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Associations between Eating Expectancies and Eating Disorder Symptoms in Men and Women

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Abstract

Eating expectancies, or learned expectations that an individual has about eating, prospectively predict eating disorder (ED) symptoms. Most studies examining eating expectancies have focused on one or two eating expectancies and their relation with bulimic symptoms. In addition, these studies have been conducted mostly in women. Thus, it is unclear whether: 1) associations between eating expectancies and ED symptoms vary between men and women, and 2) extend to ED symptoms other than bulimic symptoms. The current study (N = 197 undergraduate men and 246 undergraduate women) investigated sex variance in a model of eating expectancies and ED symptoms, including factors associated with ED symptoms (i.e., negative urgency, negative affect, alcohol use, drug use, and body mass index). Sex variance was tested using path analysis in a model including eating expectancies and associated factors, with excessive exercise, negative attitudes toward obesity, restricting, cognitive restraint, binge eating, purging, muscle building, and body dissatisfaction as dependent variables. Unconstrained (i.e., unconstrained paths across men and women) and constrained (i.e., constraining paths across men and women) models were tested. The unconstrained and constrained models differed significantly, indicating that the models varied by sex. For both sexes, eating expectancies were uniquely associated with ED symptoms. For men, Eating Manages Negative Affect was significantly associated with the most ED symptoms. In contrast, for women, Eating Leads to Feeling Out of Control was associated with the most ED symptoms. Previous findings regarding eating expectancies and ED symptoms in women may not generalize to men. Intervening on eating expectancies in a sex-specific way may help reduce specific ED symptoms.

Keywords

women; men; eating disorders; eating expectancies; college

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Eating expectancies are learned expectations surrounding eating that an individual develops through positive or negative reinforcement over time (Hohlstein, Smith, & Atlas, 1998) and are related to and prospectively predict eating disorder (ED) symptoms (e.g., Pearson, Zapolski, & Smith, 2015; Smith, Simmons, Flory, Annus, & Hill, 2007). Five distinct eating expectancies have been proposed, as measured by the Eating Expectancies Inventory (EEI; Holstein et al., 1998): 1) Eating Manages Negative Affect (EEI NA), 2) Eating is Pleasurable and Useful as a Reward (EEI Reward), 3) Eating Leads to Feeling out of Control (EEI Control), 4) Eating Alleviates Boredom (EEI Boredom), and 5) Eating Enhances Cognitive Competence (EEI Cognitive Competence). A significant body of literature has investigated the associations between two eating expectancies – EEI NA and EEI Reward – and bulimic symptomatology (i.e., binge eating and purging; De Young, Zander, & Anderson, 2014; Fischer, Peterson, & McCarthy, 2013; Fischer et al., 2018). However, less research has examined the association between the remaining eating expectancies and ED symptoms. In addition, associations between eating expectancies and ED symptoms have been conducted largely in women. Understanding the symptom-specific associations between eating expectancies and ED symptoms by sex will aid in more targeted treatment for both men and women.

The robust literature on EEI NA has indicated a consistent positive association with bulimic symptoms (e.g., Combs, Pearson, & Smith, 2011; Pearson & Smith, 2015; Racine & Martin, 2017). However, findings are mixed regarding EEI Reward and bulimic symptoms, with some studies showing a positive association and others showing a negative association (e.g., Bohon, Stice, & Burton, 2009; Combs, Smith, & Simmons, 2011). The existing literature on the other three eating expectancies indicate potential associations with ED symptomatology. For instance, lower EEI Control relates to eating disorder recovery (Fitzsimmons-Craft, Keatts, & Bardone-Cone, 2013), and women with bulimia nervosa (BN) report higher EEI Boredom than healthy controls (Bruce, Mansour, & Steiger, 2009). Conversely, no relation between ED symptoms and EEI Cognitive Competence has been observed (Hearon, Utschig, Smits, Moshier, & Otto, 2013). Thus, though the literature strongly supports an association between eating expectancies and bulimic symptoms, more research is needed in understanding how eating expectancies relate to a broader range of ED symptoms.

Sex Differences in Eating Expectancies and ED Symptom Associations

In general, research examining associations between eating expectancies and ED symptoms has been conducted largely in women. However, tests of other constructs and their association with ED symptoms, such as perfectionism (e.g., Forbush, Heatherton, & Keel, 2007), have shown that findings in female-only samples are not necessarily generalizable to men and that sex-specific investigation of these related factors is sorely needed (Dakanalis, Timko, Clerici, Zanetti, & Riva, 2014). The existing research investigating sex differences in eating expectancies has yielded mixed findings. For instance, whereas Hayaki and Free (2016) and Davis, Guller, and Smith (2016a; 2016b) reported differences between men and women in how eating expectancies were associated with ED symptoms, Schaumberg and Earleywine (2014) found that this relation did not differ by sex. These contrasting findings may be due to the use of different eating expectancies (i.e., EEI NA versus a composite of eating expectancies) and the ED symptom under study (e.g., binge eating and purging versus

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excessive exercise). Thus, a closer examination of the relation between eating expectancies and multiple ED symptoms in men are warranted to determine if results observed in women are generalizable to men, ultimately informing sex-specific treatment of EDs.

The Acquired Preparedness Model

Eating expectancies are conceptualized as a part of the acquired preparedness (AP) model, which posits that personality vulnerabilities interact with learned behaviors (i.e., eating expectancies) to create risk for the development of EDs (Combs, Pearson, & Smith, 2011; Schaumberg & Earleywine, 2014). It has been proposed that the personality traits of negative urgency and negative affect transact with eating expectancies to result in the advent of ED symptoms (Dingemans et al., 2009; Racine & Martin, 2017). This model has received substantial support for the development of binge eating and purging (Combs, Smith, & Simmons, 2011; Davis & Smith, 2018; Pearson & Smith, 2015). Though the AP model has not yet been tested as thoroughly for ED symptoms beyond binge eating and purging, it is likely that this model applies to symptoms across the ED spectrum (Davis & Smith, 2018).

The AP model may also be useful for understanding differences in the development of ED symptoms across sex. Within the AP model, it is possible for similar personality traits (i.e., negative urgency and negative affect) to lead to different maladaptive behaviors across individuals based on differences in learning experiences. For instance, women have higher levels of disordered eating behaviors than men (Forbush, Wildes, & Hunt, 2014). Men on the other hand, are more prone to developing maladaptive alcohol and drug use than women (O'Malley & Johnston, 2002), which have also been conceptualized through the AP model (Lavender et al., 2015; Vangsness, Bry, & LaBouvie, 2005). Thus, similar personality traits may also lead to differing ED symptoms based on sex-specific associations with eating expectancies. Previous literature has shown that women may be taught to attach multiple meanings to food, whereas this may not be the case for men (Pettit, Jacobs, Page, & Porras, 2010). Such learning theories may explain why EEI Reward and EEI NA confer risk for ED symptoms in women but only EEI NA confers risk for ED symptoms in men (Hayaki and Free 2016).

Despite the burgeoning literature on eating expectancies and ED symptoms, few studies have included all theorized constructs of the AP model simultaneously. The full AP model (as described above) would include the personality variables of negative urgency and negative affect transacting with eating expectancies to result in differential ED symptoms in relation to ED symptoms in women and men; however, as drug/alcohol use has also been conceptualized through the AP model, it would be important to include them as covariates in such a model. Including all related constructs in a single model allows for examining which constructs contribute unique variance to ED symptoms, beyond the variance of all other constructs in the model, and whether this varies by sex, which is essential for the development of sex-specific precision interventions.

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The Current Study

The current study examined sex variance in associations between eating expectancies and multiple ED symptoms. We also adjusted for constructs established as relevant to the AP model and ED symptoms, including negative affect, negative urgency, drug use, alcohol use. We also include body mass index (BMI) as a covariate to control for potential confounds in a college-sample (e.g., Arriaza & Mann, 2001; Rø, Reas, & Rosenvinge, 2012). We hypothesized that: 1) there would be sex variance in the model, and 2) for women, EEI NA and EEI Reward would be the eating expectancies associated with the most ED symptoms, whereas for men, EEI NA would be the eating expectancy related to the most ED symptoms. These findings will elucidate the unique associations between eating expectancies and ED symptoms in men and women, information that could ultimately inform more tailored sex-specific treatments for EDs.

Methods

Participants

Participants included undergraduate students from a large southeastern university enrolled in an introductory psychology course (N = 459) who received course credit for participation in the study. One hundred ninety-seven (42.9%) participants were men and 249 (54.2%) were women; 13 (2.8%) participants did not report their sex and were removed from these analyses. The average age of the remaining 443 participants was 19.44 years old (SD = 4.02), with nearly half of participants in their first year of college (n = 220; 47.9%). The majority of participants reported Caucasian as their race (n = 284; 61.9%); other reported races included African American (n = 49; 10.7%), Asian (n = 80; 17.4%), Pacific Islander (n = 1; 0.2%), Native American (n = 1; 0.2%), Mixed (n = 16; 3.5%), and Other (n = 16; 3.5%). Twelve participants did not report their race (2.6%). This study was approved by the local institutional review board, and all students provided online consent before participating.

Measures

Participants completed questionnaires via an online self-report assessment.

Eating expectancies—The ***Eating Expectancy Inventory*** (EEI; Hohlstein, Smith, & Atlas, 1998) was used to assess learned expectations about eating and contains five subscales: Eating Manages Negative Affect (EEI NA; e.g., *When I am feeling anxious or tense, eating helps me relax*); Eating is Pleasurable and Useful as a Reward (EEI Reward; e.g., *When I do something good, eating is a way to reward myself)*; Eating Leads to Feeling Out of Control (EEI Control; e.g., *Eating makes me feel out of control);* Eating Alleviates Boredom (EEI Boredom; e.g., *When I have nothing to do, eating helps relieve the boredom);* and Eating Enhances Cognitive Competence (EEI Cognitive Competence; e.g., *Eating helps me think and study better*). Subscales were calculated by summing items, with higher scores indicating greater endorsement of that eating expectancy. The EEI demonstrates good internal consistency and validity in a college-aged sample (Hohlstein et al., 1998). Internal consistencies in this sample were the following: 0.66 (EEI Boredom), 0.70 (EEI Reward), 0.78 (EEI Control), 0.81 (EEI Cognitive Competence), and 0.94 (EEI NA).

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Eating Disorder Symptoms—The 45-item ***Eating Pathology Symptoms Inventory*** (EPSI; Forbush et al., 2013) assessed ED symptoms and is comprised of eight subscales: purging (i.e., compensatory behaviors used to lose weight, such as vomiting, laxative, or diuretic use); binge eating (i.e., eating a very large amount of food in a short period of time [e.g., within 2 hours] and feeling out of control); muscle building (i.e., the desire to build more muscle); excessive exercise (i.e., exercising in an extreme or compulsive manner); restricting (i.e., the behavioral, actual restriction of one's caloric intake); negative attitudes toward obesity (i.e., holding negative beliefs regarding obesity); body dissatisfaction (i.e., discontent with one's body), and cognitive restraint (i.e., the intent to restrict one's caloric intake, whether or not successful). The EPSI evidences good internal consistency and construct validity in both college-aged men and women (Forbush, Wildes, & Hunt, 2014; Forbush et al., 2013). Internal consistencies for the subscales in this sample are the following: 0.77 (Cognitive Restraint subscale), 0.79 (Muscle Building subscale), 0.87 (Binge Eating subscale), 0.87 (Restricting subscale), 0.87 (Negative Attitudes Toward Obesity subscale), 0.88 (Excessive Exercise subscale), 0.88 (Purging subscale), and 0.90 (Body Dissatisfaction subscale).

Covariates—The total score from the ***Depression Anxiety and Stress Scales*** (DASS; Lovibond & Lovibond, 1995) was used as a broad measure of negative affect, with higher scores reflecting greater negative affect. The DASS has 42-items that assess depression, anxiety, and stress. The DASS evidences good internal consistency and concurrent validity in a community sample (Antony, Bieling, Cox, & Enns, 1998). Internal consistency in this sample was excellent ($\alpha = 0.96$).

To assess negative urgency, the negative urgency subscale of the ***UPPS-P Impulsive Behavior Scale*** (UPPS-P; Lynam, Smith, Whiteside, & Cyders, 2006) was used. The UPPS-P is invariant among male and female college students and demonstrates good validity and test-retest reliability in these students (Cyders, 2011). Internal consistency in this sample was $\alpha = 0.76$.

The ***Alcohol Use Disorders Identification Test*** (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) was used to assess problematic drinking. The AUDIT is a brief questionnaire with items capturing hazardous alcohol use, dependence symptoms, and harmful alcohol use. The AUDIT has good psychometric properties in a college-aged population (Fleming, Barry, & Macdonald, 1991). Internal consistency in this sample was good ($\alpha = 0.83$).

Similarly, the ***Drug Use Disorders Identification Test*** (DUDIT; Berman, Bergman, Palmstierna, & Schlyter, 2003) was used to assess problematic drug use. The DUDIT evidences excellent internal consistency and good sensitivity and specificity (Hildebrand, 2015). Internal consistency in this sample was good ($\alpha = 0.84$).

Finally, BMI was calculated through self-reported height and weight: weight (lb) / [height (in)]^2 x 703.

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Statistical Analyses

First, independent samples *t*-tests were conducted to test whether men and women differed significantly on eating expectancies, ED symptoms, and the covariates of interest. A Holm's Sequential Bonferroni Procedure (Holm, 1979), which is a modified version of the Bonferroni correction that maximizes power while controlling for inflation of Type I error (Abdi, 2010), was used to correct for multiple comparisons. The family-wise error rate was 0.05.

Sex variance tests—MPlus Version 8.0 (Muthen & Muthen, 1998) was used to conduct analyses. The maximum likelihood robust standard error (MLR) estimator was used to report standardized path coefficients, which estimates missing data efficiently and is robust to non-normality in the data (Muthen & Muthen, 1998). Several fit indices were used to evaluate model fit: (a) the comparative fit index (CFI) (Bentler, 1990), (b) the Tucker-Lewis incremental fit index (TLI) (Tucker & Lewis, 1973), (c) the root mean square error of approximation (RMSEA) (Steiger & Lind, 1980), and (d) the standardized root mean square residual (SRMR) (Jöreskog & Sörbom, 1981). For the CFI and TLI, adequate values are 0.90 or above and very good values are 0.95 or above. For the RMSEA and SRMR, adequate values are 0.08 or below and very good values are 0.05 or below.

To test if sex variance was present in the model, recommendations from Bollen (1989) were followed for path analysis. First, an unconstrained model (with unconstrained paths across men and women) was tested. This model included all five eating expectancies (i.e., EEI NA, EEI Reward, EEI Control, EEI Boredom, and EEI Cognitive Competence) and the related constructs (i.e., negative affect, negative urgency, drug use, alcohol use, and BMI) as independent variables. Purging, binge eating, muscle building, excessive exercise, restricting, negative attitudes toward obesity, body dissatisfaction, and cognitive restraint served as dependent variables. Next, a constrained model (with constrained paths across men and women) using these same paths was tested. A chi-square difference test was conducted using the Satorra-Bentler scaling correction (which is necessary when using the MLR estimator) to compare the unconstrained and constrained models (Satorra & Bentler, 2010). A significant chi-square value indicates the models are significantly different, showing that the models vary by sex. Missing data were excluded listwise in subsequent analyses. Sixteen individuals had missing data and therefore were excluded, resulting in a sample size of 443.

Results

Independent Samples *t*-tests

Results are shown in Table 1. Mean scores for binge eating, restricting, body dissatisfaction, and cognitive restraint (ps ≤ .001) were significantly higher in women than men, whereas mean scores for muscle building and excessive exercise (ps ≤ .001) were significantly higher in men than women. For eating expectancies, the mean score for EEI Reward (p = .001) was significantly higher in women than men. For covariates, negative affect (p = .002), drug use (p < .001), and alcohol use (p < .001) were significantly different in men and women. Women had significantly higher mean scores for negative affect, whereas men had significantly higher mean scores on drug use and alcohol use.

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Sex Variance Model

The unconstrained model was saturated, meaning that there are no remaining degrees of freedom in the model; when non-significant paths were removed, the model had excellent fit: CFI = .99, TLI = .97, RMSEA = .03, SRMR = .03. When comparing the unconstrained and constrained models, the Santorra-Bentler corrected chi-square statistic indicated a significant difference between the two models (X^2 (54) = 115.33, $p < .001$), suggesting the models varied by sex. Therefore, paths were examined according to sex. Unique associations for men and women between eating expectancies and ED symptoms emerged, even after adjusting for related constructs. Table 2 presents the significant paths for the associations between eating expectancies and ED symptoms by sex. Since no significant associations emerged with EEI Cognitive Competence, these are not discussed below.

Shared associations between men and women—EEI Control (bs ≥ .18, ps < .050) had the most shared associations between men and women, including significant positive associations with binge eating, excessive exercise, body dissatisfaction, and cognitive restraint in both sexes. EEI NA was positively associated with purging (bs ≥ .25, ps < .001) and body dissatisfaction (bs ≥ .14, ps < .050) in both men and women. In contrast, EEI Reward was significantly negatively associated with purging (bs ≤ −.13, ps < .010) in both sexes.

Associations unique to men—EEI Control (bs ≥ .18, ps < .050) had the most unique associations of any eating expectancy with ED symptoms in men, including positive associations with binge eating, excessive exercise, restricting, and body dissatisfaction. This was followed by EEI NA, which had significant positive (bs ≥ .18, ps < .050) associations with four ED symptoms (i.e., purging, excessive exercise, restricting, and body dissatisfaction). EEI Reward (bs ≥ .12, ps < .050) was uniquely positively associated with three ED symptoms (i.e., purging, excessive exercise, and restricting), whereas EEI Boredom (b^* = −.23, p = .006) was only uniquely related to muscle building.

Associations unique to women—EEI Control (bs ≥ .15, ps ≤ .035) was uniquely associated with the most ED symptoms (i.e., purging, muscle building, and negative attitudes toward obesity) in women. EEI NA (bs ≥ .19, ps ≤ .043) was uniquely positively related to three ED symptoms (i.e., binge eating, muscle building, and negative attitudes toward obesity). EEI Boredom also had unique associations with three ED symptoms: it was positively associated with binge eating (b^* = .26, $p < .001$) and negatively associated with restricting and cognitive restraint (bs ≤ −.14, ps ≤ .039). Finally, EEI Reward (b^* = −.17, p = .026) was only uniquely associated with muscle building.

Discussion

In our investigation of sex variance in a model including five proposed eating expectancies in association with multiple ED symptoms, while adjusting for related constructs, we found that this model varied by sex; unique associations for men and women between eating expectancies and ED symptoms existed. For both sexes, the expectancies that eating leads to feeling out of control (EEI Control) and eating manages negative affect (EEI NA) played an

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important role in the majority of ED symptoms. However, unique associations between eating expectancies and ED symptoms were also present for both sexes.

Shared Associations Between Men and Women

Eating expectancies showed significant associations with all ED symptoms. In particular, the expectancies that eating manages negative affect and eating leads to feeling out of control were related to the majority of ED symptoms in both men and women. This finding is consistent with previous literature showing that eating to reduce negative affect is related to bulimic symptoms (e.g., Lavender et al., 2015; Pearson & Smith, 2015; Racine & Martin, 2017) and extends this observed relation to other ED symptoms, such as dietary restriction and body dissatisfaction. This finding also supports the application of the AP model to ED symptoms beyond binge eating and purging. In contrast, the limited research including the expectancy that eating leads to feeling out of control suggests that it is associated with ED recovery and with overeating (Fitzsimmons-Craft, Keatts, & Bardone-Cone, 2013; Hearon et al., 2013). Thus, eating to manage negative affect and eating leads to feeling out of control may represent vulnerabilities that generalize across ED symptoms for both men and women.

Unique Associations in Men and Women

Though similarities were observed between men and women, there were also unique eating expectancy-ED symptom associations by sex. In contrast to our hypothesis, in men, the expectancy that eating is rewarding was uniquely associated with purging, excessive exercise, and restricting. It appears that viewing eating as rewarding may be particularly linked with compensatory behaviors in men. It is possible that men who view eating as rewarding are more likely to feel that their eating is out of control (regardless of whether binge eating is present) and thus may be more likely to compensate for eating. This finding contrasts with previous literature showing that eating for pleasure/reward was not related to ED symptoms in men (Hayaki & Free, 2016). This difference may be explained by the fact that the previous study investigated eating expectancies in relation to a composite score of bulimic symptoms, rather than specific compensatory behaviors or other ED symptoms. In women, eating in response to boredom was positively associated with binge eating and negatively associated with restricting and cognitive restraint. Eating to relieve boredom has previously been shown to be higher in women with BN symptoms (Bruce, Mansour, & Steiger, 2009), and this finding adds support for the role eating to reduce boredom in perpetuating binge eating while extending this to restricting behaviors.

Unique Associations Across Sex

Interestingly, muscle building and restricting did not share any eating expectancy associations between men and women when controlling for other constructs of relevance (i.e., substance use, negative affect, negative urgency, and BMI). In women, the expectancies that eating leads to feeling out of control and eating to manage negative affect were associated with muscle building, whereas in men, only eating to relieve boredom was associated with muscle building. Moreover, in women, only eating to relieve boredom was associated with restricting, whereas in men, eating to reduce negative affect, eating is rewarding, and eating leads to feeling out of control were associated with restricting. Thus, men and women may be predisposed to develop different ED symptoms from the same

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eating expectancies. The AP model may help explain these sex differences. The AP model proposes that personality traits transact with learning to lead to the development of ED symptoms (e.g., Combs, Pearson, & Smith, 2011). Differential learning may take place according to sex, which may predispose men and women to engage in certain ED symptoms (Pettit, Jacobs, Page, & Porras, 2010). College men are more likely to endorse muscle building than women, whereas college women are more likely to endorse restricting than men (Forbush, Wildes, & Hunt, 2014). Men may learn that eating should be compensated through muscle building behaviors, which may explain the associated between eating when bored and muscle building. Women, on the other hand, may be socially taught to compensate through restriction. Thus, in line with the AP model, the interaction between psychosocial learning and sex may inform the development of different ED symptoms.

Limitations

Limitations of the current study should be considered. First, our sample comprised of college students, which may not generalize to other ages or to a clinical sample. However, undergraduate samples are useful in identifying potential risk factors for ED symptoms, as college is a high-risk period for the development of an ED (e.g., Stice, 2016; Taylor et al., 2006). Second, all constructs were assessed via self-report questionnaires, which may not accurately capture certain behaviors, such as binge eating (e.g., Burton, Abbott, Modini, & Touyz, 2016). However, self-report questionnaires can be more valid for assessing ED symptoms than diagnostic interviews (Keel, Crow, Davis, & Mitchell, 2002). Third, the current study is cross-sectional, limiting our ability to establish temporal precedence and prohibiting causal conclusions.

The strengths of the current study should also be noted. The current study included previously explored relevant constructs in the AP model, which allowed for the examination of *unique* associations between eating expectancies and ED symptoms, or associations between eating expectancies and ED symptoms when partialling out the relations with all other constructs in the model. Such investigations are imperative for understanding which constructs may be important for targeted interventions. In addition, this study investigated model variance by sex, which allows for elucidating unique and shared associations for both men and women. Model variance testing is crucial for understanding how theories and models differ according to different subgroups. Thus, this study is an important step and adds to the robust literature on eating expectancies in understanding how the AP model may vary across sex.

Potential Clinical Implications

A better understanding of sex-specific and symptom-specific relations between eating expectancies and ED symptoms may aid in the development of precision interventions, which are likely to show better outcomes (Fisher et al., 2017; Insel, 2014). Eating expectancies may offer promise as targets of intervention. For instance, cognitive-behavioral approaches, such as using hypothesis testing, could be used to teach individuals that their eating expectations are violated (e.g., that eating does not help manage negative affect in the long-term). Targeting eating expectancies could thus be integrated into cognitive-behavioral treatments of EDs (e.g., Fairburn, 2008; Steinglass et al., 2011) and applied in a sex-specific

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manner. Future research should seek to replicate these findings in a clinical sample to better understand how clinical interventions targeting eating expectancies may apply in men versus women with EDs.

Conclusions

These results suggest that previous literature on eating expectancies and ED symptoms may not generalize to men. Specifically, the AP model suggests that men may be more prone to certain ED symptoms based on differential social learning. Future research should continue to investigate all eating expectancies across a range of ED symptoms in prospective data in men and women. Longitudinal designs that clarify the temporal relationship will aid in the development of sex-specific eating expectancy-ED symptom targeted treatments. Finally, conducting ecological momentary assessment studies on eating expectancies to understand how these expectancies affect momentary processes in the real world in men compared with women would be beneficial. Such research may aid in the development of sex-specific interventions to alleviate the suffering of those with ED symptoms.

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Table 1.

Independent samples *t*-tests comparing means for all study variables between men and women.

Variable	Men	Women				
	Mean (SD)	**Mean (SD)**	***t*-statistic**	***df***	**Cohen's *d***	***p*-value**
Purging	0.56 (2.17)	1.23 (2.90)	−2.64	434	0.26	.009
Binge Eating	**5.63 (4.95)**	**7.42 (6.31)**	**−3.22**	**434**	**0.32**	**.001**
Muscle Building	**5.02 (4.47)**	**1.59 (2.35)**	**10.32**	**434**	**0.96**	**< .001**
Excessive Exercise	**6.87 (5.31)**	**5.04 (5.30)**	**3.46**	**386.05**	**0.34**	**.001**
Restricting	**3.31 (4.11)**	**5.06 (5.23)**	**−3.80**	**434**	**0.37**	**< .001**
Negative Attitudes Toward Obesity	5.72 (4.64)	4.67 (4.51)	2.38	434	0.23	.018
Body Dissatisfaction	**4.65 (4.67)**	**11.33 (7.09)**	**−11.24**	**434**	**1.11**	**< .001**
Cognitive Restraint	**3.45 (2.71)**	**4.91 (3.25)**	**−5.00**	**434**	**0.49**	**< .001**
EEI NA	45.92 (20.98)	51.20 (22.29)	−2.46	394.44	0.24	.014
EEI Reward	**27.67 (6.23)**	**29.86 (6.77)**	**−3.51**	**419.32**	**0.34**	**< .001**
EEI Control	9.38 (4.75)	10.20 (5.45)	−1.67	426.22	0.16	.095
EEI Boredom	14.74 (5.07)	15.67 (5.35)	−1.87	414.60	0.18	.062
EEI Cognitive Competence	7.61 (3.34)	7.99 (3.28)	−1.17	400.77	0.11	.244
Negative Affect	**13.78 (15.43)**	**19.23 (18.57)**	**−3.17**	**405**	**0.32**	**.002**
Negative Urgency	25.68 (6.85)	25.63 (6.58)	0.07	396.08	0.01	.942
Drug Use	**3.15 (5.80)**	**1.36 (3.43)**	**3.82**	**397**	**0.38**	**< .001**
Alcohol Use	**8.51 (5.61)**	**5.60 (4.67)**	**5.16**	**330**	**0.56**	**< .001**
Current BMI	23.59 (3.39)	22.92 (4.02)	1.87	424.54	0.18	.063

The *p*-values that remained significant after conducting the Holm's Sequential Bonferonni Procedure to correct for multiple comparisons are reported; the family-wise error rate was .05; variables with significant differences are bolded for clarity. SD = standard deviation; df = degrees of freedom; EEI NA = Eating Manages Negative Affect; EEI Reward = Eating is Pleasurable and Useful as a Reward; EEI Control = Eating Leads to Feeling Out of Control; EEI Boredom = Eating Alleviates Boredom; EEI Cognitive Competence = Eating Enhances Cognitive Competence; BMI = body mass index; All eating disorder symptoms are scored according to the Eating Pathology Symptoms Inventory (Forbush et al., 2013); Eating expectancies are scored according to the Eating Expectancy Inventory (Hohlstein, Smith, & Atlas, 1998); Negative affect is scored according to the Depression Anxiety and Stress Scales (Lovibond & Lovibond, 1995); Negative urgency is scored according to the UPPS-P Impulsive Behavior Scale (Lynam, Smith, Whiteside, & Cyders, 2006); Drug use is scored according to the Drug Use Disorders Identification Test (Berman, Bergman, Palmstierna, & Schlyter, 2003); Alcohol use is scored according to the Alcohol Use Disorders Identification Test (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001); BMI was calculated according to self-reported height (inches) and weight (pounds).

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Table 2.

Significant paths for the associations between eating expectancies and eating disorder symptoms by sex.

	Men			Women		
		b-value*	***p*-value**		***b***-value*	***p*-value**
Purging	**EEI NA**	**.27**	**<.001**	**EEI NA**	**.25**	**< .001**
	EEI Reward	**−.13**	**.008**	**EEI Reward**	**−.22**	**< .001**
	Drug Use	−.30	<.001	EEI Control	.21	.001
	Negative Urgency	−.17	.002			
	Negative Affect	.17	.043			
Binge Eating	**EEI Control**	**.30**	**< .001**	**EEI Control**	**.36**	**< .001**
	Negative Affect	.22	.001	Negative Affect	.17	.007
	Drug Use	−.22	.006	EEI NA	.25	.001
	Alcohol Use	.26	.003	EEI Boredom	.26	< .001
Muscle Building	Drug Use	−.25	< .001	EEI Control	.15	.035
	EEI Boredom	−.23	.006	EEI NA	19	.036
	Negative Affect	.24	< .001	EEI Reward	−.17	.026
Excessive Exercise	**EEI Control**	**.25**	**.007**	**EEI Control**	**.44**	**< .001**
	EEI NA	.25	.021	Alcohol Use	.16	.042
	EEI Reward	.16	.043			
	Negative Affect	.17	.029			
Restricting	Negative Affect	.23	.009	Negative Affect	.49	< .001
	EEI NA	.18	.043	EEI Boredom	−.18	.007
	EEI Reward	−.12	.046			
	EEI Control	.25	.008			
	BMI	−.16	.004			
Negative Attitudes Toward Obesity	Negative Affect	.25	.004	EEI NA	.19	.027
				EEI Control	.24	.002
				Alcohol Use	.17	.015
Body Dissatisfaction	**EEI NA**	**.22**	**.024**	**EEI NA**	**.14**	**.043**
	EEI Control	**.18**	**.022**	**EEI Control**	**.41**	**< .001**
	Negative Affect	.45	< .001	Negative Affect	.29	< .001
	BMI	.18	.015	BMI	.24	.001
				Alcohol Use	.20	.002
Cognitive Restraint	**EEI Control**	**.36**	**< .001**	**EEI Control**	**.56**	**< .001**
	Negative Affect	.33	< .001	EEI Boredom	−.14	.039

All paths were tested; non-significant predictors are not included for clarity. Bolded variables for men and women indicate shared eating expectancies between men and women. EEI NA = Eating Manages Negative Affect EEI Reward = Eating is Pleasurable and Useful as a Reward; EEI Control = Eating Leads to Feeling Out of Control; EEI Boredom = Eating Alleviates Boredom; BMI = body mass index.