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Attitudes to Aging and Body Comparison as Moderators of the Relationship between Menopausal Status and Disordered Eating and Body Image Concerns among Middle-Aged Women

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Highlights

- The effects of menopausal status on disordered eating behaviors depend on moderators.
- Perimenopausal women with low scores for ‘aging concerns’ report increased dietary restraint.
- Postmenopausal women who score high on ‘body comparison’ report increased dietary restraint.

Abstract

Objective: Evidence suggests the menopausal period may be a unique window of vulnerability for the development or exacerbation of symptoms of eating disorder among middle-aged women; however, it is unclear who is most at risk during this period. The goal of this study was to evaluate whether appearance-related aging concerns and body comparison, two sociocultural factors, moderated the association between menopausal status and disordered eating behaviors and body image concerns among middle-aged women.

Method: Participants ($N = 310$) completed an online survey about their menopausal status, aging concerns, body comparison, disordered eating, and body image concerns.

Results: Tests of moderator models revealed that at low levels of aging concerns, peri-menopausal women reported greater dietary restraint than pre-menopausal or post-menopausal women. Additionally, among women with high scores for body comparison, post-menopausal women reported significantly more dietary restraint than either pre- or peri-menopausal women.

Discussion: These findings suggest that the effects of menopause on dietary restraint may be stronger for some women than others.

Keywords: menopause, body image concerns, dietary restraint, aging concerns, body comparison

1. Introduction

Although prior research on body image and eating disorders symptoms has focused mainly on adolescent girls and young adult women, middle-aged women are not immune from eating disorders. One risk factor for body dissatisfaction that is unique to middle-aged women is menopause. Menopause is the permanent absence of a menstrual period for at least 12 months [1]. The peri-menopausal period, characterized by hormonal fluctuations that cause irregularities in the menstrual cycle and physiological changes to a woman's weight and shape [1], may be a potential window of vulnerability for disordered eating attitudes and behaviors considering the physiological changes to women's bodies – gains in weight and fat mass [2], and changes in skin tone/texture [3,4], are in contrast to the young and thin sociocultural standards of beauty.

Despite the body changes associated with menopause, research on the effects of menopausal status on body image concerns and disordered eating behaviors is mixed. Some data indicate that postmenopausal women reported greater dietary restraint and eating disinhibition compared to pre-menopausal women [5,6], yet others found no group differences [7,8]. Mangweth-Matzek et al. [9] found peri-menopausal women reported a significantly greater prevalence of eating disorders, higher rates of feeling fat, and greater body shape and weight preoccupation compared to pre-menopausal women. Given these inconsistent findings, it is difficult to understand who might be most at-risk for disordered eating or body image concerns during the menopausal period. These discrepant results could indicate that there are important moderators not being considered in these models; however, no research to date has examined moderators of the relationship between menopausal status and eating disordered attitudes and behaviors. Therefore, in order to better identify which women may be most at-risk, the aim of the current study is to examine potential moderators of the association between menopausal status

and disordered eating behaviors and body image concerns, with a focus on sociocultural factors as moderators.

One potentially relevant moderator is attitudes about aging. In Western societies, female aging has been strongly associated with a decline in physical attractiveness [10]. Given that middle-aged women experience physiological changes (including weight gain, wrinkles, and loss of skin elasticity) that direct them away from the thin beauty ideal, aging anxiety is a well-studied risk factor for body shame, body dissatisfaction, and excessive concerns about dieting in this age group [11–14]. Thus, negative attitudes about aging may be a sociocultural risk factor that interacts with menopausal stage in identifying level of body dissatisfaction among middle-aged women.

Another potential moderator for middle-aged women is body comparison, which refers to comparing perceptions about one's body and physical appearance to others' [15], and stems from Festinger's Social Comparison Theory [16]. Body comparison is associated with thin-ideal internalization, body dissatisfaction, and eating disorder symptoms among middle-aged women [17]. Although body comparison has not been evaluated in the context of menopause, given the dramatic body shape and weight changes that can occur, it is possible that body comparison may act as a moderator of the relationship between menopause and disordered eating/body image concerns.

The goal of the current study was to examine potential sociocultural moderators (attitudes about aging and body comparison) that could help explain who might be most at risk for an association between menopausal status and disordered eating and body image concerns. We hypothesized that being in the transitional period of menopause (i.e., peri-menopause) would be most strongly related to body image concerns and disordered eating among those with high levels

of negative attitudes about aging or high levels of body comparison because of the physical changes that are characteristic of the peri-menopausal period.

2. Method

2.1. Participants

We recruited participants to take part in a study of body dissatisfaction and disordered eating among three generations of women (young adult women, their mothers/middle-aged women, and their maternal grandmothers/older women). Young adult women were recruited from introductory psychology classes at a large, public, southeastern university, and their mothers, the focus of this study, were recruited using contact information provided by their daughters.

A total of 365 mothers between the ages of 35 and 68 years old completed this study. Prior research has typically set a lower age limit of 40 [18,19], thus we excluded 15 mothers who were younger than 40 years old, and two who had missing age data. Additionally, in accordance with prior research on menopause, we excluded 38 women who reported a surgical induction of menopause [9], yielding a final sample of 310 women for analyses.

The 310 participants in the final sample were an average of 50.14 years old ($SD = 4.59$; range 40 – 68 years). In terms of race/ethnicity, about 80% identified as White ($n = 249$), 10% as Asian ($n = 31$), 6% as Black of ($n = 18$), 2% as biracial or multiracial ($n = 7$), and 2% ($n = 5$) did not report their race/ethnicity. Mean body mass index (BMI) was 25.70 kg/m² ($SD = 5.88$; range 17.72 – 51.76 kg/m²) and, as an indication of socioeconomic status, participants had completed 16.17 years of education on average, the equivalent of about a 4-year college degree ($SD = 2.27$; range 9 – 21 years).

2.2. Procedure

Participants received an emailed link to complete an online survey and a recruitment phone call when phone information was available. After electronic consent, participants completed questionnaires. Participants were compensated via entry into a drawing for ten \$15 gift cards, and completion of the survey helped their daughters with course credit as an additional incentive for participation. This study was approved by the institutional review board of the University of North Carolina at Chapel Hill.

2.3. Measures

2.3.1. Demographics. Self-reported demographic data for age, highest level of education, race, ethnicity, and height and weight (used to calculate BMI) were collected via a set of questionnaires created for this study.

2.3.2. Menopausal status. Women self-reported their menopausal status according to World Health Organization guidelines [20] and prior research [9]. Statuses were defined as: 1) pre-menopausal (i.e., continuing to menstruate regularly throughout the past 12 months – or if not regularly, due to use of hormonal contraception, being at a very low weight (e.g., due to anorexia nervosa), or a history of irregular periods, and not due to menopause); 2) peri-menopausal (i.e., missing menstrual periods or having menstrual irregularities for at least three months but less than 12 months); 3) naturally post-menopausal (i.e., amenorrhea, or the absence of a menstrual periods, for more than 12 months, not attributable to medical interventions); or 4) surgically post-menopausal (amenorrhea or the absence of a menstrual period due to medical intervention like the surgical removal of the ovaries or a total hysterectomy).

2.3.2. Interventions for menopause. Participants were asked about a variety of interventions sought to relieve the symptoms and signs of menopause specifically. Given the known link between certain medications (e.g., antidepressants and hormone-related medications)

and disordered eating [21,22], endorsement of the use of hormone therapy, vaginal estrogen, and antidepressants was evaluated as a potential covariate.

2.3.3. Attitudes about aging. Participants completed six items (e.g., “I am worried about the effect of aging on my appearance”) assessing aging concerns related to physical appearance [11,12]. This scale has demonstrated convergent validity through significant, positive correlations with drive for thinness and body dissatisfaction among middle-aged women [12]. Coefficient alpha for the current sample was .85.

2.3.4. Body comparison. The Body Comparison Orientation subscale of the Body, Eating, and Exercise Comparison Orientation Measure [23] was used to evaluate frequency of behaviors comparing one’s physical appearance to that of same-sex peers (e.g., “I compare my body shape to that of my peers”). This measure has demonstrated excellent internal consistency ($\alpha = .93$), and convergent validity via significant correlations with measures of body dissatisfaction and eating disorder symptomatology (r s from .60 to .75) among young adult women [23]. Coefficient alpha for the current sample was .96.

2.3.5. Disordered eating. Participants completed three measures of disordered eating. The Eating Attitudes Test-26 [24] was used to assess a broad range of eating disorder attitudes and behaviors (e.g., “I find myself preoccupied with food”). A score of 20 or more indicates a strong likelihood of an eating disorder [25]. The EAT-26 is highly correlated with the EAT-40 ($r = .98$) and has demonstrated excellent internal consistency [26]. Coefficient alpha for the current sample was .80.

The Bulimia subscale of the Eating Disorder Inventory [27] was used to assess bulimic symptoms (e.g., “I eat moderately in front of others and stuff myself when they’re gone”). The

EDI-Bulimia has demonstrated good internal consistency ($\alpha = .83$) among adult women [28]. Coefficient alpha for the current sample was .85.

Lastly, the Restraint subscale of the Eating Disorder Examination-Questionnaire-4 [29] was used to assess the frequency of engaging in restrictive dieting behaviors over the past 28 days (e.g., “Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?”). This 5-item subscale has good internal consistency ($\alpha = .85$) among adult women [30]. Coefficient alpha for the current sample was .81. This questionnaire was added after the first data collection wave began. Thus, only a subset of participants completed this measure ($n = 258$ out of the final sample of 310).

2.3.6. Body image concerns. Participants completed the Weight Concern and Shape Concern subscales of the EDE-Q [29] to assess their body dissatisfaction related to weight and shape over the past 28 days (e.g., “Have you had a definite desire to have a totally flat stomach?”). Internal consistency for the Weight Concern ($\alpha = .89$) and Shape Concern ($\alpha = .78$) subscales are adequate to good based on prior work among adult women [30]. Consistent with past research [31], weight and shape concern were evaluated together as a single construct in the current study. Coefficient alpha for the combined Weight Concern and Shape Concern items in the current sample was .92.

2.4. Data Analytic Plan

Hierarchical multiple regression models were used to test the various moderator models. Step one contained the presence of covariates, as needed. Step two contained our independent variables, menopausal status and a hypothesized moderator. Given that menopausal status is a multicategorical variable, the three levels were dummy coded with peri-menopausal status designated as the reference category. Step three contained our two-way interaction term between

the independent variable and moderator. To minimize concerns related to multicollinearity, scores for both continuous moderators (attitudes about aging and body comparison) were centered around their grand means. For all analyses, if an interaction effect was significant, we graphed and probed the nature of the interaction using the PROCESS macro for SPSS [32]. The PROCESS macro generates unstandardized regression output, including coefficient estimates of the focal predictor on the dependent variable, at three levels of the moderator set at low (one *SD* below the mean), moderate (sample mean), and high (one *SD* above the mean). Current analyses used PROCESS Model 1 to account for the multicategorical independent variable, menopausal status [33]. All statistical analyses were conducted using IBM SPSS Statistics version 24.

3. Results

In order to identify potential covariates, demographic variables and use of interventions for menopause were investigated for both menopausal group differences and correlations with dependent variables. Age was the only variable that both significantly differed by group (as expected, pre-menopausal women were the youngest, followed by peri-menopausal women, and post-menopausal women being the oldest) *and* was associated with an outcome (body image concerns; $r = -.11, p < .05$). Thus, for all models predicting body image concerns as the outcome, age was evaluated as a covariate. For all other models, no covariates were included.

3.1. Attitudes about Aging Moderator Models

3.1.1. Disordered eating. Results evaluating attitudes about aging as a potential moderator of the association between menopausal status and disordered eating and body image concerns are shown in Table 1. We found a significant interaction between menopausal status and attitudes about aging on dietary restraint ($p = .005$). Probing the nature of the interaction, results suggest that among women who were low in negative attitudes about aging (those with scores 1

standard deviation below the mean), those who were peri-menopausal reported greater dietary restraint than those who were either pre-menopausal ($p = .009$) or post-menopausal ($p = .017$), yet there were no significant differences between pre- and post-menopausal women ($p = .778$; see Figure 1).

Results revealed no significant interactions between menopausal status and attitudes about aging for either broad eating pathology or bulimic symptoms ($ps > .108$).

3.1.2. Body image concerns. Controlling for age, we found a marginally significant interaction between menopausal status and attitudes about aging for body image concerns ($p = .054$) (see Table 1). Probing the interaction, it seems that among women who were low in negative attitudes about aging, those who were peri-menopausal reported marginally more body image concerns compared to women who were pre-menopausal ($p = .062$). However, among those low in negative attitudes about aging, there were no significant differences between those who were peri-menopausal and post-menopausal ($p = .403$), or pre-menopausal and post-menopausal ($p = .320$).

3.3. Body Comparison Moderator Models

3.3.1. Disordered eating. When considering body comparison as a moderator, we found a significant interaction between menopausal status and body comparison on dietary restraint ($p = .021$) (see Table 2). Probing the interaction indicated that, among women who were high in body comparison (those who scored 1 standard deviation above the mean), post-menopausal women reported significantly more restraint compared to both peri-menopausal women ($p = .036$) and pre-menopausal women ($p = .023$), yet there were no significant differences between peri- and pre-menopausal women ($p = .86$; see Figure 2).

3.3.2. Body image concerns. Controlling for age, results revealed no significant interaction between menopausal status and body comparison for body image concerns ($p = .464$).

4. Discussion

The goal of this study was to identify which women might be most at risk for an association between menopausal status and disordered eating and body image concerns by evaluating the sociocultural factors of attitudes about aging and body comparison as potential moderators of this relationship.

Results indicated that it is among women with low levels of negative attitudes about aging for which the peri-menopausal period was associated with greater dietary restraint compared to women in the pre-menopausal or post-menopausal period. Given the significant and positive correlations between negative attitudes about aging and disordered eating and body image concerns in the current sample ($r_s = .25 - .48$; $p_s < .001$), it is possible that women who are high in negative attitudes about aging are already resistant to the idea of their body and appearance changing as they age, and thus, have engaged in disordered eating and body image concerns prior to the menopause transition. Perhaps, women who are initially low in negative attitudes about aging are less prepared for or less aware of the degree to which the physiological changes associated with peri-menopause may affect their body or appearance, and thus this transitional period may have larger effects on women's disordered eating compared to women in the other menopausal groups where changes either have not yet occurred or have stabilized.

Results also demonstrated that body comparison moderated the relationship between menopausal status and dietary restraint. Specifically, we found that among women with high levels of body comparison, being post-menopausal was associated with greater dietary restraint compared to those who were either pre- or peri-menopausal. This is in contrast to our hypothesis

that peri-menopausal women would have the most elevated levels of dietary restraint in the context of high body comparison. Since the peri-menopausal period is characterized by fluctuations in body shape and weight, it is possible women are less certain what final effect menopause will have on their appearance, and therefore are less likely to compare their body to others' during the peri-menopausal period in contrast to the post-menopausal period.

This study is the first to examine theoretically-derived moderators of the relation between menopausal status and disordered eating/body image concerns, yielding a more nuanced understanding of who among those in peri-menopause or post-menopause may exhibit greater dietary restraint. However, several limitations should be noted. The cross-sectional survey design does not allow us to test developmental questions regarding the temporal nature of our variables including mediation models. We also did not collect data about participants' eating disorder history, so we cannot make any conclusions regarding these disordered eating behaviors and attitudes newly developing or being exacerbated during this mid-life period. We did not have data on other psychiatric diagnoses or other factors that may influence eating behaviors during the menopause period (e.g., sleep or medication usage); future work should assess for and consider these factors. Additionally, although the sample has limited generalizability given the high percentage of educated White women, the current sample does have comparable levels of disordered eating behaviors and body image concerns compared to other community samples of middle-aged women [9,34,35].

We believe these findings introduce important future research directions. Prior data indicate that both attitudes about aging and attitudes about menopause may differ according to culture. For example, Yun and Lachman [36] found that, compared to Americans, Koreans reported overall higher levels of anxiety about aging. Other data suggest that African Americans

seemed to have more positive attitudes about menopause compared to non-Hispanic Whites [37]. Given that aging concerns and attitudes about menopause may vary according to one's race or culture, future studies should test these constructs in more diverse samples. Future research should also consider other theoretically-supported constructs that may act as moderators or mediators (e.g., perfectionism, appearance-related pressures from significant others) and consider both longitudinal designs (to examine mediation models) and qualitative designs (to generate a richer understanding of women's experiences with disordered eating and body image concerns during perimenopause).

In terms of clinical implications, these data may help clinicians target those most at risk for disordered eating during the menopause transition as well as post-menopause. For example, evaluating clients' attitudes about aging, particularly when they enter the menopause transition, may serve as a marker for potential disordered eating concerns for clinicians working with this population. Clients' knowledge or psychoeducation about aging and physiological changes associated with menopause, which may inform their attitudes, should also be assessed and accurately bolstered. For women in post-menopause, assessing their patterns of comparison to other women may be useful, including who they are comparing to (e.g., their peers pre-menopause or post-menopause), since the target of comparison may be less appropriate given their menopausal status. Also, to the degree that post-menopausal women who were high in body comparison had the highest levels of dietary restraint, clinicians may want to identify this group and explore their motivation for dietary restraint. If it is found connected to body comparison in a causal way, ways to decrease body comparison could be explored including potential acceptance-based approaches and cognitive dissonance approaches (e.g., changes in attitudes due to the

incompatibility of both believing one should be as thin as others and believing that menopausal changes are normative and that one should not be swayed by comparisons with others).

In conclusion, these results suggest that for middle-aged women, experiences of the disordered eating behavior of dietary restraint may depend on menopausal status and constructs such as attitudes about aging and body comparison tendencies.

Contributors

Katherine A. Thompson conducted literature searches, provided summaries of previous research studies, and wrote the first draft of the manuscript.

Anna M. Bardone-Cone designed the study and wrote the protocol.

Both authors contributed to and approved the final manuscript.

Conflict of interest

The authors declare that they have no conflict of interest.

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Ethical approval

This research was conducted using human subjects and in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki). The study was approved by the Institutional Review Board of the University of North Carolina at Chapel Hill, and informed consent was obtained from all participants.

Provenance and peer review

This article has undergone peer review.

Research data (data sharing and collaboration)

There are no linked research data sets for this paper. Due to the sensitive nature of the questions asked in this study, participants were informed during the consent process that data would remain confidential and not shared.

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Table 1

Hierarchical Regression Analyses of the Interactions between Menopausal Status and Attitudes about Aging on Women's Disordered Eating and Body Image Concerns

	Broad eating pathology				
	B	SE B	β	t (dfs)	ΔR^2
Step 1					.10***
Constant - reference	7.20	.61	--	$t(305) = 11.79, p < .001$	
Pre-Menopause	-.17	.85	-.01	$t(305) = -.20, p = .845$	

Post-Menopause	-.72	.84	-.06	$t(305) = -.86, p = .392$	
Attitudes about aging	.96	.17	.30	$t(305) = 5.54, p < .001$	
Step 2					.01
Pre-Menopause x Attitudes about aging	.55	.45	.10	$t(303) = 1.23, p = .221$	
Post-Menopause x Attitudes about aging	.54	.44	.10	$t(303) = 1.23, p = .219$	
	Bulimic symptoms				
	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.07***
Constant - reference	11.88	.43	--	$t(306) = 27.47, p < .001$	
Pre-Menopause	-.66	.60	-.07	$t(306) = -1.09, p = .278$	
Post-Menopause	-.89	.60	-.10	$t(306) = -1.49, p = .138$	
Attitudes about aging	.54	.12	.21	$t(306) = 4.36, p < .001$	
Step 2					.01
Pre-Menopause x Attitudes about aging	.52	.31	.14	$t(304) = 1.64, p = .102$	
Post-Menopause x Attitudes about aging	-.04	.31	-.01	$t(304) = -.14, p = .887$	
	Dietary restraint				
	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.15***
Constant - reference	1.31	.13	--	$t(254) = 10.47, p < .001$	
Pre-Menopause	-.12	.18	-.05	$t(254) = -.70, p = .482$	
Post-Menopause	-.05	.18	-.02	$t(254) = -.30, p = .768$	
Attitudes about aging	.24	.04	.38	$t(254) = 6.46, p < .001$	
Step 2					.04**

Pre-Menopause x Attitudes about aging	.26	.09	.26	$t(252) = 2.89, p = .004$	
Post-Menopause x Attitudes about aging	.27	.09	.26	$t(252) = 2.92, p = .004$	
	Body image concerns				
	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.01*
Age	-.04	-.02	-.11	$t(308) = -2.02, p = .044$	
Step 2					.23***
Constant - reference	3.80	1.04	--	$t(305) = 3.75, p < .001$	
Pre-Menopause	-.03	.19	-.01	$t(305) = -0.18, p = .855$	
Post-Menopause	.12	.20	.04	$t(305) = 0.62, p = .539$	
Attitudes about aging	.35	.04	.48	$t(305) = 9.51, p < .001$	
Step 3					.02†
Pre-Menopause x Attitudes about aging	.22	.09	.18	$t(303) = 2.38, p = .018$	
Post-Menopause x Attitudes about aging	.16	.09	.14	$t(303) = 1.76, p = .079$	

Note. The multicategorical independent variable, menopausal status, was dummy coded into pre-menopause and post-menopause, with peri-menopause as the reference category (designated Constant in the table above). Attitudes towards aging assesses negative aging concerns related to physical appearance. Broad eating pathology is measured by the Eating Attitudes Test-26. Bulimic symptoms are measured by the Bulimia subscale of the Eating Disorder Inventory. Dietary restraint is measured by the Eating Disorder Examination-Questionnaire. Body image concerns is calculated from a combined score of the Weight Concerns and Shape Concerns subscales of the Eating Disorder Examination-Questionnaire. *** $p < .001$. ** $p < .01$. * $p < .05$. † $p < .06$.

Table 2

Hierarchical Regression Analyses of the Interactions between Menopausal Status and Body Comparison on Women's Disordered Eating and Body Image Concerns

	Broad eating pathology
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	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.09***
Constant - reference	7.14	.62	--	$t(305) = 11.60, p < .001$	
Pre-Menopause	-.11	.85	-.01	$t(305) = -.13, p = .894$	
Post-Menopause	-.62	.85	-.05	$t(305) = -.73, p = .464$	
Body comparison	.23	.01	.29	$t(305) = 5.21, p < .001$	
Step 2					.01
Pre-Menopause x Body comparison	-.13	.11	-.10	$t(303) = -1.23, p = .219$	
Post-Menopause x Body comparison	-.05	.11	-.04	$t(303) = -.49, p = .627$	
Bulimic symptoms					
	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.18***
Constant - reference	11.69	.41	--	$t(306) = 28.65, p < .001$	
Pre-Menopause	-.44	.57	-.05	$t(306) = -.77, p = .443$	
Post-Menopause	-.54	.56	-.06	$t(306) = -.97, p = .34$	
Body comparison	.22	.03	.41	$t(306) = 7.80, p < .001$	
Step 2					.01
Pre-Menopause x Body comparison	-.08	.07	-.08	$t(304) = -1.06, p = .29$	
Post-Menopause x Body comparison	-.13	.07	-.15	$t(304) = -1.87, p = .062$	
Dietary restraint					
	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.18***
Constant - reference	1.29	.12	--	$t(254) = 10.47, p < .001$	

Pre-Menopause	-.13	.17	-.05	$t(254) = -.76, p = .448$	
Post-Menopause	.03	.17	.01	$t(254) = .17, p = .867$	
Body comparison	.07	.01	.42	$t(254) = 7.25, p < .001$	
Step 2					.03*
Pre-Menopause x Body comparison	.02	.02	.06	$t(252) = .68, p = .495$	
Post-Menopause x Body comparison	.06	.02	.22	$t(252) = 2.67, p = .008$	
	Body image concerns				
	B	SE B	β	$t (dfs)$	ΔR^2
Step 1					.01*
Age	-.04	.02	-.11	$t(308) = -2.02, p = .044$	
Step 2					.31***
Constant - reference	4.22	.99	--	$t(305) = 4.27, p < .001$	
Pre-Menopause	-.01	.18	-.003	$t(305) = -.05, p = .960$	
Post-Menopause	.26	.19	.09	$t(305) = 1.38, p = .170$	
Body comparison	.10	.01	.56	$t(305) = 11.62, p < .001$	
Step 3					.003
Pre-Menopause x Body comparison	.02	.02	.07	$t(303) = 1.03, p = .303$	
Post-Menopause x Body comparison	.02	.02	.08	$t(303) = 1.15, p = .253$	

Note. The multicategorical independent variable, menopausal status, was dummy coded into pre-menopause, and post-menopause, with peri-menopause as the reference category (designated Constant in the table above). Body comparison is measured by the Body Comparison Orientation subscale of the Body, Eating, and Exercise Comparison Orientation Measure. Broad eating pathology is measured by the Eating Attitudes Test-26. Bulimic symptoms are measured by the Bulimia subscale of the Eating Disorder Inventory. Dietary restraint is measured by the Eating Disorder Examination-Questionnaire. Body image concerns is calculated from a combined score

of the Weight Concerns and Shape Concerns subscales of the Eating Disorder Examination-Questionnaire. *** $p < .001$. * $p < .05$

ACCEPTED MANUSCRIPT

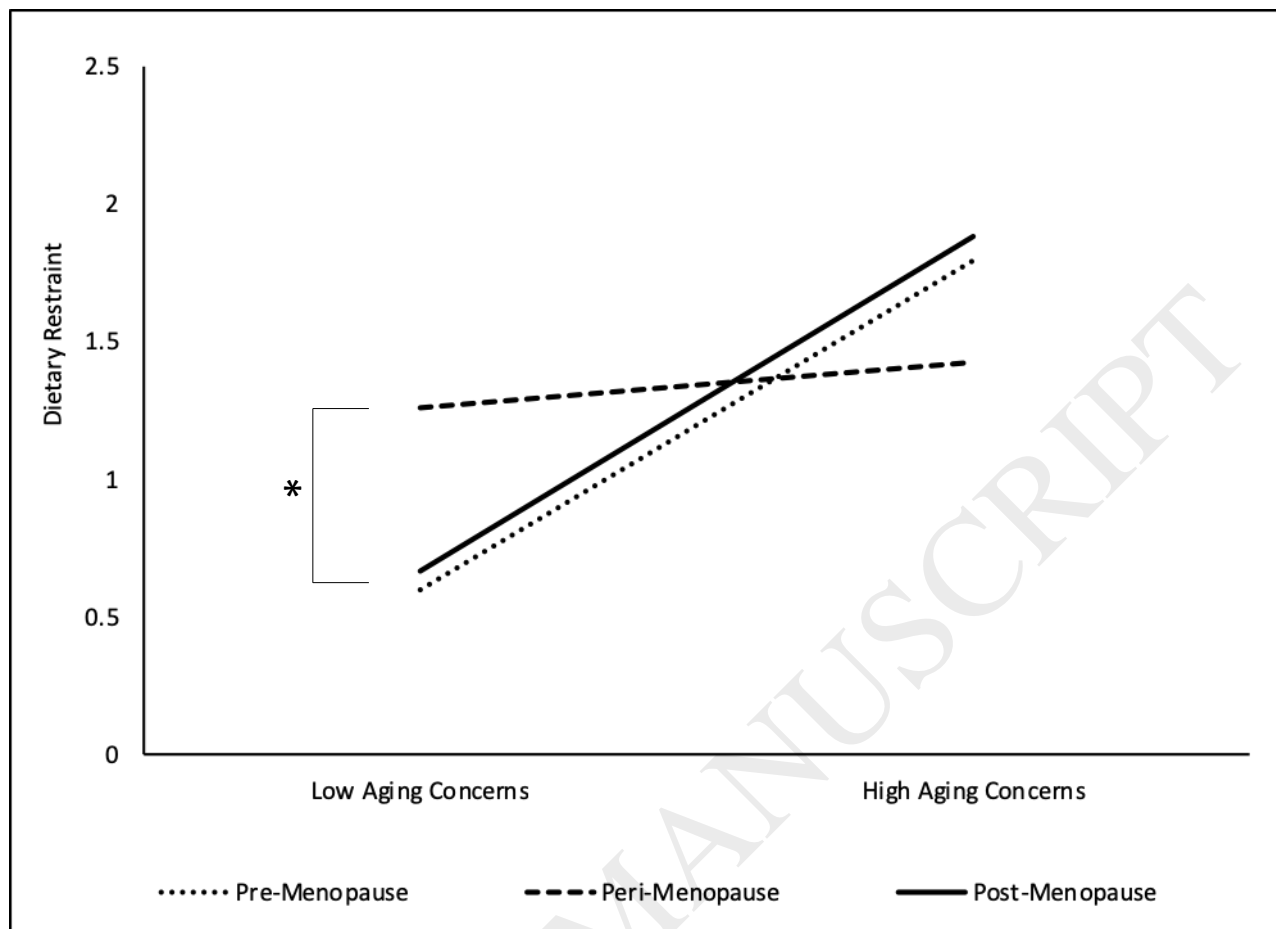


Figure 1. Significant two-way interaction ($p = .005$) involving negative attitudes about aging moderating the relationship between menopausal status and dietary restraint among middle-aged women. Results show significant differences in dietary restraint between peri-menopausal women and both pre-menopausal women and post-menopausal women when low in aging concerns. $*p < .05$.

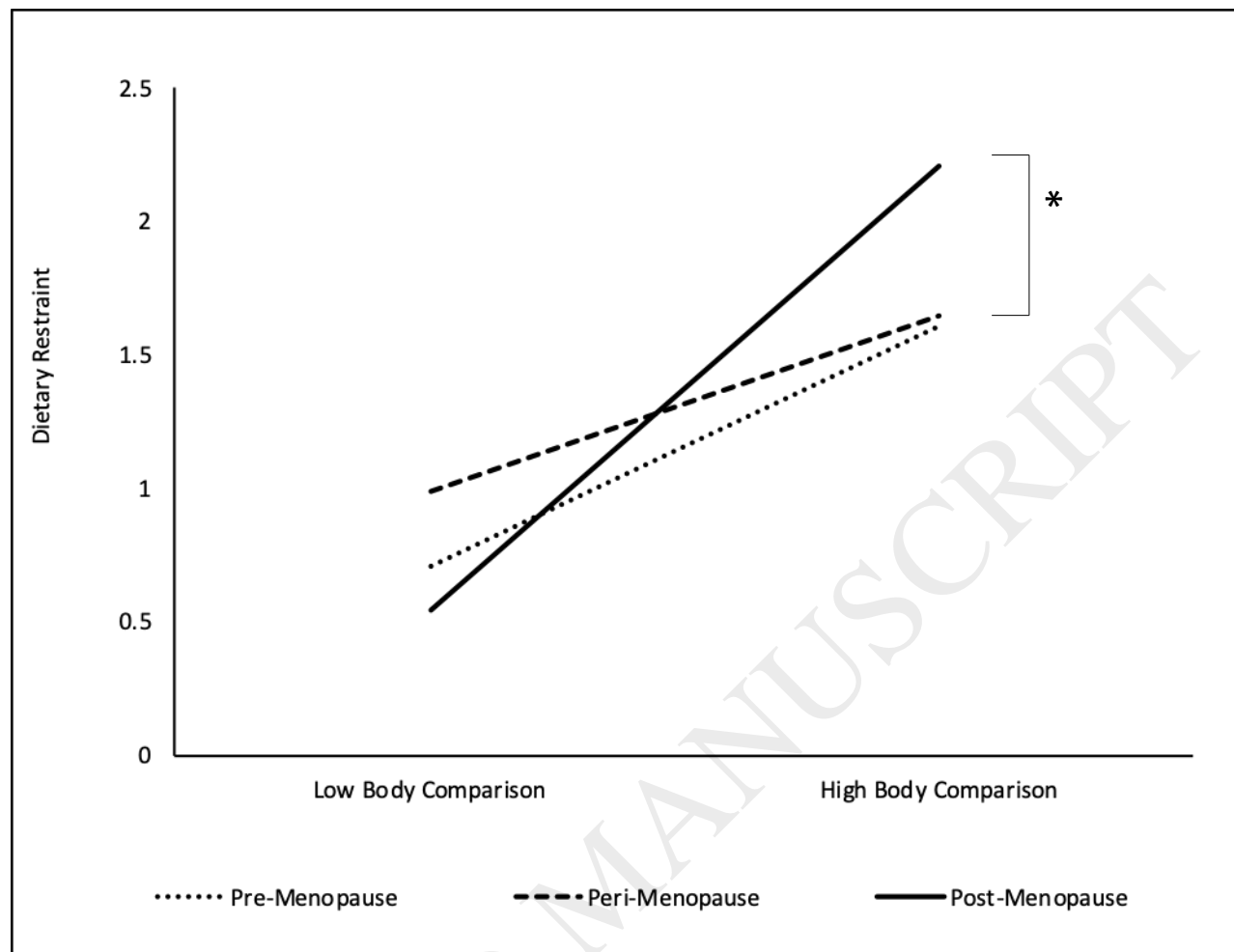


Figure 2. Significant two-way interaction ($p = .021$) involving body comparison moderating the relationship between menopausal status and dietary restraint among middle-aged women. Results show significant differences in dietary restraint between post-menopausal women and both pre-menopausal women and peri-menopausal women when high in body comparison. $*p < .05$.