Rumination and body dissatisfaction interact to predict concurrent binge eating

Kathryn H. Gordon a,*, Jill M. Holm-Denoma b, Wendy Troop-Gordon a, Elizabeth Sand a

a Department of Psychology, North Dakota State University, Fargo, ND, United States
b Department of Psychology, University of Denver, Denver, CO, United States

Article history:
Received 16 October 2011
Received in revised form 10 March 2012
Accepted 6 April 2012

Keywords:
Rumination
Body dissatisfaction
Binge eating
Escape theory

Abstract

Based upon the escape theory (Baumeister, 1991; Heatherton & Baumeister, 1991) and the emotional cascade model (Selby, Anestis, & Joiner, 2008), it was hypothesized that body dissatisfaction and rumination tendencies would interact to predict concurrent binge eating symptoms. This hypothesis was tested in a sample of 780 undergraduate students. The results confirmed the prediction, in that individuals with high levels of body dissatisfaction were most likely to report binge eating behavior when they also had a tendency to ruminate. This interaction had a significant association with binge eating, above and beyond variance accounted for by participant sex, depression symptoms, and body mass index. Moreover, there was evidence of specificity for the model, as the interaction did not predict concurrent problematic drinking. Our findings suggest compatibility between the escape theory and emotional cascade models, and identify two factors that, in combination, may render individuals particularly vulnerable to binge eating.

© 2012 Elsevier Ltd. All rights reserved.

Introduction

The Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) defines binge eating as (1) eating an unusually large amount of food in a discrete period of time (e.g., 2 h) and (2) experiencing a lack of control while eating (e.g., feeling that one cannot stop eating). Approximately 4% of men and 5% of women experience recurrent binge eating during their lifetime (Hudson, Hiripi, Pope, & Kessler, 2007). Binge eating is associated with several negative health outcomes including obesity, mental disorders, suicide attempts, and impairment in professional, personal, and social domains (Hudson et al., 2007; Wonderlich, Gordon, Mitchell, Crosby, & Engel, 2009). It is important to identify factors that are associated with binge eating in order to understand and prevent this pernicious behavior. Informed by the escape theory (Baumeister, 1991), which has been applied to binge eating (Heatherton & Baumeister, 1991), and the emotional cascade model (Selby, Anestis, & Joiner, 2008), the current study tested the hypothesis that individuals with high levels of body dissatisfaction and rumination would be particularly likely to engage in recurrent binge eating.

The escape theory (Baumeister, 1991) proposes that several maladaptive behaviors (e.g., alcohol use, suicide, binge eating) are motivated by a desire to escape aversive self-awareness, which is an emotionally unpleasant state where one is aware of their failure to meet a valued standard. Specifically, Heatherton and Baumeister (1991) posit that the chain of events that leads to binge eating begins with individuals failing to meet a personal standard or goal. According to the theory, once people experience this type of failure, they enter into a state of aversive self-awareness about the perceived inadequacy, which leads to a negative mood. These negative mood states are theorized to drive individuals to binge eat as a means of focusing their attention away from their painful self-awareness and toward the physical sensations of eating (e.g., chewing, tasting). While the escape theory’s application to binge eating states that the failure to meet any type of personal standard (e.g., career achievement) may trigger binge eating, there is a particular emphasis on standards related to body shape and weight (Heatherton & Baumeister, 1991). Indeed, failing to meet a personal ideal for body shape and weight (i.e., having body dissatisfaction) is consistently associated with concurrent binge eating symptoms (Antony, Johnson, Carr-Nangle, & Abel, 1994; Grilo, Masheb, Brody, Burke-Martindale, & Rothschild, 2005) and predictive of subsequent binge eating behavior (Johnson & Wardle, 2005; see Stice & Shaw, 2002 for a review).

The emotional cascade model is compatible with the escape theory and specifies that rumination plays a key role in the emotional dysregulation that precedes a variety of maladaptive coping behaviors including binge eating (Selby et al., 2008; Selby, Anestis, Bender, & Joiner, 2009). Rumination is a style of responding to stress that involves focusing on the feelings of distress, as well as potential causes and consequences of the distress, in a repetitive, passive...
manner (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Important in the context of the escape theory of binge eating, rumination is often self-focused (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Emotional cascades are posited to occur when an event triggers a negative emotion and the individual ruminates about the event, thereby increasing the intensity of the resultant negative emotion. The amplified emotion then purportedly leads to even greater levels of rumination, which lead to yet more intense negative feelings. This emotional cascade is proposed to continue gaining strength until the negative mood state is so powerful that engaging in an equally intense coping behavior (e.g., alcohol abuse, nonsuicidal self-injury, binge eating) is viewed as the only way to sufficiently distract oneself from the painful emotions. According to the model, less extreme coping strategies (e.g., talking to a friend, going for a walk) are not engaging enough to distract from these high intensity negative emotions.

There is evidence that individuals who tend to ruminate often report binge eating (sometimes studied in the context of bulimic behavior; Harrell & Jackson, 2008; Sarin & Nolen-Hoeksema, 2010; Selby et al., 2008, 2009). Greater tendencies to ruminate are predictive of future binge eating and the reverse is also true (i.e., binge eating is associated with greater future rumination tendencies; Holm-Denoma & Hankin, 2010; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). Moreover, following a negative body image induction task, participants who ruminated reported significantly greater state body image dissatisfaction and anxiety than a comparison group who distracted themselves following the task (Etu & Gray, 2010). While rumination and the emotional cascade model are relevant to binge eating, it is worth noting that, like the escape theory, they are also related to other types of dysfunctional coping behaviors (e.g., problematic alcohol use; Nolen-Hoeksema et al., 2008; Selby et al., 2008).

In summary, consistent with escape theory, body dissatisfaction is associated with an increased likelihood of binge eating across multiple studies (Stice & Shaw, 2002). In addition, people who tend to ruminate are at elevated risk for binge eating (Nolen-Hoeksema et al., 2008), which is in line with the emotional cascade model. We proposed that these models are compatible, and that the key variable for each model interacts with the other, rendering certain individuals especially susceptible to binge eating. Specifically, within the frameworks of the escape theory, we conceptualized body dissatisfaction as a failure to meet a personal standard that would lead to aversive self-awareness. Consistent with the emotional cascade model, for individuals who have body dissatisfaction and who also tend to ruminate, the negative self-awareness should be magnified via emotional cascades. We hypothesized that the intensity of the negative self-awareness caused by the interaction of body dissatisfaction and rumination would drive individuals to seek escape from emotional distress through binge eating. To our knowledge, the potential interaction of these variables and their association with binge eating has never been tested.

We tested this interaction hypothesis in a cross-sectional sample of college undergraduate students. College students are particularly relevant for these hypotheses, as this age group reports among the highest rates of binge eating (Hudson et al., 2007). Because women have been found to have higher levels of rumination (Jose & Brown, 2008), body dissatisfaction (Cash, Morrow, Hrabosky, & Perry, 2004) and binge eating (Hudson et al., 2007) than men, we controlled for participant sex in our analyses. In addition, we controlled for depression symptoms and body mass index (BMI) to rule out the possibilities that statistically significant relationships between our variables could be explained by these potential confounding variables (e.g., that body dissatisfaction and/or rumination are associated with binge eating due to their relationships with depression, BMI, or participant sex; Nolen-Hoeksema et al., 2008; Wiederman & Pryor, 2000).

Our primary aim was to test the hypothesis that body dissatisfaction and rumination tendencies would interact to predict levels of concurrent binge eating, such that high body dissatisfaction and greater tendencies for rumination would be associated with greater levels of binge eating. As recommended by Treynor et al. (2003), we analyzed our data separately using two empirically and theoretically distinct facets of rumination: brooding and reflection. Reflection is more adaptive, emotionally neutral, and is “a purposeful turning inward to engage in cognitive problem solving to alleviate one’s depression symptoms” (Treynor et al., 2003, p. 256). Meanwhile, brooding is characterized as less adaptive, more negative affect-laden, and “a passive comparison of one’s current situation with some unachieved standard” (Treynor et al., 2003, p. 256). We viewed brooding as more relevant to the escape theory hypothesis about failing to meet a personal standard (in this case, failure to meet a body shape ideal). Therefore, it was hypothesized that the brooding facet of rumination would interact with body dissatisfaction in the prediction of concurrent binge eating, while the reflection facet of rumination would not. We predicted that this interaction between brooding and body dissatisfaction would remain significant in its association with binge eating even after controlling for participant sex, BMI, and depression symptoms.

Our secondary aim was to test the specificity of our proposed interaction by examining whether it predicted another concurrent maladaptive coping behavior that is not theoretically or empirically linked to body dissatisfaction, but that is linked to rumination. Problematic drinking was selected as an outcome variable because of its relevance to college students, who are in the age range for the highest rates of problematic drinking (Ham & Hope, 2003). Based upon previous research (Nolen-Hoeksema & Harrell, 2002), we hypothesized a main effect of brooding tendencies in the prediction of concurrent problematic drinking, but we did not predict a significant main effect of body dissatisfaction or that a significant body dissatisfaction by brooding interaction.

Method

Participants and Procedures

Participants were recruited from undergraduate, psychology courses at a public, Midwestern university. They completed the study in exchange for course credit. The sample consisted of 780 participants (65.7% female; n = 512) with a mean age of 19.27 years (SD = 2.12; age range = 18–38). The ethnic composition of the sample was 94.0% White (n = 735), 1.7% Black/African-American (n = 13), 1.2% Asian (n = 9), 1.0% Hispanic/Latino (n = 8), and 2.1% Other (n = 17). All procedures were approved by the university’s internal review board, and the participants provided informed consent prior to participation. Participants completed all questionnaires through a secure online system.

Measures

Rumination. The Ruminative Responses Scale (RRS; Treynor et al., 2003) is a self-report questionnaire that consists of 22 items. Participants were asked to indicate how often they engage in different rumination-related behaviors on a scale of 1 (almost never) to 4 (almost always). As mentioned above, Treynor et al. (2003) found support for a two-factor model for the scale and therefore suggested that it should be broken down into two subscales: Reflection and Brooding. The Reflection subscale includes items such as, “Go some place alone to think about your feelings.” Meanwhile, the Brooding subscale includes items such as, “Think ‘why do I have problems other people don’t have?’” The Brooding and Reflection subscales have good validity and reliability (Treynor et al., 2003). Cronbach’s
alpha for the Brooding subscale in the current sample was .84, while Cronbach's alpha for the Reflection subscale was .81.

**Body dissatisfaction.** The Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983) is a widely used self-report measure that consists of statements about eating disorder-related attitudes and behaviors. Respondents are asked to rate each statement on a scale from 1 (never) to 6 (always). The current study used the 9-item Body Dissatisfaction subscale, which includes statements such as, “I think that my stomach is too big.” The total score is summed by adding the rating responses for all items. After conducting an examination of the EDI in three samples (i.e., archival clinical, treatment study, and nonpatient college), Espelage et al. (2003) reported evidence that it is a reliable and valid assessment tool. In the current study, Cronbach's alpha for the body dissatisfaction subscale of the EDI was .80.

**Depression symptoms.** The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Garbin, 1988) was utilized to assess depression symptoms via self-report. For each of its 21 items, participants selected one sentence from a group of four sentences that best reflected their current level of depressive symptomatology (scores range from 0 to 3). For example, one group has the statement “I have not lost interest in other people,” as the least severe (score of 0), while the statement that is most severe (score of 3) is, “I have lost all of my interest in other people.” The BDI-II has been found to be a reliable and valid measure of depression symptoms (see Beck et al., 1988 for a review). The BDI-II had a Cronbach's alpha of .92 in the current sample.

**Binge eating.** The Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) is composed of 16 items, and each item consists of a group of statements about attitudes and behaviors related to binge eating. Participants were asked to select the statement from each group that best describes them. Statements are assigned numerical weights that are lower (score of 0) for the least indicative of binge eating (e.g., “I usually am able to stop eating when I want to. I know when enough is enough”) to greater values (score of 3) for statements more indicative of binge eating (e.g., “I feel incapable of controlling my urges to eat. I have a fear of not being able to stop eating voluntarily.”). The BES has demonstrated good test-retest reliability (Timmerman, 1999) and concurrent validity with other measures of binge eating (Celio, Wilfley, Crow, Mitchell, & Walsh, 2004; Timmerman, 1999). The Cronbach's alpha of the BES in the current sample was .91.

**Problems related to alcohol use.** The Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) was used to measure the extent to which participants experienced problems related to alcohol use. The RAPI asks participants to indicate how many times they have experienced 23 different alcohol-related problems over the previous year on the following scale: 0 (none), 1 (1–2 times), 2 (3–5 times), 3 (more than 5 times). Sample items include, "not able to do your homework or study for a test" and "wanted to stop drinking but couldn't.” The RAPI has demonstrated good reliability and validity in the measurement of problematic drinking in college samples (White & Labouvie, 1989). Cronbach's alpha for the RAPI in this sample was .92.

### Results

Zero-order correlations, means, standard deviations, and observed ranges for all variables are reported in Tables 1 and 2.

### Body Dissatisfaction × Rumination in the Prediction of Binge Eating

**Body dissatisfaction × brooding.** To test whether brooding and body dissatisfaction interacted to predict concurrent binge eating symptoms, a hierarchical regression was performed. Participant sex, depressive symptoms, and BMI were entered in the first step. The main effects of brooding and body dissatisfaction were entered on the second step, and the brooding by body dissatisfaction interaction term was entered on the third step. Two-way interactions between sex and brooding and sex and body dissatisfaction, as well as the three-way interaction between these variables, were also entered in the model. As none of these effects were significant (all ps > .05), they were removed from the analyses and are not

### Table 1
Descriptive statistics for all measures.

<table>
<thead>
<tr>
<th></th>
<th>Brood</th>
<th>Reflect</th>
<th>BD</th>
<th>Dep</th>
<th>Binge</th>
<th>Alcohol</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males (n = 268)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>8.43</td>
<td>7.24</td>
<td>21.93</td>
<td>5.91</td>
<td>5.09</td>
<td>4.86</td>
<td>25.13</td>
</tr>
<tr>
<td>SD</td>
<td>3.04</td>
<td>2.69</td>
<td>6.78</td>
<td>7.07</td>
<td>5.28</td>
<td>7.09</td>
<td>4.44</td>
</tr>
<tr>
<td>Observed range</td>
<td>5–20</td>
<td>5–17</td>
<td>13–44</td>
<td>0–30</td>
<td>0–27</td>
<td>0–45</td>
<td>17.93–43.85</td>
</tr>
<tr>
<td>Females (n = 512)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>8.86</td>
<td>7.68</td>
<td>29.98</td>
<td>7.51</td>
<td>9.36</td>
<td>4.36</td>
<td>23.41</td>
</tr>
<tr>
<td>SD</td>
<td>3.20</td>
<td>2.83</td>
<td>8.12</td>
<td>8.19</td>
<td>7.25</td>
<td>6.95</td>
<td>4.62</td>
</tr>
<tr>
<td>Observed range</td>
<td>5–20</td>
<td>5–20</td>
<td>14–50</td>
<td>0–43</td>
<td>0–46</td>
<td>0–48</td>
<td>15.78–51.21</td>
</tr>
</tbody>
</table>

Note. SD = standard deviation; Brood = brooding; Reflect = reflection; BD = body dissatisfaction; Dep = depression symptoms; Binge = binge eating; Alcohol = problems related to alcohol use; BMI = body mass index.

### Table 2
Zero-order correlations for all variables.

<table>
<thead>
<tr>
<th></th>
<th>Brood</th>
<th>Reflect</th>
<th>BMI</th>
<th>BD</th>
<th>Dep</th>
<th>Binge</th>
<th>Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brood</td>
<td>–</td>
<td>.74*</td>
<td>–.02</td>
<td>.19*</td>
<td>.53*</td>
<td>.25*</td>
<td>.28*</td>
</tr>
<tr>
<td>Reflect</td>
<td>.67*</td>
<td>–</td>
<td>–.04</td>
<td>.17*</td>
<td>.53*</td>
<td>.24*</td>
<td>.32*</td>
</tr>
<tr>
<td>BMI</td>
<td>.06</td>
<td>.05</td>
<td>–</td>
<td>.45*</td>
<td>.07</td>
<td>.29</td>
<td>.04</td>
</tr>
<tr>
<td>BD</td>
<td>.31*</td>
<td>.21*</td>
<td>.42*</td>
<td>–</td>
<td>.33*</td>
<td>.49*</td>
<td>.17*</td>
</tr>
<tr>
<td>Dep</td>
<td>.69*</td>
<td>.60*</td>
<td>.14*</td>
<td>.47*</td>
<td>–</td>
<td>.48*</td>
<td>.40*</td>
</tr>
<tr>
<td>Binge</td>
<td>.50*</td>
<td>.36*</td>
<td>.23*</td>
<td>.55*</td>
<td>.61*</td>
<td>–</td>
<td>.54*</td>
</tr>
<tr>
<td>Alcohol</td>
<td>.34*</td>
<td>.33*</td>
<td>.05</td>
<td>.20*</td>
<td>.46*</td>
<td>.42*</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. Correlations for males are above the diagonal; correlations for females are below the diagonal. Brood = brooding; Reflect = reflection; BMI = body mass index; BD = body dissatisfaction; Dep = depression symptoms; Binge = binge eating; Alcohol = problems related to alcohol use.

* p < .01.
Table 3
Predicting binge eating symptoms from brooding, body dissatisfaction, and their interaction.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>β</th>
<th>t</th>
<th>sr²</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>.27</td>
<td>9.57</td>
<td>.28</td>
<td>.42</td>
</tr>
<tr>
<td>Depression</td>
<td>.54</td>
<td>19.25</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>.17</td>
<td>6.09</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>Step 2: Main effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brooding</td>
<td>.10</td>
<td>2.88</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>.35</td>
<td>9.89</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Step 3: Interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brooding × body dissatisfaction</td>
<td>.09</td>
<td>3.23</td>
<td>.01</td>
<td>.01</td>
</tr>
</tbody>
</table>

Note. βs, ts, sr², and ΔR² represent standardized coefficients, t statistics, and percent of variance accounted for at each step. 
* p < .01.
** p < .001.

reported on further. Sex was dummy coded (0 = male; 1 = female) and all other variables were centered prior to the computation of the interaction term and inclusion in the analyses (Aiken & West, 1991). The results of this regression can be found in Table 3.

Binge eating symptoms were positively associated with depression and BMI and were more common among females than males. Together, sex, depression, and BMI accounted for a substantial percentage of the variance in binge eating symptoms (42%). Over and above these effects, brooding and body dissatisfaction each significantly contributed to the prediction of binge eating symptoms, accounting for an additional 7% of the variance. Moreover, the brooding by body dissatisfaction interaction was significant. To aid in the interpretation of this interaction, simple slopes for body dissatisfaction were calculated at low (−1 SD), moderate (0 SD), and high (+1 SD) levels of brooding (Aiken & West, 1991; Preacher, Curran, & Bauer, 2006). The relationship between body dissatisfaction and binge eating symptoms became increasingly stronger at higher levels of brooding (low level of brooding: β = .22, t(764) = 5.78, p < .001; moderate level of brooding: β = .29, t(764) = 9.04, p < .001; high level of brooding: β = .36, t(764) = 9.26, p < .001). As displayed in Fig. 1, at low levels of body dissatisfaction, participants evidenced few binge eating symptoms regardless of the extent to which they reported brooding. Consistent with our key hypothesis, higher levels of body dissatisfaction were associated with greater binge eating symptoms, and this effect was amplified when participants reported high levels of brooding.

**Body dissatisfaction × reflection.** In an effort to examine whether the brooding aspect of rumination was specifically related to binge eating, we tested an alternative model. Specifically, we ran a second hierarchical regression that was identical to the first regression except that the Reflection subscale of the RRS was utilized in place of brooding. All results regarding the main effects of depression symptoms, BMI, participant sex, and body dissatisfaction were the same as described above. However, there was no main effect of the reflection facet of rumination, β = .01, t(765) = .37, p = .71. nor was the two-way interaction between reflection and body dissatisfaction significant, β = .03, t(764) = 1.03, p = .31. This analysis suggests that, consistent with our hypothesis, the brooding facet of rumination is most relevant for binge eating behavior.

**Body Dissatisfaction × Brooding in the Prediction of Problematic Drinking**

A hierarchical regression analysis was conducted to examine whether the interactive effect of body dissatisfaction and brooding was specific to binge eating symptoms or whether it generalized to problematic drinking as well. The independent variables and their order of entry into the regression analysis were identical to those used to predict binge eating, and problematic drinking was used as the dependent variable.

As was the case for binge eating symptoms, depression symptoms significantly predicted higher levels of problematic drinking, β = .44, t(767) = 13.70, p < .001. The main effect of sex revealed that males reported significantly greater drinking problems than females, β = −.08, t(767) = −2.40, p = .01. In contrast, BMI was not a significant predictor of drinking problems, β = −.01, t(767) = −.32, p = .75. Together, depression symptoms and sex accounted for 19.5% (p < .0001), of the variance in problematic drinking. However, the main effects of body dissatisfaction, β = .01, t(765) = .17, p = .87, and brooding, β = .06, t(765) = 1.34, p = .18, did not account for a significant amount of variance in problematic drinking. Moreover, consistent with the notion that the interactive effect of body dissatisfaction and brooding is specific to binge eating symptoms, the two-way interaction between body dissatisfaction and brooding was not significant, β = −.03, t(764) = −.81, p = .42.

**Discussion**

In line with our primary hypothesis, body dissatisfaction and the brooding facet of rumination interacted to predict concurrent binge eating behavior in a sample of undergraduate students. The individuals who reported both dissatisfaction with their bodies and a tendency to brood endorsed the greatest levels of concurrent binge eating. The interaction of these variables was predictive above and beyond the substantial variance explained by participant sex, BMI, and depression symptoms, suggesting a robust effect of our interaction model. Moreover, our analyses revealed that the brooding facet of rumination in particular, rather than the reflection facet, had a significant relationship to binge eating. Our results converge with those from previous studies suggesting that both rumination (e.g., Harrell & Jackson, 2008) and body dissatisfaction (Stice & Shaw, 2002) are strongly independently related to binge eating. This finding is also consistent with predictions from the escape theory (Heatherton & Baumeister, 1991) and the emotional cascade model (Selby et al., 2008). Finally, this finding extends previous research by demonstrating that people who have high levels of both brooding and body dissatisfaction are particularly likely to report binge eating.

In addition, the current study demonstrated that the brooding and body dissatisfaction interaction was specific to the prediction of binge eating, as it did not predict another maladaptive behavior that is used to cope with aversive emotions (i.e., problematic drinking). Contrary to our secondary hypothesis, however, there was no main effect for brooding in the prediction of problematic
drinking. One possibility is that alcohol problems and brooding are only related due to their common relationship with depression symptoms. Indeed, in our data, depressive symptoms predicted problematic drinking. Furthermore, when the depression symptoms variable was removed from the analysis, a main effect of brooding in the prediction of problematic drinking emerged.

Our results have multiple theoretical implications. For instance, they suggest that the escape theory and the emotional cascade model are compatible, and that both identify individuals who are particularly prone to coping with aversive emotional states by engaging in binge eating. Moreover, our data suggest that this is true of men and women alike. The escape theory posits that people who binge eat do so in an effort to focus on concrete physical sensations instead of aversive self-awareness (particularly related to their body dissatisfaction), whereas the emotional cascade model suggests that engaging in binge eating may distract rumination individuals from their negative cognitions and resultant negative emotions. We suggest the following integration of the two models in relation to binge eating: first, an individual becomes dissatisfied with their body, and focusing on this dissatisfaction brings about negative mood. The negative mood results in the individual continuing to ruminate about their body dissatisfaction, which subsequently increases the negative mood further (as predicted by the emotional cascade theory). Once the negative mood and aversive self-awareness reach a critical level, the individual feels an overwhelming urge to engage in a behavior (i.e., binge eating) designed to help them cope with and/or escape from their distress.

It is also possible that the relationship between body dissatisfaction, rumination, and binge eating is reciprocal. Past research by Holm-Denoma and Hankin (2010) and Nolen-Hoeksema et al. (2007) demonstrated that binge eating can subsequently lead to rumination, and Grilo et al. (2005) demonstrated that it can lead to body dissatisfaction as well. Therefore, future research examining the integrated escape theory and emotional cascade model proposed above should assess body dissatisfaction and rumination as both predictors and consequences of binge eating. In light of our findings, future research should also examine the reflection and brooding aspects of rumination separately in order to more precisely understand the relationships between rumination and disordered eating. Finally, it would be useful to conduct future studies with the potential to expand upon the model by examining whether other self-relevant stressors (e.g., not attaining a desired achievement standard) act similarly to body dissatisfaction, whether individual difference variables (e.g., degree of thin-ideal internalization, social comparison tendencies; Fitzsimmons-Craft et al., 2012) act as moderators for the model, and whether the model predicts other maladaptive coping behaviors that have been linked to body dissatisfaction (e.g., self-harm behaviors; Nolen-Hoeksema et al., 2008; Ross, Heath, & Toste, 2009; Solano, Fernández-Aranda, Aitken, López, & Vallejo, 2005).

There may also be important clinical implications for our findings. Our results suggest that when clinicians are working with clients who exhibit both brooding and body dissatisfaction (e.g., during the course of treatment), clinicians should be assessed for the presence of binge eating because of their elevated risk. Second, clinicians should attempt to decrease brooding and body dissatisfaction when treating clients who binge eat. Nolen-Hoeksema et al. (2008) recommend teaching individuals who ruminate to elevate their mood by engaging in a brief positive and distracting activity. Once the individual is in an improved mood, it may increase their ability to productively work through their stressor via problem-solving or by viewing the situation in a less emotionally painful way (e.g., with self-acceptance). If an individual is able to engage in these strategies when faced with body dissatisfaction, they might effectively circumvent the emotional cascade caused by brooding, and consequently decrease binge eating behavior. This is consistent with Etu and Gray's (2010) finding that women who distracted themselves after experiencing a negative body image event had less state body dissatisfaction and anxiety than individuals who ruminated following the event.

Although our study is unique in that it integrated predictions from two theories and identified an interaction between well-known univariate predictors of binge eating, it had some limitations that should be noted. Our sample was mostly White, which is a notable limitation given that rates of binge eating are relatively high in other racial groups (e.g., African Americans; Taylor, Caldwell, Baser, Faison, & Jackson, 2007). Despite this limitation, we believe our sample was suitable given that binge eating rates among college students are relatively high (Striegel-Moore, Silberstein, Grunberg, & Rodin, 1990). In addition, we measured problematic drinking rather than drinking frequency, which may have been a more appropriate outcome variable for a test of escape theory. Another possible limitation may be the online survey system utilized. It is possible that participants were distracted (e.g., talking on the phone) while completing the questionnaires and that this impacted their responses. Finally, although we were attempting to examine whether brooding and body dissatisfaction interact to predict binge eating behavior, our data were cross-sectional. Despite these limitations, the current study demonstrates that the combination of high body dissatisfaction and a tendency to brood are associated with elevated levels of binge eating behavior in men and women, a finding which has important theoretical and clinical implications.

References


