Personality Disorders: Theory, Research, and Treatment
2012, Vol. 3, No. 4, 433–441

1949-2715/11/$12.00 DOI: 10.1037/a0025465

Ruminative and Mindful Self-Focused Attention in Borderline Personality Disorder

Shannon E. Sauer and Ruth A. Baer
University of Kentucky

The current study investigated the short-term effects of mindful and ruminative forms of self-focused attention on a behavioral measure of distress tolerance in individuals with borderline personality disorder (BPD) who had completed an angry mood induction. Participants included 40 individuals who met criteria for BPD and were currently involved in mental health treatment. Each completed an individual 1-hr session. Following an angry mood induction, each participant was randomly assigned to engage in ruminative or mindful self-focus for several minutes. All participants then completed the computerized Paced Auditory Serial Addition Test (PASAT-C), a behavioral measure of willingness to tolerate distress in the service of goal-directed behavior. The mindfulness group persisted significantly longer than the rumination group on the distress tolerance task and reported significantly lower levels of anger following the self-focus period. Results are consistent with previous studies in suggesting that distinct forms of self-focused attention have distinct outcomes and that, for people with BPD, mindful self-observation is an adaptive alternative to rumination when feeling angry.

Keywords: borderline personality disorder, self-focused attention, mindfulness, rumination, distress tolerance

Self-focused attention has been defined as awareness of internally generated information, including bodily sensations, cognitions, and emotional states (Ingram, 1990). The tendency to focus attention on oneself has both maladaptive and adaptive consequences. Among the most dysfunctional forms of self-focus is rumination, a type of repetitive thinking about symptoms of distress and their causes, consequences, and implications (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Watkins, 2008). Rumination prolongs and intensifies negative moods and is associated with many forms of psychopathology, including self-harm, disordered eating, substance abuse, aggressive behavior, and posttraumatic stress (Nolen-Hoeksema, 2004; Watkins, 2008).

In contrast, mindful self-focused attention appears to be adaptive. Although definitions vary, mindfulness is usually described as intentionally focusing one's attention on present-moment experiences in a nonjudgmental or accepting way (Kabat-Zinn, 1990). Many mindfulness exercises involve close attention to one's own bodily sensations, cognitions, and emotional states. The regular practice of mindful self-observation appears to have many beneficial outcomes, including symptom reduction and improved well-being (Baer, 2003; Brown, Ryan, & Creswell, 2007). Because mindfulness involves nonreactive and nonjudgmental observation of thoughts as they come and go, rather than engaging with their content, it prevents the repetitive, analytical processing typical of rumination. Thus, although rumination and mindful self-observation are both described as forms of self-focused attention, they appear to have contrasting effects.

Several laboratory studies have directly compared the short-term effects of mindful and ruminative forms of self-focused attention. In two studies, nonclinical samples of undergraduate students who were instructed to respond mindfully following a sad mood induction experi-

This article was published Online First October 10, 2011.

Shannon E. Sauer and Ruth A. Baer, Department of Psychology, University of Kentucky.

Shannon E. Sauer is now with the Center for Anxiety and Related Disorders at Boston University.

Correspondence concerning this article should be addressed to Shannon Sauer, Center for Anxiety and Related Disorders, Boston University, 648 Beacon Street, 6th Floor, Boston, MA 02215. E-mail: shannonesauer@gmail.com

enced reductions in sadness that were significantly greater than for those who ruminated on or distracted from their sad mood (Broderick, 2005; Huffziger & Kuehner, 2009). In two studies of adults with depression, Watkins and Teasdale (2001, 2004 2001) found that patients who engaged in rumination were more likely to produce overgeneral autobiographical memories, which are associated with depressive symptoms and relapse (Williams et al., 2007), than patients who engaged in a form of experiential self-focus consistent with mindfulness. Overall, these studies suggest that, although rumination and mindfulness both involve attention to one's own internal experience, mindful self-focus is adaptive, whereas ruminative self-focus is not.

Previous studies have compared mindful and ruminative self-focus in relation to sadness or depression. However, because rumination occurs in many disorders (Harvey, Watkins, Mansell, & Shafran, 2004), it is important to investigate whether mindful and ruminative self-focus have distinct outcomes in other disorders in which rumination is common. Recent studies show that rumination is prominent in persons with borderline personality disorder (BPD) and correlated symptom severity (Baer & Sauer, 2011; Smith, Grandin, Alloy, & Abramson, 2006). Selby, Anestis, and Joiner (2008) suggest that people with BPD become trapped in a vicious cycle, in which rumination intensifies negative affect, which leads to more rumination. The cycle is eventually interrupted by impulsive behavior such as self-harm, binge eating, or substance use. Finally, the effects of practicing mindfulness in a laboratory setting have not been studied in persons with BPD, despite the importance of mindfulness training in dialectical behavior therapy (DBT; Linehan, 1993), a leading intervention for BPD.

The current study examined whether the distinct outcomes of ruminative and mindful self-focus observed in previous studies of nonclinical and depressed samples would also be seen in a sample with BPD. We used laboratory-based methods similar to those of Broderick (2005), Huffziger and Kuehner (2009), and Watkins & Teasdale (2001, 2004), with modifications appropriate to the study of BPD. First, because anger is a prominent diagnostic feature of BPD, we measured anger rather than sadness. Second, because persons with BPD are not continuously angry and might not be in an angry mood at the time of an experiment, we used an angry mood induction to increase the likelihood that all participants would be feeling angry at the critical point in the procedures. Finally, research shows that overgeneral autobiographical memory is not characteristic of BPD (Williams et al., 2007). Therefore, instead of an autobiographical memory task, we used a distress tolerance task as our primary dependent variable. Distress tolerance is defined as capacity to experience and withstand negative psychological states; deficits in distress tolerance may be due to the perception that emotions are unbearable, leading to the use of impulsive behaviors (self injury, binge eating, substance use) to alleviate distress (Linehan, 1993). Deficits in distress tolerance have been shown to be common in persons with BPD (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006).

The primary hypothesis was that participants instructed to ruminate following an anger induction would show less distress tolerance on the subsequent behavioral task than participants instructed to engage in mindful self-observation. This hypothesis was tested with a computer-based task that assesses willingness to tolerate distress in the service of goal-directed behavior. A secondary hypothesis was that mindful self-focus following an anger induction would lead to lower levels of anger than ruminative self-focus.

Method

Participants

Participants included 40 adults (at least 18 years of age) who met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV*) criteria (American Psychiatric Association, 2000) for BPD. Participants were required to be engaged in ongoing psychotherapy; in the event that a crisis arose during the data collection session, participants could be referred to their clinicians for crisis management (this was never necessary). Exclusion criteria included cognitive impairment (mental retardation or dementia), psychotic disorder, or being under the influence of a substance at the time of the data collection session. Participants' ages ranged from 18 to 59 years, with a mean age of 26.97. The sample included 36 females and 4 males.

This proportion is roughly consistent with previous findings that 75% of persons diagnosed with BPD are female (American Psychiatric Association, 2000). The sample was 85% Caucasian, 7.5% African American, and 7.5% other ethnicities. Nine participants (22.5%) were engaged in inpatient substance abuse treatment and 31 (77.5%) were participating in outpatient psychotherapy. Additionally, 19 participants (47.5%) reported that they were currently taking medications for psychological symptoms.

Measures

Structured Clinical Interview for the *DSM–IV* (SCID-II). The SCID-II (First, Spitzer, Williams, & Gibbon, 1997) is a standardized, semistructured, clinician-administered interview for diagnosing *DSM–IV* Axis II mental disorders. The BPD module was administered by the principal investigator during the phone screening interview to confirm the presence of BPD. The principal investigator was an advanced doctoral student with extensive experience using the SCID-II clinically, particularly the BPD module, under the supervision of a doctoral-level clinical psychologist.

Demographic questionnaire. Participants were asked to report their age, gender, race/ethnicity, types of treatment they are currently participating in (therapy, medication, or both), and how long they had been participating in this treatment.

Positive and Negative Affect Schedule–Expanded Version (PANAS-X; Watson & Clark, 1991). Because of the need for quick assessment at several points in the procedure, we used only the 6-item anger subscale. Participants rate the extent to which six mood adjectives (angry, irritable, hostile, scornful, loathing, and disgusted) reflect how they are currently feeling (right now, at the present moment) on a 5-point Likert scale (1 = very slightly or not at all; 5 = very much). The measure demonstrated adequate to good internal consistency at each measurement point (alphas ranging from .77 to .89).

Distress tolerance task. The computerized Paced Auditory Serial Addition Task (PASAT-C) is an empirically supported behavioral measure of distress tolerance that has been shown to induce short-term anxiety, frustration, and irritability (Lejuez, Kahler, & Brown, 2003; Gratz et al., 2006). The task requires very rapid addition of numbers, and points are earned for correct responses. Explosion sounds follow incorrect answers or failure to respond quickly enough. Most participants find it difficult to respond quickly enough even when they know the answer. All participants were told that they could earn extra money for study participation if they did well on this task, but that they could quit the task at any time by clicking on a *quit* button on the screen. Time spent persisting on this task (up to a maximum of 10 min) has been used in previous research as a measure of willingness to experience distress in order to pursue goal-directed behavior (Gratz et al., 2006).

Procedure

Preliminary procedures (all participants). Potential participants were recruited in two ways. Of the 40 participants who completed the study, 24 were referred by their community mental health and independent practice clinicians (who had been given flyers describing the study) and initiated participation by contacting the principal investigator via telephone. Clinicians had been asked to provide information about the study only to those clients who met criteria for BPD. A total of 25 clients called to express interest in the study; one was found to be ineligible due to endorsement of psychotic symptoms. The remaining 16 participants were recruited through e-mails sent by the principal investigator (PI) to students enrolled in an introductory psychology class who had scored highly on a screening measure of BPD features. Over two semesters, approximately 2500 undergraduates filled out a 10-item subset of the Borderline Features scale of the Personality Assessment Inventory (PAI-BOR; Morey, 1991) as part of a larger packet of screening measures for departmental research. Of these 2500 students, 104 (about 4%) produced scores that, when prorated and converted to *T*-score equivalents, were above 70T. These 104 students were contacted by e-mail and told that, based on their scores on one of the screening packet measures, they might be eligible for the study if they were currently seeing a therapist. A total of 34 interested students responded. The PI made telephone contact with 20 of these and administered the BPD module of the SCID-II to

determine whether the potential participant met criteria for BPD. Four individuals were found to be ineligible for participation because they did not meet criteria for BPD.

Individual data collection sessions were scheduled for eligible participants. At the start of the session, all participants completed the informed consent document and a risk assessment was conducted. All filled out the demographic questionnaire and the anger subscale of the PANAS-X to establish a baseline level of self-reported anger. Participants were told, as part of the informed consent process, that they would earn a minimum of $15.00 for participating in the study and that they could earn an additional $10.00, depending on their performance on a computer-based task later in the session.

Angry mood induction. All participants were asked to write for 10 min (by hand, on paper provided by the experimenter) about a personal event that had made them angry. In accordance with previous findings on the efficacy of mood inductions, participants were explicitly asked to do their best to enter the specified mood (Westermann, Spies, Stahl, & Hess, 1996). Immediately following this task, each participant completed the PANAS-X anger subscale.

Instructions for self-focused attention. Participants were asked to turn their attention to a computer screen that provided instructions for the next phase of the study. They were randomly assigned using a computerized random number generator to one of two conditions: ruminative or mindful self-focus. The rumination condition was taken from Morrow and Nolen-Hoeksema's (1990) paradigm, in which participants are instructed to concentrate on a series of prompts for an 8-min period. Participants in this condition first read general instructions asking them to focus their full attention on each of the following prompts. They were then presented with 16 rumination-consistent statements, one at a time, on the screen, for 30 s each. The statements included, "Think about why people treat you the way that they do," "Think about why you react the way you do," and "Think about what your feelings might mean."

The procedures used for the mindful self-focus group were designed to parallel those used in the rumination group but to encourage mindful observation and awareness of ongoing experience. The mindfulness group also read general task instructions asking them to focus their full attention on each of the following prompts. They were then shown 16 mindfulness-consistent statements, each presented for 30 s, for a total of 8 min. Examples of these statements included, "Allow your breath to go in and out at its own pace without trying to change it," "Notice any sensations in your body without judging them as good or bad," "Observe any emotions that are present without trying to change or get rid of them," and "Notice if any thoughts are in your mind and allow them to come and go on their own." These statements are consistent with the instructions typically provided in mindfulness-based interventions (e.g., Segal, Williams, & Teasdale, 2002). Following the 8-min period of mindful or ruminative self-focus, all participants then completed another PANAS-X anger scale.

Distress tolerance task (all participants). All participants were reminded that payment for the study was related to performance on the upcoming computer task and then completed the PASAT-C, followed by another PANAS-X anger scale.

Post-experiment procedures (all participants). After completing all procedures, participants were debriefed and paid. A second risk assessment was conducted. No participants were at risk of self-harm. All participants received the full $25.00 in compensation, regardless of performance on the PASAT-C. Because they were being paid for participation, students did not receive course credit. All procedures were conducted with the approval of the university's institutional review board.

Results

Preliminary Analyses

Potential differences between groups were tested with one-way analysis of variance (ANOVA) for continuous demographic variables and chi-square analyses for categorical variables. The mindfulness and rumination groups did not differ significantly on age ($F = .03$, *ns*), gender (chi-square = .23, *ns*), number of nonwhite participants ($F = .76$, *ns*), type of ongoing therapy (chi-square = 1.52, *ns*), length of time in therapy ($F = .06$, *ns*), number of

participants taking psychotropic medications (chi-square = 2.51, *ns*), or number of participants who had been recruited through the student pool (chi-square = .01, *ns*). Thus, none of these demographic variables were included as covariates in subsequent analyses. Additionally, a manipulation check on the anger induction demonstrated that all participants were significantly angrier following the induction than at baseline, $t(39) = 14.52$, $p < .01$. Means for anger ratings are shown in Table 1.

Effects of Mindful Versus Ruminative Self-Focus on Distress Tolerance

The primary hypothesis was that participants in the mindful self-focus condition would persist longer on the distress tolerance task than those in the rumination condition. This was tested with a one-way ANOVA (ruminative vs. mindful self-focus) conducted on latency to termination scores from the PASAT-C. Results indicated a significant between-groups difference, $F(1, 38) = 14.81$, $p = .001$, with a large effect size ($d = 1.10$). Participants in the mindful self-focus group persisted on this task for a mean of 388.50 s (6.48 min) whereas those in the rumination group persisted for a mean of 220.05 s (3.67 min). Additionally, significantly more participants in the rumination condition (65%) quit the task compared to participants in the mindfulness condition (20%), $F(1, 38) = 9.92$, $p < .01$. Thus, this hypothesis was supported.

Effects of Mindful Versus Ruminative Self-Focus on Anger

We hypothesized that anger would increase for participants in the rumination condition but would decrease for those in the mindfulness condition. This was tested with a 2 × 2 repeated measures ANOVA on anger scores, with one within-subjects factor (anger before and after the self-focus period) and one between-subjects factor (type of self-focus instructions). Means for each condition are presented in Table 1. There was a significant main effect for time point (before vs. after the self-focus period), $F(1, 38) = 46.11$, $p < .01$. Examination of means indicates that anger ratings decreased significantly following both rumination, $t(19) = 2.15$, $p < .05$, and mindfulness, $t(19) = 7.11$, $p < .01$. The main effect for response condition was not significant, $F(1, 39) = .43$, $p > .01$. However, a significant Time x Condition interaction was found, $F(1, 38) = 15.76$, $p < .01$, suggesting that mindfulness and rumination differently affected feelings of anger (see Figure 1). The reduction in anger following mindfulness was significantly greater than the reduction in anger following rumination. Further, following the self-focus period, participants in the mindfulness condition were significantly less angry than participants in the rumination condition, $F(1, 38) = 6.67$, $p = 01$), a large effect size ($d = .81$).

Finally, we conducted a 2 × 2 repeated measures ANOVA on anger scores, with one within-subjects factor (anger before and after the PASAT-C) and one between-subjects factor (type of self-focus instructions). The main effects were not significant for time point (before and after the PASAT-C), $F(1, 38) = 3.90$, *ns*, or condition, $F(1, 38) = 2.23$, *ns*. However, a significant Time x Condition interaction was found, $F(1, 38) = 5.92$, $p < .05$; participants in the mindful self-focus condition became signif-

Table 1
Study Variables as a Function of Self-Focus Instructions

Variable	Mindful Self-Focus *M* (*SD*)	Ruminative Self-Focus *M* (*SD*)	*F*(1, 38)
Anger ratings (PANAS-X)			
Baseline	9.60 (5.24)	9.10 (3.74)	0.12
Post anger induction	21.30 (4.96)	18.70 (4.05)	1.61
Post self-focus period	11.95 (4.82)	16.25 (5.66)	6.67*
Post PASAT-C	15.80 (5.20)	15.85 (5.39)	0.01
PASAT-C persistence (seconds)	388.50 (94.41)	220.05 (176.36)	14.81**

Note. PANAS-X = Positive and Negative Affect Schedule–Expanded Form; PASAT-C = Paced Auditory Serial Addition Task–Computerized Version.
* $p < .01$. ** $p < .001$.

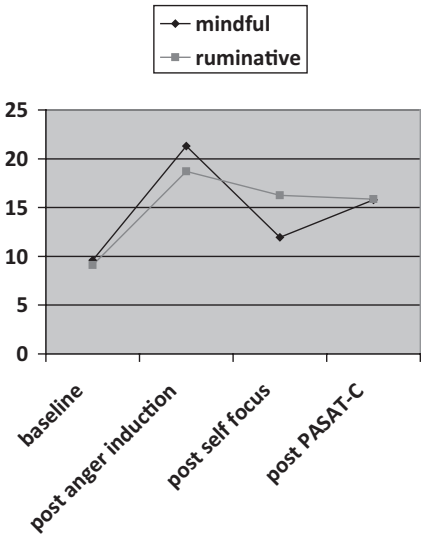

Figure 1. Anger ratings (PANAS-X, possible range = 6–30) as a function of self-focus instructions (mindful vs. ruminative) and time point.

icantly more angry, $t(19) = -3.28$, $p < .01$, while anger in the rumination condition did not change, $t(19)$ .30, *ns*. The difference between groups in self-reported anger following the PASAT-C was not significant, $F = .01$. This finding suggests that both groups quit the task upon reaching similar levels of anger; however, the mindfulness group persisted nearly twice as long as the rumination group before reaching this level of anger.

Discussion

The primary goal of the current study was to investigate the effects of mindful and ruminative self-focused attention in response to an induced angry mood on a distress tolerance task in individuals with BPD. A frustrating computer-based task (PASAT-C) served as the measure of willingness to tolerate distress in the service of goal-directed behavior. It was expected that individuals instructed to ruminate following the anger induction would be less willing to tolerate distress and would terminate performance on the timed serial-addition task sooner than individuals instructed to respond mindfully, despite the monetary incentive to persist. Results confirmed this prediction.

This study also examined the effects of ruminative and mindful self-focus following an anger induction on subsequent levels of self-reported anger. It was hypothesized that rumination would exacerbate feelings of anger, whereas responding mindfully would decrease feelings of anger. These predictions were partially confirmed. As expected, participants instructed to respond mindfully displayed large and significant reductions in self-reported anger. Contrary to predictions, participants instructed to ruminate demonstrated moderate reductions in self-reported anger. This finding may be related to the rumination prompts, which were taken directly from work on depressive rumination (Morrow & Nolen-Hoeksema, 1990). It is possible that the prompts were too broadly focused (e.g., think about the degree of clarity in your thinking, think about how similar/different you are to other people) and served to distract participants from the angry event. Modified prompts that direct participants to focus on their anger and the degree to which they feel wronged might be more effective in inducing anger rumination. Despite this unexpected finding, however, a significant interaction showed that the decrease in anger ratings after the self-focus period was much greater for the mindful self-focus condition. Thus, findings are generally consistent with the hypothesis that mindful self-focus is more adaptive than ruminative self-focus in response to anger.

The two groups showed very similar anger ratings immediately following completion of the PASAT-C. Thus, the short period of mindful self-focus did not prevent the mindfulness group from experiencing anger when completing this frustrating task. However, the mindful self-focus group persisted almost twice as long as the rumination group (6.48 vs. 3.67 min) before quitting the task. Linehan (1993) suggests that persons with BPD are slower than others to return to an emotional baseline following a provocation. As a result, they are emotionally aroused much of the time and this interferes with adaptive behavior. Thus, the present findings suggest that engaging in mindful self-focus may enable a quicker decrease in emotional arousal following an anger provocation and that being less aroused may, in turn, facilitate greater tolerance of subsequent frustrating task demands.

The results of this study extend the literature on the differential effects of two forms of self-focused attention to a BPD sample. Findings are important for several reasons. First, although self-report data suggest that individuals with BPD engage in high levels of rumination, particularly in response to anger (Baer & Sauer, 2011; Selby & Joiner, 2009), few published studies (Selby, Anestis, Bender, & Joiner, 2009) have examined behavioral or emotional consequences of instructing this population to ruminate in a laboratory setting. Second, no published studies have investigated the effects of instructing individuals with BPD to engage in mindful self-focus in a laboratory setting, despite apparent deficits in mindfulness in BPD (Wupperman, Neumann, & Axelrod, 2008) and the central role of mindfulness training in DBT (Linehan, 1993), a leading treatment for BPD. By showing better distress tolerance and greater reductions in anger for mindful self-focus than for rumination, the current findings contribute to the literature on rumination as a transdiagnostic processs, and on mindfulness as a potentially therapeutic strategy in people with BPD.

Several limitations of the present study must be noted. The SCID-II module for BPD was conducted as part of the telephone screening and was not recorded, preventing an evaluation of reliability of the BPD diagnoses. However, most of the participants had been previously diagnosed with BPD by their clinicians, and student participants had scored well above a previously established threshold for clinically significant BPD features on the PAI-BOR scale (Trull, 1995). The number of BPD criteria met during the phone screen was not tracked, thus it is unclear whether this factor was evenly distributed between groups. It may be useful, in future studies, to measure distress 5 to 10 min following the PASAT-C to assess return to an emotional baseline. To promote generalizability of findings, future research should include more ethnically diverse populations and examine emotions other than anger that are important in BPD, such as shame. Finally, the increase in anger following the induction might have been influenced by demand characteristics; thus, future research should examine whether physiological changes accompany the increase in self-reported anger following the induction.

Several types of comparison groups were not included in the present study. First, our sample was limited to persons with BPD because our purpose was to determine whether effects of self-focused attention previously seen in nonclinical and depressed groups also occur in BPD. Second, we did not include a no-instructions comparison group. Previous studies using similar methods have noted that such a group is generally not useful, because distressed people who are told simply to wait for a period of time are likely to ruminate while waiting, making their data difficult to interpret (Watkins & Teasdale, 2004). Finally, the present study did not include a distraction group. Although distraction-based skills may be useful for people with BPD (Linehan, 1993), especially in a short-term laboratory experiment, distraction also may have significant long-term disadvantages. These include reinforcement of tendencies to engage in thought suppression and experiential avoidance, which are common in BPD (Rosenthal, Cheavens, Lejuez, & Lynch, 2005), subsequent rebound effects (Wenzlaff & Bates, 1998), and reduced opportunity for emotional understanding and problem solving. Thus, the present study limited its examination to whether mindful self-observation is an adaptive alternative to rumination when feeling angry. However, without a distraction control group our findings shed no light on whether distraction would have been helpful in increasing tolerance of the distressing task. Future studies should address this question.

In conclusion, this study found that manipulating the type of self-focused attention following an induced angry mood in individuals with BPD differentially influenced subsequent anger and distress tolerance. These results provide further evidence for the advantages of mindful observation over rumination, particularly in a BPD population.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

Baer, R. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice, 10,* 125–143. doi:10.1093/clipsy.bpg015

Baer, R., & Sauer, S. (2011). Relationships between depressive rumination, anger rumination, and borderline personality disorder features. *Personality*

Disorders: Theory, Research and Treatment, 2, 142–150.

Broderick, P. (2005). Mindfulness and coping with dysphoric mood: Contrasts with rumination and distraction. *Cognitive Therapy and Research, 29,* 501–510. doi:10.1007/s10608-005-3888-0

Brown, K., Ryan, R., & Creswell, D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18,* 211–237. doi:10.1080/10478400701598298

First, M., Spitzer, R., Williams, J., & Gibbon, M. (1997). *The structured clinical interview for DSM–III–R personality disorders (SCID-II): User's guide and interview.* Washington, DC: American Psychiatric Press.

Gratz, K., Rosenthal, Z., Tull, M., Lejuez, C., & Gunderson, J. (2006). An experimental investigation of emotion dysregulation in borderline personality disorder. *Journal of Abnormal Psychology, 115,* 850–855. doi:10.1037/0021-843X.115.4.850

Harvey, A. G., Watkins, E., Mansell, W., & Shafran, R. (2004). *Cognitive behavioural processes across psychological disorders: A transdiagnostic approach to research and treatment.* Oxford, England: Oxford University Press.

Huffziger, S., & Kuehner, C. (2009). Rumination, distraction and mindful self-focus in depressed patients. *Behaviour Research and Therapy, 47,* 224–230. doi:10.1016/j.brat.2008.12.005

Ingram, R. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin, 107,* 156–176. doi:10.1037/0033-2909.107.2.156

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness.* New York, NY: Delacorte.

Lejuez, C., Kahler, C., & Brown, R. (2003). A modified computer version of the Paced Auditory Serial Addition Task (PASAT) as a laboratory-based stressor. *Behavior Therapist, 26,* 290–293.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder.* New York, NY: Guilford Press.

Morey, L. (1991). *Personality Assessment Inventory: Professional manual.* Odessa, FL: Psychological Assessment Resources.

Morrow, J., & Nolen-Hoeksema, S. (1990). Effects of responses to depression on the remediation of depressive affect. *Journal of Personality and Social Psychology, 58,* 519–527. doi:10.1037/0022-3514.58.3.519

Nolen-Hoeksema, S. (2004). The response styles theory. In C. Papageorgiou & A. Wells (Eds.), *Depressive rumination: Nature, theory, and treatment* (pp. 107–124). Chichester, UK: Wiley.

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky (2008). Rethinking rumination. *Perspectives on Psychological Science, 3,* 400–424. doi:10.1111/j.1745-6924.2008.00088.x

Rosenthal, Z., Cheavens, J., Lejuez, C., & Lynch, T. (2005). Thought suppression mediates the relationship between negative affect and borderline personality disorder. *Behaviour Research and Therapy, 43,* 1173–1185. doi:10.1016/j.brat.2004.08.006

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse.* New York, NY: Guilford Press.

Selby, E., Anestis, M., & Joiner, T. (2008). Understanding the relationship between emotional and behavioral dysregulation: Emotional cascades. *Behaviour Research and Therapy, 46,* 593–611. doi:10.1016/j.brat.2008.02.002

Selby, E., & Joiner, T. (2009). Cascades of emotion: The emergence of borderline personality disorder from emotional and behavioral dysregulation. *Review of General Psychology, 13,* 219–229. doi:10.1037/a0015687

Selby, E., Anestis, M., Bender, T., Joiner, T. (2009). An investigation of the emotional cascade model in borderline personality disorder. *Journal of Abnormal Psychology, 118,* 375–387.

Smith, J., Grandin, L., Alloy, L. B., & Abramson, L. Y. (2006). Cognitive vulnerability to depression and Axis II personality dysfunction. *Cognitive Therapy and Research, 30,* 609–621. doi:10.1007/s10608-006-9038-5

Trull, T. (1995). Borderline personality disorder features in nonclinical young adults: Identification and validation. *Psychological Assessment, 7,* 33–41. doi:10.1037/1040-3590.7.1.33

Watkins, E. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin, 134,* 163–206. doi:10.1037/0033-2909.134.2.163

Watkins, E., & Teasdale, J. D. (2001). Rumination and overgeneral memory in depression: Effects of self-focus and analytic thinking. *Journal of Abnormal Psychology, 110,* 353–357. doi:10.1037/0021-843X.110.2.333

Watkins, E., & Teasdale, J. D. (2004). Adaptive and maladaptive self-focus in depression. *Journal of Affective Disorders, 82,* 1–8. doi:10.1016/j.jad.2003.10.006

Watson, D., & Clark, L. (1991). *Preliminary manual for the Positive and Negative Affect Schedule (Expanded Form).* Unpublished manuscript, Southern Methodist University, Dallas, TX.

Wenzlaff, R., & Bates, D. (1998). Unmasking a cognitive vulnerability to depression: How lapses in mental control reveal depressive thinking. *Journal of Personality and Social Psychology, 75,* 1559–1571. doi:10.1037/0022-3514.75.6.1559

Westermann, R., Spies, K., Stahl, G., & Hess, F. (1996). Relative effectiveness and validity of

mood induction procedures: A meta-analysis. *European Journal of Social Psychology, 26,* 557–580. doi:10.1002/(SICI)1099-0992(199607)26:4<557::AID-EJSP769>3.0.CO;2-4

Williams, J. M. G., Barnhofer, T., Crane, C., Hermans, D., Raes, F., Watkins, E., & Dalgleish, T. (2007). Autobiographical memory specificity and emotional disorder. *Psychological Bulletin, 133,* 122–148. doi:10.1037/0033-2909.133.1.122

Wupperman, P., Neumann, C., & Axelrod, S. (2008). Do deficits in mindfulness underlie borderline personality disorder symptoms? *Journal of Personality Disorders, 26,* 466–482. doi:10.1521/pedi.2008.22.5.466