990). The effect of worry on cardiovascular response to phobic imagery. *Behaviour Research and Therapy*, *28*, 69–73.
- Borkovec, T. D., & Inz, J. (1990). The nature of worry in generalized anxiety disorder: A predominance of thought activity. *Behaviour Research and Therapy*, *28*, 153–158.
- Borkovec, T. D., & Lyonfields, J. D. (1993). Worry: Thought suppression of emotional processing. In H. Krohne (Ed.), *Vigilance and avoidance* (pp. 101–118). Toronto: Hogrefe & Huber.
- Borkovec, T. D., Lyonfields, J. D., Wisner, S. L., & Diehl, L. (1993). The role of worrisome thinking in the suppression of cardiovascular response to phobic imagery. *Behaviour Research and Therapy*, *31*, 321–324.
- Borkovec, T. D., & Mathews, A. M. (1988). Treatment of nonphobic anxiety disorders: A comparison of nondirective, cognitive, and coping desensitization therapy. *Journal of Consulting and Clinical Psychology*, *56*, 877–884.
- Borkovec, T. D., Mathews, A. M., Chambers, A., Ebrahimi, S., Lytle, R., & Nelson, R. (1987). The effects of relaxation training with cognitive therapy or nondirective therapy and the role of relaxation-induced anxiety in the treatment of generalized anxiety. *Journal of Consulting and Clinical Psychology*, *55*, 883–888.
- Borkovec, T. D., Robinson, E., Pruzinsky, T., & DePree, J. A. (1983). Preliminary exploration of worry: Some characteristics and processes. *Behaviour Research and Therapy*, *21*, 9–16.
- Borkovec, T. D., Shadick, R., & Hopkins, M. (1991). The nature of normal and pathological worry. In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder, and mixed anxiety–depression* (pp. 29–51). New York: Guilford Press.
- Brawman-Mintzer, O., Lydiard, R. B., Crawford, M. M., Emmanuel, N., Payeur, R., Johnson, M., Knapp, R. G., & Ballenger, J. C. (1994). Somatic symptoms in generalized anxiety disorder with and without comorbid psychiatric disorders. *American Journal of Psychiatry*, *151*, 930–932.
- Brawman-Mintzer, O., Lydiard, R. B., Emmanuel, N., Payeur, R., Johnson, M., Roberts, J., Jarrell, M. P., & Ballenger, J. C. (1993). Psychiatric comorbidity in patients with generalized anxiety disorder. *American Journal of Psychiatry*, *150*, 1216–1218.
- Breslau, N., & Davis, G. C. (1985). DSM-III generalized anxiety disorder: An empirical investigation of more stringent criteria. *Psychiatry Research*, *14*, 231–238.
- Brown, T. A., Antony, M. M., & Barlow, D. H. (1992). Psychometric properties of the Penn State Worry Questionnaire in a clinical anxiety disorders sample. *Behaviour Research and Therapy*, *30*, 33–37.
- Brown, T. A., Antony, M. M., & Barlow, D. H. (1995). Diagnostic comorbidity in panic disorder: Effect on treatment outcome and course of comorbid diagnoses following treatment. *Journal of Consulting and Clinical Psychology*, *63*, 408–418.
- Brown, T. A., & Barlow, D. H. (1992). Comorbidity among anxiety disorders: Implications for treatment and DSM-IV. *Journal of Consulting and Clinical Psychology*, *60*, 835–844.
- Brown, T. A., Barlow, D. H., & Liebowitz, M. R. (1994). The empirical basis of generalized anxiety disorder. *American Journal of Psychiatry*, *151*, 1272–1280.
- Brown, T. A., Chorpita, B. F., & Barlow, D. H. (1998). Structural relationships among dimensions of the DSM-IV anxiety and mood disorders and dimensions of negative affect, positive affect, and autonomic arousal. *Journal of Abnormal Psychology*, *107*, 179–192.
- Brown, T. A., Di Nardo, P. A., Lehman, C. L., & Campbell, L. A. (in press). Reliability of DSM-IV anxiety and mood disorders: Implications for the classification of emotional disorders. *Journal of Abnormal Psychology*.
- Brown, T. A., Hertz, R. M., & Barlow, D. H. (1992). New developments in cognitive-behavioral treatment of anxiety disorders. In A. Tasman (Ed.), *American Psychiatric Press review of psychiatry* (Vol. 11, pp. 285–306). Washington, DC: American Psychiatric Press.
- Brown, T. A., Marten, P. A., & Barlow, D. H. (1995). Discriminant validity of the symptoms constituting the DSM-III-R and DSM-IV associated symptom criterion of generalized anxiety disorder. *Journal of Anxiety Disorders*, *9*, 317–328.
- Brown, T. A., Moras, K., Zinbarg, R. E., & Barlow, D. H. (1993). Diagnostic and symptom distinguishability of generalized anxiety disorder and obsessive-compulsive disorder. *Behavior Therapy*, *24*, 227–240.
- Brown, T. A., O'Leary, T. A., Marten, P. A., & Barlow, D. H. (1993, November). *Clinical features of generalized anxiety disorder with an early vs. late onset*. Paper presented at the meeting of the Association for Advancement of Behavior Therapy, Atlanta, GA.
- Butler, G., & Booth, R. G. (1991). Developing psychological treatments for generalized anxiety disorder.

- In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder, and mixed anxiety-depression* (pp. 187-209). New York: Guilford Press.
- Butler, G., Cullington, A., Hibbert, G., Klimes, I., & Gelder, M. (1987). Anxiety management for persistent generalized anxiety. *British Journal of Psychiatry, 151*, 535-542.
- Butler, G., Fennell, M., Robson, P., & Gelder, M. (1991). Comparison of behavior therapy and cognitive behavior therapy in the treatment of generalized anxiety disorder. *Journal of Consulting and Clinical Psychology, 59*, 167-175.
- Butler, G., Wells, A., & Dewick, H. (1995). Differential effects of worry and imagery after exposure to a stressful stimulus: A pilot study. *Behavioural and Cognitive Psychotherapy, 23*, 44-55.
- Cameron, O. G., Thyer, B. A., Nesse, R. M., & Curtis, G. C. (1986). Symptom profiles of patients with DSM-III anxiety disorders. *American Journal of Psychiatry, 143*, 1132-1137.
- Chambless, D. L., Cherney, J., Caputo, G. C., & Rheinstein, B. J. G. (1987). Anxiety disorders and alcoholism: A study with inpatient alcoholics. *Journal of Anxiety Disorders, 1*, 29-40.
- Chorpita, B. F., Brown, T. A., & Barlow, D. H. (1998). Diagnostic reliability of the DSM-III-R anxiety disorders: Mediating effects of patient and diagnostician characteristics. *Behavior Modification, 22*, 307-320.
- Clark, D. A., & DeSilva, P. (1985). The nature of depressive and anxious intrusive thoughts: Distinct or uniform phenomena? *Behaviour Research and Therapy, 23*, 383-393.
- Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and the mood and anxiety disorders. *Journal of Abnormal Psychology, 103*, 103-116.
- Cohen, A. S., Barlow, D. H., & Blanchard, E. B. (1985). The psychophysiology of relaxation-associated panic attacks. *Journal of Abnormal Psychology, 94*, 96-101.
- Craske, M. G., Barlow, D. H., & O'Leary, T. A. (1992). *Mastery of your anxiety and worry*. San Antonio, TX: Psychological Corporation.
- Craske, M. G., Rapee, R. M., Jackel, L., & Barlow, D. H. (1989). Qualitative dimensions of worry in DSM-III-R generalized anxiety disorder subjects and nonanxious controls. *Behaviour Research and Therapy, 27*, 189-198.
- Craske, M. G., Street, L., & Barlow, D. H. (1989). Instructions to focus upon or distract from internal cues during exposure treatment of agoraphobic avoidance. *Behaviour Research and Therapy, 27*, 663-672.
- DiBartolo, P. M., Brown, T. A., & Barlow, D. H. (1997). Effects of anxiety on attentional allocation and task performance: An information processing analysis using nonanxious and generalized anxiety disorder subjects. *Behaviour Research and Therapy, 35*, 1101-1111.
- Di Nardo, P. A. (1991). *MacArthur reanalysis of generalized anxiety disorder*. Unpublished manuscript.
- Di Nardo, P. A., Brown, T. A., & Barlow, D. H. (1994). *Anxiety Disorders Interview Schedule for DSM-IV: Lifetime Version (ADIS-IV-L)*. San Antonio, TX: Psychological Corporation.
- Di Nardo, P. A., Moras, K., Barlow, D. H., Rapee, R. M., & Brown, T. A. (1993). Reliability of the DSM-III-R anxiety disorder categories using the Anxiety Disorders Interview Schedule—Revised (ADIS-R). *Archives of General Psychiatry, 50*, 251-256.
- Durham, R. C., & Turvey, A. A. (1987). Cognitive therapy vs. behavior therapy in the treatment of chronic general anxiety. *Behaviour Research and Therapy, 25*, 229-234.
- East, M. P., & Watts, F. N. (1994). Worry and the suppression of imagery. *Behaviour Research and Therapy, 32*, 851-855.
- Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99*, 20-35.
- Fyer, A. J., Mannuzza, S., Martin, L. Y., Gallops, M. S., Endicott, J., Schleyer, B., Gorman, J. M., Liebowitz, M. R., & Klein, D. F. (1989). Reliability of anxiety assessment: II. Symptom agreement. *Archives of General Psychiatry, 46*, 1102-1110.
- Ganzini, L., McFarland, B. H., & Cutler, D. (1990). Prevalence of mental disorders after catastrophic financial loss. *Journal of Nervous and Mental Disease, 178*, 680-685.
- Hazlett, R. L., McLeod, D. R., & Hoehn-Saric, R. (1994). Muscle tension in generalized anxiety disorder: Elevated muscle tonus or agitated movement? *Psychophysiology, 31*, 189-195.
- Heide, F. J., & Borkovec, T. D. (1984). Relaxation-induced anxiety: Mechanisms and theoretical implications. *Behaviour Research and Therapy, 22*, 1-12.
- Himmelfarb, S., & Murrell, S. A. (1984). The prevalence and correlation of anxiety symptoms in older adults. *Journal of Psychiatry, 116*, 159-167.
- Hoehn-Saric, R., & McLeod, D. R. (1988). The peripheral sympathetic nervous system: Its role in normal and pathological anxiety. *Psychiatric Clinics of North America, 11*, 375-386.
- Hoehn-Saric, R., Hazlett, R. L., & McLeod, D. R. (1993). Generalized anxiety disorder with early and late onset of anxiety symptoms. *Comprehensive Psychiatry, 34*, 291-298.
- Hoehn-Saric, R., McLeod, D. R., & Zimmerli, W. D. (1989). Somatic manifestations in women with generalized anxiety disorder: Psychophysiological responses to psychological stress. *Archives of General Psychiatry, 46*, 1113-1119.
- Kendall, P. C. (1994). Treating anxiety disorders in children: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 62*, 100-110.
- Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1992a). Generalized anxiety disorder in women: A population-based twin study. *Archives of General Psychiatry, 49*, 267-272.
- Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1992b). Major depression and generalized anxiety disorder: Same genes, (partly) different environments? *Archives of General Psychiatry, 49*, 716-722.
- Kendler, K. S., Walters, E. E., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1995). The structure of the genetic and environmental risk factors for six major psychiatric disorders in women: Phobia, generalized anxiety disorder, panic dis-

- order, bulimia, major depression, and alcoholism. *Archives of General Psychiatry* 52, 374–383.
- LeBoeuf, A., & Lodge, J. (1980). A comparison of frontal EMG feedback training and progressive relaxation in the treatment of chronic anxiety. *British Journal of Psychiatry*, 137, 279–284.
- Lindsay, W. R., Gamsu, C. V., McLaughlin, E., Hood, E. M., & Espie, C. A. (1987). A controlled trial of treatments for generalized anxiety. *British Journal of Clinical Psychology*, 26, 3–15.
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy* 33, 335–342.
- Lyonfields, J. D., Borkovec, T. D., & Thayer, J. F. (1995). Vagal tone in generalized anxiety disorder and the effects of aversive imagery and worrisome thinking. *Behavior Therapy*, 26, 457–466.
- Marten, P. A., Brown, T. A., Barlow, D. H., Borkovec, T. D., Shear, M. K., & Lydiard, R. B. (1993). Evaluation of the ratings comprising the associated symptom criterion of DSM-III-R generalized anxiety disorder. *Journal of Nervous and Mental Disease* 181, 676–682.
- Massion, A. O., Warshaw, M. G., & Keller, M. B. (1993). Quality of life and psychiatric morbidity in panic disorder and generalized anxiety disorder. *American Journal of Psychiatry*, 150, 600–607.
- Mathews, A. (1990). Why worry?: The cognitive function of anxiety. *Behaviour Research and Therapy* 28, 455–468.
- Meichenbaum, D. S., & Jaremko, M. E. (Eds.). (1983). *Stress reduction and prevention*. New York: Plenum Press.
- Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy* 28, 487–495.
- Noyes, R., Clarkson, C., Crowe, R. R., Yates, W. R., & McChesney, C. M. (1987). A family study of generalized anxiety disorder. *American Journal of Psychiatry*, 144, 1019–1024.
- Noyes, R., Woodman, C., Garvey, M. J., Cook, B. L., Suelzer, M., Clancy, J., & Anderson, D. J. (1992). Generalized anxiety disorder vs. panic disorder: Distinguishing characteristics and patterns of comorbidity. *Journal of Nervous and Mental Disease* 180, 369–379.
- O'Leary, T. A., Brown, T. A., & Barlow, D. H. (1992, November). The efficacy of worry control treatment in generalized anxiety disorder: A multiple baseline analysis. Paper presented at the meeting of the Association for Advancement of Behavior Therapy, Boston.
- Parkinson, L., & Rachman, S. (1981). The nature of intrusive thoughts. *Advances in Behaviour Research and Therapy*, 3, 101–110.
- Rapee, R. M. (1985). The distinction between panic disorder and generalized anxiety disorder: Clinical presentation. *Australian and New Zealand Journal of Psychiatry*, 19, 227–232.
- Rapee, R. M. (1991). Generalized anxiety disorder: A review of clinical features and theoretical concepts. *Clinical Psychology Review*, 11, 419–440.
- Rapee, R. M., & Barlow, D. H. (Eds.). (1991). *Chronic anxiety: Generalized anxiety disorder, and mixed anxiety–depression*. New York: Guilford Press.
- Rapee, R. M., Craske, M. G., Brown, T. A., & Barlow, D. H. (1996). Measurement of perceived control over anxiety-related events. *Behavior Therapy*, 27, 279–293.
- Roy, M. A., Neale, M. C., Pedersen, N. L., Mathé, A. A., & Kendler, K. S. (1995). A twin study of generalized anxiety disorder and major depression. *Psychological Medicine* 25, 1037–1040.
- Salzman, C. (1991). Pharmacologic treatment of the anxious elderly patient. In C. Salzman & B. D. Lebowitz (Eds.), *Anxiety disorders in the elderly* (pp. 149–173). New York: Free Press.
- Sanderson, W. C., & Barlow, D. H. (1990). A description of patients diagnosed with DSM-III-R generalized anxiety disorder. *Journal of Nervous and Mental Disease* 178, 588–591.
- Sanderson, W. C., Beck, A. T., & Beck, J. (1990). Syndrome comorbidity in patients with major depression or dysthymia: Prevalence and temporal relationships. *American Journal of Psychiatry*, 147, 1025–1028.
- Sanderson, W. C., & Wetzler, S. (1991). Chronic anxiety and generalized anxiety disorder: Issues in comorbidity. In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety–depression* (pp. 119–135). New York: Guilford Press.
- Schweizer, E., & Rickels, K. (1991). Pharmacotherapy of generalized anxiety disorder. In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety–depression* (pp. 172–186). New York: Guilford Press.
- Skre, I., Onstad, S., Torgersen, S., Lygren, S., & Kringlen, E. (1993). A twin study of DSM-III-R anxiety disorders. *Acta Psychiatrica Scandinavica* 88, 85–92.
- Starcevic, V. (1995). Pathological worry in major depression: A preliminary report. *Behaviour Research and Therapy*, 33, 55–56.
- Suinn, R. M., & Richardson, F. (1971). Anxiety management training: A nonspecific behavior therapy program for anxiety control. *Behavior Therapy*, 2, 498–511.
- Torgersen, S. (1983). Genetic factors in anxiety disorders. *Archives of General Psychiatry* 40, 1085–1089.
- Turner, S. M., Beidel, D. C., & Stanley, M. A. (1992). Are obsessional thoughts and worry different cognitive phenomena? *Clinical Psychology Review* 12, 257–270.
- White, J., & Keenan, M. (1992). Stress control: A controlled comparative investigation of large group therapy for generalized anxiety disorder. *Behavioral Psychotherapy*, 20, 97–114.
- Wisocki, P. A. (1994). The experience of worry in the elderly. In G. C. L. Davey & F. Tallis (Eds.), *Worrying: Perspectives on theory, assessment, and treatment* (pp. 247–261). Chichester, England: Wiley.
- Wittchen, H.-U., Zhao, S., Kessler, R. C., & Eaves, W. W. (1994). DSM-III-R generalized anxiety disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 51, 355–364.
- Zinbarg, R. E., & Barlow, D. H. (1991). Mixed anxiety – depression: A new diagnostic category? In R. M. Rapee & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety–depression* (pp. 136–152). New York: Guilford Press.