

ORIGINAL ARTICLE

# Body appreciation and intuitive eating in eating disorder recovery

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## Abstract

**Objective:** Eating disorder recovery research has emphasized the *absence* of symptoms over the *presence* of adaptive aspects like positive body image and healthy eating attitudes. The current study examined how body appreciation and intuitive eating related to eating disorder recovery using a comprehensive recovery definition (physical, behavioral, and cognitive recovery).

**Method:** Data were collected from 66 women with an eating disorder history and 31 controls with no history of eating pathology. Participants completed an online survey followed by a phone interview.

**Results:** The fully recovered group did not differ from controls on body appreciation, with both groups endorsing significantly higher levels of body appreciation than the partially recovered and current eating disorder groups. Similarly, the fully recovered group did not differ from controls on overall intuitive eating, with both groups endorsing significantly higher levels of overall intuitive eating than the partially recovered and current eating disorder groups.

**Discussion:** Positive psychological constructs such as body appreciation and intuitive eating relate to eating disorder recovery status. Understanding recovery within a strengths-based framework may inform intervention and relapse prevention.

## KEYWORDS

body appreciation, eating disorders, intuitive eating, recovery

## 1 | BODY APPRECIATION AND INTUITIVE EATING IN EATING DISORDER RECOVERY

Research on eating disorder recovery has largely focused on the absence of disordered eating behaviors (e.g., binge eating, fasting, purging), though select research (e.g., Bachner-Melman, Zohar, & Ebstein, 2006; Bardone-Cone, Harney, et al., 2010; Couturier & Lock, 2006) has expanded the definition of recovery to include eating disorder-related psychological/cognitive constructs, such as body image. Validation of more comprehensive definitions of recovery has involved a focus on negative body/eating-related constructs such as body shame, thin-ideal internalization, and thinness and restricting

expectancies—for example, examining how those in recovery compare to those with an eating disorder and individuals with no history of an eating disorder on these constructs (Bardone-Cone, Harney, et al., 2010). Absent from these investigations, however, has been a consideration of *positive* facets of body image and more *adaptive* attitudes toward eating.

Positive body image and adaptive eating habits are both captured in the multidimensional Theory of Embodiment (Tylka & Piran, 2019), a constellation of constructs concerning individuals' experiences of inhabiting their bodies as they engage with the world around them. Among other constructs, the theory is composed of body appreciation, acceptance, and respect, as well as an intuitive eating component,

which evaluates individuals' attunement to their hunger cues. Understanding these positive psychological constructs in the context of eating disorder recovery would theoretically be important in helping individuals with a history of an eating disorder establish a healthy relationship with food and their bodies and potentially prevent eating disorder relapse. In the current study, we examine how the positive constructs of body appreciation and intuitive eating relate to eating disorder recovery.

Body appreciation is characterized by having a positive view and acceptance of one's body regardless of physical appearance, weight, shape and imperfections, respecting one's bodily needs, and exhibiting healthier behaviors that dismiss unrealistic body expectations displayed in the media (Avalos, Tylka, & Wood-Barcalow, 2005). The positive body image construct is distinct from negative body image—it is not simply the absence of negative thoughts about one's body. Positive body image is a multidimensional construct composed of body appreciation, acceptance, and love, and is accompanied by an inclusive conceptualization of beauty, an "adaptive investment" in one's physical appearance, a sense of confidence and comfort with one's body, and a social information processing style that internalizes positive body-relevant information and rejects or reframes negative body-relevant information (Tylka & Wood-Barcalow, 2015). Results from studies with college women found that greater body appreciation was associated with lower consumption of appearance-focused media, self-objectification, social comparison, and thin-ideal internalization (Andrew, Tiggemann, & Clark, 2016), as well as lower levels of attention to thin-related images (Tobin, Barron, Sears, & von Ranson, 2019). There is also evidence to suggest that higher levels of body appreciation are associated with lower levels of negative body image and disordered eating as well as greater psychological well-being (i.e., self-esteem, optimism, and proactive coping) (Avalos et al., 2005). Research focused on understanding positive body attitudes is important for informing practitioners' work enhancing clients' strengths and promoting a healthy relationship with their body.

Whereas body appreciation primarily focuses on attitudes toward one's body, intuitive eating focuses on how one approaches eating. Intuitive eating refers to using physiological hunger and satiety indices to determine when to eat instead of relying on situational or emotional cues (Tylka, 2006). Research reveals that women who use satiety cues to stop eating report less frequent chronic dieting and binge-eating behaviors (Denny, Loth, Eisenberg, & Neumark-Sztainer, 2013). Additionally, results from a systematic review suggested that intuitive eating is associated with a more positive body image, including greater body acceptance, higher self-esteem, and overall greater life satisfaction (Bruce & Ricciardelli, 2016). Interestingly, body appreciation may predict intuitive eating among female college students (Avalos & Tylka, 2006), suggesting that having a positive body image may facilitate the ability to identify and act on physiological cues to guide eating (Avalos et al., 2005; Tylka, 2006).

The present study investigated these two adaptive constructs, body appreciation and intuitive eating, within a multidimensional conceptualization of eating disorder recovery, using cross-sectional data collected from a 7–8 year follow-up study of a sample of women with

a history of an eating disorder. We used the recovery model proposed by Bardone-Cone, Harney, et al. (2010), which assesses symptoms in physical, behavioral, and cognitive eating disorder domains. This approach has been recommended as an appropriate and nuanced method for meaningfully categorizing individuals into recovery statuses that include measures of psychological functioning (Ackard, Richter, Egan, & Cronmeyer, 2014).

We compared levels of body appreciation and intuitive eating across recovery groups proposed by Bardone-Cone, Harney, et al. (2010) using a cross-sectional design. We hypothesized that individuals who were fully recovered (along physical, behavioral, and cognitive dimensions) would have comparable levels of body appreciation and intuitive eating to individuals with no history of an eating disorder and higher levels of these positive constructs than individuals with a current eating disorder or those in partial recovery (physical and behavior recovery but not cognitive recovery). Given research finding similarities between those fully recovered from an eating disorder and individuals with no eating disorder history on other adaptive constructs (e.g., self-esteem, self-efficacy; Bardone-Cone et al., 2010), we predicted that these two groups would also look similar on adaptive constructs related to body and eating. As an exploratory aim, we examined how body appreciation and intuitive eating might relate to stability of recovery. For this aim, we compared those who met criteria for full recovery at both baseline and follow-up (separated by 7–8 years) to those who met criteria for full recovery only at baseline, on body appreciation and intuitive eating at follow-up.

## 2 | METHOD

### 2.1 | Participants and procedure

This study was a 7–8 year follow-up of 96 females with an eating disorder history who first participated in a study in 2007–2008 (Bardone-Cone, Harney, et al., 2010); three participants did not provide permission to be recontacted and two were deceased at follow-up, resulting in 91 possible participants. (See Data S1 for details about the original study.) Sixty-six women participated in the follow-up study, representing 73% of the 91 possible participants and 85% of the 78 recontacted. Control participants ( $n = 31$ ) were women recruited through fliers and a university-wide listserv posting; eligibility required no history of eating pathology based on a phone screen using the eating disorder module from the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 2002) and fitting an age band represented in the eating disorder history sample.

All participants, both those with an eating disorder history and control participants, completed the same study components: an online survey followed by a phone interview about 2 weeks later. The survey included measures of the adaptive constructs as well as the assessment of cognitive recovery and the self-report of weight and height (for physical recovery), and the interview included the diagnostic interview and the assessment of behavioral recovery. Interviewers were the first author and several advanced

undergraduate and post-baccalaureate research assistants, all extensively trained on eating disorder diagnostic criteria and the diagnostic interview used. Participants received a \$35 Amazon.com gift card as remuneration. All aspects of this study were approved by the university's Institutional Review Board.

## 2.2 | Measures

### 2.2.1 | Defining eating disorder recovery status

Measures and operationalizations used to categorize individuals in terms of recovery status (current eating disorder, partial recovery, full recovery—defined below) were the ones used in the original recovery work by Bardone-Cone, Harney, et al. (2010).

For current *eating disorder diagnosis*, the SCID (First et al., 2002) was administered in the interview to diagnose anorexia nervosa (AN) without the amenorrhea requirement, bulimia nervosa (BN), binge-eating disorder (BED), and eating disorder not otherwise specified (EDNOS). A random subset (~10%) of diagnostic interviews of those with a history of an eating disorder was selected to assess inter-rater reliability; for this subset,  $\kappa$  was .67 for current DSM-IV eating disorders, reflecting substantial agreement (Landis & Koch, 1977).

For *physical recovery*, a BMI  $\geq 18.5$  kg/m<sup>2</sup> was required, which aligns with the World Health Organization's recommendation of a BMI < 18.5 reflecting "underweight" (Björntorp, 2002). We used self-reported weight and height (from the survey), which are reasonable proxies for measured reports in both general and eating disorder samples (Craig & Adams, 2008; McCabe, McFarlane, Polivy, & Olmsted, 2001). *Behavioral recovery* was assessed during the interview using calendars that were annotated at the time of the interview with salient life events of the past 3 months that participants could use as anchors in recalling presence of eating disorder behaviors over that same time period. Absence of four eating disorder behaviors (binge eating, vomiting, laxative use, fasting) over the prior 3 months was required to meet behavioral recovery criteria. Fasting was described as efforts to counteract the effect of food eaten or to lose/control weight via "intentionally going without eating for a 24-hour period." *Cognitive recovery* was assessed in the survey with the EDE-Q (Fairburn & Beglin, 1994), which contains four subscales providing broad coverage of eating disorder cognitions over the past 28 days: restraint, eating concern, weight concern, shape concern. Scores within 1 SD of age-matched community norms for each of the EDE-Q subscales (Mond, Hay, Rodgers, & Owen, 2006) was required for cognitive recovery. In this study, coefficient alphas for these subscales were .85–.94.

Following the operationalization in Bardone-Cone, Harney, et al. (2010), *full recovery* required: absence of an eating disorder diagnosis; physical recovery, operationalized as a BMI  $\geq 18.5$  kg/m<sup>2</sup>; behavioral recovery, operationalized as no binge eating, vomiting, laxatives, or fasting in the past 3 months; and cognitive recovery, operationalized as all four EDE-Q subscales within 1 SD of age-matched community norms (Mond et al., 2006). *Partial recovery* required: absence of an eating disorder diagnosis, physical recovery, and behavioral recovery,

but the absence of cognitive recovery (i.e., 1 + EDE-Q subscale >1 SD of norms).

### 2.2.2 | Body appreciation

To examine body appreciation, we administered the Body Appreciation Scale (BAS; Avalos et al., 2005). This scale evaluates an individual's positive beliefs of one's body, assessing the degree of respect and acceptance an individual has for one's body irrespective of one's actual appearance. Example items include: "Despite its flaws, I accept my body for what it is" and "I take a positive attitude toward my body." The average of 13 items (scored from 1 = *never* to 5 = *always*) is calculated with higher scores representing greater body appreciation. Previous work supports the BAS as reliable and valid in U.S. female college students (Avalos et al., 2005). Factor structure and psychometric information for the BAS is not yet available for samples with eating disorders. In this study, coefficient alpha was .96.

### 2.2.3 | Intuitive eating

To examine intuitive eating, we administered the Intuitive Eating Scale-2 (IES-2; Tylka & Kroon Van Diest, 2013). The IES-2 assesses an individual's inclination to attend to their physical hunger to decide when and what to eat with 23 items (scored from 1 = *strongly disagree* to 5 = *strongly agree*) averaged to arrive at a total score. The IES-2 additionally produces four subscales: Unconditional Permission to Eat (six items; i.e., "I allow myself to eat what food I desire at the moment"), Eating for Physical Rather Than Emotional Reasons (eight items; i.e., "I use food to help me soothe my negative emotions"—reverse scored), Reliance on Hunger and Satiety Cues (six items; i.e., "I rely on my hunger signals to tell me when to eat"), and Body-Food Choice Congruence (three items; i.e., "I mostly eat foods that give my body energy and stamina"), with the latter subscale reflecting the extent to which individuals consume food based on nutritive value to their bodies. Previous work supports the IES-2 as reliable and valid among U.S. college men and women (Tylka & Kroon Van Diest, 2013). The IES-2 has been administered to a German-speaking sample of men and women that includes those who reported receiving an eating disorder diagnosis from a mental health professional, but no extensive psychometric work exists to date on this measure in eating disorder samples (van Dyck, Herbert, Happ, Kleveman, & Vögele, 2016). In this study, coefficient alpha was .92 for the total score and .87–.93 for the subscales.

## 2.3 | Analytic strategy

We examined how body appreciation and intuitive eating related to a comprehensive conceptualization of eating disorder recovery using a group comparisons approach. For the dependent variables of body appreciation and the total intuitive eating score, we performed one-way analyses of variance (ANOVAs) with recovery status as the

independent variable; a significant omnibus *F*-statistic was followed up by Tukey's HSD tests for pairwise comparisons among the four groups (current eating disorder, partial recovery, full recovery, controls). For the intuitive eating subscales, we first performed a multivariate analysis of variance (MANOVA) with recovery status as the independent variable and the four subscales as dependent variables. A significant multivariate effect was followed up with univariate analyses for each subscale via analysis of variance (ANOVA) and Tukey's HSD tests for pair-wise comparisons. For all significant pairwise comparisons we report Cohen's *d* as effect sizes, using the pooled standard deviation across all groups for a given construct as the standardizer. Assumptions for these statistical tests were tested, resulting in no concerns for violations of assumptions.

The Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995) was applied to the set of all inferential tests (ANOVAs, MANOVA) performed to correct for multiple comparisons. In accordance with McDonald's (2014) recommendations, all *p*-values were ranked in order from smallest to largest and compared to the critical value  $(i/m)Q$ , where *i* is the rank (with the smallest *p*-value assigned a rank of *i* = 1, the next smallest *p*-value assigned a rank of *i* = 2, etc.), *m* is the total number of tests, and *Q* is the false discovery rate, which refers to the proportion of significant results that are in reality false positives (for the current analyses this was set to .05). The largest *p*-value that remains less than the critical value becomes the upper bound of significance, and all *p*-values lower than that value remain significant.

For the exploratory aim focused on body appreciation and intuitive eating in relation to stability of recovery, we compared those fully recovered at both baseline and follow-up to those fully recovered at baseline but not follow-up using *t* tests. Since this is exploratory with a small sample, no corrections were made for multiple comparisons.

### 3 | RESULTS

#### 3.1 | Attrition analyses

We compared the 66 participants who completed the survey and interview to the 25 noncompleters on baseline indicators of eating disorder severity, using *t* tests for comparisons of continuous variables and chi-square tests for comparisons of categorical variables (Table 1). Groups did not differ in age at start of treatment, BMI at start of treatment, percentage with a lifetime history of DSM-IV AN, any of the EDE-Q subscales, or presence of any of the following at baseline: an eating disorder, binge eating, vomiting, laxative use, or fasting (*ps* > .236). Thus, completers and noncompleters were similar in terms of eating disorder severity, minimizing attrition concerns.

#### 3.2 | Classification by recovery status

Nineteen of the participants met criteria for a current eating disorder: three for AN without the amenorrhea requirement, one for BN, and 15 for EDNOS (subthreshold AN, *n* = 4; subthreshold BN, *n* = 1; subthreshold BED, *n* = 4; purging disorder, *n* = 6). Twenty-eight met criteria for full recovery (physical, behavioral, and cognitive), and 11 met criteria for partial recovery (physical and behavioral, but not cognitive). Demographically, the four groups (current eating disorder, partial recovery, full recovery, controls) did not differ on age (means and [SD] of 31.79 [3.97], 34.09 [4.99], 31.11 [5.73], and 32.35 [5.89], respectively) per a one-way ANOVA or race (93–100% identified as White in each group) per a chi-square test (*ps* ≥ .464). Eight participants did not fit any of these a priori recovery status groups mainly due to binge eating and/or

**TABLE 1** Attrition analyses

|  | Completers<br>( <i>n</i> = 66) | Noncompleters<br>( <i>n</i> = 25) | Significance  |
|--|--------------------------------|-----------------------------------|---|
| Age at start of treatment (years)              | 18.03 (4.50)                   | 17.46 (2.75)                      | $t(87) = -0.58, p = .562$ , Cohen's <i>d</i> = 0.14             |
| BMI at start of treatment (kg/m <sup>2</sup> ) | 19.03 (3.48)                   | 18.67 (3.35)                      | $t(84) = -0.43, p = .672$ , Cohen's <i>d</i> = 0.10             |
| Lifetime history of AN                         | 65%                            | 60%                               | $\chi^2(1, N = 91) = 0.21, p = .648$ , Cramer's <i>V</i> = 0.05 |
| Presence of an eating disorder at baseline     | 55%                            | 60%                               | $\chi^2(1, N = 91) = 0.22, p = .640$ , Cramer's <i>V</i> = 0.05 |
| Presence of binge eating at baseline           | 34%                            | 43%                               | $\chi^2(1, N = 86) = 0.56, p = .455$ , Cramer's <i>V</i> = 0.08 |
| Presence of vomiting at baseline               | 29%                            | 38%                               | $\chi^2(1, N = 86) = 0.58, p = .457$ , Cramer's <i>V</i> = 0.08 |
| Presence of laxative use at baseline           | 6%                             | 14%                               | $\chi^2(1, N = 86) = 1.40, p = .236$ , Cramer's <i>V</i> = 0.13 |
| Presence of fasting at baseline                | 14%                            | 10%                               | $\chi^2(1, N = 86) = 0.27, p = .606$ , Cramer's <i>V</i> = 0.06 |
| EDE-Q restraint at baseline                    | 2.48 (1.92)                    | 2.55 (1.44)                       | $t(89) = .17, p = .863$ , Cohen's <i>d</i> = -0.04              |
| EDE-Q eating concern at baseline               | 2.00 (1.61)                    | 1.92 (1.51)                       | $t(89) = -.24, p = .812$ , Cohen's <i>d</i> = 0.05              |
| EDE-Q weight concern at baseline               | 3.14 (1.80)                    | 3.41 (1.57)                       | $t(89) = .65, p = .516$ , Cohen's <i>d</i> = -0.16              |
| EDE-Q shape concern at baseline                | 3.64 (1.79)                    | 3.76 (1.46)                       | $t(89) = .30, p = .768$ , Cohen's <i>d</i> = -0.07              |

Note: BMI, body mass index; AN, anorexia nervosa; EDE-Q, Eating Disorder Examination-Questionnaire. Means and SD for continuous variables and percentages for dichotomous variables are presented for the completers and noncompleters of the follow-up study. AN was assessed using DSM-IV criteria without the amenorrhea requirement. Presence of the eating disorder behaviors (binge eating, vomiting, laxative use, fasting) was assessed for the 3 months prior to baseline data collection. Cohen's *d* represents effect sizes for *t* tests where 0.2 = small, 0.5 = medium, and 0.8 = large (Cohen, 1988). Cramer's *V* represents effect sizes for chi-square tests where, for *df* = 1, 0.1 = small, 0.3 = medium, and 0.5 = large (Kim, 2017).

**TABLE 2** Comparison of body appreciation and intuitive eating across eating disorder recovery status groups

| Measure/construct  | Current ED<br>(n = 19) | Partially<br>recovered<br>(n = 11) | Fully<br>recovered<br>(n = 28) | Controls<br>(n = 31) | Significance   | Pair-wise comparisons  |
|--|------------------------|------------------------------------|--------------------------------|----------------------|--|--|
| Body appreciation  | 2.77 (.87)             | 2.87 (.95)                         | 3.80 (.61)                     | 4.23 (.54)           | $F(3, 85) = 22.19, p < .001$ ,<br>partial $\eta^2 = .44$                 | C > CED ( $p < .001$ );<br>Cohen's $d = 2.09$<br>C > PRED ( $p < .001$ );<br>Cohen's $d = 1.94$<br>FRED > CED ( $p < .001$ );<br>Cohen's $d = 1.47$<br>FRED > PRED<br>( $p = .002$ ); Cohen's<br>$d = 1.33$    |
| Intuitive eating (total)                                   | 2.98 (.65)             | 3.19 (.40)                         | 3.92 (.55)                     | 3.89 (.46)           | $F(3, 85) = 17.26, p < .001$ ,<br>partial $\eta^2 = .38$                 | C > CED ( $p < .001$ );<br>Cohen's $d = 1.72$<br>C > PRED ( $p = .002$ );<br>Cohen's $d = 1.32$<br>FRED > CED<br>( $p < .001$ ); Cohen's<br>$d = 1.77$<br>FRED > PRED<br>( $p = .001$ ); Cohen's<br>$d = 1.38$ |
| IES-2—Unconditional<br>permission to eat                   | 2.82 (.79)             | 2.61(.75)                          | 3.76 (.89)                     | 3.95 (.53)           | $F(3, 85) = 15.60, p < .001$ ,<br>partial $\eta^2 = .36$                 | C > CED ( $p < .001$ );<br>Cohen's $d = 1.53$<br>C > PRED ( $p < .001$ );<br>Cohen's $d = 1.81$<br>FRED > CED<br>( $p < .001$ ); Cohen's<br>$d = 1.27$<br>FRED > PRED<br>( $p < .001$ ); Cohen's<br>$d = 1.55$ |
| IES-2—Eating for physical rather<br>than emotional reasons | 3.03 (1.15)            | 3.65 (.84)                         | 3.95 (.71)                     | 3.70 (.70)           | $F(3, 85) = 4.73, p = .004$ ,<br>partial $\eta^2 = .14$                  | FRED > CED ( $p = .002$ );<br>Cohen's $d = 1.11$   |
| IES-2—Reliance on hunger<br>and satiety cues               | 2.81 (.94)             | 2.88 (.96)                         | 3.86 (.82)                     | 4.09 (.61)           | $F(3, 85) = 14.17, p < .001$ ,<br>partial $\eta^2 = .33$                 | C > CED ( $p < .001$ );<br>Cohen's $d = 1.60$<br>C > PRED ( $p < .001$ );<br>Cohen's $d = 1.51$<br>FRED > CED<br>( $p < .001$ ); Cohen's<br>$d = 1.31$<br>FRED > PRED<br>( $p = .005$ ); Cohen's<br>$d = 1.23$ |
| IES-2—Body-food choice<br>congruence                       | 3.54 (1.03)            | 3.79 (.90)                         | 4.26 (.71)                     | 3.88 (.82)           | <sup>a</sup> $F(3, 85) = 2.89, p = .040$<br>(ns), partial $\eta^2 = .09$ | —  |

Note: ED, eating disorder; CED, current eating disorder; PRED, partially recovered; FRED, fully recovered; C, controls. Means and SD are presented by group, with possible ranges for each scale/subscale from 1 to 5. Body appreciation comes from the Body Appreciation Scale (BAS) and intuitive eating comes from the Intuitive Eating Scale-2 (IES-2). In all cases, higher scores reflect greater levels of the constructs. Partial  $\eta^2$  represents effect sizes for the ANOVAs where .01 = small, .06 = medium, and .14 = large (Cohen, 1988). Cohen's  $d$  represents effect sizes for  $t$  tests for pairwise comparisons where 0.2 = small, 0.5 = medium, and 0.8 = large (Cohen, 1988). The pairwise comparisons listed are those with significant  $p$ -values after applying the Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995), which controls the false discovery rate that is otherwise inflated with multiple tests.

<sup>a</sup>The omnibus test for the Body-Food Choice Congruence subscale was not significant after applying the Benjamini-Hochberg procedure, thus no pairwise comparisons are reported for this test.

vomiting in the prior 3 months (e.g., typically 1–2 episodes). Thus, of the 66 participants with a history of an eating disorder, 29% had a current eating disorder, 17% were partially recovered, 42% were fully recovered, and 12% could not be classified.

### 3.3 | Body appreciation and recovery status

Table 2 contains the ANOVA results for group comparisons on body appreciation. The fully recovered group was not significantly different

**TABLE 3** Comparison of body appreciation and intuitive eating according to recovery stability

| Measure/construct                                       | Stable recovery<br>( <i>n</i> = 12) | Not stable recovery<br>( <i>n</i> = 3) | Normative data         | <i>t</i> test                          |
|---|-------------------------------------|--|------------------------|--|
| Body appreciation                                       | 3.85 (0.73)                         | 3.08 (0.81)                            | 3.45–3.49 <sup>a</sup> | <i>t</i> (13) = −1.61, <i>p</i> = .132 |
| Intuitive eating (total)                                | 3.94 (0.62)                         | 3.49 (0.70)                            | 3.37–3.38 <sup>b</sup> | <i>t</i> (13) = −1.09, <i>p</i> = .298 |
| IES-2—Unconditional permission to eat                   | 3.72 (0.87)                         | 3.00 (1.15)                            | 3.46–3.50 <sup>b</sup> | <i>t</i> (13) = −1.21, <i>p</i> = .247 |
| IES-2—Eating for physical rather than emotional reasons | 3.95 (0.95)                         | 4.50 (.45)                             | 3.17–3.19 <sup>b</sup> | <i>t</i> (13) = 0.96, <i>p</i> = .356  |
| IES-2—Reliance on hunger and satiety cues               | 3.86 (0.95)                         | 2.89 (1.49)                            | 3.52–3.57 <sup>b</sup> | <i>t</i> (13) = −1.43, <i>p</i> = .176 |
| IES-2—Body-food choice congruence                       | 4.50 (0.72)                         | 3.00 (1.00)                            | 3.29–3.35 <sup>b</sup> | <i>t</i> (13) = −3.03, <i>p</i> = .010 |

Note: IES-2, Intuitive Eating Scale-2. “Stable recovery” refers to individuals assessed as fully recovered at both baseline and follow-up; “not stable recovery” refers to those who were assessed as fully recovered at baseline, but not at follow-up. Possible ranges for each scale/subscale were 1 to 5. In all cases, higher scores reflect greater levels of the constructs.

<sup>a</sup>Means derived from samples of college women with *N*s ranging from 177 to 527 (Avalos et al., 2005; Tylka, 2013).

<sup>b</sup>Means derived from samples of college women with *N*s ranging from 238 to 680 (Tylka & Kroon Van Diest, 2013).

from controls, with both groups endorsing significantly higher levels of body appreciation than the partially recovered and current eating disorder groups.

### 3.4 | Intuitive eating and recovery status

When considering intuitive eating as a whole with the total score of the IES-2, the fully recovered group was not significantly different from controls, with both groups endorsing significantly higher levels of intuitive eating than the partially recovered and current eating disorder groups (Table 2). In examining group differences in the intuitive eating subscales, the MANOVA was significant,  $F(12, 217) = 5.78$ ,  $p < .001$ , Wilks' Lambda = .48, partial  $\eta^2 = .22$ , thus ANOVAs were performed for each subscale. For both Unconditional Permission to Eat and Reliance on Hunger and Satiety Cues, the fully recovered group was not significantly different from controls, with both groups endorsing significantly higher levels of these aspects of intuitive eating than the partially recovered and current eating disorder groups (Table 2). In terms of Eating for Physical Rather Than Emotional Reasons, there were significant group differences overall but the only pairwise comparison reaching significance was the fully recovered group endorsing this aspect of intuitive eating more than the current eating disorder group. There were no significant group differences in Body-Food Choice Congruence; although the omnibus *F*-statistic had a *p*-value of .040, it was not significant after applying the Benjamini-Hochberg procedure since this *p*-value was larger than the critical value indicated by the procedure.

### 3.5 | Body appreciation and intuitive eating and stability of recovery

The focus on those who met criteria for full recovery at baseline and who completed the follow-up 7–8 years later resulted in a sample size of 15. (See Bardone-Cone et al. (2019) for more information about this longitudinal study.) Of these 15 individuals, 12 met criteria for full

recovery at follow-up (stable recovery) and three did not, with one relapsing to an eating disorder at follow-up and two meeting criteria for partial recovery. Descriptive data are presented in Table 3. One comparison reached significance (Body-Food Choice Congruence, with the stable recovery group having higher levels), with mean scores differing by 1.5 units on a 5-point scale. Given the small sample size, these findings are preliminary; nonsignificant findings may have emerged as significant in a larger sample. Generally, the stable recovery group had scores on body appreciation and intuitive eating constructs that were higher (better) than normative data from female college students, and the not stable recovery group had lower scores than these norms. For eating for physical rather than emotional reasons, both groups had scores substantially higher than the normative data.

## 4 | DISCUSSION

The goal of this study was to examine the relation of two positive body/eating-related constructs to eating disorder recovery. The main focus was on cross-sectional data and a comprehensive conceptualization of recovery encompassing physical, behavioral, and cognitive dimensions. An exploratory aim used longitudinal data to assess how stability of recovery may relate to body appreciation and intuitive eating.

Participants who were fully recovered reported similar levels of body appreciation as individuals with no eating disorder history and significantly greater body appreciation than individuals who met criteria for partial recovery or an eating disorder diagnosis. This finding supports our hypothesis and aligns with past research suggesting that greater body appreciation is inversely associated with negative body image and disordered eating (Avalos et al., 2005). Although future research is needed to evaluate if body appreciation is a “natural” result of comprehensive recovery or if it is something to be targeted in treatment that would promote recovery, the results suggest that body appreciation is closely linked with recovery status (particularly with the cognitive dimension of recovery, which is unique to full recovery).



This same pattern emerged for intuitive eating when examined as a total score: as hypothesized, those in full recovery had comparable levels of intuitive eating as controls and significantly higher levels than those with an eating disorder or in partial recovery. These findings align with prior data suggesting that intuitive eating is inversely associated with symptoms of AN and BN (Ruzanska & Warschburger, 2017).

When different facets of intuitive eating were considered, findings were more mixed. For Unconditional Permission to Eat and Reliance on Hunger and Satiety Cues, the same pattern emerged as for overall intuitive eating, highlighting a strong link between full recovery and these aspects of intuitive eating. Findings were not as robust for Eating for Physical Rather Than Emotional Reasons, where fully recovered participants reported significantly greater levels compared only to individuals with a current eating disorder diagnosis. In contrast to the aforementioned intuitive eating subscales, there was no significant difference between full recovery and partial recovery. It could be that this conceptualization of intuitive eating is one of the first steps toward broader intuitive eating that individuals make in the process of recovery, explaining why scores for the partially recovered group on this facet were closer to the full recovery group than the current eating disorder group. The nonsignificant difference between the controls and the current eating disorder group suggests that attaining high levels of this type of intuitive eating may be more relevant to those in the process of recovery than to those who never had an eating disorder and for whom occasional emotional eating may not pose the same risk.

For Body-Food Choice Congruence, there were no group differences that remained significant after controlling for multiple comparisons. This IES-2 subscale refers to the extent to which an individual chooses to eat foods that match their body's nutritional needs (e.g., "I mostly eat foods that make my body perform efficiently (well)"; Tylka & Kroon Van Diest, 2013). Although this finding is contrary to our hypothesis, it is consistent with prior research suggesting that Body-Food Choice Congruence is the only one of the IES-2 subscales not significantly associated with eating disorder symptomatology or BMI among women (Tylka & Kroon Van Diest, 2013). Given that the Body-Food Choice Congruence subscale focuses strictly on "nutritious" foods that provide "energy" and "stamina" (Tylka & Kroon Van Diest, 2013), it is possible that this specific subscale is not core to the focus of intuitive eating, which highlights eating without judgment or guilt (regardless of whether it is "healthy" or "unhealthy;" Tylka & Kroon Van Diest, 2013).

In a very preliminary fashion, we found that there may be an association between stability of recovery and both body appreciation and intuitive eating. Although the only significant comparison found was for Body-Food Choice Congruence, with the stable recovery group having higher levels, the small sample size for the exploratory aim analyses requires caution in interpreting nonsignificant findings. Given that body appreciation and intuitive eating were only assessed at follow-up, it is unclear if sustained recovery promotes these positive and adaptive constructs or if these constructs contributed to individuals staying recovered.

This study is the first to examine eating disorder recovery in women through the lens of the *presence* of positive body image/eating

constructs instead of just the *absence* of negative constructs. By evaluating body appreciation and intuitive eating within a comprehensive three-pronged definition of recovery that includes physical, behavioral, and cognitive markers of recovery, this paper expands on prior recovery literature. Limitations include the small sample size, which prevents the examination of the way the positive constructs may differ across various diagnostic groups within the recovery groups. Additionally, there are limits to generalizability to males and individuals of different races/ethnicities. Another limitation is the use of the original version of the Body Appreciation Scale instead of the second version due to data collection beginning before the publication of the most updated version. Finally, the current analyses were primarily cross-sectional, which limits our ability to understand the temporal nature of these constructs as they change throughout the recovery process. And for the exploratory aim that did use longitudinal data, it is unclear for how much of the follow-up period the "stable recovery" group remained stable; more frequent data collection would help better assess stability of recovery and its relation to the positive constructs.

Further research using a longitudinal study design is needed to understand how these positive psychological constructs may change over the course of recovery and to identify the mechanisms of change. For example, during the recovery process, do negative experiences (e.g., body dissatisfaction, binge-eating frequency) decrease or change first before these positive experiences (e.g., body appreciation, intuitive eating) increase or change? Alternatively, does the increase in positive experiences precede the decrease in negative experiences or help sustain their diminishment? Future research should also explore how body appreciation and intuitive eating may work together in facilitating recovery. In a study of female undergraduates, body appreciation predicted intuitive eating (Avalos & Tylka, 2006), though it remains to be seen whether this pattern would replicate in clinical samples. Recent research revealed that a focus on one's physical appearance may interfere with eating in response to physiological satiety cues (van de Veer, van Herpen, & van Trijp, 2015)—perhaps focusing less on physical appearance (and instead on respect for one's body more broadly, not narrowly defined by appearance) may increase intuitive eating practices. Theoretically, it could be intuitive eating that helps facilitate body appreciation if, as an individual begins to eat more intuitively, they begin to appreciate their body more because they are paying more attention to its cues. Longitudinal, mechanistic work is needed to identify directionality and potential reciprocal influences between these positive constructs.

Replication in larger and more diverse samples is necessary to increase the external validity of these results and to understand if this conceptualization of body appreciation and intuitive eating in relation to recovery is upheld across different races and cultures. For example, evidence suggests that African Americans report significantly greater body appreciation (Kronenfeld, Reba-Harrelson, Van Holle, Reyes, & Bulik, 2010) and less body dissatisfaction (Grabe & Hyde, 2006) compared to White females. Therefore, future studies should consider if the positive psychological constructs examined in this study are as distinctive across recovery groups among more diverse samples.

Given that a primary goal of eating disorder treatments is to help individuals establish a healthy relationship with food and with their bodies, and given the findings of strong linkages between body appreciation and intuitive eating (overall and some facets) to recovery, these results suggest possible clinical implications for assessing and bolstering these constructs in the recovery process under certain contexts. For example, Compassion-Focused Therapy fuses Cognitive Behavioral Therapy with an emphasis on practicing self-compassion and uses imagery techniques to foster compassionate behaviors and thoughts related to body appreciation (Gale, Gilbert, Read, & Goss, 2014). Further, eating disorder treatment approaches that promote listening to one's bodily signals regarding food, eating, hunger, and satiety, perhaps via mindfulness as in the Eat for Life intervention (Bush, Rossy, Mintz, & Schopp, 2014), may help target important domains within the intuitive eating construct. Eat for Life encourages clinicians to help clients identify and better understand their reasons for eating (e.g., for hunger or as an emotion regulation strategy; Bush et al., 2014). However, targeting intuitive eating as part of the recovery process may not be recommended for all clinical populations (e.g., not for those for whom physical cues have not yet been normalized). A preliminary investigation of mindful eating suggested that after an audio-guided mindfulness-based intervention, females with an eating disorder diagnosis had significant increases in negative affect compared to a nonclinical female group (Marek, Ben-Porath, Federici, Wisniewski, & Warren, 2013). Similarly, among females with a history of AN, only females with partial weight-restoration experienced significant experiential self-focus after a mindfulness-based breathing activity engaged in before a meal compared to females who met full DSM-IV criteria for AN (Cowdrey, Stewart, Roberts, & Park, 2013). Overall, interventions that improve body appreciation and intuitive eating may be important in reducing risk for relapse and facilitating the attainment and maintenance of recovery, although longitudinal research is needed to test this. Clinicians should consider treatments that are appropriate given the severity of the eating disorder and the client's stage of recovery.

In conclusion, these results suggest that positive psychological constructs related to body image and one's relationship with food and eating behaviors have strong relationships to recovery. Whether recovery should be reconceptualized as not just the absence of eating disorder symptoms, but the presence of adaptive body/eating-related attitudes is unclear. These results suggest that body appreciation and intuitive eating may be important skills to foster during treatment that may promote a lasting and comprehensive recovery.

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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