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Evaluating Associations between Perfectionism, Emotion Regulation, and Eating Disorder Symptoms in a Mixed Gender Sample

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Abstract

Prior research supports maladaptive perfectionism as a risk factor for eating disorders; however, not all individuals with elevated levels of perfectionism endorse eating pathology, suggesting additional variables may interact with perfectionism to account for this association. The current study examined the influence of difficulties in emotion regulation on the relation between perfectionism and eating disorders. Undergraduate students ($N = 309$, 50.7% male) from a large university completed measures of perfectionism, emotion dysregulation, and eating pathology. Results indicated high levels of perfectionism only accounted for significant variance in eating disorder symptoms among individuals with limited access to adaptive strategies to regulate emotions, but not among those with greater access to adaptive strategies. Findings demonstrate that clinicians and researchers should consider the role of emotion regulation among individuals with elevated levels perfectionism and eating pathology. Future research should prospectively evaluate these associations and examine mechanisms that may further elucidate these relations.

Keywords

eating disorders; emotion regulation; perfectionism

Eating disorders are serious mental health conditions linked to various psychosocial and medical sequelae, including decreased quality of life (Winkler et al., 2014), high rates of psychiatric comorbidities (Hudson, Hiripi, Pope, & Kessler, 2007), and increased suicide risk (Arcelus, Mitchell, Wales, & Nielsen, 2011). Recent research has identified several factors that may contribute to disordered eating; however, more research is needed to better

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understand specific risk and maintenance factors for eating disorders, which may inform more effective treatment and prevention methods. Maladaptive perfectionism and emotion regulation are two variables that have been independently linked to the etiology and maintenance of eating disorders (Harrison, Sullivan, Tchanturia, & Treasure, 2010; Hewitt, Flett, & Ediger, 1995). The purpose of the current study was to evaluate how the interaction between these two risk factors might account for unique variability in eating disorder symptoms.

1.1. Perfectionism and eating pathology

While several conceptualizations of perfectionism exist, it is most frequently described multi-dimensionally spanning two key dimensions: achievement striving perfectionism and maladaptive perfectionism (Bardone-Cone et al., 2007), with each dimension associated with distinct outcomes. Achievement-striving perfectionism relates to adaptive outcomes and fosters success in areas such as academic achievement (Mills & Blankstein, 2000). In contrast, maladaptive perfectionism consistently relates to negative psychosocial outcomes (Hewitt et al., 2003), including eating disorders (Bastiani, Rao, Weltzin, & Kaye, 1995). Recently, researchers have examined specific aspects of perfectionism in order to increase understanding of its relation to eating pathology (Bardone-Cone et al., 2007). Socially prescribed perfectionism (SPP), or the belief that others in one's social environment expect perfection, is one potentially crucial component of maladaptive perfectionism in the etiology of disordered eating (Hewitt et al., 1991; 1995; Bardone-Cone, 2007).

As conceptualizations of body image and eating disorders universally include an overvaluation of shape and weight—specifically, a preoccupation with achieving a certain body ideal often influenced by societal standards—it is logical that individuals with elevated levels of SPP may be at a greater risk for developing an eating disorder. Body ideals (e.g., the thin ideal) are influenced by a variety of sociocultural factors including, awareness and internalization of a certain body ideal and perceived pressures to adhere to that body type (Cafri, Yamamiya, Brannick, & Thompson, 2006). Accordingly, individuals with SPP may experience a greater belief that others expect them to adhere to such body ideals, which in turn leads to body dissatisfaction and eating pathology. While SPP has previously been linked to increased risk for eating disorders, not everyone with elevated SPP will go on to develop an eating disorder. Thus, research examining factors that may interact with perfectionism to exacerbate risk will improve our understanding of the relation between perfectionism and eating pathology.

1.2. Emotion regulation and eating pathology

Emotion regulation is an important factor in the etiology and maintenance of different forms of psychopathology (Aldao, Nolen-Hoeksema, & Schweizer, 2010), including eating disorders (Harrison et al., 2010). Gratz and Roemer (2004) note that individuals with psychopathology often lack effective, adaptive strategies to regulate negative affect, which in turn, prompts use of maladaptive behaviors to manage negative feelings. Research within eating disorders supports this hypothesis, suggesting that individuals with eating disorders have fewer effective emotion regulation strategies than healthy controls and more frequently

engage in dysfunctional emotion regulation strategies (Lavender et al., 2015). For example, a study by Svaldi and colleagues (2012) found that individuals with eating disorders engaged in dysfunctional emotion regulation strategies more frequently than healthy controls. A separate study noted that among emotion regulation difficulties, limited access to adaptive emotion regulation strategies was most strongly associated with emotional eating (Gianini, White, & Masheb, 2013). Thus, lack of access to effective skills for regulating negative affective states may prompt the use of disordered eating behaviors to regulate negative affect—particularly among those groups already at risk for engagement in these behaviors.

1.3. The interaction between perfectionism and emotion dysregulation

Current research suggests strong links between maladaptive perfectionism and deficits in emotion regulation. For example, Rudolph and colleagues (2007) found that that SPP was associated with maladaptive emotion regulation strategies (e.g., rumination) and negatively correlated with adaptive strategies (e.g., positive reappraisal). Additionally, several studies have longitudinally evaluated associations between emotion regulation, maladaptive perfectionism, and general forms of psychopathology. For example, preliminary research in a sample of university students supported the mediational role of emotional dysregulation in the association between perfectionism and psychological distress (Aldea & Rice, 2006). Another recent study (Richardson, Rice, & Devine, 2014) which examined perfectionism, emotion regulation, and stress response, further supported an interaction between emotion dysregulation and perfectionism; specifically, latent profile analyses suggested that participants with adaptive perfectionistic traits endorsed healthier emotion regulation strategies, as well as a moderate level of stress reactivity, compared to participants with maladaptive perfectionism.

Overall, evidence suggests that the individuals with high levels of maladaptive perfectionism, as well as difficulties with regulating their emotions, may be at elevated risk for various negative psychosocial outcomes. However, to date, only two studies have evaluated links between emotion regulation, perfectionism, and eating disorder-related constructs. Specifically, Byrne and colleagues (2016) explored the influence of perfectionism, emotion dysregulation, and aspects of affective disturbances on clinical impairment related to eating pathology. Results indicated that participants who reported high levels of both perfectionism and emotion dysregulation reported the greatest levels of clinical impairment. In addition, perfectionism alone was not a predictor of clinical impairment, suggesting that perfectionism may have a greater impact when combined with emotion dysregulation. Importantly, Byrne and colleagues only evaluated these associations within women; extending these results, Cunningham and colleagues (2018) looked at the role of emotion dysregulation in the relationship between perfectionism and dysmorphic appearance concerns among men. Interestingly, results indicated that difficulties in emotion regulation moderated the relationship between perfectionism and dysmorphic appearance concerns.

Findings from Byrne and colleagues (2016), as well as Cunningham and colleagues (2018), suggest that the interaction between perfectionism and emotion regulation difficulties may be relevant in accounting for variability in eating pathology. However, no studies to date

have evaluated the interaction between perfectionism and emotion dysregulation in accounting for symptoms of eating pathology. Byrne and colleagues (2016) evaluated the interaction between perfectionism and emotion dysregulation in accounting for eating disorder-related impairment, whereas Cunningham et al. (2018) linked this interaction with dysmorphic appearance concern. Furthermore, while existing findings in single gender samples provide initial support that these constructs are relevant across self-identified gender, no studies have evaluated these associations in a mixed gender sample of men and women.

1.4. The current study

This study examined whether lack of access to emotion regulation strategies strengthened the relationship between maladaptive perfection and eating disorder symptoms. We hypothesized that socially prescribed perfectionism would only account for significant eating disorder pathology among individuals who also endorsed having limited access to adaptive emotion regulation strategies.

2. Materials and methods

2.1. Participants

Participants recruited from a medium-sized university in the northeastern United States ($N=309$, 50.5% male) were predominately first year undergraduate students (58.8%). While the sample was largely comprised of individuals who identified as White/Caucasian (48.7%), other racial and ethnic groups were represented in the sample, including Asian/Asian-American (19.6%), Black/African American (15.0%), Hispanic/Latino (11.1%), Pacific Islander (.7%), and Multiracial/Other (4.9%).

2.2. Measures

2.2.1. Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994, 2008).—The EDE-Q is a 28-item self-report questionnaire that evaluates attitudes and behavioral characteristics of EDs. The measure contains four subscales, with higher total scores indicating greater eating pathology. In our sample, all subscales demonstrated good reliability, with Cronbach's α ranging from .80 to .91. In the present study, we used the global EDE-Q score, which is an average of the four subscales, as an indicator of general eating pathology.

2.2.2. Difficulties in Emotion Regulation Scale—Strategies Subscale (DERS; Gratz & Roemer, 2004).—The DERS is a 36-item measurement that gauges six dimensions of emotion regulation. Higher scores on the measurement indicate greater difficulty with regulating emotions. In the current study, we used the eight-item “Strategies” subscale, which gauges the extent to which a participant endorses limited access to emotion regulation strategies. Items on the subscale, such as “When I’m upset, I believe wallowing in it is all I can do,” are rated on a 5-point Likert-type scale ranging from *Almost Never* (1) to *Almost Always* (5). Past research has supported the psychometric properties of the scale

(Gratz & Roemer, 2004). This was replicated in our sample, as the Strategies subscale had a Cronbach's α of .91.

2.2.3. Multidimensional Perfectionism Scale—Socially Prescribed

Perfectionism Subscale (MPS-SPP; Hewitt & Flett, 1991).—The MPS is a 45-item scale that provides a measurement of three dimensions of perfectionism: self-oriented, other-oriented, and socially-prescribed perfectionism. Items are ranked using a 7-point Likert-type scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) with higher scores are indicative of greater perfectionism. The SPP subscale was used in the present analyses. This 15-item subscale measures the extent to which individuals believe others in their social environment (e.g., peers, family) demand perfection. In our sample, internal consistency for the subscale was acceptable ($\alpha = .75$).

2.2.4. Demographics questionnaire.—Participants reported self-identified gender, racial and ethnic background, and year in school. Self-reported, weight and height data was used to calculate Body Mass Index (BMI).

2.3. Procedure

Participants were recruited through the university's undergraduate research pool and were given course credit as compensation for their participation. Participants attended one in-lab appointment during which they provided informed consent and completed all measures on laboratory computers. The university's Institutional Review Board approved all methods.

2.4. Analytic plan

Prior to running analyses, we conducted Little's Missing Completely at Random (MCAR) test within SPSS for all self-report scales used in the current study. Missingness for items ranged from 1.6–4.5% with results from Little's MCAR test indicating that data were missing completely at random (p 's > .05). Accordingly, we proceeded with list-wise deletion in all subsequent analyses.

All variables demonstrated acceptable normality and fit relevant analytic assumptions. Independent and moderator variables (i.e., BMI, SPP, and DERS Strategies) were mean-centered prior to analyses. We tested the moderating effects of emotion regulation strategies (DERS) on maladaptive perfectionism (SPP) and eating pathology (EDE-Q) using hierarchical multiple regression analyses. We included gender as a covariate to control for gender differences in eating pathology (Stice, 2002). BMI was also entered as a covariate (Stice, 2002). In our multiple regression analyses, covariates were entered at Step 1, main effects were entered at Step 2, and the interaction effect (DERS Strategies x SPP) was entered at Step 3.

3. Results

3.1. Descriptive statistics

Descriptive statistics and Pearson-product bivariate correlations between all variables are available in Table 1. SPP, DERS Strategies, and EDE-Q Global scores all demonstrated significant, positive correlations.

3.2. Moderation analyses

Full results from the hierarchical multiple regression analyses are available in Table 2. Within Step 1 of the model, both gender, $t = -8.16$, $p < .01$, and BMI, $t = 7.74$, $p < .01$, demonstrated significant effects; both covariates continued to demonstrate significant effects of consistent directionality throughout all steps of the analysis. The addition of DERS Strategies and SPP to the model in Step 2 resulted in a significant increase in the variance in EDE-Q scores accounted for by the model. Both SPP, $t = 3.28$, $p < .01$, and DERS Strategies, $t = 4.17$, $p < .01$, had significant, positive main effects, such that increases in scores were associated with increases in EDE-Q global scores. Finally, in Step 3 of the model, adding the interaction term (SPP x DERS Strategies), $t = 2.73$, $p < .01$, resulted in a significant increase in variance in EDE-Q scores accounted for by the model. Graphical representation of the interaction is shown in Figure 1. DERS Strategies, $t = 3.78$, $p < .01$, and SPP, $t = 3.55$, $p < .01$, demonstrated positive main effects in Step 3 of the analyses. Finally, we performed the Johnson-Neyman technique to evaluate the regions of significance for the interaction effect. Results indicated that there was a significant link between SPP and EDE-Q scores for individuals who had DERS Strategies scores above 13.17. Approximately 61% of the sample had scores above this value.

4. Discussion

Although an extensive body of work has demonstrated associations between maladaptive perfectionism and eating disorder symptoms, perfectionism is a non-specific risk factor across various psychopathologies and, thus, cannot reliably account for variability in risk specific to eating pathology. For that reason, it is imperative to determine which variables interact with unique facets of maladaptive perfectionism, such as SPP, to confer greater risk for eating disorder symptoms. This study investigated whether having a lack of access to adaptive emotion regulation strategies strengthened the association between SPP and eating pathology.

Consistent with our hypotheses, results indicate that the interaction between SPP and emotion regulation strategies accounted for significant variance in eating disorder symptoms, such that the association between SPP and eating disorder symptoms was stronger for those individuals who endorsed having fewer adaptive emotion regulation strategies. These results coincide with prior evidence suggesting that maladaptive perfectionism interacts with deficits in emotion regulation skills to predict increased distress and psychopathology (e.g., Aldea & Rice, 2006; Richardson et al., 2014). Moreover, the current findings coincide with prior research that supported the influencing role of emotion regulation in associations between perfectionism and eating pathology (Byrne et al., 2016;

Cunningham et al., 2018). Altogether, results expand upon etiological models of eating disorders that implicate perfectionism as a key factor in eating pathology (e.g., Fairburn, Cooper, & Shafran, 2003), and validate prior calls to evaluate whether perfectionism interacts with other variables to explain eating disorders symptoms (e.g., Bardone-Cone et al., 2007).

The current findings suggest that a lack of adaptive emotion regulation strategies presents a key set of emotion regulation processes to target among individuals with elevated SPP. Moreover, it may also be the case that individuals with SPP who also possess greater adaptive emotion regulation skills are better able to cope with the distress driven by maladaptive perfectionism. These findings align with recent research identifying deficits in emotion regulation as a maintaining factor and potential treatment target across a variety of psychiatric conditions (Berking & Wupperman, 2012). Accordingly, eating disorder clinicians should aim to develop adaptive emotion regulation skills among individuals with eating disorders who may demonstrate elevated maladaptive perfectionism traits. For example, clinicians may choose to utilize a manualized treatment protocol, such as integrative cognitive-affective therapy (ICAT; Wonderlich et al., 2010), which emphasizes the importance of developing emotion regulation strategies as a way to cope with negative emotional states associated with eating pathology.

In addition to the role emotion regulation skills have as a maintaining factor and treatment target, the current findings suggest that they may also serve to protect individuals from developing eating pathology. As previous research has implicated adaptive emotion regulation skills as a protective factor against the development of various forms of psychopathology (Berking, Wirtz, Svaldi, & Hofmann, 2014; Kim & Cicchetti, 2010), it seems likely that increased access to adaptive emotion regulation skills may similarly serve as a protective factor against the development of eating pathology. Given this, ED prevention programs would likely benefit from an increased focus on emotion regulation skills. However, it is important to note that due to the cross-sectional design of the current study, our findings cannot directly assess the role of emotion regulation skills as a maintaining or protective factor in eating disorders.

Finally, consistent with previous research, gender and BMI demonstrated consistent, significant main effects on eating pathology. Although the current findings reinforce the importance of the interaction of maladaptive perfectionism and emotion regulation strategies in accounting for eating pathology, it is also important to note that SPP and DERS Strategies had significant main effects outside of the interaction with suggests their unique contributions to eating pathology. While this study provides a more nuanced understanding of how SPP and access to adaptive emotion regulation strategies are related to eating disorders, there are several limitations that must be noted. Because the current data presented is cross-sectional, future research should evaluate prospective associations between perfectionism, emotion regulation, and eating pathology. Although past work has suggested that self-reported height and weight demonstrate acceptable reliability and validity (Spencer, Appleby, Davey, & Key, 2002), the use of self-reported height and weight to determine participants' BMIs represents another limitation of the current study; future work should consider the use of objective measurements for height and weight, when feasible. In

addition, as the current sample consisted of generally healthy undergraduate students, further research is needed to examine if these relations occur similarly in clinical and more diverse populations.

This study has implications for future clinical work and research. Specifically, while perfectionism is widely accepted as a facet of eating pathology and is addressed within in existing standardized treatment protocols (e.g., Egan, Wade, Shafran, & Antony, 2014; Levinson et al., 2017), these findings indicate that perfectionism must be considered within the context of other variables, such as emotion regulation strategies. Clinicians who focus on perfectionism in the prevention and treatment of eating disorders may benefit from assessing and targeting clients' emotion regulation—specifically, increasing access to adaptive strategies. For example, therapeutic interventions may benefit from including efforts to increase access to adaptive cognitive emotion regulation strategies, such as positive reappraisal and putting things into perspective (both of which have been negatively correlated with SPP; Rudolph et al., 2007). Relatedly, as existing eating disorder prevention programs content varies widely (for review see: Stice, Shaw, & Marti, 2007), it may be beneficial to place a greater emphasis on teaching emotion regulation skills to participants as a way to adaptively cope with pressures to adhere to societal body ideals.

4.1. Conclusions

Our results indicate that maladaptive perfectionism may only account for significant variance in eating disorder symptoms among those individuals who have deficits in emotion regulation strategies. These findings further support the notion that emotion regulation represents an important etiological feature in eating disorders. While perfectionism has long been associated with eating disorders, clinicians and researchers must also consider the importance of deficits in emotion regulation strategies in individuals with eating pathology and elevated levels of perfectionism.

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Figure 1.

The moderating effect of DERS Strategies on the association between socially-prescribed perfectionism and eating disorder symptoms. Note. DERS Strategies, Low corresponds to -1 standard deviation below the mean; DERS Strategies, High corresponds to +1 standard deviation above the mean.

Table 1.
Pearson Product Bivariate Correlations for Variables of Interest (*N* = 309, 49.5% women)

Variable	Mean				SD		Range	
	1.	2.	3.	4.				
1. SPP	--				57.54	13.46	26.00–96.00	
2. DERS Strategies	.40*	--			17.61	7.68	8.00–40.00	
3. EDE-Q Global	.34*	.27*	--		1.53	1.35	0.00–6.00	
4. BMI	.08	-.05	.37*	--	23.76	4.14	14.22–41.63	

* *Note.* Denotes correlations significant at *p* < .01; SPP = Multidimensional Perfectionism Scale, Socially-Prescribed Perfectionism Subscale; DERS Strategies = Difficulties in Emotion Regulation Scale, Strategies Subscale; EDE-Q Global = Eating Disorder Examination Questionnaire Global Symptom Score; BMI = Body Mass Index.

Table 2.

Hierarchical multiple regression analyses for socially-prescribed perfectionism, DERS Strategies, and their interaction accounting for EDE-Q global scores

Variable	Step 1			Step 2			Step 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Gender	-.14	.14	-.43*	-.98	.13	-.37*	-1.00	.13	-.37*
BMI	.13	.02	.41*	.13	.02	.40*	.12	.02	.38*
SPP				.02	.01	.17*	.02	.01	.18*
DERS Strategies				.04	.01	.22*	.04	.01	.20*
SPP x DERS Strategies							.002	.00	.13*
<i>R</i> ²		.34			.44			.45	
<i>F</i> for change in <i>R</i> ²		61.58			21.95			7.46	

* *Note.* $p < .01$; Gender was coded as -.5 = female, .5 = male for statistical analyses to minimize bias (Kraemer & Blasey, 2004); BMI = Body Mass Index; DERS Strategies = Difficulties in Emotion Regulation Scale, Strategies Subscale; SPP = Multidimensional Perfectionism Scale, Socially-Prescribed Perfectionism Subscale; BMI, SPP, and DERS Subscales were all mean-centered prior to analyses. Step 1 through Step 3 = individual steps within the hierarchical multiple regression model.