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Maladaptive perfectionism, body image satisfaction, and disordered eating behaviors among U.S. college women: The mediating role of self-compassion



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ABSTRACT

Maladaptive perfectionism has been linked with body image dissatisfaction and disordered eating behaviors. From the standpoint of social mentality theory, this relationship may be the result of an overactive threat system and/or an underactive self-soothing system. Self-compassion represents the activities of the self-soothing system. This article describes two studies that were conducted in order to investigate whether self-compassion mediates these relationships in a large sample of U.S. college women. Study 1 found that self-compassion mediates the relationship between maladaptive perfectionism and body image dissatisfaction. Study 2 replicated the results of Study 1 but found that self-compassion did not mediate the relationship between maladaptive perfectionism and disordered eating. Results from both studies suggest that the self-judgment component of self-compassion was the most consistent mediator, suggesting that maladaptive perfectionism impacts body image satisfaction and disordered eating through negative self-evaluations.

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1. Introduction

The inverse relationship between perfectionism and body image satisfaction among women has been well-documented ([Downey & Chang, 2007](#); [Siegling & Delaney, 2013](#); [Welch, Miller, Ghaderi, & Vaillancourt, 2009](#)). The link between perfectionism and low body image satisfaction has been found in disordered eating patients and female athletes, but body image dissatisfaction and eating-disordered behaviors exist in non-clinical samples of women as well ([Downey & Chang, 2007](#); [Welch et al., 2009](#); [Williamson et al., 1995](#)). This relationship has also been found cross-culturally ([Chan, Ku, & Owens, 2010](#); [Choo & Chan, 2013](#)). This widespread low body image satisfaction may be due to the constant media exposure in our society today. [Wolf \(1991\)](#) argues that American culture is continually exposed to idealized female images heavily characterized by youth and slimness, a standard ideal that is unrealistic and impossible to achieve for most women ([Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999](#); [Thompson, Covert & Stormer, 1999](#); [Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005](#)). Body image dissatisfaction is linked to this thin-ideal internalization ([Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999a](#); [Thompson, Covert & Stormer, 1999b](#); [Thompson & Stice, 2001](#)). The purpose of this study

was to investigate the role of self-compassion in the relationship between perfectionism and body image satisfaction among U.S. college-aged women. Increased understanding of the cognitive processes that mediate this relationship may lead to insights helpful for designing new cognitive interventions.

1.1. Maladaptive perfectionism

Perfectionism has often been conceptualized as having normal and neurotic, positive and negative, or adaptive and maladaptive forms ([Lo & Abbott, 2013](#); [Slade & Owens, 1998](#); [Slaney, Rice, Mobley, Trippi, & Ashby, 2001](#)). Consistent with previous research utilizing the Almost Perfect Scale – Revised Short Form ([Slaney et al., 2001](#)), we chose to conceptualize perfectionism as having both adaptive and maladaptive forms ([Ashby & Rice, 2011](#); [Chester, Merwin, & DeWall, 2014](#); [Park & Jeong, 2016](#); [Paulson & Rutledge, 2014](#)). Adaptive perfectionism is characterized by setting high goals but being satisfied with one's performance, whereas maladaptive perfectionism is characterized by setting unrealistically high goals and resulting dissatisfaction ([Enns & Cox, 2002](#); [Slaney et al., 2001](#)). This study operationalized maladaptive perfectionism as the discrepancy between one's high standards and their actual performance ([Slaney et al., 2001](#)) because it most closely matches the discrepancy between ideal body image and an individual's actual body image satisfaction. Maladaptive perfectionism has been associated with high levels of perceived stress ([Rice & Van Arsdale, 2010](#)) and

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neuroticism (Hill, McIntire, & Bacharach, 1997; Parker & Stumpf, 1995; Stumpf & Parker, 2000). In this study, we sought to explore whether maladaptive perfectionism has an effect on body image satisfaction through self-compassion.

1.2. Self-compassion and social mentality theory

Self-compassion can be defined as “nonjudgmental understanding of one’s pain, inadequacies, and failures, so that one’s experience is seen as part of the larger human experience” (Neff, 2003a, p. 87). Social mentality theory, based on concepts from evolutionary biology, neurobiology, and attachment theory, suggests that social processing systems can produce internal signal-responses that allow for self-soothing (Gilbert & Irons, 2005). This theory posits that self-compassion deactivates the threat system and activates the self-soothing system (Gilbert, 1989). The threat system is associated with feelings of insecurity and defensiveness while the self-soothing system is associated with feelings of secure attachment and safeness. The self-soothing system has been posited to help individuals feel emotionally calm and cared for. This theory suggests that self-compassion is related to well-being because it creates feelings of safeness and security (Gilbert, 1989; Gilbert & Irons, 2005; Neff, 2003b, 2011). These self-soothing aspects of self-compassion have been theorized to increase successful coping in one’s environment (Gilbert, 1989). Self-compassion is negatively associated with neurotic perfectionism (Neff, 2003b) and has been found to inhibit the effects of negative body image and perfectionism in female undergraduate students (Wasyliw, MacKinnon, & MacLellan, 2012), perhaps because individuals high in self-compassion are less likely to compare themselves to others (Neff, 2011).

Women have reported lower levels of self-compassion compared to men, and are more likely to engage in self-judgment, feel isolated when confronted with painful situations, and to be more over-identified and less mindful of their negative emotions (Neff, 2003b; Neff, Hsieh, & Dejitterat, 2005). These findings are consistent with the idea that women tend to have higher levels of rumination (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999), depression (Nolen-Hoeksema, 1990; Nolen-Hoeksema, Larson, & Grayson, 1999), anxiety (for review see, McLean & Anderson, 2009), and negative affect (Fujita, Diener, & Sandvik, 1991). These lower levels of self-compassion may contribute to lower levels of body image satisfaction experienced by women (Siegling & Delaney, 2013).

According to social mentality theory, the threat system is associated with self-criticism, and the soothing system is associated with self-acceptance (Gilbert & Irons, 2005; Neff, 2011). The self-critical aspects of maladaptive perfectionism closely relate to the threat system, while the self-accepting and self-kindness aspects of self-compassion represent the soothing system. Consistent with previous research, these traits will activate cognitive appraisals and affective responses consistent with their associated system (Gilbert & Irons, 2005). It has been posited that individuals who are high in self-criticism are often automatically self-critical and may be less rehearsed in soothing the self (Gilbert & Irons, 2005). This suggests that personality traits, such as maladaptive perfectionism, may impact the way individuals relate to the self. Increased levels of self-judgment and maladaptive perfectionism will manifest through the threat system, which activates more negative cognitive appraisals and affective responses. Conversely, higher levels of self-compassion will manifest through the soothing system, which will activate more positive cognitive appraisals and create a kind and accepting view of the self. These cognitive appraisals and affective responses may effect the individual’s overall body image satisfaction. We posit that increased levels of maladaptive perfectionism could lead to lower levels of self-compassion, which would effect an individual’s overall body image satisfaction.

Previous research has linked self-compassion and body image (Breines, Toole, Tu, & Chen, 2014; Wasyliw et al., 2012) and has examined self-compassion as a mediator in body image and psychological

functioning (Duarte, Ferreira, Trindade & Pinto-Gouveia, 2015). We sought to explore this relationship but with a larger and more diverse sample. Wasyliw et al. (2012) found that self-compassion mediated the relationship between body preoccupation and depressive symptoms among female undergraduate students. Breines et al. (2014) found that body shame mediated the relationship between self-compassion and disordered eating behaviors among college women. We sought to expand upon this research by considering the role of maladaptive perfectionism along with self-compassion and body image. In Study 1, we examined this effect using maladaptive perfectionism and body image satisfaction. In Study 2, we replicated the analyses conducted in Study 1, and examined the effect of self-compassion on disordered eating behavior.

1.2.1. Study 1

The purpose of this study was to examine the relationship between maladaptive perfectionism, self-compassion, and body image satisfaction among U.S. college women. Consistent with the theoretical model described above, it was hypothesized that: (H_1) total self-compassion will mediate the relationship between maladaptive perfectionism and body image satisfaction. More specifically, and consistent with previous research into subfacets of self-compassion and body image (Wasyliw et al., 2012), it was hypothesized that maladaptive perfectionism would have an indirect effect on body image through (H_2) self-kindness and (H_3) self-judgment.

2. Method

2.1. Participants

Participants consisted of 580 female undergraduate students age 18–30 at a large public university in the southern U.S. Participants were recruited through the department research website. Demographic information is provided in Table 1.

2.2. Procedure

The study was approved by the university IRB. Informed consent was obtained from all participants. Participants completed the survey online and received course credit for participating.

Table 1
Demographic Characteristics.

Characteristic	Study 1		Study 2	
	n (580)	%	n (398)	%
Age				
18–21	437	75.3	293	73.6
22–25	123	21.3	92	23.1
26–30	20	3.4	13	3.3
Ethnicity				
White	308	53.1	175	44.0
Black/African-American	94	16.2	76	19.1
Hispanic	113	19.5	98	24.6
Asian/Pacific Islander	46	7.9	32	8.0
Native American	1	0.2	3	0.8
Other	18	3.1	14	3.5
Academic classification				
Freshman	148	25.5	98	24.6
Sophomore	133	22.9	84	21.1
Junior	172	29.7	100	25.1
Senior	126	21.7	115	28.9
Other	1	0.2	1	0.3

2.3. Measures

2.3.1. Maladaptive perfectionism

The Almost Perfect Scale – Revised Short Form (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) is a self-report measure of perfectionism. The APS-R consists of 23 items that measure three facets of perfectionism: standards, order, and discrepancy. Consistent with previous research (Gilman, Ashby, Sverko, Florell, & Varjas, 2005; Stoeber, Harris, & Moon, 2007; Wang, Slaney, & Rice, 2007), this study operationalized maladaptive perfectionism as the discrepancy scale, which consists of items such as: “My best just never seems to be good enough for me” and “I often worry about not measuring up to my own expectations.” Participants respond to the items using a Likert-type scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Higher scores are associated with increased levels of discrepancy, meaning that the higher score is, the greater the disparity is between one’s personal standards and their performance. In this study, Cronbach’s $\alpha = 0.94$.

2.3.2. Body image satisfaction

The Body Image Satisfaction Scale (BISS; Holsen, Jones, & Birkeland, 2012) is a self-report measure of body image satisfaction. The BISS consists of 4 items (e.g., “I would like to change a good deal about my body”), which participants respond to using a Likert scale ranging from 1 = *does not apply at all* to 6 = *applies exactly*. Responses are summed so that higher scores reflect a more positive body image. In this study, Cronbach’s $\alpha = 0.85$.

2.3.3. Self-compassion

The Self-Compassion Scale (Neff, 2003a, 2003b) is a self-report measure self-compassion. The self-compassion scale is comprised of 26 items with six subscales to measure three general facets of self-compassion: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification. Self-kindness is the tendency to treat oneself with understanding and care rather than with harsh self-judgment (e.g., “When I’m going through a very hard time, I give myself the caring and tenderness I need”). Common humanity is concerned with having the ability to recognize that failure is a human experience, instead of feeling cut off from others by one’s own failures (e.g., “I try to see my failings as part of the human condition”). Mindfulness is centered on being aware of the present moment in a balanced way rather than overidentifying with one’s emotions (e.g., “When something painful happens I try to take a balanced view of the situation”). Participants respond to items on a Likert-type scale ranging from 1 = *almost never* to 5 = *almost always*. Higher scores on the self-kindness, common humanity, and mindfulness subscales are associated with higher levels of self-compassion. The self-judgment, isolation, and over-identification subscales are reverse-scored and higher levels on these are associated with lower levels of self-compassion. In this study, Cronbach’s alpha for each scale was: self-kindness ($\alpha = 0.84$), self-judgment ($\alpha = 0.82$), common humanity ($\alpha = 0.80$), isolation ($\alpha = 0.83$), mindfulness ($\alpha = 0.78$), over-identified ($\alpha = 0.82$), and total ($\alpha = 0.90$).

2.4. Data analysis

Data analysis involved three stages. First, preliminary analyses were conducted in order to ensure no violation of assumptions. Second, descriptive and correlational data were calculated for each of the study variables. Third, mediation models were conducted in SPSS using the bootstrapping procedure of Preacher and Hayes (2008). 95% confidence intervals were used and 10,000 bootstrapping resampling procedures were run. Bootstrapping is a nonparametric procedure in which samples are taken multiple times from an existing dataset to create an empirical approximation of the sampling distribution. Confidence intervals are then generated based on this sampling distribution to test indirect effects associated with mediational models. If the computed confidence

intervals do not include 0, this indicates that the variable is a significant mediator in the proposed model. For a detailed discussion, see Preacher and Hayes (2008).

3. Results

Preliminary analyses found no violation of assumptions. Correlations between all variables of interest and descriptive statistics are displayed in Table 2.

Mediation occurs when a predictor variable (X) affects one or more mediators (M_j), which, in turn, affects the outcome variable (Y ; Preacher, Rucker, & Hayes, 2007). In this study, the effect of maladaptive perfectionism (X) on body image satisfaction (Y) is hypothesized to be mediated by self-compassion (M_j).

3.1. Single mediation

In order to test the hypothesis (H_1) that total self-compassion mediates the relationship between maladaptive perfectionism and body image satisfaction, a single mediation model was specified in which maladaptive perfectionism was the independent variable, self-compassion was the mediator, and body image satisfaction was the dependent variable. Maladaptive perfectionism had a significant negative effect on self-compassion (path a : -0.02 , $SE = 0.001$, $t = -14.29$, $p < 0.001$, 95% CI $[-0.02, -0.02]$), and self-compassion had a significant positive effect on body image satisfaction (path b : 2.56 , $SE = 0.36$, $t = 7.12$, $p < 0.001$, 95% CI $[1.85, 3.27]$). Maladaptive perfectionism had a significant negative direct effect on body image satisfaction (path c' : -0.07 , $SE = 0.01$, $t = -5.56$, $p < 0.001$, 95% CI $[-0.10, -0.05]$) and a significant negative indirect effect on body image satisfaction through self-compassion (-0.05 , $SE = 0.01$, 95% CI $[-0.07, -0.03]$). This single mediation model is displayed in Fig. 1.

3.2. Multiple mediation model

In order to test the hypotheses and that maladaptive perfectionism has an indirect effect on body image satisfaction through (H_2) self-kindness and (H_3) self-judgment, a multiple mediation model was specified in which maladaptive perfectionism was the independent variable, the six facets of self-compassion were entered as parallel mediators, and body image satisfaction was the dependent variable. Maladaptive perfectionism had a significant negative effect on self-kindness (path a_1 : -0.011 , $SE = 0.002$, $t = -5.51$, $p < 0.001$, 95% CI $[-0.02, -0.01]$), self-judgment (path a_2 : -0.03 , $SE = 0.002$, $t = -15.74$, $p < 0.001$, 95% CI $[-0.03, -0.03]$), isolation (path a_3 : -0.04 , $SE = 0.002$, $t = -16.88$, $p < 0.001$, 95% CI $[-0.04, -0.03]$), mindfulness (path a_4 : -0.006 , $SE = 0.002$, $t = -2.76$, $p = 0.006$, 95% CI $[-0.01, -0.002]$), overidentified (path a_5 : -0.03 , $SE = 0.002$, $t = -14.63$, $p < 0.001$, 95% CI $[-0.04, -0.03]$). Self-kindness (path b_1 : 1.30 , $SE = 0.36$, $t = 3.61$, $p < 0.001$, 95% CI $[0.59, 2.00]$) and self-judgment (path b_2 : 0.92 , $SE = 0.43$, $t = 2.15$, $p = 0.03$, 95% CI $[0.08, 1.75]$) and a significant positive effect on body image satisfaction. Maladaptive perfectionism had a significant negative direct effect on body image satisfaction (path c' : -0.08 , $SE = 0.01$, $t = -5.50$, $p < 0.001$, 95% CI $[-0.11, -0.05]$). Maladaptive perfectionism also had a significant negative indirect effect on body image satisfaction through self-kindness (-0.02 , $SE = 0.006$, 95% CI $[-0.03, -0.01]$) and self-judgment (-0.03 , $SE = 0.01$, 95% CI $[-0.05, -0.003]$). This multiple mediation model is displayed in Fig. 2.

4. Discussion

The purpose of this study was to examine the relationship between maladaptive perfectionism, self-compassion, and body image satisfaction among U.S. college women. Maladaptive perfectionism had an indirect effect on body image satisfaction through self-compassion, supporting H_1 . This suggests that maladaptive perfectionism is

Table 2
Descriptive statistics and bivariate correlations for Study 1.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Body image	14.37	4.53	–								
2. Maladaptive perfectionism	49.76	14.61	–0.39***	–							
3. Self-kindness	3.02	0.73	0.35***	–0.22***	–						
4. Self-judgment	2.80	0.78	0.34***	–0.55***	0.21***	–					
5. Common humanity	3.06	0.80	0.14***	–0.01	0.60***	–0.10*	–				
6. Isolation	2.95	0.88	0.34***	–0.58***	0.24***	0.81***	–0.01	–			
7. Mindfulness	3.18	0.72	0.25***	–0.11**	0.72***	0.01	0.67***	0.12**	–		
8. Over-identified	2.89	0.86	0.28***	–0.52***	0.22***	0.80***	–0.03	0.79***	0.13**	–	
9. SC total	2.98	0.54	0.43***	–0.51***	0.72***	0.72***	0.49***	0.76***	0.61***	0.75***	–

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

associated with lower self-compassion, which in turn, is associated with lower body image satisfaction. These results are consistent with previous research on the mediating impact of self-compassion on body image satisfaction (Wasylikiw et al., 2012). Maladaptive perfectionism had an indirect effect on body image satisfaction through self-kindness and self-judgment, supporting H_2 and H_3 . These results suggest that individuals with high levels of self-compassion are more likely to have increased body image satisfaction, and could be less likely to compare themselves to others (Neff, 2011; Wasylikiw et al., 2012).

At a broader level, these results support social mentality theory. The results are consistent with the notion that self-compassion activates the soothing system, which creates feelings of safeness and security, and can deactivate the threat system (Gilbert, 1989; Gilbert & Irons, 2005; Neff, 2003b, 2011). Individuals who are high in self-criticism – in this case, individuals who are high in maladaptive perfectionism – are often automatically self-critical, and may be less rehearsed in self-soothing (Gilbert & Irons, 2005). Individuals are likely to have increased feelings of self-worth through the increased self-kindness and decreased self-judgment component of self-compassion (Neff, 2011). This suggests that adopting a more accepting and positive view of the self may help to combat the heavy media exposure of idealized and unrealistic female images that women are exposed to in our society (Thompson, Heinberg, et al., 1999; Thompson, Coovert, 1999; Thompson & Stice, 2001).

4.1. Study 2

The purpose of Study 2 was to attempt to replicate the findings of Study 1 in a new sample and to explore whether the same pattern of prediction would be found with disordered eating behavior.

4.1.1. Disordered eating

The relationship between perfectionism and disordered eating behaviors has been well documented (Choo & Chan, 2013; Cockell et al., 2002; Davis, 1997; Hewitt, Flett, & Ediger, 1995; Strober, 1980).

Disordered eating behaviors have been associated with lower body image satisfaction and increased shape and weight overevaluation (Siegling & Delaney, 2013; Thompson, Coovert, 1999; Welch et al., 2009). Sullivan and Harnish (1990) reported that weight and shape overevaluation has been found in individuals that exhibit increased levels of self-monitoring behavior. Individuals high in self-monitoring behavior also reported engaging in more physical appearance behaviors when compared to individuals with low self-monitoring behavior.

4.1.2. Self-compassion

Goss and Gilbert (2002) posit that disordered eating behaviors can serve as a way of regulating threat and creating feelings of safety within a social group. Self-compassion has been associated with lower levels of body preoccupation and disordered eating (Ferreira, Pinto-Gouveia, & Duarte, 2013; Wasylikiw et al., 2012). Breines et al. (2014) found that participants with higher levels of appearance-related self-compassion reported lower levels of disordered eating and body shame. The process of self-compassion can help break the cycle of self-absorption because it allows the individual to put personal experiences into greater perspective and achieve greater clarity (Neff, 2003b). This theory posits that the soothing system activates more positive cognitive appraisals, which lead to a kind and accepting view of the self. Adopting an accepting view of the self is associated with lower levels of self-criticism, which we posit would lead to lower levels of maladaptive perfectionism and disordered eating behavior.

4.2. The current study

Wasylikiw et al. (2012) examined the mediating relationship between the subscale facets of self-compassion, body image, and depressive symptoms in a female undergraduate sample. This study wanted to use that approach while examining the relationship that self-compassion has on maladaptive perfectionism and disordered eating behavior. In order to replicate Breines et al. (2014), in Study 2 the short form of the self-compassion measure was used. The purpose of

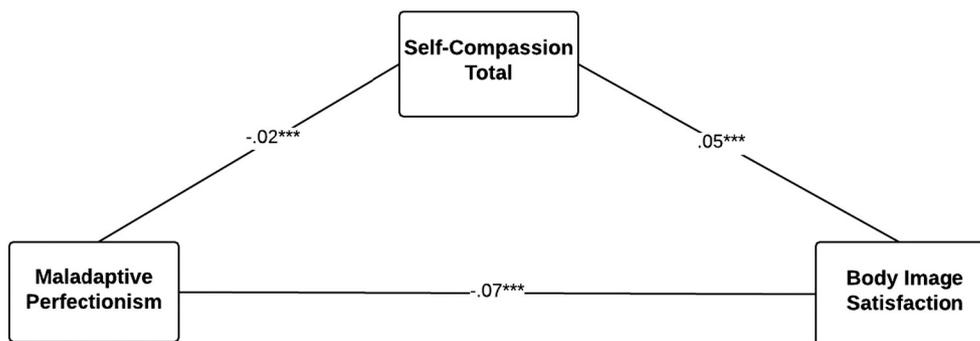


Fig. 1. Study 1: Coefficients presenting the effect of maladaptive perfectionism on self-compassion and body image satisfaction. Significant effects were found for the total effect of maladaptive perfectionism on body image satisfaction (-0.07), $t = -5.56$, $SE = 0.01$, $p < 0.001$.

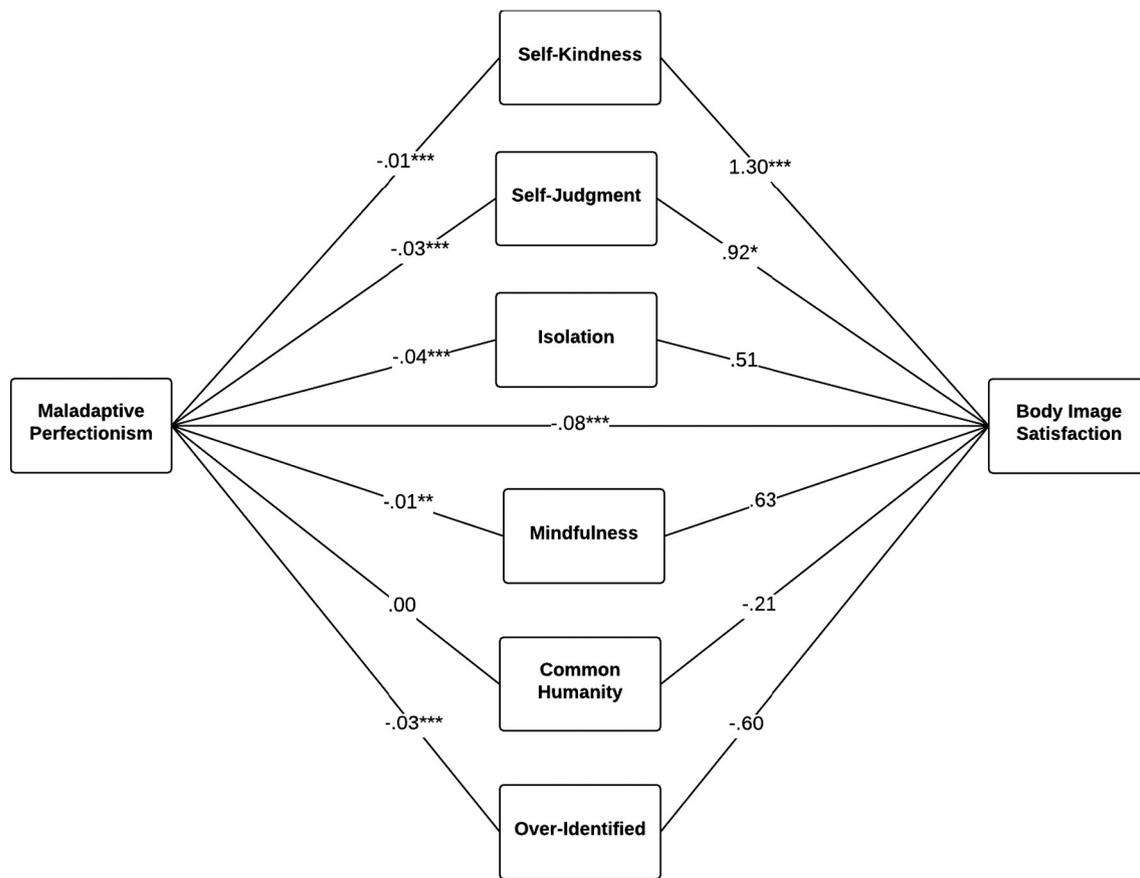


Fig. 2. Study 1: Coefficients presenting the effect of maladaptive perfectionism on self-compassion and body image satisfaction. Significant effects were found for the total effect of maladaptive perfectionism on body image satisfaction (-0.08), $t = -5.50$, $SE = 0.01$, $p < 0.001$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Study 2 was to attempt to replicate the findings of Study 1 in a new sample and to explore whether the same pattern of prediction would be found with disordered eating behavior. Therefore, it was hypothesized that: (H_1) total self-compassion will mediate the relationship between maladaptive perfectionism and body image satisfaction. More specifically, and consistent with previous research into subfacets of self-compassion and body image (Wasylikiw et al., 2012), it was hypothesized that maladaptive perfectionism would have an indirect effect on body image through (H_2) self-kindness and (H_3) self-judgment. It was hypothesized that (H_4) self-compassion would mediate the relationship between maladaptive perfectionism and disordered eating behavior; it was hypothesized that maladaptive perfectionism would have an indirect effect on disordered eating behavior through (H_5) self-kindness and (H_6) self-judgment.

5. Method

5.1. Participants

Participants consisted of 398 female undergraduate students age 18–30 at a large public university in the southern U.S. Participants were recruited through the department research website. Demographic information is provided in Table 1.

5.2. Measures

The Almost Perfect Scale – Revised Short Form (APS-R SF; Rice, Richardson, & Tueller, 2014), is a self-report measure of perfectionism. Consistent with Study 1, this study operationalized maladaptive perfectionism as the discrepancy subscale. The discrepancy subscale contains four items from the APS-R discrepancy subscale (e.g., “I am hardly ever

satisfied with my performance” and “I often feel disappointment after completing a task because I know I could have done better”). Higher scores indicate higher levels of maladaptive perfectionism. In this study, Cronbach's $\alpha = 0.91$.

The Body Image Satisfaction Scale (BISS; Holsen et al., 2012), as described in Study 1, is a self-report measure of body image satisfaction. In this study, Cronbach's $\alpha = 0.85$.

The Self-Compassion Scale – Short Form (Raes, Pommier, Neff, & Van Gucht, 2011) is a self-report measure self-compassion. In order to replicate Breines et al. (2014), the short form of the self-compassion scale was used. The self-compassion scale consists of 12 items forming six subscales to measure three general facets of self-compassion: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification. In this study, Cronbach's α was: overidentified ($\alpha = 0.75$), self-judgment ($\alpha = 0.73$), self-kindness ($\alpha = 0.52$), mindfulness ($\alpha = 0.77$), isolation ($\alpha = 0.76$), common humanity ($\alpha = 0.57$), and total ($\alpha = 0.68$).

The Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982) is a self-report measure of disordered eating behavior. The EAT-26 is comprised of 26 items to measure the degree of disordered eating (e.g., “Am terrified of being overweight”, “Feel extremely guilty after eating”, and “Feel that food controls my life”). Participants respond to 26 items on a 6-point Likert-type scale ranging from 1 = never to 6 = always. Higher scores indicate higher levels of disordered eating behavior. In this study, Cronbach's $\alpha = 0.94$.

6. Results

Preliminary analyses were conducted in order to ensure no violation of assumptions. Correlations between all variables of interest and descriptive statistics are displayed on Table 3.

Table 3
Descriptive statistics and bivariate correlations for Study 2.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Body image	13.93	4.31	–									
2. Maladaptive perfectionism	17.23	5.60	0.28***	–								
3. Self-kindness	22.23	1.50	–0.18**	–0.07	–							
4. Self-judgment	21.90	1.75	–0.32***	–0.42***	–0.12*	–						
5. Common humanity	22.15	1.60	–0.08	0.02	0.59***	–0.21***	–					
6. Isolation	21.76	1.78	–0.22***	–0.42***	–0.14**	0.64***	–0.19***	–				
7. Mindfulness	22.66	1.68	–0.10*	–0.01	0.68***	–0.22***	0.59***	–0.24***	–			
8. Over-identified	21.77	1.83	–0.23***	–0.41***	–0.15**	0.65***	–0.19***	0.74***	–0.23***	–		
9. SC total	132.46	5.46	–0.35***	–0.42***	0.52***	0.58***	0.44***	0.61***	0.44***	0.62***	–	
10. EAT	9.930	11.20	0.43***	0.26***	0.06	–0.29***	0.13*	–0.21***	0.14**	–0.16**	–0.12*	–

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

6.1. Single mediation for body image satisfaction

In order to test the hypothesis (H_1) that total self-compassion would mediate the relationship between maladaptive perfectionism and body image satisfaction, a single mediation model was specified in which maladaptive perfectionism was the independent variable, self-compassion was the mediator, and body image satisfaction was the dependent variable. Maladaptive perfectionism had a significant negative effect on self-compassion (path a : -0.41 , $SE = 0.05$, $t = -8.91$, $p < 0.001$, 95% CI $[-0.50, -0.32]$). Self-compassion had a significant positive effect on body image satisfaction (path b : 0.23 , $SE = 0.04$, $t = 5.43$, $p < 0.001$, 95% CI $[0.145, 0.309]$). Maladaptive perfectionism had a significant negative direct effect on body image satisfaction (path c' : -0.12 , $SE = 0.04$, $t = -2.94$, $p = 0.004$, 95% CI $[-0.20, -0.04]$) and a significant negative indirect effect on body image satisfaction through self-compassion (-0.09 , $SE = 0.02$, 95% CI $[-0.14, -0.06]$). This single mediation model is displayed in Fig. 3.

6.2. Multiple mediation for body image satisfaction

In order to test the hypothesis (H_2) that maladaptive perfectionism would have an indirect effect on body image through self-kindness and (H_3) self-judgment, a multiple mediation model was specified in which maladaptive perfectionism was the independent variable, the six facets of self-compassion were the mediators, and body image satisfaction was the dependent variable. Maladaptive perfectionism had a significant negative effect on overidentified (path a_1 : -0.13 , $SE = 0.02$, $t = -8.61$, $p < 0.001$, 95% CI $[-0.16, -0.10]$), isolation (path a_2 : -0.13 , $SE = 0.02$, $t = -8.91$, $p < 0.001$, 95% CI $[-0.16, -0.10]$), and self-judgment (path a_3 : -0.13 , $SE = 0.02$, $t = -8.77$, $p < 0.001$, 95% CI $[-0.16, -0.10]$). Self-kindness (path b_1 : 0.45 , $SE = 0.20$, $t = 2.29$, $p = 0.02$, 95% CI $[0.06, 0.84]$), and self-judgment (path b_2 : 0.69 , $SE = 0.17$, $t = 4.15$, $p < 0.001$, 95% CI $[0.36, 1.02]$) had a significant

positive effect on body image satisfaction. Maladaptive perfectionism had a significant negative direct effect on body image satisfaction (path c' : 0.11 , $SE = 0.04$, $t = -2.52$, $p = 0.012$, 95% CI $[-0.19, -0.02]$) and a significant negative indirect effect on body image satisfaction through self-judgment (-0.09 , $SE = 0.03$, 95% CI $[-0.15, -0.04]$). This multiple mediation model is displayed in Fig. 4.

6.3. Single mediation with disordered eating

In order to test the hypothesis (H_4) that self-compassion would mediate the relationship between maladaptive perfectionism and disordered eating, a single mediation model was specified in which maladaptive perfectionism was the independent variable, self-compassion was the mediator, and disordered eating was the dependent variable. Maladaptive perfectionism had a significant negative effect on self-compassion (path a : -0.41 , $SE = 0.05$, $t = -8.91$, $p < 0.001$, 95% CI $[-0.50, -0.32]$). Self-compassion did not have a significant relationship with disordered eating. Maladaptive perfectionism had a significant positive direct effect on disordered eating (path c' : 0.51 , $SE = 0.11$, $t = 4.61$, $p < 0.001$, 95% CI $[0.29, 0.73]$), but it did not have a significant indirect effect on disordered eating through self-compassion. This single mediation model is displayed in Fig. 5.

6.4. Multiple mediation with disordered eating

In order to test the hypothesis that maladaptive perfectionism would have an indirect effect on disordered eating behavior through (H_5) self-kindness and (H_6) self-judgment, a multiple mediation model was specified in which maladaptive perfectionism was the independent variable, the six facets of self-compassion were the mediators, and disordered eating behavior was the dependent variable. Maladaptive perfectionism had a significant negative affect on overidentified (path a_1 : -0.13 , $SE = 0.02$, $t = -8.61$, $p < 0.001$, 95% CI $[-0.16, -0.10]$), isolation (path a_2 : -0.13 , $SE = 0.02$, $t = -8.91$, $p < 0.001$, 95% CI $[-0.16, -0.10]$),

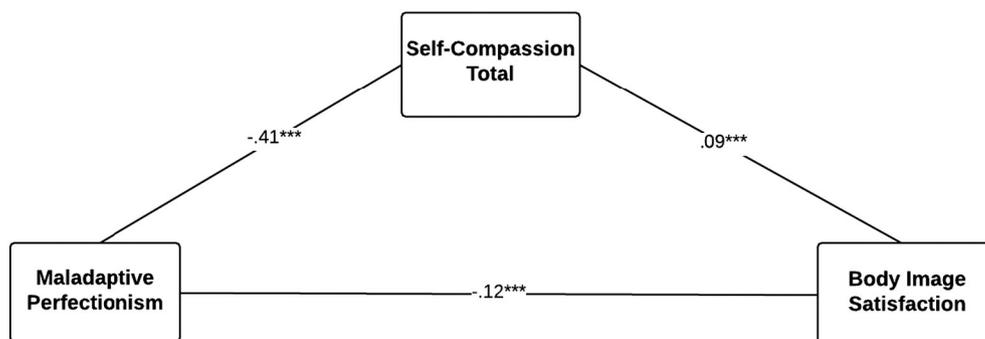


Fig. 3. Study 2: Coefficients presenting the effect of maladaptive perfectionism on self-compassion and body image satisfaction. Significant effects were found for the total effect of maladaptive perfectionism on body image satisfaction (-0.12), $t = 2.94$, $SE = 0.04$, $p < 0.001$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

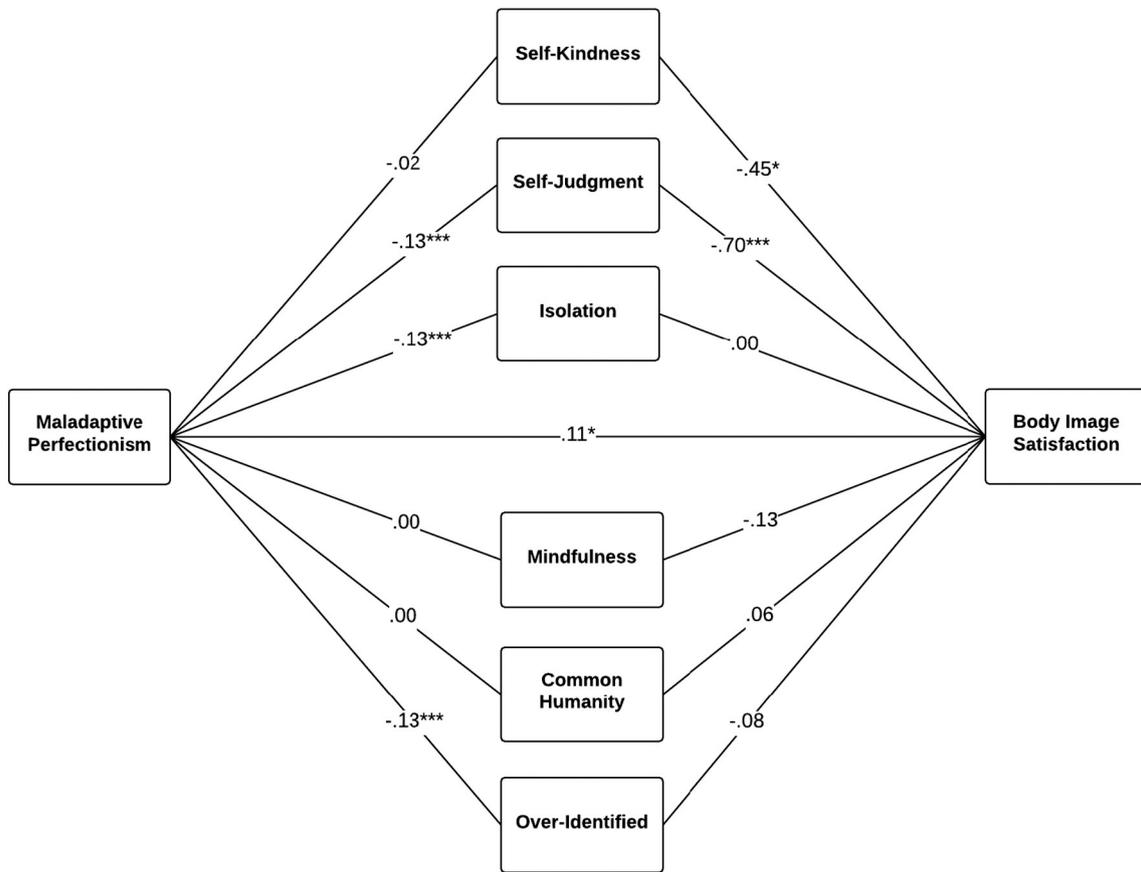


Fig. 4. Study 2: Coefficients presenting the effect of maladaptive perfectionism on self-compassion and body image satisfaction. Significant effects were found for the total effect of maladaptive perfectionism on body image satisfaction (0.11), $t = -2.52$, $SE = 0.04$, $p = 0.012$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

and self-judgment (path a_3 : -0.13 , $SE = 0.02$, $t = -8.77$, $p < 0.001$, 95% CI $[-0.16, -0.10]$). Self-judgment (path b_1 : -1.54 , $SE = 0.44$, $t = -3.48$, $p < 0.001$, 95% CI $[-2.41, -0.67]$) had a significant negative effect on disordered eating. Maladaptive perfectionism had a significant positive direct effect on disordered eating (path c' : 0.38 , $SE = 0.11$, $t = 3.40$, $p < 0.001$, 95% CI $[0.16, 0.60]$). Maladaptive perfectionism had a significant positive indirect effect on disordered eating through self-judgment (0.20 , $SE = 0.06$, 95% CI $[0.11, 0.33]$). This multiple mediation model is displayed in Fig. 6.

7. Discussion

The purpose of this study was to replicate the results found in Study 1 as well as to examine the relationship between maladaptive perfectionism, self-compassion, and disordered eating behavior among U.S.

college women. Consistent with the results of Study 1, maladaptive perfectionism had an indirect effect on body image satisfaction through self-compassion, providing support for H_1 . These results offer further support for the positive mediating impact of self-compassion on body image satisfaction (Wasylikiw et al., 2012). Maladaptive perfectionism did not have a significant indirect effect on body image satisfaction through self-kindness, but it did through self-judgment, meaning that H_2 was not supported but H_3 was. These results on the subscale facets of self-compassion are consistent with previous research that self-judgment was the only significant mediator when examining body image (Wasylikiw et al., 2012). Inconsistent with our hypothesis (H_4), maladaptive perfectionism did not have a significant effect on disordered eating behavior through self-compassion. Although previous research has contended that increased levels of self-compassion were related to lower levels of disordered eating behavior (Breines et al.,

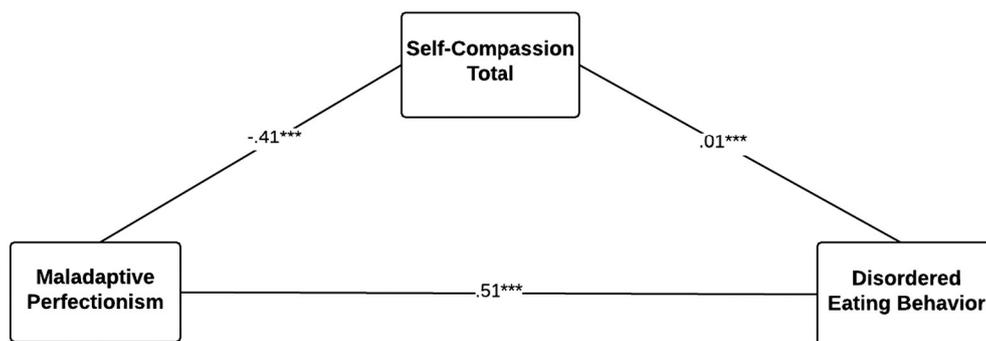


Fig. 5. Study 2: Coefficients presenting the effect of maladaptive perfectionism on self-compassion and disordered eating behavior. Significant effects were found for the total effect of maladaptive perfectionism on disordered eating behavior (0.511), $t = 4.609$, $SE = 0.111$, $p < 0.001$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

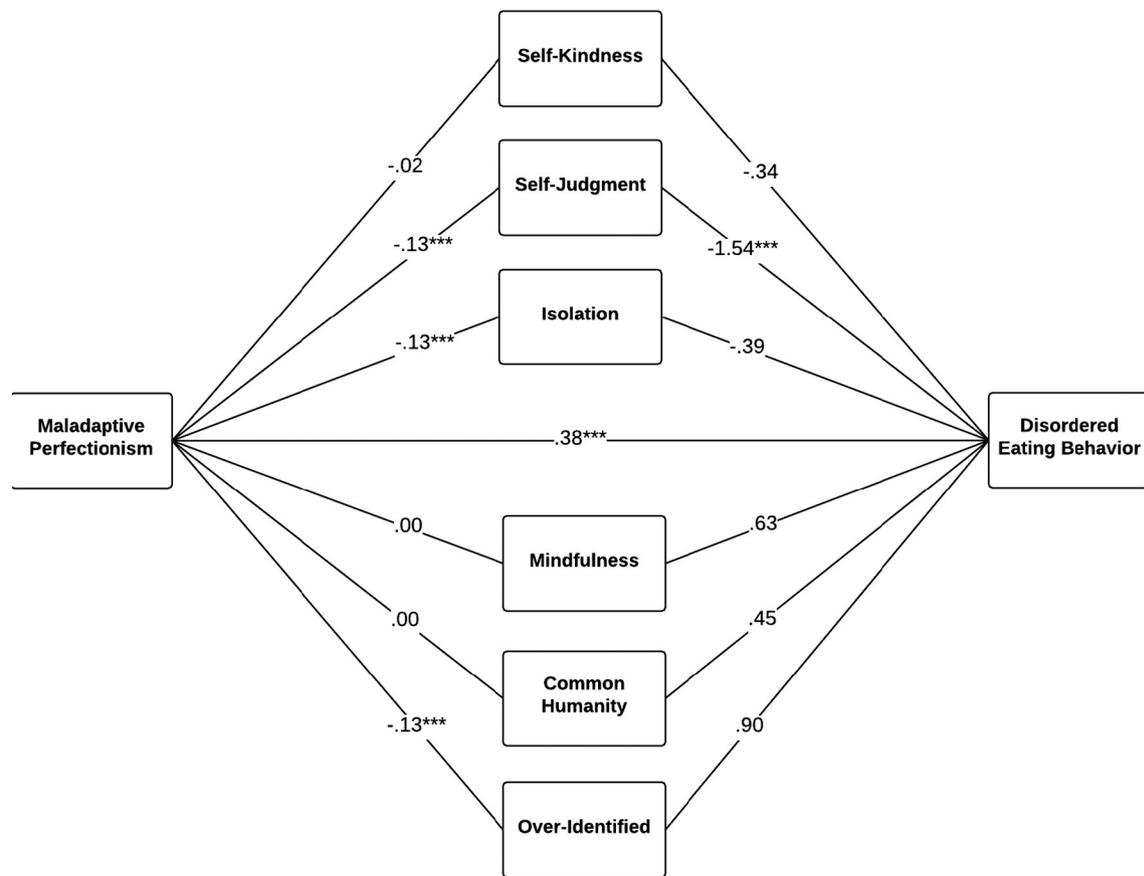


Fig. 6. Study 2: Coefficients presenting the effect of maladaptive perfectionism on self-compassion and disordered eating behavior. Significant effects were found for the total effect of maladaptive perfectionism on body image satisfaction (0.38), $t = 3.40$, $SE = 0.11$, $p < 0.001$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

2014; Wasylikiw et al., 2012), we found no significant relationship between self-compassion and disordered eating behaviors. Finally, inconsistent with our hypothesis (H_5), maladaptive perfectionism did not have a significant impact on disordered eating through self-kindness. Consistent with our hypothesis, (H_6) maladaptive perfectionism had an indirect effect on disordered eating behavior through self-judgment. These results are consistent with previous research on the subscale facets of self-compassion and disordered eating (Wasylikiw et al., 2012).

Disordered eating behaviors have been theorized to serve as a way to regulate threat and create feelings of safety (Goss & Gilbert, 2002). By activating the self-soothing system through certain aspects of self-compassion, which creates feelings of safety and self-confidence, disordered eating behaviors and body preoccupation levels are lowered (Ferreira et al., 2013; Gilbert, 1989; Gilbert & Irons, 2005). Self-compassion was found to mediate the relationship between maladaptive perfectionism and body image satisfaction in both studies, however, when disordered eating was measured, self-judgment was the only significant component of self-compassion.

8. General discussion

In summary, maladaptive perfectionism was found to have an indirect effect on body image satisfaction through self-compassion; however, it did not have an indirect effect on disordered eating through self-compassion. The components of self-compassion that were found to exert effects most consistently were self-kindness and self-judgment component. The self-judgment component was a mediator in both studies. The self-kindness component was a mediator in Study 1 but not Study 2, which may be due to the low alpha value for this subscale. This component is focused on creating an understanding and patient

stance towards oneself instead of a judging and critical stance (Neff, 2003b). By creating a patient and understanding view of oneself, self-compassion activates the self-soothing system to help create feelings of safety and self-confidence (Gilbert, 1989; Gilbert & Irons, 2005; Neff, 2011). This view posits that self-compassion can transform negative self-affect into a more positive affective state (Neff, 2003b). This view is consistent with the idea that increasing self-kindness while decreasing the level of self-judgment can be helpful for the individuals' overall well-being (Neff, 2011). Adopting a more self-compassionate view of the self may help to lessen the impact of the constant media exposure to images of idealized female bodies. Utilizing self-compassion based interventions may be particularly helpful for individual with high levels of self-judgment and maladaptive perfectionism.

Although our study obtained results consistent with previous findings, it had some limitations. This study utilized a convenience sample of undergraduate students, so the results may not generalize to other populations. Also, the study utilized a cross-sectional design to test mediation, which some have found to be biased (Maxwell & Cole, 2007). This limits the conclusions that can be drawn regarding causality and directionality of results. The results found in these studies can serve as a starting point for the exploration into the relationships between self-compassion, maladaptive perfectionism, and body image satisfaction. The measures used in this study were all self-report, which presents the possibility for bias in the participants' responses. One limitation of this study concerns the psychometric properties of the Self-Compassion Scale. Williams, Dalgleish, Karl, and Kuyken (2014) conducted confirmatory factor analyses that did not endorse the psychometric properties of the Self-Compassion Scale. They concluded that this scale falls below the criteria for an acceptable measure of self-compassion. Raes, Pommier, Neff, and Van Gucht (2010) have reported issues with the psychometric properties of the short-form of the Self-Compassion Scale. The alpha

values for this scale were low and the results should be interpreted cautiously. The replication of the total self-compassion scale was supported, but the results from the individual subscales should be interpreted more tentatively.

Despite these limitations, these studies suggest directions for future. Future research could explore these relationships among other populations, such as the general public or a clinical sample of individuals with eating disorders. Future studies could employ longitudinal designs in order to further investigate causality between these variables. These studies also have implications for clinical practice. Similar to mindfulness-based interventions, Neff (2011) contends that self-compassion can be utilized as a mental health intervention. This could be particularly helpful for individuals with high levels of maladaptive perfectionism and disordered eating behavior, because Neff (2003b) contends that self-compassion could be useful for countering negative attitudes in domains where self-improvement is difficult or impossible. Interventions that focus on creating a more accepting and positive view of the self could help to combat the heavy exposure of idealized and unrealistic images that women are exposed to today. Future research should focus on the development and utilization of these self-compassion based interventions.

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