

# Self-compassion and intuitive eating in college women: Examining the contributions of distress tolerance and body image acceptance and action



Suzanne J. Schoenefeld, Jennifer B. Webb\*

The University of North Carolina at Charlotte, Department of Psychology, 9201 University City Blvd., Charlotte, NC 28223, United States

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## ABSTRACT

Self-compassion has been linked to higher levels of psychological well-being. The current study evaluated whether this effect also extends to a more adaptive food intake process. More specifically, this study investigated the relationship between self-compassion and intuitive eating among 322 college women. In order to further clarify the nature of this relationship this research additionally examined the indirect effects of self-compassion on intuitive eating through the pathways of distress tolerance and body image acceptance and action using both parametric and non-parametric bootstrap resampling analytic procedures. Results based on responses to the self-report measures of the constructs of interest indicated that individual differences in body image acceptance and action ( $\beta = .31, p < .001$ ) but not distress tolerance ( $\beta = .00, p = .94$ ) helped explain the relationship between self-compassion and intuitive eating. This effect was retained in a subsequent model adjusted for body mass index (BMI) and self-esteem ( $\beta = .19, p < .05$ ). Results provide preliminary support for a complementary perspective on the role of acceptance in the context of intuitive eating to that of existing theory and research. The present findings also suggest the need for additional research as it relates to the development and fostering of self-compassion as well as the potential clinical implications of using acceptance-based interventions for college-aged women currently engaging in or who are at risk for disordered eating patterns.

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## 1. Introduction

Positive Psychology's recent call to action has mobilized an increase in scholarship devoted to clarifying the nature and correlates of more adaptive forms of eating and relating to one's body (e.g., Tylka, 2011). Intuitive eating constitutes one such approach that has emerged as a healthier alternative to maladaptive eating patterns that is characterized by the unconditional permission to eat, eating for physiological rather than emotional reasons, and tuning into internal hunger and satiety cues to guide the eating process (Tylka, 2006). Nevertheless, despite the promising growth of research on this construct, few studies have attempted to provide theoretically-driven empirical models that may help explain its occurrence (Avalos & Tylka, 2006).

Accordingly, the current study sought to evaluate a complementary perspective on understanding the quality of acceptance in the context of intuitive eating to the existing model initially posited by Avalos and Tylka (2006) and subsequently extended by Augustus-Horvath and Tylka (2011). We pursued this objective by: 1) examining the potential contribution of self-compassion, a modern outgrowth of ancient Buddhist philosophical traditions (Neff, 2003) and 2) identifying candidate

mediators through which this adaptive self-regulatory style may enhance eating more intuitively.

Drawing from both humanistic (Rogers, 1961) and feminist body objectification (Fredrickson & Roberts, 1997) frameworks, Avalos and Tylka's (2006) original acceptance model highlighted the significance of perceiving unconditional acceptance of one's self and one's body by external others for promoting an intuitive eating style. In comparison to this more interpersonal conceptualization of acceptance, we contend that a self-compassionate orientation may help foster acceptance of internal unwanted events that would also facilitate greater engagement in this adaptive eating style. The theoretical and clinical relevance of this aim is substantiated by accruing evidence elucidating the importance of self-compassion in the domains of body image and maladaptive eating behavior (e.g., Ferreira, Pinto-Gouveia, & Duarte, 2011, 2013; Webb & Forman, 2013) and how specific self-regulatory capacities (e.g., unconditional self-acceptance and emotional tolerance: Webb & Forman, 2013) may help clarify self-compassion's impact in these contexts.

We further investigated the extent to which acceptance as enacted in general distress tolerance (Simons & Gaher, 2005) and in more specific body image acceptance and action (i.e., body image flexibility: Sandoz, Wilson, Merwin, & Kellum, in press) skills served as potential explanatory factors in the relationship between self-compassion and intuitive eating. Both of these self-regulatory processes have been recognized as possible mechanisms to counteract deficits in interoceptive

\* Corresponding author. Tel.: +1 704 687 1320; fax: 1 704 687 1317.  
E-mail address: jennifer.webb@unc Charlotte.edu (J.B. Webb).

awareness manifested along the continuum of disordered eating (Cooper, Wells, & Todd, 2004; Fairburn, Cooper, & Shafran, 2003; Ferreira et al., 2011; Sandoz et al., in press). We tested the tenability of this indirect effect model while controlling for variation in both self-esteem and body mass index (BMI) in a non-clinical sample of emerging adult females attending college. We reasoned that this was a target demographic in which to explore these relationships as research has confirmed their heightened risk for both experiencing body image disturbance and engaging in disordered eating behavior at this developmental juncture (see Fitzsimmons-Craft et al., 2012 for an overview).

## 2. Methods

### 2.1. Participants

Three hundred twenty-two female undergraduate students between the ages of 18–24 years ( $M = 19.48$ ,  $SD = 1.46$ ) with an average BMI of 23.55 ( $SD = 5.11$ ) participated in this study. Participants were identified as European American (67.4%), African American (21.1%), Latina (5.8%), Asian (3.2%), American Indian (1.6%), or a Hawaiian or other Pacific Island (1.0%). The majority of the participants identified themselves as either freshman or sophomore (77.4%) and indicated the highest level of education completed by their mother as some college (38.7%).

### 2.2. Measures

#### 2.2.1. Demographics

This questionnaire included basic socio-demographic items regarding sex, age, ethnicity, mother's education level, and current year in college. Self-reported weight and height were also collected to calculate BMI.

#### 2.2.2. Self-compassion Scale (SCS)

The SCS (Neff, 2003) is a 26-item measure that evaluates self-compassion on three separate subscales (self-kindness, common humanity, and mindfulness). The present study only examined the total score for self-compassion. Respondents answered on a 5-point Likert scale from 1 (almost never) to 5 (almost always). Higher scores indicated higher levels of self-compassion. A high level of internal consistency ( $\alpha = .93$ ) was established for this measure in the initial validation work (Neff, 2003). In the present analysis a Cronbach's alpha of .92 was found for the full scale.

#### 2.2.3. Distress Tolerance Scale (DTS)

The 15-item DTS (Simons & Gaher, 2005) measures an individual's expectations and evaluations of experiencing negative emotional states in response to (a) tolerability and aversiveness, (b) appraisal and acceptability, (c) tendency to absorb attention and disrupt functioning, and (d) regulation of emotions. In the current analysis, the measure's total scale score was used. Participants use a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). Higher scores indicate higher distress tolerance. The original validation study generated a Cronbach's alpha for each of the four subscales at .72, .82, .78 and .70, respectively (Simons & Gaher, 2005). In the present analysis a Cronbach's alpha of .92 was found for the full scale.

#### 2.2.4. Body Image-Acceptance and Action Questionnaire (BI-AAQ)

The 12-item BI-AAQ adopts an Acceptance and Commitment Therapy (ACT)-based approach (Hayes, Strosahl, & Wilson, 1999) to experiential avoidance in measuring the acceptance of one's thoughts, feelings, and emotions toward the body in the service of pursuing valued action. All items are negatively-worded and thus are reverse-scored such that higher scores reflect higher levels of body image flexibility. A high level of internal consistency ( $\alpha = .93$ ) was established for this measure in

the initial validation work (Sandoz et al., in press) which was replicated in the present analysis ( $\alpha = .93$ ).

#### 2.2.5. Intuitive Eating Scale (IES)

The 21-item first-generation IES (Tylka, 2006) measures the following key aspects of intuitive eating: (a) unconditional permission to eat when hungry and what food is desired at the moment, (b) eating for physical rather than emotional reasons, and (c) reliance on internal hunger and satiety cues to determine when and how much to eat. The response format for the IES is a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate higher levels of intuitive eating. The internal consistency reliability on the full scale IES was .85 (Tylka, 2006). Only the total scale score was used in the present analysis and yielded a high level of internal consistency ( $\alpha = .87$ ).

#### 2.2.6. Rosenberg Self-Esteem Scale (RSES)

The RSES (Rosenberg, 1965) is a 10-item scale that assesses global self-esteem. Participants respond to items on a 4-point Likert scale that indicates how strongly they agree or disagree with the statement. The scale generally has high reliability: test-retest correlations are typically in the range of .82 to .88, and Cronbach's alpha for various samples are in the range of .77 to .88 (Blascovich & Tomaka, 1993). The present analysis also found an internal consistency within this range ( $\alpha = .87$ ).

### 2.3. Procedure

Human subjects' approval was obtained from the university's institutional review board prior to beginning data collection. Data were collected using a web-based survey generated by the university's Psychology Department Research System interface; participant consent was passively obtained at the outset of the online survey. Following completion of this series of online questionnaires, students received research credit in their participating psychology course.

## 3. Results

Table 1 presents the descriptive statistics and correlational matrix for the primary study variables. Pearson's correlations revealed that participants scoring higher on self-compassion also reported higher levels of intuitive eating, distress tolerance, and body image flexibility (see Table 1). Young women reporting a higher level of engagement in intuitive eating further tended to report both higher levels of body image acceptance and action as well as distress tolerance albeit the latter relationship was more modest in size (see Table 1).

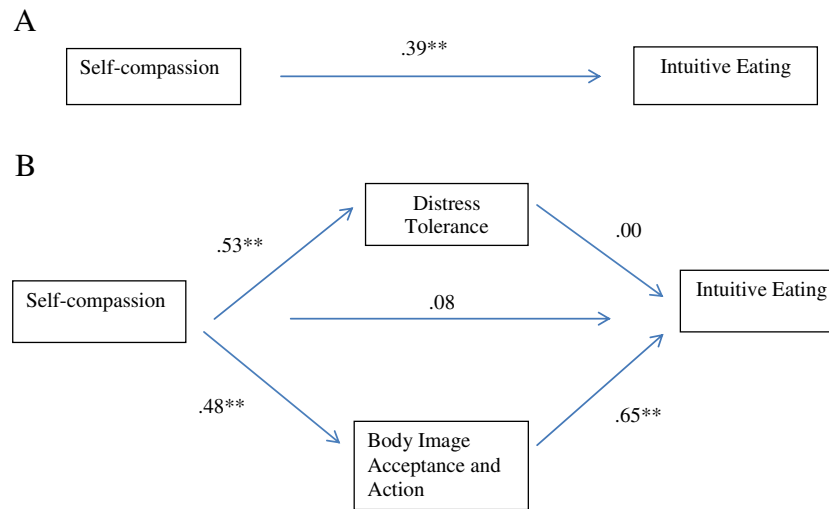
The SPSS INDIRECT script developed by Preacher and Hayes (2008) for multiple mediator models was used to test for indirect effects of self-compassion on intuitive eating through both distress tolerance and body image flexibility. Analyses generated both parametric

**Table 1**  
Descriptive statistics and correlations among variables.

	1	2	3	4	5	6
1. SCS						
2. IES	.39**					
3. DTS	.53**	.21**				
4. BI-AAQ	.49**	.69**	.24**			
5. RSES	.53**	.40**	.34**	.46**		
6. BMI	-.05	-.27**	.00	-.35**	-.09	
<i>M</i>	3.0	3.25	3.15	57.2	22.95	23.55
<i>SD</i>	.63	.67	.77	16.7	2.87	5.11

SCS = Self-compassion Scale (Neff, 2003); IES = Intuitive Eating Scale (Tylka, 2006); DTS = Distress Tolerance Scale (Simons & Gaher, 2005); BI-AAQ = Body Image Acceptance and Action (Sandoz et al., in press); RSES = Rosenberg Self-esteem Scale (Rosenberg, 1965); BMI = Body Mass Index.

\*\* Correlation is significant at the .01 level.



**Fig. 1.** Relationship between self-compassion and intuitive eating as influenced by both distress tolerance and body image acceptance and action. Panel A presents the total effect ( $c$ ) of self-compassion on intuitive eating. Panel B presents the direct effect ( $c'$ ) of self-compassion on intuitive eating ( $.08, p > .05$ ) along with its indirect effects via distress tolerance ( $.00, p = .94$ ) and body image acceptance and action ( $.31, p < .001$ ). The values presented are standardized Beta coefficients. \*\* =  $p < .001$

(i.e., the Sobel test) and non-parametric bootstrap resampling (with 5000 resamples) estimates for the magnitude and significance of the indirect effect. Results were considered significant at the .05 level if the 95% CI level excluded zero.

Fig. 1 illustrates the standardized regression coefficients for the total effect model (Panel A) and the multiple mediator model (Panel B) inclusive of the direct and indirect effects of self-compassion on intuitive eating. Overall, this full model accounted for 48% of the variance in intuitive eating scores. A sizeable total combined indirect effect of distress tolerance and body image acceptance and action in the relationship between self-compassion and intuitive eating,  $\beta = .31$  [ $SE = .05, Z(286) = 6.44, p < .001$ ] based on both normal test theory and bootstrapping procedures (95% CI = .22 to .42) was observed.

More specifically, this effect appeared to be driven by the contribution of body image flexibility to the model. The indirect effect of self-compassion on intuitive eating scores via BI-AAQ scores while controlling for DTS scores was estimated to be .31 [ $SE = .04, Z(286) = 7.70, p < .001$ ] according to the Sobel test and bootstrap resampling method (95% CI = .23 to .39). Thus, the indirect effect for self-compassion on intuitive eating with distress tolerance as the proposed mediator adjusted for variability in body image flexibility was of negligible magnitude being indistinguishable from zero [ $SE = .03, Z(286) = .08, p = .94$ ] in accordance with normal test theory and corroborated with non-parametric estimations (95% CI =  $-.06$  to  $.06$ ). Of note, the indirect effect of self-compassion on intuitive eating scores via body image flexibility was retained in a subsequent model adjusted for self-esteem and BMI ( $\beta = .19, p < .05$ ).

#### 4. Discussion

An accumulating body of research has recognized the importance of examining self-compassion in the contexts of body image and eating behavior yet the majority of this emerging scholarship has been limited to clarifying its role in disordered eating-related processes (e.g., Pinto-Gouveia, Ferreira, & Duarte, 2012; Wasylikiw, MacKinnon, & MacLellan, 2012; Webb & Forman, 2013). Thus ours is the first investigation to explore the contribution of self-compassion to a more adaptive, intuitive eating style and to offer new insights into possible explanatory variables in this relationship.

Building upon previous research (e.g., Ferreira et al., 2011), the present findings provide preliminary evidence to support the idea that body image flexibility helps account for the strong positive

link observed between self-compassion and intuitive eating in our sample. In so doing, our self-compassion-based self-regulatory model provides a complementary understanding of the role of acceptance in intuitive eating to its predecessor (Avalos & Tylka, 2006) by highlighting how adopting a self-compassionate stance toward difficult *internal* experiences related to the body may facilitate eating more intuitively. This further suggests that intuitive eating itself could be viewed as acting in accordance with one's values in the specific domain of food consumption even amidst experiencing negative thoughts and feelings about one's physical form.

Notably, distress tolerance played a negligible role in the full model studied here. This may suggest that this broad-based emotion regulation style exerts a stronger influence in the context of self-compassion acting to reduce the frequency of engaging in maladaptive eating than in augmenting adaptive eating processes (Webb & Forman, 2013). Or perhaps, distress tolerance may be better conceptualized as functioning as a moderator versus as a mediator in this instance. It is also plausible that utilizing the full scale DTS score versus one or more specific componential scores may have obscured our ability to detect a meaningful effect for this variable. These speculations will remain to be more fully addressed in subsequent investigations.

Limitations of the study include a large female and European American (67.4%) sample. A participant pool reflecting greater ethnic and gender diversity may prove useful when attempting to generalize these results. Secondly, the external validity of the present findings may not extend to clinical samples or those inclusive of a greater representation of individuals actively engaging in disordered eating behaviors. A third caveat involved the use of a convenience sample which does not permit ruling out the potential for a self-selection bias. A fourth limitation was the use of self-report data. Lastly, the cross-sectional design precludes any inferences of causality.

Forthcoming studies may seek to determine if the present findings are being driven by the relationship between specific dimensions of the constructs of self-compassion and intuitive eating versus total scores. This examination would be helpful when translating the current results into designing later stage health promotion initiatives for college women. Finally, it would also be fruitful for future studies to contribute to better articulating what socio-ecological factors promote the optimal development of self-compassion, body image flexibility, and intuitive eating processes. Arguably, this would be advantageous in efforts to develop programs targeting the primary prevention of body image disturbance and disordered eating among today's youth.

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**Contributors**

Suzanne Schoenefeld and Jennifer Webb designed the study procedures. Suzanne Schoenefeld wrote the IRB protocol, monitored data collection, conducted the statistical analyses and led the process of manuscript preparation. Jennifer Webb provided editorial feedback on earlier drafts of the manuscript. Both authors jointly were involved in data interpretation. Both authors contributed to and have approved the final version of the manuscript.

**Conflict of interest**

The authors declare no conflict of interest.

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