

Applying an Emotion Regulation Framework to Integrative Approaches to Generalized Anxiety Disorder

Douglas S. Mennin, Richard G. Heimberg,
Cynthia L. Turk, and David M. Fresco
Adult Anxiety Clinic of Temple University

Integrative conceptualizations like that proposed by Roemer and Orsillo provide exciting new directions for understanding and treating generalized anxiety disorder (GAD). However, these approaches may be further strengthened by adoption of an emotion regulation perspective. Persons with GAD may have difficulty understanding their emotional experience and may possess few skills to modulate their emotions. They may experience emotions as subjectively aversive and use worry and maladaptive interpersonal behaviors as defensive strategies to control, avoid, or blunt emotional experience. An emotion regulation perspective suggests adding treatment components to help clients become more comfortable with arousing emotional experience, more able to access and utilize emotional information in adaptive problem solving, and better able to modulate emotional experience and expression according to contextual demands.

Key words: emotion regulation, generalized anxiety disorder. [*Clin Psychol Sci Prac* 9:85–90, 2002]

Great strides have been made in the conceptualization and treatment of anxiety disorders in the past two decades. However, fewer studies of generalized anxiety disorder (GAD) were published between 1980 and 1997 than studies of panic disorder, obsessive-compulsive disorder, or post-traumatic stress disorder (Dugas, 2000). Nevertheless, efforts to understand and treat GAD have increased substantially in recent years.

Cognitive-behavioral approaches have been fruitful with respect to understanding and treating GAD. How-

ever, the proportion of clients who are not helped by these treatments or who experience significant residual symptoms is larger than for other anxiety disorders (Brown, Barlow, & Liebowitz, 1994; Gould, Safren, O'Neill Washington, & Otto, in press). Cognitive-behavioral theorists and practitioners must broaden their conceptualization of GAD and consider importing techniques from other psychotherapeutic approaches to increase the likelihood that clients with GAD will have an adequate response to treatment. Indeed, Roemer and Orsillo (this issue; see also Newman, Castonguay, Borkovec, & Molnar, in press) expand the boundaries of cognitive-behavioral approaches to GAD, supplementing cognitive-behavioral treatments with compatible experiential techniques.

The integrative approach of Roemer and Orsillo (this issue) begins with Borkovec's avoidance model of worry (for a review, see Borkovec, Alcaine, & Behar, in press). Borkovec and colleagues argue that worry allows individuals to process emotional topics at an abstract, conceptual level and, consequently, avoid aversive images, autonomic arousal, and intense negative emotions in the short run. In this way, worry is negatively reinforced. Although worry allows individuals to deal with emotional material at an abstract, conceptual level, it does not allow the individual to quiet emotional distress and put it aside. Therefore, over the long term, the individual is continuously confronted with troubling emotional material, has a more intense experience of anxiety, and repeatedly engages in frequent worry to dull this experience.

Roemer and Orsillo (this issue) logically connect Borkovec's conceptualization of GAD to the work of Hayes and colleagues, who have focused on *experiential* avoidance which "occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioral dispositions) and takes steps to alter the form or frequency of these events and the contexts that occasion them" (Hayes, Strosahl, & Wilson, 1999, p. 58). Evidence is emerging to show that experiential avoidance is associated with many psychological disorders and that acceptance-based treatments intended to reduce experiential avoidance are effective in helping individuals overcome these difficulties (Hayes et al., 1999). Roemer and Orsillo present a compelling approach to the treatment of GAD, which combines cognitive-behavioral therapy with acceptance-based and mindfulness techniques. At its highest level, accep-

Address correspondence to Richard G. Heimberg, Adult Anxiety Clinic of Temple University, Department of Psychology, Weiss Hall, Temple University, 1701 North 13th Street, Philadelphia, PA 19122-6085. E-mail: rheimber@nimbus.temple.edu.

tance involves a disavowal of strategies aimed at controlling emotional experience, an allowance of feelings and their processing, and an end to experiential avoidance as a habitual mode of coping. Through mindful action, the individual with GAD is able to step back from his/her worries, gain perspective, and permit feelings to emerge that provide direction for action, thus breaking the maladaptive worry cycle.

Newman, Catanguay, Borkovec, & Molnar (in press) have also expanded on Borkovec's avoidance model by incorporating an interpersonal perspective. Newman and colleagues suggest that, in their attempt to avoid painful emotions, individuals with GAD not only worry but also engage in behaviors that make negative interpersonal outcomes more likely. More specifically, individuals with GAD avoid letting others know who they are and what they feel in an attempt to protect themselves from the criticism and rejection they fear and anticipate from others. They may also fail to let others know what they need and want in relationships but nevertheless express anger and disappointment when their emotional needs are not met. Indeed, GAD does appear to be characterized by interpersonal difficulties. Worry topics often center on interpersonal relationships (Borkovec, Shadick, & Hopkins, 1991), and the cognitions of persons with GAD are more likely to concern interpersonal conflict than are the cognitions of individuals with panic disorder (Breitholtz, Westling, & Öst, 1998). In addition, individuals with GAD are often characterized by interpersonal styles that are overly nurturant and intrusive (Pincus & Borkovec, 1994). Newman and colleagues have developed a treatment approach that integrates traditional cognitive-behavioral treatment with both interpersonal (to address maladaptive patterns of relating) and experiential (to address emotional avoidance) techniques. These investigators are currently examining the efficacy of this combined treatment versus traditional cognitive-behavioral therapy.

Both Roemer and Orsillo (this issue) and Newman and colleagues (in press) emphasize the role of emotional avoidance and the need for emotional processing to break the worry cycle and modify associated negative emotions. In the Roemer and Orsillo framework, experiential avoidance is largely composed of the failure to engage emotions. In fact, Hayes et al. (1999) assert that emotion is the quintessential private event that individuals try to escape, modify, or avoid during experiential avoidance.

However, the nature of emotional experience that leads individuals with GAD toward worry and other avoidance strategies has not been sufficiently delineated. In other words, what is it about the emotions experienced by persons with GAD that require the use of these maladaptive coping strategies in the first place?

We propose that individuals with GAD have extreme difficulty understanding their emotional experience and possess few skills to modulate their emotions. These deficits cause persons with GAD to experience emotions as subjectively aversive and to utilize worry to control, avoid, or blunt emotional experience. Individuals with GAD may also develop an approach to interpersonal relations aimed at obtaining security from others or avoiding feared negative interpersonal outcomes specifically to regulate their own emotional experience. An understanding of emotion regulation deficits in GAD may shed light on how cognitive, behavioral, and interpersonal (as well as biological) aspects of this disorder are related and, thus, generate an overall framework for integration of these diverse approaches. Further, emotion regulatory strategies may provide an important supplement to these integrative treatments (Samoilov & Goldfried, 2000; Westen, 2000).

AN EMOTION REGULATION FRAMEWORK FOR UNDERSTANDING AND TREATING GAD

Contemporary theories of emotion emphasize its adaptive value (Gross, 1998). Frijda (1986) argued that emotions are cues for readiness for action (action tendencies) that work to establish, maintain, or disrupt relationships with particular internal and external environments of importance to the person. Emotion serves an information function, notifying individuals of the relevance of their concerns, needs, or goals in a given moment. A number of investigators (Greenberg & Safran, 1987; Safran, 1998; Samoilov & Goldfried, 2000) have argued for a greater focus on the role of emotions in psychopathology and treatment.

Emotion regulation, as a field of study, examines "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998, p. 275). Adaptive regulation of emotion may involve one's efforts to decrease the intensity of experienced emotions. For instance, one may need to diminish emotional arousal to work effectively or contain one's anger in a public setting.

Thompson (1990) also stresses the importance of the maintenance and enhancement of emotional experience, including negative emotions. For example, a person who is feeling “numb” may listen to a sad piece of music to help identify his or her feelings and become emotionally unstuck. For emotion theorists, adaptive functioning is characterized by knowing when it is most appropriate to enhance or attenuate emotional experience and expression. In their influential work on the construct of emotional intelligence, Salovey, Mayer, and colleagues theorize that people differ in their ability to attend to, process, and act on their emotions and have provided empirical support for the adaptive value of emotion regulation skills in a wide variety of contexts (Mayer & Salovey, 1993, 1997; Salovey, Hsee, & Mayer, 1993; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995).

Cicchetti, Ackerman, and Izard (1995) suggested that emotion regulation problems can be divided into two categories. The first category involves difficulties in modulation of emotional experience and/or expression; the second category involves frequent or automatic attempts to control or suppress emotional experience or expression. In the first scenario, the person experiences emotions with great intensity but is unable to adequately modulate the experience (e.g., self-soothe, inhibit emotional expression). In the second scenario, the person engages in control strategies that prevent emotion from being experienced. One way in which this may occur, and which is most relevant to GAD, is that the person may attend to cognitive information at the expense of emotional experience. By decreasing attention to emotional experience, emotion is avoided or blunted.

Elsewhere (Mennin, Turk, Heimberg, & Carmin, *in press*), we have proposed that GAD is best conceptualized as a multicomponent syndrome involving both significant deficits in the self-regulation of emotions (i.e., difficulties in the modulation of emotional experience and/or expression) and in frequent attempts to control or suppress emotional experience (i.e., overreliance on cognitive control strategies such as worry). Up to this point, investigators have focused much more on attempts to control or suppress emotional experience among persons with GAD than on possible deficits in their self-regulation of emotions. However, individuals with GAD may experience emotions as aversively arousing, more so than individuals without this disorder. Not only may emotions be intense

and intensely aversive, but they may also be experienced as difficult to understand and less easily quieted. Emotions may thus be perceived as overwhelming and dangerous, affecting behavioral performance and one’s sense of well-being. In addition, they may provide an impetus for inappropriate expression (or lack of expression) of emotion that could, in turn, alienate others and adversely affect interpersonal relationships. Most likely, ruptured interpersonal relationships lead to negative inputs from others that elicit additional emotional experiences, which may further challenge the individual’s ability to modulate these affects.

From an emotion regulation perspective, worry can be viewed as a cognitive control strategy employed in attempts to “fix” the regulatory problems associated with subjectively jarring emotional experience. By decreasing attentional focus to emotional experience, intense emotion is avoided. A decrease in processing of emotion is accomplished through the constricted cognitive experience of worry. However, the worried person continues to focus on apprehension-producing subjects but does not utilize important affective information because of its overwhelming nature. As a result, approaches to problem solving become inflexible, and perseveration at initial stages of problem generation occurs. Goals for action cannot be accessed because the relevant motivational response tendencies are blocked by avoidance of emotional experience. Finally, avoidance of distressing emotions may cause previously unattended emotional messages to become more intense, leading to the experience of emotion as even more aversive and to even greater attempts to control emotion with worry.

Studies conducted in our laboratory provide initial evidence for this conceptualization of GAD. Individuals who met criteria for GAD by self-report were found to report higher levels of intensity of emotional experience than control individuals (Mennin, Turk, Fresco, & Heimberg, 2000), marking their significant need to regulate and control their emotional experience. However, they also displayed marked difficulties in their ability to identify, describe, and accept emotional experience (including anxiety, sadness, anger, and positive emotions), and deficits in their ability to soothe themselves when they experienced negative emotions, compared to a nonanxious control group. Furthermore, a composite score of these various measures of emotion regulation significantly pre-

dicted GAD classification when controlling for symptoms of worry, anxiety, and depression. We have recently replicated these findings with a clinical sample of persons with GAD and matched community controls (Turk, Mennin, Fresco, & Heimberg, 2001).

Additional support for this model comes from a recently completed study in which persons who met criteria for GAD by self-report responded differently to a negative mood induction than persons without GAD (Mennin, 2001). Specifically, after listening to anxiety-inducing music, GAD participants, but not controls, displayed greater increases in both worry and physiological symptoms than were evident after a neutral mood induction, providing evidence that negative emotions may stimulate the cycle of worry among chronic worriers. Similarly, Startup and Davey (2001) also found that induced negative mood led to increases in catastrophic worry. In Mennin's study, in response to the mood induction, GAD participants were also less likely to accept their emotional experience; they reported less clarity about the nature of their emotions, what they were, and why they were having them; and they believed that they could do less to repair this mood than did control participants.

Additional studies are needed to examine the role of emotion dysregulation in GAD. Gross and Muñoz (1995) have shown that deficits in emotion regulation are present in many forms of psychopathology. It will be important to determine how individuals with GAD differ from persons with other disorders in terms of emotion regulation and dysregulation. It will also be important to determine when worry is likely to be invoked as a control strategy for managing emotion. Future research may also examine the functional brain activity of GAD clients during worry episodes and periods of actively engaging emotion. LeDoux (1996) explains that there are multiple bidirectional connections between subcortices that initially process emotional stimuli and cortical centers that regulate emotional experience. Emotion dysregulation in individuals with GAD may be reflective of a deficit in this normally integrated biological system. Finally, emotion dysregulation may be a marker for a developmental pathway (e.g., poor attachment in relationships with primary caregivers) to GAD. Preliminary evidence suggests that individuals with GAD have a history of early attachment difficulties characterized by role reversal and enmeshment with their primary caregivers (Cassidy, 1995; Zuellig, Newman, Kachin, & Constantino, 1997). It will be

important to determine how both genetic and early environmental factors interplay to generate emotion regulation difficulties that may place individuals at risk for developing GAD.

An emotion regulation approach to GAD may also offer additional strategies to bolster the efficacy of treatments for GAD. If we conceptualize persons with GAD as having difficulties in the modulation of emotion and as fixedly utilizing cognitive control strategies to avoid this rampaging emotional experience, it follows that they may benefit from interventions that enhance their knowledge of emotions and their emotion regulation skills. These interventions would be quite compatible with the acceptance and mindfulness techniques advocated by Roemer and Orsillo (this issue) and the interpersonal techniques of Newman and colleagues (in press). The fostering of adaptive emotion regulation skills in individuals with GAD (via psychoeducation about emotions, emotion evocation techniques, and emotion regulation skill training) should help them become more comfortable with arousing emotional experience, more able to access and utilize emotional information in adaptive problem-solving efforts, and, hence, reduce the felt need for worry. Improved ability to understand and cope with one's own emotions and the emotions of others may also improve interpersonal functioning (e.g., expressing emotion more appropriately to others, greater sensitivity to the emotional reactions of others). Achievement of these therapeutic goals could help clients to become better equipped to tolerate distress and to function at a more adaptive level.

CONCLUSION

GAD has received increased attention in the past decade. However, compared with other anxiety disorders, advances in the understanding and treatment of this syndrome have been limited. However, new integrative conceptualizations (Newman et al., in press; Roemer & Orsillo, this issue) provide an exciting new direction for understanding and treating GAD. We have argued that these integrative approaches can be further strengthened through incorporation of an emotion regulation framework. In particular, we have suggested that GAD may be conceptualized as a syndrome that involves both deficits in regulation of emotions and attempts to control or avoid affective experience through worrying. In addition, an emotion regulation perspective may inform integrative treatments through the incorporation of psychoeducation

about emotions, emotion evocation techniques, and emotion regulation skill training. In particular, we suggest that clients with GAD who have become more comfortable with arousing emotional experience, have become more able to access and utilize emotional information in adaptive problem solving efforts, and have learned how to modulate emotional experience and expression according to contextual demands will witness decreases in their worrying and associated anxiety.

We have suggested that emotion variables are an important part of integrative cognitive-behavioral approaches to GAD. By stressing these variables, we do not imply that cognition, behavior, or interpersonal relations are not vital to understanding or treatment. Rather, emotion regulation may be the tie that binds these phenomena together. In fact, the ultimate goal of an integrated treatment should be an integrated mind that is able to effectively process all levels of information (including both cognitive and emotional data) and act adaptively as a result. Dodge (1991) has argued that “all information processing is emotional, in that emotion is the energy level that drives, organizes, amplifies, and attenuates cognitive activity and in turn is the experience and expression of that activity” (p. 159). Further research is clearly necessary to determine the relationship among emotional, cognitive, behavioral, biological, and interpersonal phenomena in GAD. It is our hope that an emotion regulation perspective can facilitate this integrative goal.

REFERENCES

- Borkovec, T. D., Alcaine, O., & Behar, E. (in press). Avoidance theory of worry and generalized anxiety disorder. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice*. New York: Guilford.
- Borkovec, T. D., Shadick, R. N., & 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.
- Breitholtz, E., Westling, B. E., & Öst, L. G. (1998). Cognitions in generalized anxiety disorder and panic disorder clients. *Journal of Anxiety Disorders, 12*, 567–577.
- Brown, T. A., Barlow, D. H., & Liebowitz, M. R. (1994). The empirical basis of generalized anxiety disorder. *American Journal of Psychiatry, 151*, 1272–1280.
- Cassidy, J. (1995). Attachment and generalized anxiety disorder. In D. Cicchetti & S. L. Toth (Eds.), *Emotion, cognition, and representation. Rochester symposium on developmental psychopathology* (Vol. 6, pp. 343–370). Rochester, NY: University of Rochester Press.
- Cicchetti, D., Ackerman, B. P., & Izard, C. E. (1995). Emotions and emotion regulation in developmental psychopathology. *Development and Psychopathology, 7*, 1–10.
- Dodge, K. A. (1991). Emotion and social information processing. In J. Garber & K. A. Dodge (Eds.), *The development of emotion regulation and dysregulation* (pp. 159–181). Cambridge: Cambridge University Press.
- Dugas, M. J. (2000). Generalized anxiety disorder publications: So where do we stand? *Journal of Anxiety Disorders, 14*, 31–40.
- Frijda, N. H. (1986). *The emotions*. Cambridge: Cambridge University Press.
- Gould, R. A., Safren, S. A., O’Neill Washington, D., & Otto, M. W. (in press). Cognitive-behavioral treatments: A meta-analytic review. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice*. New York: Guilford.
- Greenberg, L. S., & Safran, J. D. (1987). *Emotion in psychotherapy: Affect, cognition, and the process of change*. New York: Guilford.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*, 271–299.
- Gross, J. J., & Muñoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice, 2*, 151–164.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford.
- LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York: Simon & Schuster.
- Mayer, J. D., & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence, 17*, 433–442.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence* (pp. 3–31). New York: Basic Books.
- Mennin, D. S. (2001). *Examining the relationship between emotion and worry: A test of the avoidance theory of generalized anxiety disorder*. Unpublished doctoral dissertation, Temple University, Philadelphia, PA.
- Mennin, D. S., Turk, C. L., Fresco, D. M., & Heimberg, R. G. (2000, November). *Deficits in the regulation of emotion: A new direction for understanding generalized anxiety disorder*. Paper presented at the annual meeting of the Association for Advancement of Behavior Therapy, New Orleans, LA.
- Mennin, D. S., Turk, C. L., Heimberg, R. G., & Carmin, C. (in press). Focusing on the regulation of emotion: A new direction for conceptualizing and treating generalized anxiety.

- ety disorder. In M. A. Reinecke & D. A. Clark (Eds.), *Cognitive therapy over the lifespan: Theory, research and practice*. New York: Wiley.
- Newman, M. G., Castonguay, L. G., Borkovec, T. D., & Molnar, C. (in press). Integrative therapy for generalized anxiety disorder. In R. G. Heimberg, C. L. Turk, & D. S. Mennin (Eds.), *Generalized anxiety disorder: Advances in research and practice*. New York: Guilford.
- Pincus, A. L., & Borkovec, T. D. (1994, June). *Interpersonal problems in generalized anxiety disorder: Preliminary clustering of clients' interpersonal dysfunction*. Paper presented at the annual meeting of the American Psychological Society, New York.
- Safran, J. D. (1998). *Widening the scope of cognitive therapy: The therapeutic relationship, emotion, and the process of change*. Northvale, NY: Jason Aronson.
- Salovey, P., Hsee, C. K., & Mayer, J. D. (1993). Emotional intelligence and the self-regulation of affect. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 258–277). Englewood Cliffs, NJ: Prentice Hall.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125–154). Washington, DC: American Psychological Association.
- Samoilov, A., & Goldfried, M. R. (2000). Role of emotion in cognitive-behavior therapy. *Clinical Psychology: Science and Practice*, 7, 373–385.
- Startup, H. M., & Davey, C. L. (2001). Mood as input and catastrophic worry. *Journal of Abnormal Psychology*, 110, 83–96.
- Thompson, R. A. (1990). Emotion and self-regulation. In R. A. Thompson (Ed.), *Socioemotional development. Nebraska symposium on motivation, 1988* (pp. 367–468). Lincoln: University of Nebraska Press.
- Turk, C. L., Mennin, D. S., Fresco, D. M., & Heimberg, R. G. (2001, March). *An examination of emotion regulation deficits among individuals with generalized anxiety disorder*. Paper presented at the annual meeting of the Anxiety Disorders Association of America, Atlanta, GA.
- Westen, D. (2000). Commentary: Implicit and emotional processes in cognitive-behavior therapy. *Clinical Psychology: Science and Practice*, 7, 386–390.
- Zuellig, A. R., Newman, M. G., Kachin, K. E., & Constantino, M. J. (1997, November). *Differences in parental attachment profiles in adults diagnosed with generalized anxiety disorder, panic disorder, or non-disordered*. Paper presented at the annual meeting of the Association for Advancement of Behavior Therapy, Miami, FL.

Received May 2, 2001; accepted May 30, 2001.