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Targeted Treatment of Catastrophizing for the Management of Chronic Pain

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Pain catastrophizing refers to a negative mental set brought to bear during the experience of pain. Individuals who catastrophize often feel helpless about controlling their pain, ruminate about painful sensations, and expect bad outcomes. Not surprisingly, such individuals often fail to improve with treatment. This paper provides an assessment tool and outlines a cognitive-behavioral group treatment approach for chronic pain that is specifically designed to reduce catastrophizing. Principles from stress management, cognitive therapy for depression, assertiveness training, and communal coping models are incorporated within the treatment framework to address specific needs posed by catastrophizing. Suggestions are provided for organizing treatment sessions and for assigning homework based on treatment principles.

ACCORDING TO RECENT ESTIMATES, approximately 10% of individuals in the United States experience pain conditions on more than 100 days per year (Osterweis,

Kleinman, & Mechanic, 1987). The individual and societal "costs" associated with chronic pain are numerous. Individuals affected by chronic pain struggle not only with the physical ramifications of pain but also with associated emotional and social stressors. Many individuals are unable to work and require disability benefits. For some, this means a significant change in self-concept, from providing for a family to requiring support from the government. Chronic pain also affects family members in

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 Continuing Education Quiz located on p. 172.

the form of financial difficulties, changes in lifestyle, and distress related to prolonged support of the pain patient (Turk, Flor, & Rudy, 1987). Many pain patients develop psychological problems, such as depression and anxiety, which often exacerbate pain intensity and disability (Asmundson, Jacobson, Allardings, & Norton, 1996; Banks & Kerns, 1996). Finally, the health care expenses, disability benefits, and lost work productivity of chronic pain patients create burdens that are shared by all of society.

Given that chronic pain impacts social and emotional functioning as well as physical comfort, mental health treatments are often indicated. Cognitive-behavioral therapy (CBT) is an empirically supported pain treatment (Chambless, 1998). As such, it has become the common standard of psychosocial intervention for pain (Morley, Eccleston, & Williams, 1999). Numerous research studies have shown that CBT generally decreases pain and improves functioning among chronic pain patients (James, Thorn, & Williams, 1993; Kole-Snijders et al., 1999; ter Kuile, Spinhoven, Linssen, & van Houwelingen, 1995; Thorn & Williams, 1993; Turner & Clancy, 1986; Turner & Jensen, 1993; Vlaeyen, Haazen, Schuerman, Kole-Snijders, & van Eek, 1995). Unfortunately, not all patients benefit from CBT, suggesting that individual differences play a role in treatment success or failure.

Patients who fail to significantly improve with treatment often share common personality characteristics, including neuroticism, anxiety, external locus of control, negative affectivity, and a cognitive set referred to as catastrophizing (Affleck, Tennen, Urrows, & Higgins, 1992; Asghari & Nicholas, 1999; Gatchel & Weisberg, 2000). Catastrophizing refers to an exaggerated negative mental set brought to bear during the experience of pain (Sullivan et al., 2001). Individuals who catastrophize expect the worst from their pain problem, ruminate about pain sensations, and feel helpless about controlling their pain. It is not surprising that these individuals have a poor adjustment to pain as compared to patients who are not burdened by such maladaptive cognitions.

This paper will provide clinicians with an understanding of what catastrophizing is and how it potentially impacts treatment. Recommendations are offered for assessing catastrophizing and an instrument for doing so is provided in an appendix. Specific guidelines for the targeted treatment of catastrophizing within a CBT framework are also presented.

Catastrophizing

Catastrophizing is consistently related to poor pain outcomes. Several authors have noted a relation between catastrophizing and higher levels of self-reported pain (Flor, Behle, & Birbaumer, 1993; Keefe, Brown, Wallston, & Caldwell, 1989; Sullivan, Bishop, & Pivik, 1995; Ulmer,

1997). This relation between heightened pain intensity and catastrophizing has been found in numerous pain populations, including among otherwise pain-free individuals undergoing experimental pain tasks (Sullivan et al., 1995). Catastrophizing is also consistently related to higher levels of psychological distress for patients who are participating in multidisciplinary pain treatment (Geisser, Robinson, Keefe, & Weiner, 1994; Jensen, Turner, & Romano, 1992; Robinson et al., 1997), higher rates of disability (Martin et al., 1996; Robinson et al., 1997; Sullivan, Stanish, Waite, Sullivan, & Tripp, 1998; Turner & Clancy, 1986), and higher rates of analgesic use and post-operative pain in surgical patients (Butler, Damarin, Beaulieu, Schwebel, & Thorn, 1989; Jacobsen & Butler, 1996). Thus, the literature on catastrophizing is robust and quite clear about its association with poorer physical and psychosocial functioning.

Given that individuals who catastrophize experience such a myriad of negative outcomes without treatment, it follows that cognitive-behavioral interventions would be especially beneficial to this group. A variety of nonspecific short-term treatments have resulted in reductions in catastrophic thinking by pain patients. In one treatment outcome study, investigators reported that cognitive or relaxation therapy, when combined with treatment designed to increase health behavior and activity levels, resulted in greater decreases in the use of catastrophizing than treatment aimed at health behavior and activity levels alone (Vlaeyen et al., 1995). In another study, multimodal treatment for fibromyalgia resulted in improvements on various outcome measures, with the greatest change emerging on the catastrophizing subscale of the Cognitive Strategies Questionnaire. Impressively, these treatment gains were maintained at a 2-year follow-up (Bennett et al., 1996). Headache patients have been shown to be less likely to catastrophize following CBT (ter Kuile, Spinhoven, Linssen, & van Houwelingen, 1995), and those patients who engaged in more catastrophizing following treatment reported higher levels of psychological distress. In another cognitive-behavioral treatment study, decreases in catastrophizing from pretreatment to 6-month follow-up was shown to predict decreases in depression and pain-related physician visits over the same time period (Jensen, Turner, & Romano, 1994).

It has been difficult to evaluate the comparative efficacy of the various components of CBT because clinical researchers frequently fail to describe the exact components utilized in their protocol, and, when described, the components of treatment vary widely across laboratories. This lack of clarity in the literature leads to the implication that any or all cognitive-behavioral interventions are equally efficacious, although there is not an empirical basis for this assumption. Typical components of CBT include behavioral skills training such as relaxation, bio-

feedback and/or pacing, and cognitive coping training, which may or may not include the concept of maladaptive thinking and catastrophizing.

Based on what is known about catastrophizing, the typical cognitive-behavioral interventions may not be as effective as a more targeted approach. There are several potential explanations to account for treatment failure when the approach promotes the use of adaptive cognitive and behavioral coping strategies but provides limited attention to catastrophic thinking. Individuals who catastrophize tend to magnify the threat value or seriousness of pain sensations (Chaves & Brown, 1987). Hypervigilance to threat engenders a heightened attention to pain, limiting the ability to focus on stimuli incompatible with the pain experience, such as using imaginal inattention or imagery, often taught during coping skills training. Additionally, those who catastrophize tend to ruminate about pain sensations and the severity of their pain, making it difficult to use distraction strategies and other cognitive coping techniques (Spanos, Henderikus, & Brazil, 1981; Spanos, Radtke-Bodorik, Ferguson, & Jones, 1979). Thus, an approach designed to teach adaptive pain coping strategies might be sabotaged by the cognitive processes associated with catastrophizing (i.e., hypervigilance to the threat value of pain, magnification, and rumination). Finally, individuals who catastrophize often approach treatment with a pessimistic outlook (Rosenstein & Keefe, 1983). They feel unable to help themselves and doubt their abilities to comply with treatment. They might also doubt the integrity of the intervention. Thus, a behavioral intervention focused on mastery and achievement tasks may also be doomed to failure.

Prior to being referenced in the pain literature, catastrophizing was primarily discussed within the context of cognitive theories of depression. In fact, an early conceptualization of pain catastrophizing was that it was not theoretically or operationally distinct from depression (Sullivan & D'Eon, 1990). Catastrophizing in the depression literature is one of a variety of cognitive errors, characterized by focusing exclusively on the worst possible outcome (A. T. Beck, 1967). In the pain literature, however, catastrophizing refers to a broader type of dysfunctional thinking toward pain, including having difficulty focusing one's attention away from the pain, perceiving the pain as unusually intense, and feeling helpless to control the pain (Sullivan et al., 1995). The available literature suggests that although depressive cognitive errors and pain catastrophizing share commonalities, catastrophizing is a separate construct, predicting outcome in pain patients even after depression is statistically controlled (Geisser et al., 1994; Keefe, Lefebvre, & Smith, 1999; Sullivan et al., 1998).

Other theoretical constructs that have been proposed for pain catastrophizing are that catastrophizing is an ap-

praisal process (Haythornthwaite & Heinberg, 1999; Thorn, Rich, & Boothby, 1999) or a cognitive coping attempt (Keefe et al., 1999). More recently, Sullivan, Tripp, and Santor (2000) proposed that catastrophizing serves a communal coping process.

An appraisal model of catastrophizing helps to explain the dysfunctional thought processes that may precede real or anticipated pain, and it helps to explain how someone might develop enduring maladaptive beliefs about pain. In this view, catastrophizing (and the associated tendency to appraise pain stimuli as potentially threatening or damaging) serves to direct the focus of attention toward the pain, which limits an individual's ability to attend to other stimuli. Heightened attention leads to rumination about the pain and magnification of the perceived stimulus. Inability to distract oneself from the pain stimulus leads to reduced perceived self-efficacy to deal with the pain, and hence a sense of helplessness. Maladaptive or unrealistic beliefs about pain, including catastrophizing, are perpetuated because the individual avoids events that may reshape his or her beliefs. Thus, using the appraisal model, interventions targeting catastrophizing must help the patient to become aware of his or her appraisal process and to challenge distorted thinking resulting from heightened attention to the pain stimulus. Once this is accomplished, it is assumed that the individual will be more receptive to cognitive training in coping techniques, and to engage in prescribed behaviors emphasizing mastery and achievement.

Although the appraisal model is a promising heuristic for designing a treatment to reduce catastrophizing, it does not explain why someone might strategically utilize catastrophizing in an effort to cope with the perceived stress associated with pain. The communal coping model, with its focus on the social-behavioral dimensions of catastrophizing, helps to explain interpersonal issues involved in pain adaptation (Sullivan et al., 2000). In this view, catastrophizing serves to solicit social proximity, assistance, and empathy from significant others. The primary goal of these individuals may be stress reduction via relationships rather than pain reduction per se. Emotional disclosure has been shown to be an effective coping strategy for individuals who tend to catastrophize (Sullivan & Neish, 1999), thus validating the coping utility of at least one catastrophizing behavior. Interventions designed to target catastrophizing must therefore take into account the potential coping value of such behavior, validate its worth, and provide ways of getting relationship goals met.

A model that incorporates both communal coping and appraisal processes may be the most promising in guiding future research and present-day targeted treatment approaches. See Sullivan et al. (2001) for a comprehensive review of catastrophizing literature and theory.

Assessing Catastrophizing

Given the impact of catastrophizing on treatment success, it is important to include a measure of catastrophizing as part of the treatment planning process. Two of the most commonly used self-report measures of catastrophizing are the catastrophizing subscale of the Coping Strategies Questionnaire (CSQ; Rosenstiel & Keefe, 1983) and the Pain Catastrophizing Scale (PCS; Sullivan et al., 1995). Both scales have been shown to have good psychometric properties and to be related to negative outcomes in response to acute and chronic pain experience (Keefe et al., 1989; Rosenstiel & Keefe; Sullivan et al.).

An advantage of using the CSQ is that it includes six coping subscales in addition to the catastrophizing subscale. The catastrophizing subscale of the CSQ contains six items that are rated in relation to frequency of occurrence on 6-point scales (0 = *never*, 5 = *almost always*; Rosenstiel & Keefe, 1983). The CSQ allows the clinician to examine a comprehensive profile of a patient's repertoire of adaptive and maladaptive coping strategies associated with pain experience.

The PCS was developed specifically to assess catastrophic thinking associated with pain. The PCS yields subscale scores on three different dimensions of catastrophizing: rumination (e.g., "I can't stop thinking about how much it hurts"), magnification (e.g., "I worry that something serious may happen"), and helplessness (e.g., "There is nothing I can do to reduce the intensity of my pain"). The three-factor structure of the PCS has been replicated in clinical and nonclinical samples (Osman et al., 1997; Sullivan et al., 1995; Sullivan et al., 2000).

The PCS total score and subscale scores are computed as the algebraic sum of ratings made for each item. PCS items are rated in relation to frequency of occurrence on 5-point scales (0 = *never*, 4 = *almost always*). The PCS is a 13-item self-report measure that can be completed and scored in less than 5 minutes, and thus can be readily included within standard clinical practice. The PCS is reprinted in Appendix B. The items that make up each subscale as well as means and standard deviations for each subscale are also presented in the appendix.

Although it is premature to make strong statements about clinical cutoff scores for the PCS, we have some preliminary data regarding the percentile distribution of PCS scores in a sample of individuals with soft tissue damage referred to a multidisciplinary pain management center for evaluation and treatment. These data suggest that patients obtaining a total score above 38 (80th percentile) are particularly likely to experience adjustment difficulties and to progress poorly in rehabilitation programs (Sullivan et al., 1998).

As catastrophizing is related to a myriad of poor outcomes, it might be useful to incorporate additional out-

come measures into a standardized assessment battery when treating pain patients who catastrophize. In addition to the assessment of catastrophizing with the PCS or CSQ, treatment providers might want to consider assessing mood states, such as depression and anxiety, other maladaptive cognitions, and physical functioning or activity level. Commonly used self-report questionnaires for the assessment of mood states include the Beck Depression Inventory (BDI; A. T. Beck, Steer, & Brown, 1996), State-Trait Anxiety Inventory (STAI; Spielberger et al., 1983), and Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1983). Although not commonly used in the pain field, measures such as the Dysfunctional Attitude Scale (DAS-A; Oliver & Baumgart, 1985) and the Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980) are useful indicants of dysfunctional thinking and cognitive errors. Including these types of measures in an assessment battery would provide a more thorough evaluation of maladaptive cognitions. Finally, it is often worthwhile to evaluate patients' overall activity level, as this is an area clinicians often hope to positively impact through pain treatment. Measures such as the West Haven-Yale Multidimensional Pain Inventory (WHYMPI; Kerns, Turk, & Rudy, 1985) and the Sickness Impact Profile (SIP; Roland & Morris, 1983) provide such information as well as additional data regarding overall functioning.

Treatment for Catastrophic Thinking

Because a traditional CBT approach for pain might only touch on the idea of maladaptive thinking or completely fail to address catastrophizing, we are proposing a CBT approach that specifically focuses on the reduction of catastrophizing. Although we believe that such an approach would be more beneficial than a nonspecific CBT approach for those who catastrophize, an empirical comparison of treatments for catastrophizing has not yet been undertaken. It has been our clinical observation that many individuals with chronic pain seem unresponsive to adaptive coping strategy training unless/until they become aware of their automatic catastrophic thinking and become able to control it through realistic appraisal and composing alternative (more adaptive) responses. In an eight-session CBT approach utilized by the first author, cognitive restructuring was initially included only in the latter two sessions; we have now moved it to the initial phase of treatment, and expanded its focus to at least four sessions of cognitive restructuring. It is our experience that although patients at first dislike attending to their catastrophic thoughts, and complain that it makes them even more likely to catastrophize, once they come to realize the frequency with which they have these thoughts, and the impact these thoughts have on their

emotions, behavior, and physiological response, they become very invested in learning to change their patterns of thinking.

The treatment described below is adapted from a CBT approach utilized by the first author in her clinical pain research laboratory. The treatment description provided is modified from ongoing headache treatment research targeted to reduce catastrophizing; however, it has been described here in more general terms for use with other pain populations. The treatment is designed to provide a cognitive rationale for the exacerbation, maintenance, and, sometimes, the onset of painful states. Patients are treated in groups of 7 to 9 participants and are educated about the connection between cognitive activity and pain and given explicit instruction in the use of cognitive restructuring.

We acknowledge that many CBT interventions may already include, to some degree, a cognitive restructuring component in the treatment approach. By providing the following treatment description, our aim is to (a) provide a conceptual/theoretical framework for focusing on catastrophizing *per se*, and (b) provide specific details about how to implement this focused treatment approach. We believe that most or all persons experiencing chronic pain engage in some amount of catastrophic thinking and therefore it is appropriate to incorporate this approach into an existing CBT regimen. However, it is also possible to employ this intervention as part of a stepped-care approach with only those patients who are identified as high in catastrophic thinking, or those who have an inadequate response to a traditional CBT approach.

The suggested treatment utilizes Lazarus and Folkman's (1984) transactional model of stress to frame the treatment approach. The transactional model conceptualizes the stress response as multifaceted and emphasizes the role of cognition in coping with stressful situations. The primary features of the model are briefly discussed. First, individual variables, such as personality, stable social roles, and/or biological parameters, can influence how a person will cope. Second, people engage in dynamic appraisal processes that influence their response to the stressor, including whether, and which coping responses will be attempted. One category of appraisals, labeled primary appraisals by Lazarus and Folkman, are those relating to judgments about whether or not an environmental event is stressful. If judged to be stressful, it can be appraised as a loss, a challenge, or a threat. Beliefs about coping options, and their possible effectiveness, are called secondary appraisals in the transactional model. Finally, coping, as defined by Lazarus and Folkman, is a purposeful effort to manage the impact of a stressor. If a response is automatic or noneffortful, even if adaptive, it is not considered a coping attempt. Similarly, if a response does not represent an effort to reduce the

negative impact of the stressor, it is not coping. Since catastrophic thoughts are often automatic (rather than strategic) cognitions related to beliefs about coping options, they could be categorized as secondary appraisals. However, since catastrophic thinking can be viewed as a means to elicit support from significant others, it also has elements of a coping attempt (albeit, nonadaptive).

Our main treatment goal is to reduce catastrophizing, thereby promoting other improvements in the areas of pain, physical functioning, and mood. In order to achieve reductions in catastrophizing, we incorporate principles from stress management training (Meichenbaum, 1986), cognitive therapy for depression (J. S. Beck, 1995), communal coping models (Coyne & Smith, 1991), and assertiveness training (Turk, Meichenbaum, & Genest, 1983). It is believed that once catastrophizing is reduced, adaptive coping attempts will increase, thus serving to divert the patient away from his or her pain and increase activity-based mastery and achievement tasks. This makes sense if one views catastrophizing as a secondary appraisal, influencing what kinds of coping attempts will be made (and if coping will be attempted at all). We also work within the assumption that catastrophic thinking may serve a relational goal, and thereby be a coping strategy. That is, patients who tend to catastrophize want and need relationship support and may use catastrophizing to get this goal met. Until they learn more adaptive means of getting their relationship goals met, they are unlikely to relinquish catastrophizing if it serves the purpose of getting support from their loved ones, even if catastrophizing increases their pain and dysfunction. The group treatment format provides a venue for appropriate emotional disclosure and potential support from others who experience pain. Group attention to legitimate needs served by catastrophizing and education about getting these needs met through more adaptive means (e.g., assertiveness) provides another avenue for validating the relational needs of those who catastrophize. Table 1 provides a brief summary of treatment components.

Phase 1 (One Session)

Treatment aim. The first aim of treatment is to provide a collaborative relationship among group members and group therapists (see Turk et al., 1986). To do so, therapists must provide a sound rationale for treatment as well as discuss treatment goals. This phase of treatment is a typical first session in most CBT group treatment.

Implementation. In the treatment rationale (adapted from Blanchard & Andrasik, 1985) described to group members, pain is defined as a physical reality that is stress-related. Goals of treatment are described as the following: (a) to promote management of chronic pain by learning new ways of interpreting and labeling stressful situations; (b) to learn how to think differently in order

Table 1
Overview of Treatment Components

Session	Primary Aim	Treatment Suggestions
1	Establish relationship and discuss treatment rationale	1. Build rapport 2. Get participants invested in treatment approach through active discussion of treatment rationale and potential benefits
2	Discuss relation between stress and pain	3. Compose list of stressful situations 4. Apply concepts of challenge, threat, and loss appraisals to individual stressors 5. Emphasize role of cognition and interpretation in determining "stress" 6. Elicit examples from group members of pain flare-ups occurring during stress
3	Identify catastrophizing thoughts	7. Introduce concept of catastrophizing 8. Practice monitoring automatic thoughts, specifically those related to pain 9. Discuss relation between negative thoughts and emotions and behavior
4	Challenge and replace catastrophizing thoughts	10. Evaluate validity of negative thoughts 11. Discuss potential consequences of embracing such thoughts 12. Introduce Dysfunctional Thought Record and practice recording thoughts 13. Encourage practice of writing down thoughts in session and at home
5	Challenge and replace catastrophizing thoughts	14. Practice replacing catastrophizing thoughts with more adaptive thoughts 15. Encourage active participation by group members in formulating adaptive thoughts 16. Continue practice with the Dysfunctional Thought Record
6	Explore the utility of catastrophizing as a coping response	17. Explore ways that catastrophizing might be used to cope with problems (e.g., to elicit support and empathy or to signal pain and distress) 18. Discuss the advantages and disadvantages of using catastrophizing to cope 19. Encourage group members to voice alternative methods for managing problems or communicating pain and compile a list of possible methods
7	Learn more adaptive means for accomplishing interpersonal needs	20. Use the list of coping methods generated in the previous session to begin discussion of assertiveness training 21. Introduce assertiveness skills one by one and elicit examples from group members regarding situations when the skills could be used 22. Practice the use of assertiveness skills through role-playing with group members
8	Promote continued practice of learned skills and summarize treatment	23. Encourage group members to summarize treatment components 24. Discuss noted improvements and areas needing continued attention 25. Emphasize that skills practice should continue

to reduce the occurrence of pain flare-ups and to learn how to think in a way that does not exacerbate pain during a pain flare-up; and (c) to learn ways of achieving social and emotional support that do not increase the experience of pain.

The treatment format is described as psychoeducational, with group discussion focused on experiences with stress and pain, and the types of thoughts before and during pain flare-ups. It is explained that weekly homework assignments are given to participants and discussion of these assignments with group members occurs during the following week.

Phase 2 (One Session)

Treatment aim. The second aim of treatment is to provide education and insight regarding the impact of stress on pain, particularly the interpretation of potentially

stressful events. This phase of treatment incorporates Lazarus and Folkman's (1984) concept of primary appraisals into the treatment protocol.

Implementation. In session, group members begin a list of situations they find stressful and/or that trigger pain flare-ups. The therapist introduces the concept of appraisal, whereby situations are judged as harmless or stressful. Stressful situations are further appraised as a challenge (perception that the ability to cope is not outweighed by the potential danger of the stimulus) or a threat (perception that the danger posed by the situation outweighs the individual's ability to cope), or a loss (perception that damage has occurred as a result of the stimulus). Depending upon one's appraisal of a situation, one will think about it differently, feel different emotions about it, and behave differently. For example, a young couple wishing to have children, but unable to conceive

for 6 months, may think of this as a challenge (“Let’s learn all we can about optimizing our chances to conceive and then give it our best shot”), a threat (“This may mean we will not be able to have children”), or a loss (“Our inability to conceive a child has robbed us of a critical part of our life”). Group members are encouraged to discuss how, in the example provided, each of these ways of appraisal (challenge, threat, loss) would affect the couple’s thinking, feeling, and subsequent behavior. Group members are then directed to choose one of their own previously identified stressful situations related to pain and assess whether they appraised it as a threat, challenge, or loss. A discussion follows about how their own appraisal of the stressor might impact their thoughts, feelings, and subsequent behavior. As homework, group members continue their list of stressful situations and/or situations that may trigger pain flare-ups. They continue to identify how the stressor was appraised and how their appraisal might affect their experience of pain.

Phase 3 (Three Sessions)

Treatment aim. The third aim of treatment is to teach patients to identify, challenge, and replace catastrophizing thoughts. Once the role of primary appraisals (threat, loss, challenge) has been explored in Phase 2, the role of catastrophizing as a secondary appraisal is integrated into the treatment protocol. The role of cognition, specifically catastrophizing thoughts and interpretations in responding to stressful situations, is emphasized.

Implementation. Several sessions are spent helping group members define and discuss catastrophic thoughts, with participants learning to monitor and change their thinking patterns. This aspect of the treatment protocol closely resembles cognitive restructuring typical of cognitive therapy. In session, the therapist introduces the concept of catastrophizing: What is it (typically associated with appraisal of pain as a threat or loss, with an associated tendency to focus on the negative aspects of pain, resulting in magnification, rumination, and helplessness) and why is it harmful (associated with poorer treatment outcome, greater pain, more disability, greater distress, more medication use, higher dysfunction)? Catastrophizing is discussed as often being an automatic thought process—a thought process that might occur without being aware of doing so. Group members are encouraged to become aware of what they are thinking because when one is not aware of what one is thinking/feeling, it is more difficult to interrupt the process. Group members begin to identify current catastrophic thoughts, both those specific to pain and those more general in nature. A discussion follows regarding how these catastrophic thoughts might impact participants’ emotions, behaviors, and even their physical functioning.

Next, the therapist introduces the idea that cata-

strophic thoughts might not be realistic. Group members are educated about the importance of evaluating the validity of thoughts and challenging any that are unrealistic. The potential behavioral, emotional, and physical consequences of continuing to hold such beliefs is discussed. Finally, group members are educated about choosing alternative, more realistic thoughts to replace those thoughts that are not valid. A thought record (adapted from the Dysfunctional Thought Record, used in cognitive therapy for treatment of depression; J. S. Beck, 1995) is introduced as a means of recording catastrophic thoughts and their accompanying emotional/behavioral/physiological consequences. The form is explained and several examples are highlighted during the group session. An important component of this thought record is the replacement of maladaptive thoughts with more realistic thoughts. Group members assist in composing a list of catastrophic thoughts. For each maladaptive thought, participants work together to develop a more realistic, adaptive thought. For example, replace “this pain is unbearable” with “the pain is bad, but not more than I can bear.” As homework, group members make a written list of catastrophic thoughts as they become aware of them during the week. They then write down how the catastrophic thought might impact their thoughts, feelings, and subsequent behavior. They then examine the validity of the catastrophic thought by examining the evidence that the catastrophic thought is true, and conversely, that the catastrophic thought is not true. Finally, for each catastrophic thought, they are encouraged to write down a more realistic, adaptive thought.

Phase 4 (Two Sessions)

Treatment aim. The fourth aim of treatment is to assist group members in developing skills that will allow them to meet interpersonal needs in more adaptive ways. This phase of treatment incorporates Lazarus and Folkman’s (1984) concept of coping into the treatment protocol, and specifically introduces the use of catastrophizing as a strategic, albeit maladaptive, coping attempt.

Implementation. The group leader(s) should validate the potential of catastrophizing as serving a legitimate purpose; people with stress-related disorders often have unreasonable expectations of themselves that might explain their typical reaction to stressful situations. It might be that catastrophizing allows the individual to drop those unreasonable expectations (at least temporarily) because he or she is simply unable, during the catastrophic thought process, to “measure up.” Helping participants to examine the potential utility of catastrophizing by providing realistic examples may be useful. As an example, a former group participant was a young grandmother/headache patient whose recently divorced daughter and two children had moved back into the home. The patient

was suddenly faced with increasing responsibilities for child care, food preparation, and homemaking. Her self-expectations were to help her daughter through this difficult time by making it “easy” for her daughter, thus taking the load on herself. The patient was unable to set limits or attend to her own needs. She began telling herself, “I am a weak person, I can’t handle this,” went into a severe headache cycle, and was subsequently unable to “carry the load.” Using the above example, group members are encouraged to identify the need being met by catastrophizing and other ways the grandmother might get the same need met. Other examples can be obtained from group members and the group process can be used to identify the need being met by catastrophizing and other options for getting the need met. Group members should also be encouraged to identify potential roadblocks to meeting those needs in alternative ways and problem solve toward resolution of the roadblocks.

Assertiveness skills are taught during the second session of this phase of treatment to enable patients to meet their interpersonal needs in more direct and constructive ways. Although our treatment program focuses on only a limited number of assertiveness skills, this aspect of treatment could certainly be broadened to include additional social skills. The therapist can introduce assertiveness skills through examples, such as saying no to requests by others, expressing personal opinions, and verbalizing wants and needs. It is explained that when individuals feel unable to assert themselves or lack specific skills to assert themselves appropriately, communication breaks down and relationships suffer. Often, unassertive individuals oscillate between passive and aggressive behavior in interpersonal contexts. It is explained that catastrophizing is used in place of direct communication to garner support or possibly to gain empathy from others. Learning to voice opinions and express needs directly will help individuals to meet interpersonal needs in a constructive and more forthright manner. Direct communication can also serve a cathartic, therapeutic purpose.

In session, group leaders demonstrate assertiveness skills in front of the group. Group members then take turns role-playing the new skills. Role-playing scenarios are actively critiqued by group leaders and other group members. This process serves to desensitize patients’ anxiety associated with social performance. Role-playing scenarios are guided from less threatening social situations to more difficult interactions. For example, an early role-play might focus on having the patient make a request for a hug from his or her significant other, whereas a later role-play might have the patient request a lessened workload from an employer. Group members give personal examples of situations where they would find it difficult to assert themselves. These situations are used for additional role-playing.

As homework, group members examine current catastrophic thoughts to identify potential legitimate needs being met through the catastrophic thinking. Group members list potential options for meeting their needs in another way. Participants are encouraged to list any and all options they come up with, even if they don’t feel that they could exercise a particular option. Group members also practice assertiveness skills in their daily lives and record their thoughts and feelings in each situation. They are asked to practice their new skills in a variety of situations and interpersonal contexts. Direct dialogue with a significant other (e.g., spouse, friend, family member) is also attempted, and feedback from these encounters is recorded.

Phase 5 (One Session)

Treatment aim. The fifth and final aim of treatment is to promote continued practice and generalization outside of the therapeutic setting.

Implementation. In session, therapists introduce the concept that challenging catastrophizing thoughts is a long-term project. Treatment introduces the participant to the concepts, but long-term change is produced by practice. It is explained that stressors are a dynamic rather than static phenomenon; some new stressors will emerge over time, whereas others will take care of themselves. Therefore, one’s list of stressors should be updated periodically. Additionally, it is pointed out that sometimes, for very good reason, individuals choose not to address a particular stressor at that particular time, but that does not mean they have no control over the stressor. They can still change how they think, feel, and behave in reaction to the stressor, and they can challenge maladaptive catastrophizing thoughts as they relate to the stressor.

During this final phase of treatment, important concepts are reviewed: (a) pain is a stress-related phenomena; (b) stress appraisal is important in our thoughts, feeling, and emotions; (c) catastrophizing is a dysfunctional thought pattern related to poor pain control; (d) catastrophizing may be an attempt to serve legitimate needs that can be met through other means; (e) assertive communication is a means of meeting interpersonal needs. In session, group members discuss what they have learned during treatment. In particular, each participant is asked to share one aspect of the treatment he or she found particularly useful. Each participant is also asked to share one aspect of treatment he or she found particularly challenging or difficult. Options are discussed for continuing the work begun in the group, particularly as it relates to challenging catastrophic thoughts by staying aware of the thoughts, determining whether the catastrophic thinking is meeting any needs, exploring meeting the needs in another manner, and challenging unrealistic cognitive distortions and replacing them with

more realistic thoughts. Group members are encouraged to continue working on identifying catastrophic thoughts and replacing these thoughts with more adaptive responses. Participants should also continue identifying maladaptive expectations and beliefs they hold, and work on replacing these with more adaptive expectations and beliefs. An emphasis is placed on evaluating thoughts and beliefs in a rational manner, constantly challenging the validity and utility of thoughts and paying specific attention to thoughts occurring prior to and during pain flare-ups.

Conclusion

Catastrophizing is a consistent predictor of poor pain outcomes and warrants attention in treatment. However, the typical pain treatment approach of CBT does not rigorously target the reduction of catastrophizing. Although some pain treatment programs include mention of catastrophizing and even spend time on interventions, such as cognitive restructuring, to alter maladaptive thinking patterns, the theory and focus of treatment is not specifically on the reduction of catastrophizing. The treatment outline proposed in this paper is an attempt to directly attack catastrophizing from multiple perspectives.

Although the authors utilize this treatment approach and have found it effective in reducing catastrophizing and improving other positive outcomes, such as mood,

pain intensity, and activity level, there has been no empirical study comparing this intervention to other, more general, pain treatment approaches. Clearly, such studies are needed. The current approach to pain treatment is often a smorgasbord of CBT interventions that, in some combination, produce positive outcomes. However, theory-driven treatment approaches, such as the one proposed, allow clinicians and researchers to better understand the mechanisms of change. Studies that isolate treatment components and compare their relative efficacy are also needed to further expand our knowledge in this area and to promote the development of interventions that are more streamlined and powerful. With managed care organizations demanding time-limited treatments that have been empirically validated, it would bode well for professionals in the field of pain to look toward this type of research agenda.

A beginning point for future research might be to compare the effectiveness of treatment components presented in this paper. More specifically, studies that evaluate the effectiveness of cognitive restructuring as compared to assertiveness training for those who catastrophize would begin to elucidate the mechanisms underlying catastrophizing. Although it is likely that catastrophizing is multifaceted, comprised of appraisal processes and coping or interpersonal processes, research comparing such focused interventions would help shape future theory in this area.

APPENDIX A Catastrophizing Thought Record

Directions: When you notice a pain signal or notice that your pain is getting worse, ask yourself, "What's going through my mind right now?" and as soon as possible jot down the thought or mental image in the Catastrophizing Thought Record

Date/time	Situation	Catastrophizing thought(s)	Emotion/Behavior/ Physical Response	Adaptive response	Outcome
8/10 9:30 A.M.	Sitting on couch, alone, watching reruns.	I can't do anything for myself because of my pain.	Frustration Anger Sadness	Even though I can't do all the things I used to enjoy, I can still do important things like being with my family.	Less frustration and anger Hopeful about continuing to enjoy time with my family
8/11 5:00 P.M.	I went for a walk and couldn't walk far—it hurt too much	I'm never going to feel any better. I can't exercise anymore.	Crying Want to give up all activities that make me hurt	My pain is worse on some days and better on others. I need to focus on feeling better tomorrow.	Stop crying More relaxed Maybe I'll take a short walk tomorrow.

Note. Adapted from *Cognitive Therapy: Basics and Beyond* (p. 126), by J. S. Beck, 1995, New York: Guilford Press. Copyright 1995 by Judith S. Beck.

APPENDIX B
Pain Catastrophizing Scale

Ψ

PCS

Name: _____ Age: _____ Gender: _____ Date: _____

Everyone experiences painful situations at some point in their lives. Such experiences may include headaches, tooth pain, joint or muscle pain. People are often exposed to situations that may cause pain such as illness, injury, dental procedures or surgery. We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are thirteen statements describing different thoughts and feelings that may be associated with pain. Using the following scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.

0 – not at all 1 – to a slight degree 2 – to a moderate degree 3 – to a great degree 4 – all the time

When I'm in pain ...

1. I worry all the time about whether the pain will end.
2. I feel I can't go on.
3. It's terrible and I think it's never going to get any better.
4. It's awful and I feel that it overwhelms me.
5. I feel I can't stand it anymore.
6. I become afraid that the pain will get worse.
7. I keep thinking of other painful events.
8. Anxiously want the pain to go away.
9. I can't seem to keep it out of my mind.
10. I keep thinking about how much it hurts.
11. I keep thinking about how badly I want the pain to stop.
12. There's nothing I can do to reduce the intensity of the pain.
13. I wonder whether something serious may happen.

...Total

Note. PCS scoring information: Rumination = sum of items 8, 9, 10, 11; magnification = sum of items 6, 7, 13; helplessness = sum of items 1, 2, 3, 4, 5, 12. *Mean (SD):* Total = 28.2 (12.3); rumination = 10.1 (4.3); magnification = 4.8 (2.8); helplessness = 13.3 (6.1). Values are drawn from Sullivan et al. (1998). Copyright 1995 by Michael J. L. Sullivan. Reprinted with permission.

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Multicomponent Standardized Treatment Programs for Fear of Flying: Description and Effectiveness

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This paper has two objectives. The first is to describe a multimodal, standardized treatment program used by the VALK Foundation, an agency that specializes in the treatment of patients with fear of flying. The second is to present the results of an evaluation of this program, particularly with regard to the effectiveness of a 2-day cognitive-behavioral group treatment program and a 1-day behavioral group treatment program for flying phobics. On the basis of individualized assessment, patients (N = 1,026) were nonrandomly assigned to 1 of the 2 group treatment modalities. Self-report data and behavioral indicators for fear of flying were collected at pretreatment and at 3-, 6-, and 12-month follow-ups. Complete data were obtained from 757 participants. Results showed that both treatment programs produced statistically significant, clinically relevant decreases in self-reported anxiety and behavioral anxiety indices. This paper explains the procedures and outcomes of a well-established clinical program. Limitations of the study are discussed and future research suggested.

FLYING has become increasingly common in industrialized countries, but not all passengers (or intended passengers) are happy to fly. According to a number of studies, the prevalence of varying degrees of fear of flying is estimated at 10% to 40% in the general populations of industrialized countries (Agras, Sylvester, & Oliveau, 1969; Arnarson, 1987; Dean & Whitaker, 1982; Ekeberg, 1991). A recent review showed that there are approximately 50 facilities with comprehensive programs for

treating fear of flying throughout the Western world (Van Gerwen & Diekstra, 2000). However, little is known about the effectiveness of these programs in clinical practice. Flight anxiety can have a negative impact on the quality of life and on social and professional activities. Despite the relatively high prevalence of this phobia, empirical evidence on the effectiveness of treatment programs is rare, particularly in comparison to the amount of research on the treatment of other phobias (Marks, 1987). Available outcome studies have demonstrated that interventions may effectively reduce fear of flying (Greco, 1989; Howard, Murphy, & Clarke, 1983; Roberts, 1989; Walder, McCracken, Herbert, James, & Brewitt, 1987). Most reports on fear of flying interventions are individual case studies (Canton-Dutari, 1974; Deyoub & Epstein, 1977; Diment, 1981; Karoly, 1974; Ladouceur, 1982;

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Continuing Education Quiz located on p. 173.