

PREDICTING DIFFICULTIES CONTROLLING OVEREATING AND DRINKING WHEN EXPERIENCING NEGATIVE AFFECT IN UNDERGRADUATE WOMEN

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Negative affect has been associated with both binge eating and problem drinking; thus, a better understanding of factors related to difficulties controlling overeating and drinking when experiencing negative affect is warranted. In this study, we examined interactive models of perfectionism and stress as predictors of difficulties controlling overeating and drinking when experiencing negative affect, using two dimensions of perfectionism, self-oriented and socially prescribed, and three domains of stress: academic, interpersonal, and weight/shape. A sample of 406 undergraduate females participated in a brief longitudinal study by completing surveys assessing perfectionism (Time 1), stress (weekly between Times 1 and 2), and the degree of difficulty controlling overeating and drinking when experiencing negative affect (Time 2). Socially prescribed perfectionism interacted with academic stress to predict difficulty controlling overeating when experiencing negative affect. Socially prescribed perfectionism also interacted with each domain of stress in the prediction of difficulty controlling drinking when experiencing negative affect. No significant 2-way interactions emerged involving self-oriented perfectionism. These interactive findings have clinical implications, suggesting avenues of prevention and intervention with a focus on socially prescribed perfectionism and academic stress.

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Anecdotally and empirically, there is support for eating and drinking behaviors occurring in response to negative affect (Arnow, Kernady, & Agras, 1995; Cooper, Russell, Skinner, & Windle, 1992; Fox & Froom, 2009). These behaviors may be construed as attempts to escape from or modulate aversive emotions and their use in this manner is generally seen as maladaptive. Furthermore, emotional eating, which is the tendency to eat/overeate in response to negative emotions, predicts binge eating (Stice, Presnell, & Spangler, 2002) and is more elevated among obese individuals with binge eating disorder (BED) when compared to those without BED (Pinaquy, Chabrol, Simon, Louvet, & Barbe, 2003), and drinking to cope with negative affect is associated with alcohol abuse/dependence symptoms (Cooper et al., 1992; Kuntsche, Stewart, & Cooper, 2008; Pritchard, Wilson, & Yamnitz, 2007).

However, little is known about which factors may set the stage for eating or drinking when experiencing negative affect. Since not all individuals turn to food or alcohol on a regular basis when feeling badly, or struggle with controlling these behaviors in the face of emotional distress, it is important to identify who is most vulnerable to engage in these patterns of behaviors in order to develop appropriate interventions. In this longitudinal study, we focus on interactive models of perfectionism and stress in the prediction of difficulties controlling overeating and drinking when experiencing negative affect, thus examining how an internal factor (personality) and an external factor (stress) may be important to consider in concert.

Given the high prevalence of eating and drinking problems in undergraduate women, testing these models in a college sample is important. For instance, estimates suggest that 16–25% of college-age women engage in binge eating behaviors, with up to 10% doing so once per week or more (Ferriter & Ray, 2011). Regarding problem drinking, research has indicated that up to 40% of college women engage in frequent, heavy use of alcohol (e.g., Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994), with college women drinking more and exhibiting higher rates of alcohol abuse than same-age noncollege women (Slutske, 2005). By examining who is most likely to struggle controlling overeating and drinking in response to negative emotions, we hope to find intervention points that could divert young women from even more concerning behaviors.

PERFECTIONISM IN RELATION TO EATING AND DRINKING BEHAVIORS

Perfectionism has been associated with binge eating (defined as overeating, often triggered by negative affect, with a sense of loss of control) and bulimic symptoms both on its own (Bardone-Cone, 2007; Bardone-Cone, Wonderlich, Frost, Bulik, Mitchell, Uppala, & Simonich, 2007; Stice, 2002) and in interaction with other factors (e.g., feeling overweight; Bardone-Cone, Weishuhn, & Boyd, 2009; Joiner, Heatherton, Rudd, & Schmidt, 1997). The limited research examining perfectionism and drinking has yielded mixed findings with higher levels of perfectionism associated with both more frequent binge drinking (Flett, Goldstein, Wall, Hewitt, Wekerle, & Azzi, 2008) and less frequent drinking (Pritchard et al., 2007). Interestingly, Mackinnon et al. (2011) found no significant correlation between a dimension of perfectionism focused on concern over mistakes and binge drinking, but found a significant negative correlation between a healthier form of perfectionism (i.e., having perfectionistic strivings) and binge drinking. To our knowledge, minimal research exists on the relation between perfectionism and difficulties controlling overeating or drinking in response to negative affect.

Given the empirical and theoretical support for multidimensional perfectionism (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993), it is important to consider dimensions of perfectionism in relation to eating and drinking behaviors. While different broad terms have been used to capture perfectionism's dimensionality, most commonly perfectionism has been referred to as maladaptive or adaptive, with different facets reflecting these underlying higher order dimensions. Based on factor analytic work, socially prescribed perfectionism, involving feeling that others have high expectations for oneself, appears to reflect maladaptive perfectionism and is correlated with disordered eating (including binge eating and bulimic symptoms), anxiety and depressive symptoms. In contrast, self-oriented perfectionism, involving having high standards for oneself, is generally considered adaptive or benign, with no consistent relation with depression and anxiety, but some relations with eating disorder symptoms (Bardone-Cone et al., 2007; Klibert, Langhinrichsen-Rohling, & Saito, 2005).

Only one study was found examining emotional overeating and dimensions of perfectionism, finding non-significant correlations between emotional overeating and both socially prescribed and self-oriented perfectionism in an undergraduate female sample (O'Connor & O'Connor, 2004). Similarly, only one relevant study was found for drinking when experiencing negative affect: Rice and Van Arsdale (2010) found that maladaptive perfectionists were more likely to drink to cope compared to adaptive perfectionists and nonperfectionists.

STRESS IN RELATION TO EATING AND DRINKING BEHAVIORS

A more researched and robust relation exists between stress and overeating/binge eating and drinking. Stress is a common antecedent of binge eating with this finding emerging across a range of study designs (Polivy & Herman, 1993; Smyth et al., 2009; Stice, Bohon, Marti, & Fischer, 2008). Stress also has strong connections with overeating and, in particular, emotional eating/overeating (Wallis & Hetherington, 2004). Food consumption has further been shown to be triggered by school performance stress among worry-prone dieters (Scattolon & Nicki, 1995). Stress is also associated with problem drinking, characterized by the presence of alcohol dependence symptoms, negative consequences from drinking (Mulia, Schmidt, Bond, Jacobs, & Korcha, 2008), and drinking to cope (Rice & Van Arsdale, 2010). For example, drinking and binge drinking appear to be higher on days of high stress (Grzywacz & Almeida, 2008). Of note, most studies examining stress and eating and drinking behaviors have defined stress broadly with less known about how specific domains of stress (e.g., interpersonal stress) may be associated with these behaviors.

AN INTERACTIVE MODEL OF PERFECTIONISM AND STRESS

Perfectionism and stress in tandem have the potential to create a perfect storm of heightened negative affect and aversive self-awareness. That is, for someone who is perfectionistic (has high standards, feels the need to meet others' high expectations), encoun-

tering stress may be especially aversive since it may reflect goals thwarted and a flawed, imperfect self. Negative affect and aversive self-awareness may, in turn, increase motivation to escape from these negative feelings, including by means of overeating and/or drinking. Thus, it is the individual with elevated perfectionism and stress who, theoretically, will be most motivated and compelled to employ some affect regulation strategy to modulate her/his negative feelings. Indeed, escape theory (Baumeister, 1991; Heatherton & Baumeister, 1991) posits that negative affect is the proximal cause of potential escape behaviors such as binge eating and drinking, with distal causes being high levels of perfectionism combined with an ego threatening stressor. A concept related to escape theory, the tension reduction hypothesis, has often been applied to drinking and highlights drinking as a way to cope with stress and negative feelings (Conger, 1956).

There is support for perfectionism, or related constructs such as neuroticism, interacting with stress to predict binge eating (Bardone-Cone et al., 2009; Joiner et al., 1997; Sassaroli & Ruggiero, 2005) and drinking (Liu, Wang, Zhan, & Shi, 2009). For example, high levels of maladaptive perfectionism combined with the appearance stress of perceiving oneself to be overweight predicted the highest levels of bulimic symptoms in a sample of African American college women; this interaction was not found with adaptive perfectionism (Bardone-Cone et al., 2009). Sassaroli and Ruggiero (2005) found that maladaptive perfectionism was associated with bulimic symptoms in a nonclinical sample only when assessed in a stressful situation (i.e., the day of an examination). In terms of drinking, Liu et al. (2009) found that higher levels of neuroticism strengthened the relation between work stress and alcohol use in a sample of Chinese adult workers and, as aforementioned, Rice and Van Arsdale (2010) identified maladaptive perfectionists as most likely to drink to cope under stress in a college sample.

THE PRESENT STUDY

The current study extends research on the interaction of perfectionism and stress in relation to eating and drinking in several ways. First, we contribute a nuanced examination of perfectionism by considering two dimensions of perfectionism: maladaptive and adaptive. Second, this work is novel with its domain-specific examina-

tion of stress, examining three domains of stress relevant to college women: academics, interpersonal relationships, and weight/shape. Third, we examine a perfectionism-stress interactive model for the first time in relation to the outcomes of difficulties controlling overeating and drinking in response to negative affect. These patterns of behavior are important to investigate because they are maladaptive on their own and because of their relations to subsequent binge eating and problem drinking. Lastly, we use a brief longitudinal design, permitting prospective prediction. This work has clinical implications since identifying interactive personality-environment models would highlight points of prevention and intervention in relation to problematic overeating and drinking.

Based on prior work on binge eating (Bardone-Cone et al., 2009), we hypothesized that the combination of high socially prescribed perfectionism and high weight/shape stress would be associated with the greatest difficulty controlling overeating in response to negative emotions. We also predicted that socially prescribed perfectionism would similarly interact with academic and interpersonal stress to predict difficulty controlling overeating. While the analyses focused on difficulty controlling drinking when experiencing negative feelings can be considered more exploratory, we hypothesized that interactions that predict this difficulty would involve socially prescribed perfectionism, not self-oriented perfectionism.

METHOD

PARTICIPANTS AND PROCEDURE

Undergraduate women ($N = 426$) attending a Midwestern university were selected randomly from the undergraduates taking Introductory Psychology to participate in this study. Participants were recruited via phone and offered course credit in exchange for their participation. Of the participants who began the study, 20 did not complete it or were dropped from the analyses due to reasons such as illness, habitually late data, and not needing course credit. The descriptive statistics and analyses that will be presented refer to the 406 completers (95.3% retention rate). The participants who completed the study had an average age of 18.60 years ($SD = .97$; range: 17–25). The majority of the participants (92.4%) self-reported as Caucasian, 3.2% as Asian, 2% as Hispanic, 1.2% as African Ameri-

can, and 1.1% as other races/ethnicities. Based on their self-report of current height and weight at the start of the study, participants averaged a body mass index (BMI) of 22.00 kg/m² ($SD = 3.01$; range: 14.76–40.35).

Participants provided written informed consent and completed surveys at several points across about three months. Perfectionism data came from Time 1, and reports of the degree of difficulty controlling overeating and drinking when experiencing negative affect came from Time 2, 11 weeks after Time 1. Both Time 1 and Time 2 assessments were administered in groups by female research assistants. In between Times 1 and 2, participants completed 10 weekly reports of stress in the domains of academics, interpersonal relationships, and weight/shape, which they turned in weekly. Each report covered the past week's stresses and was included in a packet of other questionnaires with only a study identification number. This study was approved by the university's Institutional Review Board.

MEASURES

Perfectionism. Perfectionism was assessed at Time 1 with the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991). The subscales used in this study were Self-Oriented Perfectionism, reflecting personal striving for perfection—an adaptive dimension of perfectionism, and Socially Prescribed Perfectionism, reflecting the sense that others expect perfection from oneself—a maladaptive dimension. Each subscale contains 15 items rated on a 7-point scale. Reliability (coefficient alphas $\geq .85$ for Self-Oriented Perfectionism and Socially Prescribed Perfectionism in an undergraduate sample) and validity of the MPS have been adequately demonstrated (Hewitt & Flett, 1991). In the current study, coefficient alphas were .89 for Self-Oriented Perfectionism and .85 for Socially Prescribed Perfectionism.

Stress. Stress was assessed on a weekly basis between Times 1 and 2 using a questionnaire developed for this study. In particular, participants reported on the degree to which they had problems, failures, or setbacks in the prior week in the domains of academics/schoolwork (one item), interpersonal relationships (four items, one each for: female friends, opposite sex friends, family, and romantic partners), and body weight or shape (one item), using a 4-point scale from 1 = not at all to 4 = extremely. These data were collected subse-

quent to the initial assessment of trait perfectionism and before the assessment of difficulties controlling overeating and drinking when experiencing negative affect. To capture the typical level of stress experienced in each domain, averages across the 10 weeks of data were computed separately for academic, interpersonal (i.e., mean across all relationships assessed across all 10 weeks), and weight/shape stress. This approach has been used in prior work (e.g., Cain, Bardone-Cone, Abramson, Vohs, & Joiner, 2008).

Overeating and Drinking in Response to Negative Affect. The degree of difficulty in controlling overeating when experiencing negative affect was assessed at Time 2 using a subset of items from the Negative Affect subscale of the Eating Self-Efficacy Scale (Glynn & Ruderman, 1986). The ten items asked about difficulty controlling overeating in the following negative affect situations: restless, upset, tense, angry or annoyed, angry at yourself, depressed, frustrated, want to cheer up, nervous, and anxious or worried, using a 7-point response scale from 1 = no difficulty controlling to 7 = great difficulty controlling. A sample question for overeating is: "How difficult is it for you to control your overeating when you feel upset?" These 10 items were modified to ask about difficulty controlling drinking in the same negative affect situations (e.g., How difficult is it for you to control your drinking when you feel upset?). The Eating Self-Efficacy Scale has support for adequate reliability and validity in the assessment of overeating tendencies in college samples (Glynn & Ruderman, 1986). In the current study, coefficient alphas were .94 for the overeating items and .97 for the drinking items.

ANALYTIC STRATEGY

To test the hypotheses presented, we conducted a series of hierarchical multiple regression analyses following the guidelines prescribed by Cohen, Cohen, West, and Aiken (2003). One set of analyses focused on difficulty controlling overeating as the dependent variable, and the other set of analyses focused on difficulty controlling drinking as the dependent variable, both Time 2 variables. Given that the same interactive models were being tested for two correlated behaviors (see Table 1), we controlled for difficulty controlling drinking in the overeating analyses and difficulty controlling overeating in the drinking analyses. Steps after this covariate were:

TABLE 1. Correlations, Means, and Standard Deviations of the Independent and Dependent Variables

	1	2	3	4	5	6	7
1. Self-oriented perfectionism	<i>M</i> = 70.49 <i>SD</i> = 15.57						
2. Socially prescribed perfectionism	.47***	<i>M</i> = 47.77 <i>SD</i> = 13.88					
3. Academic stress	.03	.30***	<i>M</i> = 1.95 <i>SD</i> = .52				
4. Interpersonal stress	.02	.19***	.44***	<i>M</i> = 1.32 <i>SD</i> = .28			
5. Weight/shape stress	.18***	.18***	.37***	.35***	<i>M</i> = 1.71 <i>SD</i> = .68		
6. Overeating	.11*	.15**	.14**	.09	.34***	<i>M</i> = 18.33 <i>SD</i> = 11.74	
7. Drinking	-.04	.17**	.25***	.34***	.14**	.16**	<i>M</i> = 16.17 <i>SD</i> = 10.81

Note. Overeating = Difficulty controlling overeating when experiencing negative affect. Drinking = Difficulty controlling drinking when experiencing negative affect. Self-oriented perfectionism and socially prescribed perfectionism come from Time 1, Overeating and Drinking come from Time 2, and academic, interpersonal, and weight/shape stress are mean values from weeks 1-10 between Times 1 and 2.

p* < .05; *p* < .01; ****p* < .001

simultaneous entry of the perfectionism dimension (Time 1) and the stress domain (10-week average between Times 1 and 2), followed by entry of the 2-way interaction of the independent variables (e.g., socially prescribed perfectionism \times academic stress). Significant interactive findings were followed up with simple slope analyses (Aiken & West, 1991).

RESULTS

DESCRIPTIVE ANALYSES

Table 1 includes the correlations, means, and standard deviations for the study variables. Self-oriented perfectionism was significantly positively associated with difficulty controlling overeating when experiencing negative affect, while socially prescribed perfectionism was significantly positively associated with difficulties controlling both overeating and drinking. Self-oriented perfectionism was significantly positively related to only weight/shape stress of the stress domains, while socially prescribed perfectionism was significantly related to all domains of stress. Academic, interpersonal, and weight/shape stress were all significantly associated with difficulty controlling drinking when experiencing negative affect, but only academic and weight/shape stress were significantly associated with difficulty controlling overeating.

OVEREATING ANALYSES

No significant 2-way interactions emerged for self-oriented perfectionism and any stress domain in the prediction of difficulty controlling overeating when experiencing negative affect: academic stress, $t(400) = .74$, $\beta = .04$, $p = .459$, $\Delta R^2 = .001$; interpersonal stress, $t(400) = 1.38$, $\beta = .07$, $p = .170$, $\Delta R^2 = .01$; and weight/shape stress, $t(400) = -.96$, $\beta = -.05$, $p = .338$, $\Delta R^2 = .002$.

In contrast, socially prescribed perfectionism interacted with academic stress to predict difficulty controlling overeating when experiencing negative affect (see Table 2). Among those with high socially prescribed perfectionism, higher levels of academic stress predicted greater difficulties controlling overeating in response to negative affect (see Figure 1; in all figures, high and low values of

TABLE 2. Hierarchical Multiple Regression Analyses of the Interaction of Socially Prescribed Perfectionism and Stress Domains Predicting Difficulty Controlling Overeating When Experiencing Negative Affect

	B	SE B	β	<i>t</i> (<i>difs</i>)	ΔR^2
Socially Prescribed Perfectionism & Academic Stress					
Step 1					.03**
Difficulty controlling drinking in response to negative affect	.18	.05	.16**	3.33 (1, 404)	
Step 2					.02*
Socially Prescribed Perfectionism	.09	.04	.11*	2.10 (2,402)	
Academic Stress	1.73	1.18	.08	1.46 (2,402)	
Step 3					.02**
Socially Prescribed Perfectionism \times Academic Stress	.23	.08	.14**	2.92 (1,401)	
Socially Prescribed Perfectionism & Interpersonal Stress					
Step 1					.03**
Difficulty controlling drinking in response to negative affect	.18	.05	.16**	3.33 (1, 404)	
Step 2					.02*
Socially Prescribed Perfectionism	.11	.04	.13*	2.49 (2, 402)	
Interpersonal Stress	.91	2.23	.02	.41 (2, 402)	
Step 3					.000
Socially Prescribed Perfectionism \times Interpersonal Stress	.02	.15	.01	.14 (1, 401)	
Socially Prescribed Perfectionism & Weight/Shape Stress					
Step 1					.03**
Difficulty controlling drinking in response to negative affect	.18	.05	.16**	3.33 (1, 404)	
Step 2					.11***
Socially Prescribed Perfectionism	.07	.04	.08	1.63 (2,402)	
Weight/Shape Stress	5.34	.82	.31***	6.54 (2,402)	
Step 3					.000
Socially Prescribed Perfectionism \times Weight/Shape Stress	-.02	.06	-.02	-.39 (1,401)	

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

the independent variables are defined as plus or minus one standard deviation from the mean). Further, simple slope analyses revealed that academic stress was significantly associated with difficulty controlling overeating when experiencing negative affect at high levels of socially prescribed perfectionism, $\beta = .21$, $t(401) = 3.04$, $p < .01$, but not at low levels of socially prescribed perfectionism, $\beta = -.07$, $t(401) = -.92$, $p = .360$. Socially prescribed perfectionism did not interact with interpersonal or weight/shape stress to predict difficulty controlling overeating when experiencing negative affect.

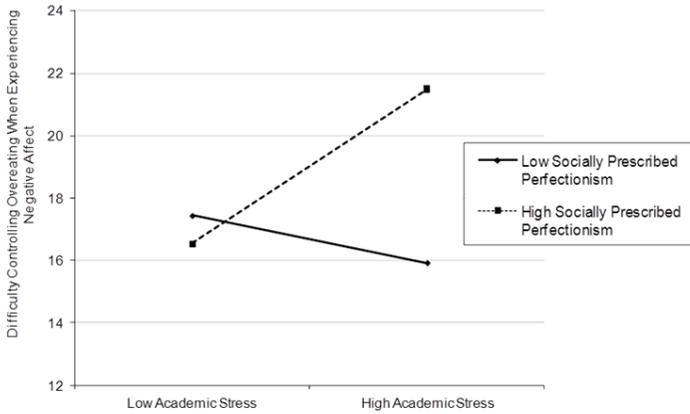


FIGURE 1. The interaction of socially prescribed perfectionism and academic stress predicting difficulty controlling overeating when experiencing negative affect.

Since BMI was significantly positively correlated with difficulty controlling overeating when experiencing negative affect ($r = .23$, $p < .001$), but not with difficulty controlling drinking when experiencing negative affect ($r = -.05$, $p = .314$), analyses with the overeating dependent variable were run with and without the covariate of BMI. The pattern of findings did not change, so the results without BMI as a covariate are presented for parsimony.

DRINKING ANALYSES

Similar to the overeating analyses, no significant 2-way interactions emerged involving self-oriented perfectionism and any stress domain in the prediction of difficulty controlling drinking when experiencing negative affect: academic stress, $t(400) = -.96$, $\beta = -.05$, $p = .336$, $\Delta R^2 = .002$; interpersonal stress, $t(400) = .29$, $\beta = .01$, $p = .773$, $\Delta R^2 = .000$; and weight/shape stress, $t(400) = -.58$, $\beta = -.03$, $p = .562$, $\Delta R^2 = .001$.

In contrast, all of the interactions involving socially prescribed perfectionism were significant in the prediction of difficulty controlling drinking when experiencing negative affect (see Table 3). For each domain of stress, for those with high socially prescribed

TABLE 3. Hierarchical Multiple Regression Analyses of the Interaction of Socially Prescribed Perfectionism and Stress Domains Predicting Difficulty Controlling Drinking When Experiencing Negative Affect

	B	SE B	β	t (dfs)	ΔR^2
Socially Prescribed Perfectionism & Academic Stress					
Step 1					.03**
Difficulty controlling eating in response to negative affect	.15	.05	.16**	3.33 (1, 404)	
Step 2					.06***
Socially Prescribed Perfectionism	.07	.04	.09	1.75 (2,402)	
Academic Stress	4.39	1.05	.21***	4.20 (2,402)	
Step 3					.03**
Socially Prescribed Perfectionism \times Academic Stress	.24	.07	.16**	3.40 (1,401)	
Socially Prescribed Perfectionism & Interpersonal Stress					
Step 1					.03**
Difficulty controlling eating in response to negative affect	.15	.05	.16**	3.33 (1, 404)	
Step 2					.12***
Socially Prescribed Perfectionism	.07	.04	.09	1.87 (2, 402)	
Interpersonal Stress	12.30	1.84	.32***	6.69 (2, 402)	
Step 3					.02**
Socially Prescribed Perfectionism \times Interpersonal Stress	.41	.13	.15**	3.17 (1, 401)	
Socially Prescribed Perfectionism & Weight/Shape Stress					
Step 1					.03**
Difficulty controlling eating in response to negative affect	.15	.05	.16**	3.33 (1, 404)	
Step 2					.03**
Socially Prescribed Perfectionism	.11	.04	.14**	2.76 (2, 402)	
Weight/Shape Stress	1.22	.83	.08	1.47 (2, 402)	
Step 3					.01*
Socially Prescribed Perfectionism \times Weight/Shape Stress	.13	.06	.12*	2.44 (1,401)	

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

perfectionism, higher levels of stress predicted greater difficulty controlling drinking in response to negative affect (see Figures 2–4). Simple slope analyses revealed that academic stress was significantly associated with difficulty controlling drinking when experiencing negative affect at high levels of socially prescribed perfectionism, $\beta = .36$, $t(401) = 5.43$, $p < .001$, but not at low levels of socially prescribed perfectionism, $\beta = .05$, $t(401) = .67$, $p = .502$. Interpersonal stress was significantly associated with difficulty controlling drinking when experiencing negative affect at high levels of socially pre-

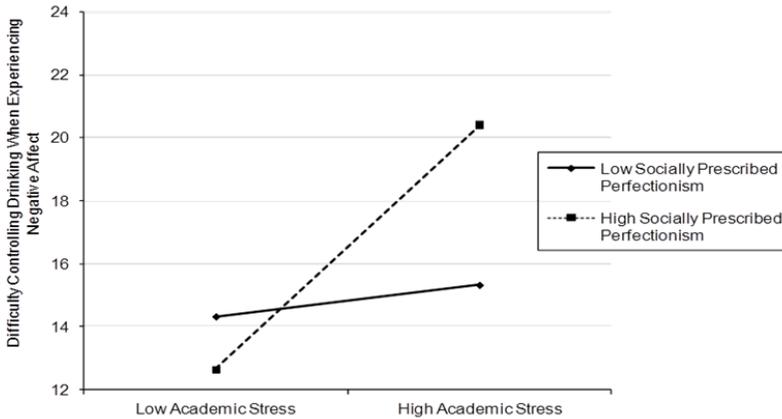


FIGURE 2. The interaction of socially prescribed perfectionism and academic stress predicting difficulty controlling drinking when experiencing negative affect.

scribed perfectionism, $\beta = .44$, $t(401) = 7.18$, $p < .001$, as well as at low levels of socially prescribed perfectionism, albeit less strongly, $\beta = .15$, $t(401) = 2.23$, $p < .05$. Lastly, weight/shape stress was significantly associated with difficulty controlling drinking when experiencing negative affect at high levels of socially prescribed perfectionism, $\beta = .18$, $t(401) = 2.68$, $p < .01$, but not at low levels of socially prescribed perfectionism, $\beta = -.06$, $t(401) = -.75$, $p = .453$.

DISCUSSION

This study examined how interactive models of perfectionism (self-oriented and socially prescribed) and stress (academics, interpersonal relationships, and body weight/shape) relate to difficulties controlling overeating and drinking when experiencing negative affect in a sample of college women. This work tests, for the first time, these interactive models in the prediction of difficulties controlling these behaviors and thus contributes to our understanding of behaviors that are problematic on their own, as well as maladaptive in that they are important precursors to binge eating and problem drinking.

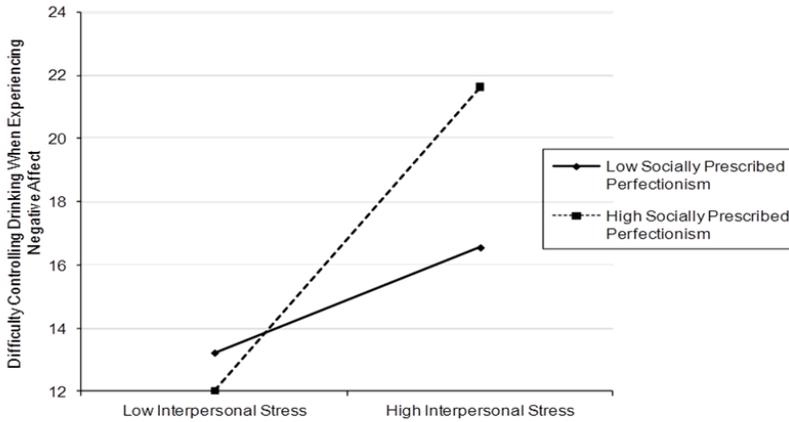


FIGURE 3. The interaction of socially prescribed perfectionism and interpersonal stress predicting difficulty controlling drinking when experiencing negative affect.

Our hypothesis that socially prescribed perfectionism and stress would interact to predict difficulty controlling overeating when experiencing negative affect was partially supported. Namely, a significant interaction emerged between socially prescribed perfectionism and academic stress in the prediction of difficulty controlling overeating when experiencing negative affect such that elevated levels of socially prescribed perfectionism and academic stress combined to prospectively predict the greatest difficulties controlling overeating. Investigation of the perfectionism-stress interactive model in relation to drinking yielded significant 2-way interactions between socially-prescribed perfectionism and all three of the stress domains in the prospective prediction of difficulty controlling drinking when experiencing negative affect.

Examining these interactive findings as a whole, several observations warrant attention. Regarding perfectionism, it was only socially prescribed perfectionism, not self-oriented perfectionism, that interacted with stress to predict difficulties controlling overeating and drinking in response to negative affect. This is largely in line with the literature supporting socially prescribed perfectionism as a maladaptive form of perfectionism, with self-oriented perfectionism generally considered adaptive or benign (e.g., Bieling, Israeli, & Antony, 2004). Additionally, there is evidence that maladaptive

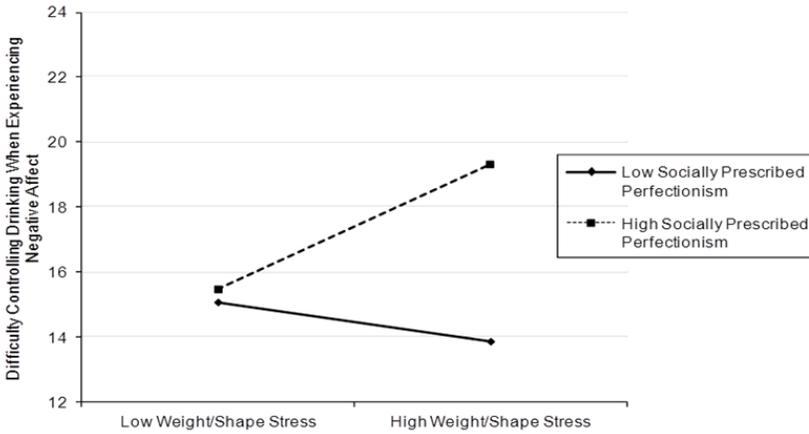


FIGURE 4. The interaction of socially prescribed perfectionism and weight/shape stress predicting difficulty controlling drinking when experiencing negative affect.

perfectionists tend to exhibit more stress than adaptive perfectionists or nonperfectionists (Rice & Van Arsdale, 2010), suggesting a possible synergistic effect between socially prescribed perfectionism and stress. Our findings support this possibility since the correlations between socially prescribed perfectionism and stress were more consistent and generally higher than the correlations between self-oriented perfectionism and stress. Feeling that others have high expectations of oneself could generate additional worry about meeting standards (Sassaroli & Ruggiero, 2005), which may in turn amplify the stress associated with those domains, creating particularly aversive conditions which motivate escape.

Regarding stress, academic stress was the only domain of stress to interact with perfectionism to predict difficulties controlling both overeating and drinking in response to negative affect. In a collegiate atmosphere, social pressures to perform academically are abundant (e.g., pressure from parents or the university to maintain a certain GPA) and high value is placed on academic outcomes (i.e., a high GPA is viewed as necessary for good post-graduate professional placement). The coupling of socially prescribed perfectionism and academic stress predicting difficulties controlling both overeating and drinking when experiencing negative affect may

occur especially for individuals with low tolerance for distress in search of escape.

It was somewhat surprising that the interactive model involving interpersonal stress was not significant in predicting difficulty controlling overeating in the context of negative affect. One might expect that relationship stress would be a potent contributor to eating pathology given the support for interpersonal psychotherapy for bulimia nervosa and binge eating (Fairburn, Jones, Peveler, Hope, & O'Connor, 1993; Tanofsky-Kraff & Wilfley, 2010) and its premise that interpersonal conflict may contribute to the development and maintenance of eating pathology. However, an examination of the bivariate correlations revealed no significant relation between interpersonal stress and difficulties controlling overeating when experiencing negative affect ($r = .09$). Perhaps interpersonal stress, as experienced by a college sample, may be more episodic and better captured using experience sampling, in contrast to academic and weight/shape stress which may be more chronic. Interestingly, an interactive model with interpersonal stress did predict difficulty controlling drinking when experiencing negative affect. This may reflect a scenario where an individual, feeling like she has to meet others' expectations and feeling interpersonal stress related to not fitting in, may feel the urge to drink in order to escape these aversive feelings or to try to fit in; future research is needed to better understand this finding.

It was also unexpected that the interactive model involving weight/shape stress did not predict difficulty controlling overeating in the context of negative affect. In other work, using an African American female college sample, maladaptive perfectionism (which included socially prescribed perfectionism) and the specific appearance stressor of feeling overweight interacted to predict bulimic symptoms (Bardone-Cone et al., 2009). In the current study, although weight/shape stress and socially prescribed perfectionism were independently significantly correlated with difficulties controlling overeating, the confluence of elevations in both did not produce heightened risk related to overeating. It may be that specifically feeling overweight is more jarring in the context of high socially prescribed perfectionism than having general concerns about weight/shape. It is interesting to note that the interaction of socially prescribed perfectionism and weight/shape stress did predict dif-

difficulties controlling drinking in response to negative affect. Perhaps in the context of social situations involving drinking, one's body concerns become more salient (e.g., comparing how one's weight/shape compare with others') and more potently engage with trait-level socially prescribed perfectionism to motivate drinking as a way to escape negative body-generated feelings or as "liquid courage" to stay in the social setting despite negative feelings about one's appearance.

The current study has several strengths including: the large sample size, excellent retention rate, assessment of dimensions of perfectionism and domains of stress, and the novel focus on difficulties controlling overeating/drinking when experiencing negative affect. Furthermore, the longitudinal design is a strength as it permitted prospective prediction.

One limitation of the present study is generalizability; it will be important for future research to determine if these findings replicate in males, community samples, clinical samples, and more racially/ethnically diverse samples. However, a focus on the current sample of college females is important given the high rates of binge eating and problem drinking among this group (e.g., Ferriter & Ray, 2011; Wechsler et al., 1994). Interestingly, Rice and Van Arsdale (2010) found that the link between stress and drinking to cope was stronger for female than male college students, and Timko, Finney, and Moos (2005) reported that in a sample of individuals with alcohol use disorders, females were more likely than males to drink to cope with stress, highlighting the need to examine stress models of drinking in females.

We note that the construct of difficulty controlling behaviors could be viewed as reports of self-efficacy as well as behaviors. While we framed this work largely emphasizing the behavioral aspect, regardless of the nomenclature, the constructs themselves of difficulties controlling overeating and drinking when experiencing negative affect (and related constructs – e.g., emotional eating, drinking to cope) have clear linkages with even more problematic behaviors, namely, binge eating and problem drinking (Kuntsche et al., 2008; Stice et al., 2002). Future longitudinal research should examine trait vulnerabilities, such as socially prescribed perfectionism, along with stress, negative affect, and both difficulties controlling overeating/drinking and frank behaviors of binge eating and binge drinking to test a more comprehensive model.

An additional limitation of the current study is the assessment of stress. Although representative of stress over the course of 10 weeks, for the domains of weight/shape and academics, stress was assessed with a single item. Future research should consider more detailed examinations of stress (e.g., multiple items of each stress domain of interest), distinguishing between objective and perceived stress, and assessing stress in other domains (e.g., work-related stress). A renewed investigation of interpersonal stress is also advised, given that the absence of significant findings involving interpersonal stress and difficulty controlling overeating were somewhat surprising. Future work examining stress might include an experience sampling approach, which would enable the fine-grained examination of the temporal relation between key constructs, including stress as it is experienced in a more momentary fashion.

In terms of clinical implications, clinicians working with college women may want to evaluate levels of academic, interpersonal, and weight/shape stress and socially prescribed perfectionism, as the perfectionism-stress combinations predicted subsequent problems controlling drinking and, to a lesser extent, overeating. Since an interactive model identifies multiple points of intervention, it should be the case that, for example, working on reducing academic stress or socially prescribed perfectionism should decrease difficulties controlling overeating and drinking when experiencing negative affect. This approach could potentially aid in preventing the development of the more serious problems of binge eating, bulimia nervosa, and problem drinking. To the degree that perfectionism and stress may be synergistic (Rice & Van Arsdale, 2010), clinicians may want to explore with clients how perfectionism can exacerbate stress; with this awareness, individuals may find agency in limiting these aversive synergistic effects. From a clinical perspective emphasizing positive well-being and individual strengths (Gelso & Fretz, 2001), clinicians may want to reduce the power of socially prescribed perfectionism by helping clients identify their own values and then strive to accomplish internally-driven goals, rather than externally-driven goals.

The study findings also suggest the need to assist in developing a client's repertoire of adaptive coping strategies. Building an awareness of negative affect may cue the individual that she is vulnerable to maladaptive coping patterns (i.e., overeating or drinking) and that self-care is warranted. Developing distress tolerance can aid in

acceptance and, in turn, grounded decision-making in response to negative affect rather than engaging in urgent, reactionary decision-making which may be reflected in the difficulties controlling overeating and drinking in the context of emotional distress.

In conclusion, the current study contributes to the literature by examining the nuanced roles of perfectionism and stress in interaction in predicting difficulties controlling overeating and drinking when experiencing negative affect. This work provides support for how socially prescribed perfectionism and stress (especially academic stress) can combine in college women to prospectively produce maladaptive behaviors that may set the stage for even more problematic behaviors such as binge eating and problem drinking and thus identifies points of prevention and intervention.

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