Restrictive Masculinity Norms and Eating Disorder Risk in Young Adult Females

SAMANTHA R. ROSENTHAL, PhD, MPH; JADYN N. TORRES; MADALYN E. LYONS; KELSEY A. GATELY, OTD, OTR/L

ABSTRACT

OBJECTIVE: This study examined the association between restrictive masculinity norms and eating disorder risk in young adult females.

METHODS: Data from females in the 2024 Rhode Island Young Adult Survey were used (n=724). The SCOFF and the Restrictive Masculinity Scale were used to assess eating disorder risk and restrictive masculinity norms, respectively. A multivariable logistic regression model estimated the main effect after adjusting for age, gender and sexuality, race/ethnicity, social status, student status, and employment status.

RESULTS: In the fully adjusted model, odds of eating disorder risk were 2% higher (OR=1.02, 95%CI: 1.01,1.04) for each additional unit of the restrictive masculinity scale.

CONCLUSIONS: Interventions for females with eating disorders should address rigid masculinity norms by integrating gendered perspectives into screening, therapy, and treatment. Schools and media can further support prevention by promoting gender awareness, media literacy, and diverse body representation.

KEYWORDS: restrictive masculinity; eating disorder; female; young adult

INTRODUCTION

Eating disorders occur most frequently among young females, with approximately 6% of females experiencing an eating disorder at some point in their lives, yet this figure is likely an underestimate.[1,2] Research suggests the highest rates of eating disorder are among females aged 20 to 24 years, as well as those from lower socioeconomic backgrounds, sexual minority groups (especially bisexual men and lesbian women), college students, and the Latinx community.[2,3]

Eating disorders encompass a range of issues, all are characterized by changes in eating behaviors that affect consumption or absorption of nutrients and present with substantial impairments to mental and physical health.[4] These disorders can affect an individual's perception of weight, body shape, and eating habits, and include specific behaviors such as restrictive eating, purging, and difficulties controlling food intake. Commonly recognized disorders include bulimia nervosa, anorexia nervosa, binge-eating disorder, though there are a total of eight separate eating disorders recognized in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR).[4]

Eating disorders can have severe physical consequences, impacting multiple body systems such as the cardiovascular, gastrointestinal, neurological, and endocrine systems.[5] For example, individuals with an eating disorder are at an increased risk for both functional and structural cardiac abnormalities, including irregular heart rhythm, irregular heart rate, hemodynamic changes, and other related issues.[5] They also face a higher likelihood of electrolyte imbalances and potential damage to blood vessels. Many individuals with an eating disorder have reported gastrointestinal symptoms, including abdominal pain, bloating, nausea, and heartburn.[6] Additionally, different eating disorders have been linked to specific neurological complications. For instance, anorexia can disrupt the functional connectivity of the frontal cortex and the amygdala, impairing emotional regulation, while bulimia can lead to a desensitized dopamine reward system.[7] Furthermore, eating disorders can cause hormonal imbalances, particularly reduction in estrogen and testosterone, which can negatively impact menstruation, bone metabolism, and may contribute to infertility.[8]

Current literature suggests that social norms in general, and in relation to body image, contribute to the burden of eating disorder among young females. For example, social media may play a significant role, as studies have reported that appearance and weight-related content exacerbate body image concerns among young females.[9-11] Similarly, restrictive masculinity norms may play a role. Restrictive masculinity norms are rigid, socially enforced expectations about how men should think, feel, and behave. Common aspects of restrictive masculinity include emotional suppression, dominance, aggression, anti-femininity, self-reliance, and physical toughness.[12,13] Those with rigid masculinity norms are at higher risk of mental health disorders while individuals with less rigid norms have lower risk of mental health difficulties due to greater adaptability.[14] Despite this research, no literature to our knowledge has examined the role of restrictive masculinity norms in eating disorder risk among young adult females. Thus, this study aims to examine whether holding more restrictive masculinity norms is associated with greater eating disorder risk among young adult females in Rhode Island.

METHODS

Sample

The Rhode Island Young Adult Survey (RIYAS) was an anonymous, self-reported, cross-sectional survey conducted by the Rhode Island Department of Behavioral Healthcare, Developmental Disabilities & Hospitals. The 2024 survey was administered online using Qualtrics to gather information on young adults' behavioral health, risk behaviors, and mental and physical health outcomes. It targeted individuals aged 18 to 25 who lived in Rhode Island for at least part of the year. Recruitment efforts included paid advertisements on Instagram and Spotify, along with outreach via flyers and emails to students at institutions of higher education. To ensure data integrity, the survey underwent strict internal quality control measures. Participants received a $10 gift card as compensation for their time. A total of 1,008 surveys were completed between June and September 2024. All respondents provided electronic informed consent, and the study received approval from the local Institutional Review Board. This study includes only those young adults who were assigned female at birth (n=724).

Measures

The primary outcome of the study is eating disorder risk, as measured by the SCOFF. The SCOFF is a five-question screening tool used to identify people at risk for eating disorders, including anorexia nervosa, bulimia nervosa, and others, but not diagnose them. Questions address whether a person makes themselves sick because they feel uncomfortably full, worries about a loss of control over how much they eat, has recently lost 14lbs. within a three-month period, believes they are fat while others say they are too thin, or reports that food dominates their life. Each "yes" response accounts for 1 point on the overall score. A total score of 2 or more suggests screening positive for eating disorder risk.[1]

The primary exposure of the study is the Restrictive Masculinity Scale, a 12-item questionnaire that measures restrictive masculinity norms (i.e., "Men should be able to freely express their emotions through crying" and "Men should respect a woman's decision if they say no to sex").[13] Response options for each norm statement ranged from strongly disagree (coded 0) to strongly agree (coded 4), except for 3 items which were reverse coded. Scores could range from 0, the least restrictive masculinity norms score, to 48, the most restrictive masculinity norms score.[13]

Covariates measured in the study are those previously identified as potential risk factors for eating disorder risk.[15] These covariates include gender and sexuality, race/ethnicity, age, social status, student status, and employment status. Gender and sexuality was a binary variable. Young adults whose sex assigned at birth matched their gender identity and identified as heterosexual were categorized as Cisgender Heterosexual, and those whose gender identity differed from their sex assigned at birth or identified as anything other than heterosexual were categorized as Sexual and Gender Minority. Race/ethnicity was categorized as White, non-Hispanic, Black, non-Hispanic, Hispanic, Asian, non-Hispanic, or Other/Multiracial, non-Hispanic. Age was a continuous variable measured in years. Social status was measured by the MacArthur Scale of Subjective Social Status (MSSS), a self-reported measure to assess an individual's perceived social standing within their community. Respondents are asked to place themselves on a ladder based on social status relative to others in their community ranging from 1 "worst off" to 10 "best off".[16] Student status was measured by an affirmative response to the question, "Are you currently enrolled in high school or a post-secondary educational institution, this includes a two- or four-year college, university or technical school?" Employment status was measured by the question, "Are you employed?" Responses of "Yes, part-time" and "Yes, full-time" were considered employed.

Statistical Analysis

All continuous variables were considered normally distributed after examination of their distributions, and descriptive statistics were provided for all variables in the total sample and by eating disorder risk. Means and standard errors were reported for continuous variables, while frequencies and percentages were reported for categorical variables. Bivariable statistics were assessed using two-sample t-tests for continuous variables and chi-square tests for categorical variables by eating disorder risk. Multivariable logistic regression for eating disorder risk on restrictive masculinity scale was conducted controlling for gender and sexuality, race/ethnicity, age, social status, student status, and employment status. Adjusted odds ratios and 95% confidence intervals are reported. Adjusted probabilities of eating disorder risk were plotted across the restrictive masculinity scale controlling for all other variables. Reference categories were cisgender heterosexual, White, non-Hispanic, not being a student, and not being employed. All analyses were conducted at $\alpha = 0.05$ and all analyses were calculated in Stata/SE 15.0.[17]

RESULTS

In a sample of n=724 female young adults, 39.8% screened positive for eating disorder risk. The mean age was 21.1 years old (SE: 0.08). About half (50.1%) were cisgender heterosexual, and a majority were White, non-Hispanic (59.0%). Most females were students (65.5%) and employed (75.3%). The mean restrictive masculinity score was 25.7 (SE: 0.24), with a higher score among females with eating disorder risk (p = 0.044) than those without. Social status was lower among females with eating disorder risk (p = 0.009). In the fully adjusted model, there was 1.02 (95%CI: 1.01, 1.04) times the odds of eating disorder risk with each additional unit in the restrictive masculinity scale; 1.59 (95%CI: 1.19, 2.13) times the odds for sexual and gender minority females; 0.89

(95%CI: 0.82, 0.96) times the odds with each additional unit in social status; 1.38 (95%CI: 1.01, 1.89) times the odds for students; and 1.38 (95%CI: 1.01, 1.90) times the odds for those employed. (**Table 1**)

Table 1. Sociodemographics of young adult females by eating disorder risk

	TOTAL N=724 (%)	No Eating Disorder Risk N=436 (60.2%)	Eating Disorder Risk N=288 (39.8%)	P-value
Restrictive Masculinity [Mean(SE)]	25.7 (0.24)	25.3 (0.31)	26.3 (0.39)	**0.044**
Gender and Sexuality				0.083
Cisgender Heterosexual	363 (50.1)	230 (52.8)	133 (46.2)	
Sexual and Gender Minority	361 (49.9)	206 (47.3)	155 (53.8)	
Race/Ethnicity				0.52
White, non-Hispanic	427 (59.0)	255 (58.5)	172 (59.7)	
Black, non-Hispanic	51 (7.0)	37 (8.5)	14 (4.9)	
Hispanic	135 (18.7)	74 (17.0)	61 (21.2)	
Asian, non-Hispanic	58 (8.0)	32 (7.3)	26 (9.0)	
Other/Multiracial, non-Hispanic	53 (7.3)	38 (8.7)	15 (5.2)	
Age [Mean(SE)]	21.1 (0.08)	21.2 (0.11)	21.1 (0.14)	0.433
Social Status [Mean(SE)]	5.5 (0.07)	5.7 (0.08)	5.3 (0.11)	**0.009**
Student				0.303
Yes	474 (65.5)	279 (64.0)	105 (67.7)	
No	250 (34.5)	157 (36.0)	93 (32.3)	
Employed				0.832
Yes	545 (75.3)	327 (75.0)	218 (75.7)	
No	179 (24.7)	109 (25.0)	70 (24.3)	

Note: P-values are calculated using two-sample t-tests for continuous variables and chi-square tests for categorical variables

DISCUSSION

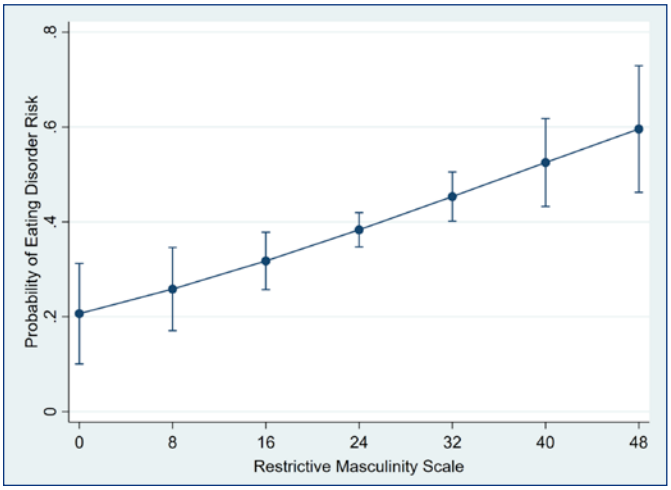
In this sample of females, higher restrictive masculinity scores were associated with eating disorder risk. Identifying as a sexual and/or gender minority, a student, or employed were also identified as risk factors for eating disorder risk in this sample. However, having a perceived higher social status was considered a protective factor. (**Table 2, Figure 1**)

While some literature focuses on the association between restrictive masculinity and eating disorders in cisgender males, no research to our knowledge examines this relationship in cisgender females.[18] Females who believe in more restrictive masculinity norms--rigid, socially enforced expectations about men—may also subscribe to more restrictive femininity norms. These include not only people-pleasing and self-sacrificing, but also appearance-based self-worth, thinness, and unrealistic beauty standards.[19] Internalizing these norms may lead females to more weight loss attempts, behaviors, and disordered eating.[20] This is supported by

Table 2. Adjusted Odds of Eating Disorder Risk among young adult females

	Adjusted Odds of Eating Disorder Risk	
	AOR	95%CI
Restrictive Masculinity	**1.02**	**1.01, 1.04**
Gender and Sexuality		
Cisgender Heterosexual	1.00	ref
Sexual and Gender Minority	**1.59**	**1.19, 2.13**
Race/Ethnicity		
White, non-Hispanic	1.00	ref
Black, non-Hispanic	0.62	0.36, 1.07
Hispanic	1.19	0.85, 1.67
Asian, non-Hispanic	1.22	0.76, 1.97
Other/Multiracial, non-Hispanic	0.78	0.45, 1.36
Age	0.99	0.92, 1.06
Social Status	**0.89**	**0.82, 0.96**
Student		
Yes	**1.38**	**1.01, 1.89**
No	1.00	ref
Employed		
Yes	**1.38**	**1.01, 1.90**
No	1.00	ref

Figure 1. Adjusted Probabilities of Eating Disorder Risk among Females across the Restrictive Masculinity Scale



Note: Adjusted probabilities control for gender and sexuality, race/ethnicity, age, social status, student status, and employment status

the femininity theory of eating disorders which suggests females' conformity to traditional female gender roles is associated with higher levels of eating disorder pathology.[21] Also, consistent with restrictive masculinity norms, men are meant to be dominant financially and sexually.[22] Females who hold more restrictive views of masculinity may therefore view themselves as subordinate or submissive. According to one study, patients with eating disorders reported higher levels of submissive behavior, and the level of that submissive behavior was related to the severity of eating disorder symptoms.[23] This also aligns with femininity theory that traits such as dependence, passivity, and exaggerated need for male approval can lead to the development of eating disorder.[21]

Research also suggests that adhering to rigid gender norms, whether masculine or feminine, can increase eating disorder risk. For example, in one longitudinal study following adolescents (11–18 years) to adulthood (18–26 years), higher levels of femininity traits in females were associated with weight loss attempts and weight loss behaviors.[20] Similarly, research has shown females who displayed higher levels of masculinity traits also displayed higher levels of disordered eating.[24] Adherence to these rigid gender norms, masculine or feminine, can lead to unrealistic appearance expectations, a drive for muscularity and a drive for thinness, respectively, contributing to eating disorders.[25,26] Females conforming to restrictive masculinity may express more control-oriented traits such as perfectionism, which are common among individuals with eating disorders.[27] Other common traits of restrictive masculinity, poor emotional awareness and emotional suppression, are also prevalent among females diagnosed with eating disorders, often contributing to the use of maladaptive eating behaviors as coping mechanisms.[28]

Other risk factors for disordered eating included being a sexual and/or gender minority, being a student, and being employed, and stress may play a role in explaining these relationships. Literature suggests that sexual and gender minorities have higher rates of disordered eating behaviors due to stigma, minority stress, and other social pressures.[29] Similarly, college students have been identified as a high-risk group for eating disorders and researchers have reported an even greater risk among students who face specific stressors, such as food insecurity.[30]

While there is considerably less research examining employment status specifically, previous literature has reported associations between work-related stress and burnout with various forms of disordered eating.[31] Conversely, higher perceived social status protects against disordered eating, while low social rank perception is linked to eating disorder psychopathology.[32] Feelings of inferiority, self-criticism, and appearance-based rankings drive restrictive eating to boost status.[32,33] High social rank perception enhances self-esteem, reducing eating disorder risk, while low self-esteem increases vulnerability.[34,35]

LIMITATIONS

While a novel research question among a high-risk population, this study comes with some limitations. First, this is a cross-sectional study and causality cannot be inferred. Second, while the SCOFF was used as a screening tool for eating disorder risk, it is not a diagnostic test and relies on self-report, leaving room for misclassification by eating disorder risk. Also, the entire survey was self-reported and therefore subject to social desirability and recall bias. Finally, this study is among a convenience sample of young adults in Rhode Island and may not be representative of all young adults.

Implications

Interventions for eating disorders in females should address the influence of rigid masculinity norms. While valid tools like the Eating Attitudes Test identify symptoms, they often overlook the impact of gender norms.[36] Clinicians can enhance treatment by integrating gendered perspectives, screening for masculine norms, and training providers to recognize their role in eating disorder risks.

Gender-sensitive therapy can incorporate discussions on masculinity, perfectionism, and emotional suppression. Cognitive behavioral therapy (CBT) effectively helps individuals recognize and change harmful thoughts and behaviors, including those linked to eating disorders.[37] Framing recovery as a strength-based process fosters empowerment, reduces stigma, and enhances engagement by emphasizing personal strengths and goals. This has been shown to enhance recovery outcomes.[38]

Our results also align with the developmental theory of embodiment, a theory focused on the experiences of females. This theory highlights the importance of freedom to explore and determine one's identity, freedom from objectification, and the development of a positive relationship with one's body.[39] This can be applied in empowerment workshops where a space is provided for young females to explore their identity beyond restrictive norms and develop self-confidence in their self-expression.

Media can also be created to normalize diverse body types by promoting realistic body images. Research has shown that embracing diverse body representation challenges traditional beauty standards and encourages individuals to value their bodies based on functionality rather than appearance which can promote body appreciation.[40]

Lastly, interventions can be applied in the school setting. Schools can integrate discussions on gender norms, self-worth, and emotional well-being into health curricula. Gender transformative education follows this approach by using all aspects of the education system to transform stereotypes, norms, and practices by challenging and rethinking gender norms. Students can also be taught to analyze and challenge gendered portrayals in media.[41,42]

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Authors

Samantha R. Rosenthal, PhD, MPH, Department of Health Science, College of Health & Wellness, Johnson & Wales University, Providence, RI; Center for Student Research & Interdisciplinary Collaboration (CSRIC), Johnson & Wales University, Providence, RI; Department of Epidemiology, Brown School of Public Health, Providence, RI.

Jadyn N. Torres, Department of Biology, College of Arts & Sciences, Johnson & Wales University, Providence, RI; Center for Student Research & Interdisciplinary Collaboration (CSRIC), Johnson & Wales University, Providence, RI.

Madalyn E. Lyons, Department of Health Science, College of Health & Wellness, Johnson & Wales University, Providence, RI; Center for Student Research & Interdisciplinary Collaboration (CSRIC), Johnson & Wales University, Providence, RI.

Kelsey A. Gately, OTD, OTR/L, Department of Health Science, College of Health & Wellness, Johnson & Wales University, Providence, RI; Center for Student Research & Interdisciplinary Collaboration (CSRIC), Johnson & Wales University, Providence, RI.

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Correspondence

Samantha R. Rosenthal, PhD, MPH
Johnson & Wales University
8 Abbott Park Place, Providence, RI, 02903
samantha.rosenthal@jwu.edu