

ETHNIC DIFFERENCES IN ED PATHOLOGY

ETHNIC DIFFERENCES IN THE MAINTENANCE AND PATHOLOGY OF DISORDERED
EATING IN A COLLEGE POPULATION

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Abstract

College students are one of the most vulnerable groups for developing disordered eating (e.g., restricting food intake, purging, binge-eating). Moreover, eating disorders have often been considered a ‘White woman’s disease,’ and research of EDs on minority populations has been limited. Because of this, it is crucial that we gain a deeper understanding of the role ethnicity plays in the pathology and maintenance factors of eating disorders in a college student population. The current study utilized the transdiagnostic model (TM) of eating disorders to conceptualize and measure eating pathology. The TM proposes that there are four maintenance factors for disordered eating: mood intolerance, interpersonal problems, perfectionism, and low self-esteem. The present study examined differences between White and Latina women in the relationship of the four maintenance factors to disordered eating pathology (n = 131). It was predicted that these populations would differ in endorsed symptoms of eating pathology, as well as in the severity of symptoms of eating disorders. The study also tested ethnicity as a moderator in the relationships between each maintenance factor and overall eating pathology, as measured by the Eating Pathology Symptom Inventory (EPSI). Contrary to predictions, no significant differences were found in overall eating pathology or disordered eating presentation between the groups. The trait of perfectionism was found to correlate significantly and positively with eating pathology across the entire sample. Unexpectedly, self-esteem and emotion regulation correlated significantly and *positively* with eating pathology. Ethnicity did not moderate the relationship between the maintenance factors of EDs and overall eating pathology. Results showed no significant differences in the presentation of disordered eating across the two ethnic groups. Findings also challenged the expected direction of emotion dysregulation and low self-esteem, as

they relate to eating pathology. Future research should explore the relation of ethnic identity and acculturation on eating pathology.

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Ethnic Differences in Maintaining Factors of Eating Disorders in a College Population

By the time the average American woman is 20 years old, there is a 13% chance that she will already have suffered from a clinical eating disorder (ED; Stice et al., 2009). When subclinical symptoms are considered, males suffer from disordered eating behaviors at nearly the same rates as women (Mond et al., 2014). Disordered eating behaviors can be life-threatening, and can include caloric restriction, bingeing, purging, excessive exercise, misuse of laxatives, and distorted perceptions of body image (American Psychiatric Association [APA], 2013). In fiscal year 2018 to 2019 alone, the total cost associated with eating disorders was estimated to be \$64.7 billion in the U.S., indicating that they are a serious public health problem (Streatfeild et al., 2021).

There is evidence that eating disorders are often thought of as a young, White woman's disease. One study that explored media representation of eating disorders found that the majority of characters suffering from EDs were indeed White women under the age of 30, consistent with this stereotype (Bassett & Ewart, 2023). Early research suggests that White women are at a higher risk for disordered eating when compared to individuals from ethnic minority groups (Bruch, 1973), though more recent studies have yielded less consistent findings (Smolak & Levine, 2015). It is clear that more research is needed to fully understand the relationship of ethnicity in the presentation and maintenance of EDs, as well as potential moderating factors.

Prevalence rates of EDs across ethnicities have long been debated. Some studies have found that White adults have a higher lifetime prevalence of eating disorders (Striegel-Moore, 2003; Udo & Grilo, 2018). However, other studies have produced conflicting findings. Notably, DSM-5 criteria expanded the diagnoses for eating disorders, including binge eating disorder and eating disorders not otherwise specified (EDNOS). The first study that used DSM-5 criteria for

eating disorders found no ethnic differences in lifetime prevalence of clinical eating disorders (Solmi et al., 2016). Further, in terms of methodology, this body of literature has suffered from small sample sizes, exclusion of male subjects, and only including participants who meet clinical criteria for an ED. A more recent analysis, which combined three studies on ethnic differences in the prevalence of eating disorders to produce a sample of 1777 participants, also found no differences in the point prevalence of threshold and subthreshold eating disorders between White, Hispanic, Black, and Asian populations (Cheng et al., 2019). It is unclear whether these more recent results are the product of different research methodologies, differences in the samples, or differences in DSM criteria.

Despite an apparent lack of ethnic differences in the prevalence of EDs, it is nevertheless important to consider how they develop, their characteristic behaviors, and how they are maintained in various cultural subgroups. Markey (2004) proposed a tripartite model of the development of eating disorders, suggesting that an individual's culture will impact their eating behaviors, body image ideals, and perceptions of health. For example, White women tend to have stronger beliefs in the thin-ideal (i.e., the idea that a thinner body is more valuable in society) than Black and Hispanic women (Roberts et al., 2006). Biologically, there are also ethnic differences in body mass index (BMI), which can serve as a risk factor for developing an eating disorder, as individuals with a higher BMI are more likely to develop an ED than those with a lower BMI (Quick & Byrd-Brenner, 2014). Finally, exposure to Western media, which often highlights the thin-ideal, has shown an association with body image issues and eating disturbances (Becker et al., 2002). Ethnicity and culture may affect an individual's exposure to media or societal ideals, thus influencing their risk for developing an ED. For example, if an individual is from a culture that does not afford exposure to Western media, they may be less

likely to internalize the Western thin-ideal, creating a protective factor against body image disturbances and related behaviors.

Markey's model is further reflected in the differences in disordered eating behavior between ethnicities. In minority populations (i.e., Black, Latinx, Asian), purging (such as vomiting) and weight concerns were the main symptoms, while in White populations, shape concerns were the most prominent symptom (Perez et al., 2021). Put simply, minority populations were more worried about the number on the scale, while White populations were more concerned with how they perceived their body to look. An earlier study found that binge-eating behaviors are more prevalent in Hispanic populations when compared to White and Black populations (Fitzgibbons et al., 1998). Despite current research suggesting no ethnic differences in the prevalence of EDs, Markey's (2004) model suggests a bi-directional relationship between culture and eating disorder symptomatology.

Culture can also influence how an individual is parented, in turn, influencing disordered eating behaviors and vice versa. For example, high parental expectations were linked to increased disordered eating in Latinx, Asian American, and multiracial college women, while high parental criticism was associated with higher body dissatisfaction in White, Black, and multiracial women (Goel et al., 2020). Though cultural and racial aspects influence disordered eating symptomatology in many ways, an individual's level of ethnic identity can mediate this association. In fact, Asian American men who identified strongly with their culture were less likely to engage in loss-of-control eating (Guidinger et al., 2020). Similarly, Black individuals who had higher levels of ethnic identity had higher self-esteem and lower ED pathology (Rhea & Thatcher, 2013). It is likely that when an individual has a strong sense of ethnic identity, they can

be more accepting of their body type, improving overall self-esteem and serving as a protective factor against developing disordered eating behaviors.

As Markey's model suggests, ethnicity and culture may play a substantial role in the development of EDs. However, these studies focused on specific types of disordered eating symptoms and behavior, not diagnoses or disordered eating pathology in general. Prior to the last few decades, each eating disorder diagnosis was conceptualized differently. Essentially, this means that each disorder (i.e., anorexia, bulimia, binge-eating disorder) had a unique model to conceptualize the disease. Fairburn et al. (2003) developed the transdiagnostic model of eating disorders (TM) which conceptualizes anorexia nervosa, bulimia nervosa, and binge-eating disorder in one overarching model. Thus, it operates on the assumption that these three disorders have core commonalities, despite their different clinical presentations. Fairburn et al. (2003) proposed that all eating disorders include the same dysfunctional schema for self-evaluation, including self-evaluation of shape, eating habits, and achievement. The research has clearly linked culture and race to differences in how these negative schemas may develop and present symptomatically in eating disorders. However, there is little research on the *maintenance factors* of eating disorders that the authors suggest in the TM. This is an important avenue of study because in treating eating disorders, the maintenance factors are often the focus of intervention. If there are ethnic differences in the presence or severity of maintaining factors between ethnicities, culturally competent care would include using this knowledge to inform care in treating eating disorders across an ethnically diverse clientele.

Fairburn et al. (2003) propose that there are *four maintaining factors* across the most common eating disorders: *core low self-esteem*, *mood intolerance*, *interpersonal difficulties*, and *clinical perfectionism*. They argue that while the dysfunctional schemas described in their model

may set the stage for an eating disorder to develop, the four maintaining factors keep the individual trapped in maladaptive thoughts and behaviors, and thus, stuck in the disorder. Based on this model, Cognitive Behavior Therapy – Enhanced (CBT-E) was developed, specifically to target the maintaining factors of eating disorders (Fairburn, 2008). While this treatment was found to be effective (Atwood & Friedman, 2020), it can be further specified to optimize treatment. For instance, there has been little research examining how these maintaining factors of eating disorders may differ between ethnicities. It could be the case that individuals of certain ethnicities may benefit from spending more or less time on therapy modules targeting specific maintaining factors. For example, if Asian Americans are found to have higher rates of perfectionism, it may be beneficial to spend more time in treatment challenging perfectionistic tendencies within that population, such as starting with CBT for perfectionism rather than the simplified perfectionism module included in CBT-E.

Due to cultural differences in the development and presentation of eating disorders, the potential differences in maintaining factors of eating disorders between ethnicities warrant further study. This information could inform culturally sensitive interventions, which could target the primary maintenance factor(s) based on empirically derived subgroups. Further, most eating disorders typically begin between the ages of 18 to 21, the typical college age (NEDA, 2013). In fact, a survey at one college found that the point prevalence rates of EDs were 25% for males and 32.6% for females over a 13-year period (White, 2013).

Researchers have also found differences specifically between White and Hispanic populations. One study found that Latinx individuals have elevated rates of binge eating and a low prevalence of anorexia when compared to non-Hispanic White populations (Alegria et al., 2007). Further, White individuals were more likely to report co-occurring overevaluation and

dissatisfaction of their bodies, while Latinx individuals were more likely to experience exclusively dissatisfaction. This research also determined that ethnicity moderated the relationship between dissatisfaction and over-evaluation of BMI (Lydecker et al., 2021), suggesting ethnicity plays a role in the development of disordered eating behaviors.

Because of the vulnerability of a college population in the development of eating disorders, the current study focused exclusively on college students from differing ethnic backgrounds. The current study examined possible differences in the relationship between ethnicity, the four maintenance factors of eating disorders, and disordered eating pathology in a college population. Specifically, it compared White and Latina females currently enrolled in a diverse public university on the East Coast, who were predicted to show differences in ED presentation.

Based on Fairburn et al.'s model (2003) as well as prior research findings, it is predicted that the severity of each of the four maintenance factors will be positively correlated to and predict levels of total disordered eating pathology across the sample population. However, it is also predicted that endorsed symptoms of eating disorders will differ between White and Latinx individuals. Specifically, it is predicted that Latina women, who are acculturated to accept a larger body image ideal, will have higher levels of binge-eating, while White women, who are known to aspire to a 'thin ideal,' will have higher levels of restrictive eating and weight concerns. The second hypothesis is based on the framework of Markey's (2004) tripartite model, predicting that ethnicity will moderate the relationship between maintaining factors and disordered eating pathology. Specifically, it was expected that ethnicity would influence the strength of the relationship between each maintenance factor and eating pathology.

Finally, it was predicted that the severity of each maintaining factor would differ between White and Latina populations. For example, based on past research, Latinx individuals may have lower self-esteem than White participants due to racial discrimination. However, White participants are predicted to have higher levels of perfectionism. Findings of this study could inform culturally sensitive care in the treatment and understanding of eating disorders in a young adult population.

Method

Participants

Participants in the current study were 131 females attending a public University in New Jersey. 58 (44%) were White and 73 (56%) were Latina. The majority (83%) of participants were between the ages of 18 and 24, with 22 (17%) participants over the age of 25. Participants were recruited via undergraduate psychology classes and were offered either extra credit or the fulfillment of a research requirement for the class in return for their participation. The only inclusion criteria were that the participant speak English fluently and be enrolled in college. Demographic characteristics of participants can be found in Table 1.

Table 1*Demographic Information of Participants*

	White		Latinx	
	<i>n</i> = 58	%	<i>n</i> = 73	%
Age				
18-24	44	76	64	90
25-35	7	12	6	8
36-50	7	12	1	1
51+	0	0	1	1
Year				
Freshman	14	24	31	42.5
Sophomore	7	12	15	20.5
Junior	20	35	11	15
Senior	12	21	14	19
4+ years	5	8	2	3
Socioeconomic Class				
Lower	1	2	7	10
Lower-middle	13	22	36	49
Middle	33	57	27	37
Upper-middle	11	19	3	4
First-Generation Student				
Yes	27	47	42	57.5
No	31	53	31	42.5

Note. A definition of SES was not included in the survey. Participants were asked to self-identify their SES from the options shown above. Upper class was given as an option, though no participants selected it.

Measures

Measures in the current study included a demographic survey, the Eating Pathologies Symptom Inventory (EPSI; Forbush et al., 2013), the Self-Esteem, Interpersonal Problems, and Emotion Dysregulation scales from the Eating Disorder Inventory – 3 (EDI-3; Garner, 2004), and the Frost Multidimensional Perfectionism Scale, Brief Form (FMPS-B; Burgess et al., 2016).

All measures are both reliable and valid (Forbush et al., 2013; Garner, 2004; Burgess et al., 2016).

Eating Pathologies Symptom Inventory (EPSI)

The EPSI (Forbush et al., 2013) is a self-report questionnaire that measures the presence and severity of common eating pathology. It consists of 45 total items across 8 subscales. The subscales include: body dissatisfaction, binge eating, cognitive restraint, purging, restricting, excessive exercise, negative attitudes towards obesity, and muscle building. Respondents rate each item on a 5-point Likert scale, ranging from 0 (*never*) to 4 (*very often*). It can be used for adolescents and adults, appropriate for anyone ages 14 and over. The EPSI scales have strong internal consistency (median coefficient alpha values were .86 in a college student population and .89 in an eating disorder patient population), with significant differences ($p < .001$) in scores from the general college population and eating disorder population (Forbush et al., 2014). Cronbach's alpha value was .91 in the current sample. The EPSI does not have a threshold score to differentiate clinical and nonclinical eating disorders, it simply measures total disordered eating behaviors.

Eating Disorder Inventory – 3 (EDI-3)

The EDI-3 (Garner, 2004) is a self-report questionnaire that measures symptoms commonly associated with eating disorders. Participants were asked to complete the following subscales: (1) the emotional dysregulation scale to measure mood intolerance; (2) the low self-esteem scale to measure core low self-esteem; and (3) the interpersonal insecurity and interpersonal alienation scales to measure interpersonal difficulties. This included 27 items total, with each item responded to on a 6-point scale *always, sometimes, usually, rarely, and never*. Each response is then scored on a scale of 0-4, with *rarely* and *never* both being scored as 0. The

EDI-3 was found to have strong discriminant validity ($p < .001$) between clinical (eating disorder) and nonclinical samples (Clausen et al., 2011). Cronbach's alpha was above .80 in both Clausen's (2011) normative sample and the current sample for each scale. Similarly, the EPSI subscales were found to have strong discriminant validity in our sample, with all subscales having Cronbach's alpha scores of above 0.70.

Frost Multidimensional Perfectionism Scale – Brief Form (FMPS-B)

The FMPS-B (Burgess et al., 2016) is a self-report questionnaire that includes 8 items measuring levels of perfectionism. It measures two core constructs of perfectionism: evaluative concerns and striving for perfectionism. Each item is rated on a 5-point Likert scale of 1 (*strongly disagree*) to 5 (*strongly agree*). This two-factor model of perfectionism was found to be a good to excellent fit (CFI = 0.94) for measuring perfectionism in both clinical and nonclinical samples (Burgess et al., 2016). Cronbach's alpha for the FMPS-B in this study was .84.

Procedure

The research was approved by the university institutional research board and was performed in accordance with all ethical standards. Data was collected during the Fall 2022 semester, which took place from September to mid-December. Each participant was able to complete the online surveys in private from their own laptop or smartphone and could do so from any location. After reading and agreeing to the consent form by clicking a link, the participant completed demographic questions, the EPSI, the FMPS-B, and the EDI-3 items, in that order. Written instructions were provided before each questionnaire. At the end of the survey, participants were debriefed on the intention of the study and given contact information of all researchers in case of questions or concerns.

Data Analysis Plan

All data was analyzed using SPSS v. 28 software. Data were first examined for missing responses and 3.6% of participants (n=5) were removed because at least 10% of responses overall or in a single scale were missing. This yielded a final sample of 131. Missing data in the final sample was less than 10%, and all missing data was analyzed for systematic patterns and to ensure proper data cleaning measures. If a participant was missing minimal data (less than 10% of items per measure and less than 10% of total items) then the mean of the sample's responses for each missing item was imputed as that individual's response.

It should be noted that there was a significant difference in socioeconomic status (SES) between the White and Latina populations, with significantly more Latina individuals identifying as lower-middle class, and significantly more White individuals identifying as upper-middle class ($\chi^2 = 19.00, p < .001$). Because of this, SES was included as a covariate in all analyses.

To determine differences in eating disorder symptomatology between White and Latina women, a multivariate analysis of covariance (MANCOVA) was run comparing all EPSI subscales (body dissatisfaction, binge eating, cognitive restraint, excessive exercise, restricting, purging, muscle building, and negative attitudes towards obesity) across the ethnic groups. A MANCOVA was also run to measure differences in severity of the four maintenance factors (FMPS-B scores, and EDI-3 mood intolerance, interpersonal difficulties, and low self-esteem scores). To determine the relationships between the maintenance factors and total eating pathology, a correlation analysis was run between scores on each maintenance factor and EPSI scores. These tests were conducted for the total sample as well as for White and Latina samples individually. In addition to this, a regression analysis was run with the maintenance factors as predictor variables and EPSI scores as the outcome variable to determine which maintenance

factors predicted disordered eating. Again, this test was conducted with the total sample as well as within White and Latina subsamples. Finally, to determine if ethnicity plays a role in the relationship between each maintenance factor of eating disorders and the severity of disordered eating pathology, moderation analyses were run with FMPS-B scores and EDI-3 mood intolerance, low self-esteem, and interpersonal difficulties scores as the predictor variables, EPSI scores as the outcome variable, and ethnicity as the moderator. The moderation analyses were conducted using SPSS's PROCESS macro (Hayes, 2013).

Results

Multivariate Analyses of Covariance

First, to test the hypothesis that eating pathology and presentation would differ between groups, a MANCOVA was run to compare White and Latina females on both EPSI total and subscale scores (Table 2.1). This test concluded that there were no significant differences between groups on EPSI and EPSI subscale scores after controlling for socioeconomic status, $F(8, 121) = 0.840, p = .57, \text{Wilks}' \Lambda = .840, \text{partial } \eta^2 = .376$. The next prediction, that White and Latina women would have different levels of severity in the four maintenance factors, was also tested with a MANCOVA. This test revealed that there were no statistically significant differences between White and Latina women on severity of any of the maintenance factors after controlling for socioeconomic status, $F(4, 125) = 1.223, p = .31, \text{Wilks}' \Lambda = .962, \text{partial } \eta^2 = .038$. The means and standard deviations, controlled for SES, for the EPSI and its subscales can be found in Table 2.1. The means and standard deviations for the four maintenance factors, also controlled for SES, can be found in Table 3. Results did not significantly differ regardless of whether SES was included as a covariate.

Table 2.1*Means and Standard Deviations of EPSI and Subscales, Controlled for SES*

	White		Latina		Total Sample	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
EPSI Total	58.24	24.28	53.64	20.91	53.64	22.49
Body Dissatisfaction	14.16	7.44	13.92	5.60	14.02	6.46
Binge Eating	10.71	6.43	9.56	5.96	10.07	6.17
Cognitive Restraint	5.31	2.94	4.55	2.82	4.89	2.89
Neg. Attitudes of Obesity	4.10	4.12	3.47	3.27	3.75	3.67
Purging	3.44	5.62	2.84	5.39	3.11	4.96
Excessive Exercise	7.12	5.57	5.75	4.39	6.36	4.97
Muscle Building	3.21	3.40	2.81	3.50	2.98	3.44
Restriction	9.19	5.63	9.75	5.38	9.50	5.48

Note. *M* = mean, *SD* = standard deviation.

Correlational Analyses

To test the hypothesis that each maintenance factor would positively correlate with eating pathology across the full sample and subsamples as posited by the TM (Fairburn et al., 2003), a Pearson Product-Moment correlational analysis was run with the maintenance factors as predictor variables, and EPSI scores as the outcome variable (Table 3). As predicted, EPSI scores were moderately and positively correlated with perfectionism, $r(129) = .519, p < .001$. Contrary to predictions however, EPSI scores were *negatively* correlated with low self-esteem ($r(129) = -.322, p < .001$) and emotion dysregulation ($r(129) = -.361, p < .001$). It is important to note that the EDI subscales measured *low* self-esteem and emotion *dys*regulation, and that our results indicated that higher self-esteem and better emotion regulation correlated with *increased* eating pathology. Interpersonal problems were not significantly correlated with eating pathology in either subsample or the full sample. Consistent with hypotheses, higher

levels of perfectionism were associated with higher levels of eating pathology, however, contrary to predictions, lower self-esteem and poorer emotion regulation were associated with *lower* levels of eating pathology. When these correlations were tested for significant differences between ethnic groups, it was found that the correlation between perfectionism and EPSI scores was significantly stronger for White women, ($r(56) = .612, p = < .001$) than Latina women ($r(71) = .390, p = < .001$), as predicted ($z = 1.67, \text{one-tailed } p = .047$). Results were not appreciably different when SES was removed as a covariate.

Table 3

Correlations between Maintenance Factors and EPSI Scores while Controlling for SES

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. EPSI							
White	58.24	24.28	—				
Latina	53.64	20.91	—				
Full Sample	55.67	22.49	—				
2. Perfectionism							
White	26.57	6.97	.612**	—			
Latina	25.16	6.28	.390**	—			
Full Sample	25.79	6.60	.519**	—			
3. Low Self-Esteem							
White	21.19	2.57	-.321*	-.189	—		
Latina	20.78	3.37	-.356**	-.150	—		
Full Sample	20.96	3.03	-.322**	-.154	—		
4. Emotion Dys.							
White	37.48	7.32	-.239	-.179	-.001*	—	
Latina	38.23	7.53	-.468**	-.276*	.284*	—	
Full Sample	37.90	7.42	-.361**	-.239**	.174*	—	
5. Int.Problems							
White	46.50	7.00	.042	.035	.215	-.300*	—
Latina	47.52	6.43	.172	.195	-.074	-.172*	—
Full Sample	47.07	6.68	.122	.121	.035	-.225**	—

Note. *Correlation is significant at the $p < .05$ level (two-tailed), **Correlation is significant at the $p < .01$ level (two-tailed). These correlations were still significant after a Bonferroni correction for multiple correlations.

Regression Analyses

To test the hypothesis that perfectionism, self-esteem, emotion regulation, and interpersonal problems significantly predicted EPSI scores, a hierarchical multiple linear regression was run in the full sample and subsamples. Again, SES was also included as a predictor variable on the first step in the regression analyses, and was not found to significantly predict the outcome of EPSI scores in any sample. In the full sample, the overall regression was statistically significant ($R^2 = .375$, $F(5, 125) = 14.970$, $p < .001$). Perfectionism ($\beta = .43$, $p < .001$), low self-esteem ($\beta = -.22$, $p = .003$), and emotion dysregulation ($\beta = -.21$, $p = .005$) were found to significantly predict EPSI scores. Again, higher levels of perfectionism predicted *increased* eating pathology, while lower self-esteem and lower emotion regulation predicted *decreased* eating pathology. When the same analysis was run including only White participants, the overall regression model was statistically significant ($R^2 = .476$, $F(5, 52) = 9.442$, $p < .001$). However, in this regression, only perfectionism ($\beta = .54$, $p < .001$) and low self-esteem ($\beta = -.22$, $p = .044$) were found to be significant predictors. When the analysis was run with Latina participants, the model was statistically significant ($R^2 = .356$, $F(5, 67) = 7.400$, $p < .001$), and once again, perfectionism ($\beta = .25$, $p = .017$), low self-esteem ($\beta = -.22$, $p = .036$), and emotion dysregulation ($\beta = -.32$, $p = .003$) were found to be significantly associated with EPSI scores. Interestingly, interpersonal problems were not found to be significant predictors in either group, nor was SES. Again, results did not significantly differ when the analyses were run without SES as a covariate.

Table 4.1

Full Sample Regression Analysis Summary for Maintenance Factors Predicting Eating Pathology, Controlling for SES

Variable	<i>B</i>	95% CI	β	<i>t</i>	<i>p</i>
Constant	67.74	[26.78, 108.70]		3.27	<.001
Perfectionism*	1.47	[.97, 1.97]	.432	5.85	<.001
Low Self-Esteem*	-1.63	[-2.70, -.56]	-.220	-3.02	.003
Emotion Dysregulation*	-0.65	[-1.01, -.19]	-.213	-2.83	.005
Interpersonal Problems	0.10	[-.39, .59]	.029	0.40	.688
SES	1.53	[-2.63, 5.68]	.052	0.73	.469

Note. * = predictor is significant at the $p < .05$ level.

Table 4.2

White Sample Regression Analysis Summary for Maintenance Factors Predicting Eating Pathology, Controlling for SES

Variable	<i>B</i>	95% CI	β	<i>t</i>	<i>p</i>
Constant	115.91	[43.46, 188.34]		3.21	.002
Perfectionism*	1.90	[1.15, 2.65]	.544	5.06	<.001
Low Self-Esteem*	-2.06	[-4.06, -.06]	-.217	-2.07	.044
Emotion Dysregulation	-0.42	[-1.14, .29]	-0.13	-1.19	.241
Interpersonal Problems	0.11	[-.65, .87]	0.03	0.29	.777
SES	-3.27	[-10.58, 4.04]	-.094	-0.90	.373

Table 4.3

Latina Sample Regression Analysis Summary for Maintenance Factors Predicting Eating Pathology, Controlling for SES

Variable	<i>B</i>	95% CI	β	<i>t</i>	<i>p</i>
Constant	119.57	[69.49, 169.65]		4.77	<.001
Perfectionism*	0.85	[-.158, 1.53]	.254	2.45	.017
Low Self-Esteem*	-1.36	[-2.63, -.09]	-.219	-2.13	.036
Emotion Dysregulation*	-0.89	[-1.48, -.31]	-.322	-3.03	.003
Interpersonal Problems	0.16	[-.50, .82]	.049	0.49	.628
SES	4.93	[-.85, 10.70]	.168	1.70	.093

Moderation Analyses

In the total sample, perfectionism, self-esteem, and emotion regulation were associated with eating pathology. Because of this, moderation analyses were run to determine if ethnicity moderated the relationship between perfectionism and eating pathology, low self-esteem and eating pathology, and emotion dysregulation and eating pathology. Ethnicity was not found to moderate the relationship between perfectionism ($b = -0.06$, $SE = 0.04$, $t = -0.21$, $p = .200$), low self-esteem ($b = -0.02$, $SE = 0.02$, $t = -1.04$, $p = .299$), or emotion dysregulation ($b = -0.10$, $SE = -0.06$, $t = -1.77$, $p = .076$) and eating pathology. In summary, while levels of perfectionism, self-esteem, and emotion regulation predicted eating pathology, ethnicity did not moderate this relationship when controlling for SES. Results did not change when SES was removed as a covariate.

Discussion

This study tested several hypotheses relevant to cultural differences in symptoms of EDs. Specifically, it was expected that the presentation and severity of disordered eating would differ

between ethnic groups. It was also predicted that the severity of maintenance factors of EDs would differ between groups, with White women having higher levels of perfectionism and Latina women having lower self-esteem. Finally, we predicted that ethnicity would moderate the relationship between the proposed maintenance factors of EDs and the severity of eating pathology.

Contrary to our hypotheses, there were no significant differences in overall eating pathology between White and Latina women. Further, there were no significant differences in the presentation of disordered eating. This could be for a multitude of reasons. One study found that EDs have been stereotyped as primarily present in those who are of higher SES, and that there have been disparities in ED identification and treatment in those of lower SES (Huryk, Drury, & Loeb, 2021). The current study's participants were mostly lower-middle or middle class, so this study could have tapped into a different demographic than past research. Or, it could be that the sample used in our study is more culturally homogenous, even between ethnic groups. This could be due to living in the same college community or being raised in a similar geographic region. Further, the current analyses controlled for socioeconomic status, which may play a larger role than ethnicity in impacting disordered eating. Our results also showed that the severity of factors that maintain disordered eating is similar between White and Latina females. This finding lends support for CBT-E, the form of treatment that specifically targets these maintenance factors, as an intervention that can be used in either ethnic group. If there are no differences in the severity of maintenance factors between ethnic groups, it can be assumed that CBT-E would potentially be equally effective at targeting these factors in both populations.

As predicted, the trait of perfectionism was positively correlated with eating pathology, and this correlation was stronger for White women than Latina women. This is likely due to

White women having stronger beliefs in the thin-ideal (Roberts et al., 2006), and may feel the need to obtain that perfect image. Surprisingly, increased self-esteem and emotion regulation led to increased eating pathology across both samples. This is contradictory to the transdiagnostic model (Fairburn et al., 2003). Unfortunately, media can often portray images of the thin-ideal, which can be a risk factor for disordered eating and negative self-image (Anixiadis et al., 2019). It could be that in early stages of disordered eating, these behaviors temporarily improve self-esteem. Weight loss, restriction, or exercise may initially make the individual feel good about themselves, as it may get them closer to the thin-ideal. However, over time, continued disordered eating behaviors can lead to lower self-esteem due to continued overevaluation of shape and weight, according to the TM (Fairburn et al., 2003). This study did not explore the correlation between self-esteem and the presentation of eating pathology, but it is entirely possible that certain presentations (i.e. restriction, overexercise, etc.) temporarily improve self-esteem, which should be further researched. The current study also did not evaluate how long an individual had been experiencing these symptoms; the EPSI simply provides a snapshot look at eating pathology at the time the questionnaire is completed. The length of time symptoms have been present could also impact the correlation between self-esteem and eating pathology, as previously discussed, although there is not current research on the relationship between the two.

Emotion regulation was found to positively correlate with eating pathology. The TM (Fairburn et al., 2003) posits that individuals with trouble regulating their emotions may use disordered eating behaviors as a coping skill; therefore, those with more trouble regulating their emotions may turn to disordered eating behaviors (Sander et al., 2021). However, it could be that disordered eating is (maladaptively) effective in regulating emotions. Of course, disordered eating behaviors may contribute to irritability, anxiety, or depression (Eck & Byrd-Bredbenner,

2021), but it could be that at the time participants completed the EPSI, disordered eating was a maladaptive coping skill, effectively improving their emotion regulation.

The regression analyses showed that perfectionism and low self-esteem were significant predictors of eating pathology in both samples. However, the emotion dysregulation maintenance factor was only a predictor of eating pathology in Latina women; higher levels of emotion regulation predicted higher levels of eating pathology, which was surprising. This could be explained by prior research that found that minority groups are more likely to attempt to inhibit an emotional response than White individuals (Gross & John, 2003). It could be that White individuals are more likely to express negative emotions, while Latina women may instead opt to suppress the feeling. ED behaviors may help in suppressing emotions, as they have been found to correlate with alexithymia, or trouble experiencing emotions (Behar & Aranciba, 2014). The Latina women sampled could be using disordered eating behaviors to help regulate, or suppress, their emotions. However, these possibilities await empirical support.

Despite significant differences in socioeconomic status between the two groups, SES was not found to be a predictor of eating pathology in the full sample, nor in either group independently. The results of our analyses also did not change when SES was removed as a covariate, which is somewhat contradictory to prior research. For example, some studies have found that being of a low SES may be associated with binge eating behavior due to food insecurity (Rasmussen et al., 2019). Others show that those of high SES are more likely to engage in unhealthy dieting behaviors (Rogers et al., 1997). The impact of SES on disordered eating and its maintenance factors is an area of further research. It could be that those of higher SES are more likely to have their eating habits impacted by perfectionistic tendencies, while

food insecurity in lower SES populations could lead to mood intolerance or low self-esteem, impacting eating behaviors through a different mechanism.

Contrary to hypotheses, interpersonal problems were not associated with eating pathology. The increased popularity of social media may account for this. It may create a community for those with disordered eating behaviors to come together. While those with eating disorders often report problems in psychosocial functioning (Hartmann et.al., 2010), they may be finding support in an online community. Sometimes this type of community is supportive and recovery-focused, but it can also be a community of those connecting over their disordered behaviors (Borzekowski et al., 2010). Further, the recent COVID-19 pandemic may have led to isolation and exacerbation of eating pathology in some populations. In fact, one study found that those with subclinical eating disorders or OSFED (Other Specified Feeding or Eating Disorder) were those who saw the highest increase in symptomatology in the early stages of the pandemic (Fernandez-Aranda et al., 2020). Post-pandemic, it may be continued isolation rather than conflict in relationships that contribute to eating pathology. Further research may be needed to explore the relationship between interpersonal problems and disordered eating, or lack thereof.

Finally, ethnicity did not moderate the relationship between any of the four maintenance factors and EPSI scores. This result, combined with the fact that there were no significant differences in EPSI or EPSI subscale scores, suggests that the ethnic differences previously found in eating disorders may be on the decline due to cohort differences or other factors. For example, it could be that cultures are assimilating to one another. One study found that minorities in denser, or more populated, social networks are more likely to assimilate to the majority culture (Verdier & Zenou, 2017). The county our study was conducted in has a high population density of 2,781 people per square mile, with some of the surrounding counties

having an even higher population density reaching 15,273 people per square mile (US Census Bureau, 2024). This study did not assess how long students have been living in the United States, or how long they have been living in the geographic region, but it could be that students living in this region are assimilating to the majority culture, thus closing the gap in differences between ethnicities. If the students sampled in our study have assimilated to a more homogenous culture, we would not see ethnicity moderating the relationship between the maintenance factors of EDs and overall eating pathology.

Exploratory Analyses

Because we found a surprising relationship between emotion dysregulation, low self-esteem, interpersonal problems, and levels of disordered eating, we ran additional analyses between groups of higher EPSI scores and lower EPSI scores. A 2018 study found that the average EPSI score in college students was 53.70 (Coniglio et al., 2018), and our study had an extremely similar finding, with an average EPSI score of 53.64. Surprisingly, this average is very close to the average EPSI scores of patients in an outpatient eating disorder clinic, who had an average score of 56.20 (Coniglio et al., 2018). When participants were grouped into above-average (53.64) and below-average, we found that self-esteem was not significantly correlated with eating pathology in the above-average group. However, self-esteem was significantly and positively correlated with EPSI scores in the below-average group ($r = .301$). This shows that, in our sample, there was only a significant correlation between self-esteem and eating pathology in those who had below-average levels of eating pathology. Further, emotion dysregulation was not significantly correlated with eating pathology in the below-average group.

While levels of acculturation were not measured and the sample did not include enough international student participants to run additional analyses between international and domestic

students, we did measure whether or not participants were first-generation college students. A MANCOVA was run to explore differences in EPSI scores between first and continuing-generation students. There were significant differences in overall EPSI scores ($p = .018$), negative attitudes towards obesity ($p = .012$), and binge eating ($p = .042$), with first-generation students scoring higher in these scales. This analysis was also run with SES as a covariate, as more first-generation students identified as lower-middle class and more continuing-generation students identified as upper-middle class. This covariate did not change the outcome.

Limitations

The current study had several limitations that could impact interpretation and generalization. One potentially important component in the relationship between ethnicity and eating pathology is the strength of an individual's ethnic identity and levels of acculturation to Western culture. Previous research shows that Black females with higher ethnic identity were at lower risk of eating disorders, though the same correlation was not found in Latina women (Rhea & Thatcher, 2013). Students may identify as part of one ethnic group, but the culture they were raised in could be different, such as in cases of adoption or second-generation immigrants. Our study simply identified the ethnicity the student identifies as, leaving out important variables such as the strength of this ethnic identity, acculturation to a different culture than past generations of their family, or even familial/cultural values the individual holds. Future studies should examine levels of acculturation, strength of ethnic identity, or even differing values as moderators of the relationship between maintenance factors of eating disorders and eating pathology.

Notably, this study only explored the differences between White and Latina women attending an urban university in the Northeast United States. Results may not generalize to the

larger U.S. population. Furthermore, the current study did not consider ethnic groups outside of White and Latinx. The National Student Clearinghouse Research Center found that in 2022, Black students made up 11% of the college population in America, and Asian students made up 6% (2023). It could be that there are significant differences in how eating pathology presents in these populations as compared to White and Latinx populations, and including these groups may influence whether or not ethnicity is a moderator between maintenance factors and eating pathology in a more representative sample. Another limitation was that the current study used only self-report measures. Participants may not be entirely truthful in these measures, and results may have differed if scales that rely on clinician evaluation of symptoms had been used.

Finally, our study only included females. Males have been historically understudied when it comes to disordered eating (Murray et al., 2017). Future studies may explore ethnic differences between only males, or even overall ethnic differences when males are included in the sample. The relationship between the ED maintenance factors, eating pathology, and ethnicity may be different for men and women. For example, differential hormones in men and women can contribute to the differential risk of eating pathology between genders (Culbert et al., 2021). Another study proposed that men regulate their emotions with greater efficiency than women (McRae et al., 2008), which may affect the impact emotion dysregulation has as a maintenance factor of EDs for men. In addition to men, those who are transgender or gender non-conforming should also be included in future studies, as they are at a higher risk than cisgender individuals for developing eating disorders (Diemer et al., 2015).

Future Directions

Our study found that there was a significant difference in SES between the two ethnic groups. While SES was not a significant predictor of eating pathology, it is important to note that

it could still have an indirect influence, such as impacting an individual's self-esteem, leading to food insecurity in low SES communities, or heightened perfectionism in high SES communities, leading to restriction or preoccupation with shape and weight. Specifically, one study found that higher parental SES was associated with an increased risk of anorexia (Koch et al., 2022). Future studies could explore the influence of SES both within and between ethnic groups, as it could be possible that SES influences the severity of eating pathology or the maintenance factors of disordered eating. Further, it could be that the influence SES has on eating behaviors may differ between ethnic groups. It is recommended that future studies explore this topic, as eating pathology may be more influenced by economic disparity than originally thought.

Finally, one of our exploratory analyses showed that first-generation college students have higher EPSI scores overall, as well as higher scores in the binge-eating and negative attitudes toward obesity scales. A recent study found that first-generation college students are under more stress than continuing-generation students (Amirkhan et al., 2023). This stress may lead to maladaptive coping skills, such as disordered eating. Further, another study found that first-generation college students are more likely to have compensatory health beliefs (CHB), or the belief that unhealthy behavior can be compensated for by healthy behaviors. CHBs then predicted less healthy eating behaviors in these students (Gallagher, 2019). Future studies may explore factors that impact first-generation college students to understand why these students have slightly higher levels of eating pathology.

Conclusions

In conclusion, this study found few differences between White and Latina women in severity of maintenance factors, overall eating pathology, specific symptoms of eating pathology, and the associations among these variables. As predicted, perfectionism was moderately,

positively correlated with eating pathology in both groups, though the correlation was stronger among White women than in Latina women. Despite there being no significant difference in the severity of perfectionism or eating pathology between the two ethnic groups, there was a stronger relationship between these two variables in White women. This could be due to perfectionism being deeply rooted in Western culture (Okun, 2010), and therefore having a greater impact on White women.

Contrary to hypotheses, self-esteem and emotion regulation were positively correlated with eating pathology across the sample. Simply, those with higher self-esteem and greater emotion regulation had *increased* eating pathology. Notably, severity of emotion regulation was not a predictor of eating pathology for White women, but was for Latina women, as those with *lower* emotion regulation had *higher* levels of eating pathology. Finally, ethnicity did not moderate the relationship between any of the maintenance factors and overall eating pathology. Future studies may include other ethnicities, men, and gender non-conforming individuals. They may also explore how SES may moderate or mediate the relationship between ethnicity, maintenance factors of EDs, or ED symptomatology. It may also be important to explore the role of acculturation and strength of ethnic identity.

Despite early research showing that White women have a higher likelihood of experiencing EDs, particularly anorexia, than ethnic minorities, the current study shows that the severity and presentation of disordered eating are similar between White and Latina undergraduate students. Interestingly, while the TM (Fairburn et al., 2003) suggests emotion dysregulation and low self-esteem may maintain disordered eating, our study found the opposite relationship. In treating disordered eating, it would be important for the clinician to understand the relationship between emotion regulation, self-esteem, and eating pathology. If disordered

eating helps the individual regulate their moods or improve their self-esteem, simply treating the eating pathology may leave them at risk for mood intolerance or a poor self-image. However, the current findings support perfectionism as a risk factor of eating pathology in both populations, meaning clinicians should continue to target perfectionism when treating eating disorder patients. Contrary to Fairburn et al.'s model, interpersonal problems did not correlate or predict eating pathology, meaning the treatment modules targeting interpersonal problems may not be as important in therapy. Finally, our study supports the overarching TM as being effective across both White and Latina women, suggesting that the model can be used with a diverse clientele.

The current study shows that eating disorders do not predominantly affect affluent White women. The rates and severity in which Latina and White women experience eating pathology, as well as the factors that maintain the disorder, were proven to be similar. Given that college students are such a vulnerable population for this disease, psychoeducation and treatment must be provided across ethnic groups. Clinicians should also understand the nuances of the impact of self-esteem and emotion regulation, and recognize that eating disorders may improve self-esteem or serve as a maladaptive emotion regulation tool. Even subclinical eating disorders may harm an individual, and ethnicity does not appear to play a role in how those are affected by eating pathology. Eating disorders do not discriminate and must be treated as a universal concern, especially within the college population.

References

- Alegria, M., Woo, M., Cao, Z., Torres, M., Meng, X. L., & Striegel-Moore, R. (2007). Prevalence and correlates of eating disorders in Latinos in the United States. *International Journal of Eating Disorders*, 40(S3), S15-S21. <https://doi.org/10.1002/eat.20406>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). [doi/book/10.1176/appi.books.9780890425596](https://doi.org/10.1176/appi.books.9780890425596)
- Amirkhan, J. H., Manalo, R., Jr., & Velasco, S. E. (2023). Stress overload in first-generation college students: Implications for intervention. *Psychological Services*, 20(3), 636–646. <https://doi.org/10.1037/ser0000650>
- Anixiadis, F., Wertheim, E. H., Rodgers, R., & Caruana, B. (2019). Effects of thin-ideal instagram images: The roles of appearance comparisons, internalization of the thin ideal and critical media processing. *Body Image*, 31, 181-190. <https://doi.org/10.1016/j.bodyim.2019.10.005>
- Atwood, M. E., & Friedman, A. (2020). A systematic review of enhanced cognitive behavioral therapy (CBT-E) for eating disorders. *International Journal of Eating Disorders*, 53(3), 311-330. <https://doi.org/10.1002/eat.23206>
- Bassett, L., & Ewart, M. (2023). Discrepancies between media portrayals and actual demographics of eating disorders in TV and film: Implications of representation. *Journal of Eating Disorders*, 11(1), 161. <https://doi.org/10.1186/s40337-023-00892-y>
- Behar, R., & Arancibia, M. (2014). Alexithymia in eating disorders. In A. M. Columbus (Ed.), *Advances in Psychology Research* (pp. 81-107). Nova Science Publishers.
- Borzekowski, D. L., Schenk, S., Wilson, J. L., & Peebles, R. (2010). e-Ana and e-Mia: A content

- analysis of pro-eating disorder websites. *American Journal of Public Health*, 100(8), 1526-1534. <https://doi.org/10.2105/AJPH.2009.172700>
- Bruch, H. (1973). *Eating disorders: Obesity, anorexia nervosa, and the person within*. Basic Books. <https://doi.org/10.5555/19741422333>
- Burgess, A. M., Frost, R. O., & DiBartolo, P. M. (2016). Development and validation of the Frost Multidimensional Perfectionism Scale–Brief. *Journal of Psychoeducational Assessment*, 34(7), 620-633. <https://doi.org/10.1177/0734282916651359>
- Cheng, Z. H., Perko, V. L., Fuller-Marashi, L., Gau, J. M., & Stice, E. (2019). Ethnic differences in eating disorder prevalence, risk factors, and predictive effects of risk factors among young women. *Eating Behaviors*, 32, 23-30. <https://doi.org/10.1016/j.eatbeh.2018.11.004>
- Clausen, L., Rosenvinge, J. H., Friberg, O., & Rokkedal, K. (2011). Validating the Eating Disorder Inventory-3 (EDI-3): A comparison between 561 female eating disorders patients and 878 females from the general population. *Journal of Psychopathology and Behavioral Assessment*, 33(1), 101-110. <https://doi.org/10.1007/s10862-010-9207-4>
- Coniglio, K. A., Becker, K. R., Tabri, N., Keshishian, A. C., Miller, J. D., Eddy, K. T., & Thomas, J. J. (2018). Factorial integrity and validation of the Eating Pathology Symptoms Inventory (EPSI). *Eating Behaviors*, 31, 1-7. <https://doi.org/10.1016/j.eatbeh.2018.07.004>
- Culbert, K. M., Sisk, C. L., & Klump, K. L. (2021). A narrative review of sex differences in eating disorders: Is there a biological basis? *Clinical Therapeutics*, 43(1), 95-111. <https://doi.org/10.1016/j.clinthera.2020.12.003>
- Diemer, E. W., Grant, J. D., Munn-Chernoff, M. A., Patterson, D. A., & Duncan, A. E. (2015).

Gender identity, sexual orientation, and eating-related pathology in a national sample of college students. *Journal of Adolescent Health*, 57(2), 144-149.

<https://doi.org/10.1016/j.jadohealth.2015.03.003>

Eck, K. M., & Byrd-Bredbenner, C. (2021). Disordered eating concerns, behaviors, and severity in young adults clustered by anxiety and depression. *Brain and Behavior*, 11(12), Article e2367. <https://doi.org/10.1002/brb3.2367>

Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders*. Guilford Press.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A “transdiagnostic” theory and treatment. *Behaviour Research and Therapy*, 41(5), 509-528. [https://doi.org/10.1016/S0005-7967\(02\)00088-8](https://doi.org/10.1016/S0005-7967(02)00088-8)

Forbush, K. T., Wildes, J. E., & Hunt, T. K. (2014). Gender norms, psychometric properties, and validity for the Eating Pathology Symptoms Inventory. *International Journal of Eating Disorders*, 47(1), 85–91. <https://doi.org/10.1002/eat.22180>

Forbush, K. T., Wildes, J. E., Pollack, L. O., Dunbar, D., Luo, J., Patterson, K., Petruzzi, L., Pollpeter, M., Miller, H., Stone, A., Bright, A., & Watson, D. (2013). Development and validation of the Eating Pathology Symptoms Inventory (EPSI). *Psychological Assessment*, 25(3), 859–878. <https://doi.org/10.1037/a0032639>

Gallagher, K. M. (2019). What do we know about the health of first-generation college students? A first look at compensatory health beliefs and behavior. *Perspectives In Learning*, 18 (1). <https://csuepress.columbusstate.edu/pil/vol18/iss1/3>

Garner, D. M. (2004). Eating disorder inventory-3 (EDI-3). *Professional manual*.

Psychological Assessment Resources.

Goel, N. J., Burnette, C. B., & Mazzeo, S. E. (2020). Racial and ethnic differences in the

association between parent-oriented perfectionism and disordered eating in college women. *International Journal of Eating Disorders*, 53(2), 191-200.

<https://doi.org/10.1002/eat.23179>

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348. <https://doi.org/10.1037/0022-3514.85.2.348>

Guidinger, C., Williamson, G., & Kelly, N. R. (2020). Cultural values and ethnic identity are important considerations in the link between emotion dysregulation and loss of control eating in Asian/Asian American men. *Appetite*, 151, Article 104693.

<https://doi.org/10.1016/j.appet.2020.104693>

Hartmann, A., Zeeck, A., & Barrett, M. S. (2010). Interpersonal problems in eating disorders. *International Journal of Eating Disorders*, 43(7), 619-627.

<https://doi.org/10.1002/eat.20747>

Koch, S. V., Larsen, J. T., Plessen, K. J., Thornton, L. M., Bulik, C. M., & Petersen, L. V. (2022). Associations between parental socioeconomic-, family-, and sibling status and risk of eating disorders in offspring in a Danish national female cohort. *International Journal of Eating Disorders*, 55(8), 1130-1142. <https://doi.org/10.1002/eat.23771>

Lydecker, J. A., Cotter, E. W., & Grilo, C. M. (2021). Distinctiveness and significance of body dissatisfaction and overvaluation among Latinx/Hispanic and White men and women. *International Journal of Eating Disorders*, 54(3), 354-364.

<https://doi.org/10.1002/eat.23413>

Markey, C. N. (2004). Culture and the development of eating disorders: A tripartite model. *Eating Disorders*, 12(2), 139-156. <https://doi.org/10.1080/10640260490445041>

- McRae, K., Ochsner, K. N., Mauss, I. B., Gabrieli, J. J., & Gross, J. J. (2008). Gender differences in emotion regulation: An fMRI study of cognitive reappraisal. *Group Processes & Intergroup Relations*, *11*(2), 143-162. <https://doi.org/10.1177/1368430207088035>
- Mond, J., Mitchison, D., & Hay, P. (2014). Eating disordered behavior in men: Prevalence, impairment in quality of life, and implications for prevention and health promotion. In L. Cohn & R. Lemberg (Eds.), *Current findings on males with eating disorders* (pp. 195-215). Taylor & Francis. <https://doi.org/10.4324/9780203495650>
- Murray, S. B., Nagata, J. M., Griffiths, S., Calzo, J. P., Brown, T. A., Mitchison, D., ... & Mond, J. M. (2017). The enigma of male eating disorders: A critical review and synthesis. *Clinical Psychology Review*, *57*, 1-11. <https://doi.org/10.1016/j.cpr.2017.08.001>
- National Student Clearinghouse Research Center. (2023). *Current term enrollment estimates: Fall 2022*. https://nscresearchcenter.org/current-term-enrollment-estimates/ctee_dataappendixfall2022/
- National Eating Disorders Association (NEDA). (2013). Collegiate Survey Project. Retrieved from <https://www.nationaleatingdisorders.org/sites/default/files/CollegeSurvey/CollegiateSurveyProject.pdf>
- Perez, M., Perko, V., Yu, K. Y., Hernández, J. C., Ohrt, T. K., & Stadheim, J. (2021). Identifying central symptoms of eating disorders among ethnic and racial minority women. *Journal of Abnormal Psychology*, *130*(7), 748–760. <https://doi.org/10.1037/abn0000695>
- Rasmusson, G., Lydecker, J. A., Coffino, J. A., White, M. A., & Grilo, C. M. (2019). Household food insecurity is associated with binge-eating disorder and obesity. *International Journal of Eating Disorders*, *52*(1), 28-35. <https://doi.org/10.1002/eat.22990>

Rhea, D. J., & Thatcher, W. G. (2013). Ethnicity, ethnic identity, self-esteem, and at-risk eating disordered behavior differences of urban adolescent females. *Eating Disorders*, 21(3), 223-237. <https://doi.org/10.1080/10640266.2013.779177>

Rogers, L., Resnick, M. D., Mitchell, J. E., & Blum, R. W. (1997). The relationship between socioeconomic status and eating-disordered behaviors in a community sample of adolescent girls. *International Journal of Eating Disorders*, 22(1), 15-23. [https://doi.org/10.1002/\(SICI\)1098-108X\(199707\)22:1<15::AID-EAT2>3.0.CO;2-5](https://doi.org/10.1002/(SICI)1098-108X(199707)22:1<15::AID-EAT2>3.0.CO;2-5)

Sander, J., Moessner, M., & Bauer, S. (2021). Depression, anxiety and eating disorder-related impairment: Moderators in female adolescents and young adults. *International Journal of Environmental Research and Public Health*; 18(5), 27-79. <https://doi.org/10.3390/ijerph18052779>

Smolak, L. & Levine, M. (2015). *The Wiley handbook of eating disorders*. John Wiley & Sons.

Solmi, F., Hotopf, M., Hatch, S. L., Treasure, J., & Micali, N. (2016). Eating disorders in a multi-ethnic inner-city UK sample: Prevalence, comorbidity and service use. *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 369-381. <https://doi.org/10.1007/s00127-015-1146-7>

Stice, E., Marti, C. N., Shaw, H., & Jaconis, M. (2009). An 8-year longitudinal study of the natural history of threshold, subthreshold, and partial eating disorders from a community sample of adolescents. *Journal of Abnormal Psychology*, 118(3), 587. <https://doi.org/10.1037/a0016481>

Streatfeild, J., Hickson, J., Austin, S. B., Hutcheson, R., Kandel, J. S., Lampert, J. G., Myers, E.

- M., Richmond, T. K., Samnaliev, M., Velasquez, K., Weissman, R. S., & Pezzullo, L. (2021). Social and economic cost of eating disorders in the United States: Evidence to inform policy action. *The International Journal of Eating Disorders*, 54(5), 851–868. <https://doi.org/10.1002/eat.23486>
- US Census Bureau. (2024). *Population division. 2023 population density in New Jersey counties*. Retrieved March 20, 2024, from <https://www.nj.gov/labor/labormarketinformation/assets/PDFs/content/maps/Popden.pdf>
- Udo, T., & Grilo, C. M. (2018). Prevalence and correlates of DSM-5–defined eating disorders in a nationally representative sample of US adults. *Biological Psychiatry*, 84(5), 345-354. <https://doi.org/10.1016/j.biopsych.2018.03.014>
- Verdier, T., & Zenou, Y. (2017). The role of social networks in cultural assimilation. *Journal of Urban Economics*, 97, 15-39. <https://doi.org/10.1016/j.jue.2016.11.004>