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Appearance-Related Factors in Relation to Body Dissatisfaction, Dieting, and Excessive

Exercise: Competitiveness as a Moderator

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Abstract

Previous research has established relationships between appearance-related factors and disordered eating attitudes and behaviors, but it is not clear which appearance-focused individuals are most at risk for engaging in maladaptive eating-related attitudes and behaviors. Thus, this study examines competitiveness as a moderator of the relationships between appearance-related factors (i.e., thin-ideal internalization and appearance contingent self-worth) and disordered eating attitudes and behaviors (i.e., body dissatisfaction, dieting, and excessive exercise) both cross-sectionally and longitudinally. The sample consisted of 441 undergraduate women at Time 1 and a subsample of 237 undergraduate women at Time 2 approximately one year later. Survey data were analyzed with hierarchical multiple regression analyses. Results showed that thin-ideal internalization and appearance contingent self-worth both interact with competitiveness to identify concurrent levels of dieting and excessive exercise. Additionally, individuals who were high in thin-ideal internalization and high in competitiveness exhibited the most elevated levels of body dissatisfaction, dieting, and excessive exercise one year later. Lastly, after controlling for baseline levels of the dependent variables, results showed that individuals who were high in thin-ideal internalization and high in competitiveness exhibited increased levels of body dissatisfaction and excessive exercise one year later. The current study brings the field of eating disorders one step closer to identifying which individuals are most at risk for developing disordered eating attitudes and behaviors, allowing psychologists to improve prevention and intervention efforts.

Keywords: thin-ideal internalization, appearance contingent self-worth, competitiveness, body dissatisfaction, dieting, excessive exercise

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Appearance has become a central focus in today's increasingly image-obsessed society, especially for young women in Western, industrialized cultures. Individuals are inundated with images of extremely thin women and messages about ideal beauty, particularly through media sources such as magazines, television, and the Internet. However, this standard is unrealistic and difficult for most women to attain. Consequently, women may become dissatisfied with their bodies and experience shame or guilt for failing to meet the thin ideal that they may have internalized or that they perceive to be important to society or important to others. Further, they may engage in behaviors such as dieting and excessive exercise to attempt to approach the beauty ideals they see promoted. Research has shown that body dissatisfaction, dieting, and excessive exercise have negative consequences, including low levels of self-esteem (LePage, Crowther, Harrington, & Engler, 2008), high levels of social anxiety (Koff, Benavage, & Wong, 2001), depression, and eating disorder symptoms (Ackard, Croll, & Kearney-Cooke, 2002). It is therefore important to understand factors associated with these unhealthy attitudes and behaviors. In this study, I will examine the relationship between two appearance-related factors, thin-ideal internalization and appearance contingent self-worth, both of which may emerge from cultures focused on appearance, and body dissatisfaction, dieting, and excessive exercise. Moreover, I will explore competitiveness as a possible moderator of these relationships.

Thin-ideal internalization refers to an endorsement of the cultural ideal of attractiveness, which in today's Western society, is extreme thinness (Homan, 2010). More specifically, if an individual is high in thin-ideal internalization, he or she endorses the desirability to be thin and

engages in behaviors to achieve this ideal. Substantial research has indicated that thin-ideal internalization is associated with body dissatisfaction (Fitzsimmons-Craft et al., 2011; Homan, 2010; Juarascio et al., 2011). A meta-analysis conducted by Cafri, Yamamiya, Brannick, and Thompson indicates that thin-ideal internalization has a statistically significant relationship with body image (2005). Indeed, one of the prominent theories of body dissatisfaction and disordered eating, the sociocultural model, posits that thin-ideal internalization leads to body dissatisfaction because of the unrealistically thin standard, which then instigates both restrained eating and negative affect, which increases risk for bulimia nervosa (Stice, 1994). The correlation between thin-ideal internalization and body dissatisfaction holds true for more specific samples, including college women in a sorority (Kroon Van Diest & Perez, 2013), young girls (Evans, Tovée, Boothroyd, & Drewett, 2013; Sands & Wardle, 2003), and Asian American women (Nouri, Hill, & Orrell-Valente, 2011), indicating that the results are generalizable. Moreover, it has been suggested that neither age nor ethnicity is a statistically significant moderator of the thin-ideal internalization-body image relationship (Cafri et al., 2005). Interestingly, what matters is not only an awareness of this ideal, but its personal adoption. For example, research has shown that thin-ideal internalization, but not thin-ideal awareness, is associated with eating and weight concerns (Low et al., 2003), and that thin-ideal internalization has a stronger relationship to body image than does thin-ideal awareness (Cafri et al., 2005). Thin-ideal internalization may become problematic among individuals who perceive themselves as overweight, but who are in reality in the healthy weight range (Juarascio et al., 2011).

Research also indicates that thin-ideal internalization is associated with the behaviors of dieting and excessive exercise, with these relations likely occurring in part through a body

dissatisfaction pathway. For example, research shows that thin-ideal internalization is correlated with dieting (Heinberg, Thompon, & Stormer, 1995; Stice, Mazotti, Krebs, & Martin, 1998; Stice, Nemeroff, & Shaw, 1996). One study of female high school seniors indicated that internalization of the thin ideal was positively correlated with dieting, but did not prospectively predict change in dieting over time (Stice et al., 1998). Thin-ideal internalization has also been linked to excessive exercise, including evidence for thin-ideal internalization predicting increases in compulsive exercise (Homan, 2010) and evidence that high levels of thin-ideal internalization were present only among individuals who both vigorously exercised and fasted (LePage, et al., 2008). Of note, while exercise is generally regarded as a positive and important health behavior, the focus in this paper is on “excessive” exercise, which captures a negative side of exercise that is often also characterized by compulsivity and negative emotionality associated with missing an exercise session (De Young & Anderson, 2010). Further, excessive exercise is included as an inappropriate compensatory behavior for bulimia nervosa (American Psychiatric Association, 2013).

Compared to thin-ideal internalization, the relations between appearance contingent self-worth and the constructs of body dissatisfaction, dieting, and excessive exercise are much less studied. Appearance contingent self-worth reflects deriving one’s sense of self and worth from physical appearance (Crocker, Luhtanen, Cooper, & Bouvrette, 2003) and is one of the many domains of contingent self-worth identified by Crocker and Wolfe (2001). External contingencies of self-worth, such as appearance and approval, are believed to be unhealthier than internal contingencies, such as God’s love and virtue (Crocker & Wolfe, 2001). There is some evidence that basing one’s self-worth on weight/shape discriminates between individuals with

eating disorders and controls (Geller et al., 1998), which suggests an important relationship between appearance contingent self-worth and disordered eating. Also, there is evidence that appearance contingent self-worth may serve as a moderator of the relationship between anxiety and disordered eating (Bardone-Cone, Brownstone, Higgins, Fitzsimmons-Craft, & Harney, 2013) and between need satisfaction and engagement in unhealthy weight control behaviors (Thøgersen-Ntoumani, Ntoumanis, Cumming, & Chatzisarantis, 2011). Despite the much more limited research base for appearance contingent self-worth and the dependent variables of interest, I chose to test both thin-ideal internalization and appearance contingent self-worth as independent variables as they are both relevant to young women but explore differing nuances of cognitions about physical appearance. I hypothesize that individuals who base their self-esteem largely on appearance will be particularly driven to look as physically attractive as possible, which in current Western society is very thin, in order to feel good about themselves, contrasting with individuals who base their self-esteem primarily on other constructs such as relationships or academic achievement. Since appearance is core to their sense of self, these individuals will be motivated to achieve their definition of “success” in the appearance domain (i.e., being thin), likely causing them to turn to dieting and excessive exercise in order to achieve the thin ideal. These individuals high in appearance contingent self-worth will likely be dissatisfied with their bodies because they are not able to achieve the thin ideal.

Past research has clearly demonstrated a significant link between thin-ideal internalization and body dissatisfaction, dieting, and excessive exercise, and, theoretically, appearance-contingent self-worth has similar linkages. Nonetheless, not all individuals who internalize the thin ideal or define their self-worth based on their appearance engage in

disordered eating behaviors, which accentuates the need to identify moderators of this relationship. Minimal research has been conducted on the conditions under which thin-ideal internalization and appearance contingent self-worth are most related to disordered eating attitudes and behaviors. In the present study, I hypothesize that the underlying trait of competitiveness may serve as a moderator in these models, identifying which individuals high in thin-ideal internalization or appearance contingent self-worth may be most likely to exhibit disordered eating attitudes and behaviors.

Competitiveness is defined as the extent to which an individual compares his or her athletic ability, academic ability, or appearance to others and strives to be equal to and surpass the abilities or appearance of others (Peden, Stiles, Vandehey, & Diekhoff, 2008). Thus, competitiveness is closely related to social comparison, but has an additional motivational factor embedded in it (Sides-Moore & Tochkov, 2011). Furthermore, if a woman is highly competitive in one domain, it is hypothesized that she also will be competitive in other domains, including attempts at weight loss, such as dieting and excessive exercise, to meet the thin ideal (Sides-Moore & Tochkov, 2011).

To my knowledge, there has been no research on whether or not competitiveness is associated with thin-ideal internalization and appearance contingent self-worth, although a related construct, social comparison, has been linked to thin-ideal internalization (Harrison, 2001). Additionally, it has been reported that social comparison behavior (specific to physical appearance) mediated the relationship between thin-ideal internalization and body dissatisfaction in preadolescent girls (Blowers, Loxton, Grady-Flessner, Occhipinti, & Dawe, 2003). While there is little support for a link between appearance-related factors and competitiveness, there is

substantial evidence in support of the relationship between competitiveness and body dissatisfaction, dieting, and excessive exercise.

Competitiveness contributes positively to body dissatisfaction (Sides-Moore & Tochkov, 2011), with perceived competition with and inferiority to other women a strong predictor of body dissatisfaction (Muñoz & Ferguson, 2012). In one study, competitiveness was positively correlated with characteristics of eating disorders and body dissatisfaction in a general sample, while competitiveness was positively correlated with body dissatisfaction, but not disordered eating, in an athletic sample (Peden et al., 2008). Conceptually, competitiveness and body dissatisfaction have been linked in the Catalyst Model of Body Dissatisfaction, which asserts that women's body dissatisfaction is influenced by peer competition with other proximal women rather than distal depictions of women in the media (Buss, 1989; Ferguson, Winegard, & Winegard, 2011).

In addition to body dissatisfaction, some support also exists for a relationship between competitiveness and both dieting and excessive exercise. A study by Huon et al. (1999) demonstrated that peer competitiveness stood out as the most important predictor of dieting status compared to peer and parent compliance, conformity, modeling, and television and magazine influences. Furthermore, the related construct of ego orientation, which refers to an individual's definition of subjective success as other-referenced with an individual feeling competent when he or she has outperformed others (de Bruin, Bakker, & Oudejans, 2009), was significantly and positively correlated with more frequent dieting and indices of disordered eating in a sample of gymnasts and dancers. In relation to exercise, competitiveness is a motivator of exercise, among others (e.g., appearance, mental benefits, affiliation, mastery,

flexibility/agility, social recognition, health benefits, weight management, and fitness) (Duda and Tappe, 1989). There is research demonstrating a link between competitiveness and exercise, though to my knowledge, none has been conducted specifically on excessive exercise, and most of it focuses on competitiveness in relation to sports and elite athletes. While one study suggests that competitiveness is the primary variable discriminating competitive sport participants and nonparticipants, with win orientation strongly related to competitiveness scores (Gill, Dzewaltowski, & Deeter, 1988), another study shows no effect of competition on the performance of a sit-up task designed to test endurance (Lerner and Locke, 1995). One study on exergames (video games that also serve as a source of exercise) linked competitiveness to exercise intensity (Snyder, Anderson-Hanley, & Arclero, 2012). These results demonstrated that highly competitive riders on a cybicycle (a virtual reality-enhanced stationary bicycle) rode more intensely in the presence of a live versus a virtual competitor (Snyder et al., 2012).

Given the empirical and/or theoretical relations between both thin-ideal internalization and appearance contingent self-worth and body dissatisfaction, dieting, and exercise, the question posed in this research is: among individuals high in thin-ideal internalization or appearance-contingent self-worth, who is most likely to exhibit disordered eating attitudes and behaviors? I suggest that the answer is individuals who are also competitive, as competitiveness may lay the groundwork for individuals highly focused on their appearance turning to diet and exercise as a means of satisfaction from outperforming others in a domain that is particularly important to them. Furthermore, I reason that these same individuals will tend to exhibit more body dissatisfaction since appearance will be salient to them (due to, for example, high levels of thin-ideal internalization), and it will be additionally important to them to strive for

thinness due to their competitiveness; wanting to be thin and finding that others' appearance may be better than theirs would amplify body dissatisfaction. In sum, I hypothesize that among individuals high in thin-ideal internalization or appearance contingent self-worth, those who are highly competitive will exhibit the highest levels of body dissatisfaction, dieting, and excessive exercise concurrently and prospectively. In a more exploratory fashion, these interactive models will also be examined prospectively controlling for baseline levels of the dependent variables.

Method

Participants

Participants consisted of undergraduate female students ($N = 441$) at a large, public Southeastern university. Participants were recruited through introductory psychology classes with the selection criterion of being female. Participants ranged in age from 17 to 24 with a mean age of 18.71 years ($SD = 1.01$ years). The majority (73.2%) self-reported as Caucasian/White, 9.1% as African American/Black, 8.0% as Hispanic/Latina, 5.0% as Asian, 0.4% as other races/ethnicities, and 4.3% as multiple race/ethnicities. Highest parental education attained was used as a proxy for socio-economic status, with a mean of 17.01 years ($SD = 2.67$), which reflects a little over 4 years of post-secondary education. Based on the participants' self-reported current height and weight, average body mass index (BMI) was 22.39 kg/m² ($SD = 3.73$; range 16.76-41.24).

Procedure

A link to the survey and consent form was emailed to participants, followed up by a call from a research assistant to highlight particularly important aspects of the consent form and to answer any questions about the study. After participants provided electronic consent, they were

directed to the questionnaires, which were presented in a fixed order and took 45-60 minutes to complete in a private setting (e.g., their home). Participants received course credit for completing the survey at this initial time point (Time 1).

Participants who, at Time 1, agreed to be contacted for follow-up data ($N = 352$; 79.8%) were contacted via phone and email by research assistants about one year after their Time 1 participation. The procedure used in Time 1 was applied in Time 2; after participants provided electronic consent, they were directed to the electronic questionnaires, which were presented in a fixed order and took 30-45 minutes to complete. As an incentive for completing Time 2, participants received an electronic \$5 gift certificate to their choice of a popular coffeehouse or a discount retail store. Of the 352 individuals who agreed to be recontacted, 237 completed the Time 2 survey. Thus, of the original 441 participants who provided Time 1 data in the previous year, 53.7% completed Time 2. Of those eligible for follow-up, 67.4% completed Time 2. This study was reviewed and approved by the university's Institutional Review Board.

Participants providing data at both time points were compared to those who only completed Time 1 on demographics and core variables collected at Time 1. Attrition analyses are included in the results section.

Measures

Thin-ideal internalization. The Internalization subscale of the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ-4) was used to assess the degree to which participants internalized the thin ideal (Schaefer et al., 2013). This scale consists of five items (e.g., "I want my body to look very thin") rated from 1 = *definitely disagree* to 5 = *definitely agree*, with higher scores reflecting more thin-ideal internalization. This study was conducted as

part of a validation study for the SATAQ-4, and thus psychometric properties of this questionnaire are only readily available for the earlier version of this measure, the SATAQ-3. The Internalization subscale of the SATAQ-3 demonstrated strong reliability ($\alpha = .96$) and good construct validity in a sample of female undergraduates, as samples of individuals with disordered eating and eating disorders scored higher on the Internalization subscale than control samples (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). In the current sample, $\alpha = .87$.

Appearance contingent self-worth. The Appearance subscale of the Contingencies of Self-Worth Scale (Crocker et al., 2003) was used to assess the degree to which self-worth was contingent on appearance. This 5-item subscale (e.g., “My sense of self-worth suffers whenever I think I don’t look good”) is rated from 1 = *strongly disagree* to 7 = *strongly agree*, with higher scores reflecting greater dependence of self-worth on appearance. This subscale has demonstrated adequate internal consistency ($\alpha = .83$) and three-month test-retest reliability ($r = .75$) in undergraduate samples, as well as convergent validity via significant positive correlations with narcissism, shopping, grooming, and increases in exercising (Crocker et al., 2003). In the current sample, $\alpha = .76$.

Body dissatisfaction. Body dissatisfaction was assessed using the combined Weight Concern and Shape Concern subscale of the Eating Disorder Examination-Questionnaire (EDE-Q 6.0; Fairburn & Beglin, 2008), which is one of the most commonly used measures of disordered eating attitudes and behaviors (Anderson & Williamson, 2002). Factor analytic work supports the combination of these subscales since together they reflect one underlying factor reflecting body dissatisfaction (Peterson et al., 2007). There are 12 items that make up this

combined Weight Concern and Shape Concern subscale, measuring weight/shape dissatisfaction and the degree to which an individual's self-worth is defined by weight/shape, as experienced over the past 28 days. Five of these items (e.g., "Have you had a definite fear that you might gain weight?") are quantified on a 7-point response scale from 0 = *no days* to 6 = *every day* with a midpoint of 3 = *13-15 days*. The other seven items (e.g., "How dissatisfied have you been with your shape?") are quantified on a 7-point response scale from 0 = *not at all* to 6 = *markedly*. Items were averaged to compute an overall weight/shape concern score, with higher scores reflecting greater concern. The Weight Concern and Shape Concern subscales of an earlier version of the EDE-Q have demonstrated good internal consistency in an undergraduate female sample ($\alpha = .89-.93$), and good test-retest reliability ($r = .92-.94$) (Luce & Crowther, 1999). Furthermore, the Weight/Shape subscale of version of the EDE-Q that we used in this study demonstrated good reliability ($\alpha = .94$) (Barnes, Prescott, & Muncer, 2012). The two versions are quite similar; the only difference relevant to the constructs used in this study is that the new version contains minor adjustments in the phrasing of some items (Aardoom, Dingemans, Slof Op't Landt, & Van Furth, 2012). In the current study, $\alpha = .95$ at Time 1 and $.95$ at Time 2.

Dieting. Dieting was assessed using the Restraint subscale of the aforementioned Eating Disorder Examination-Questionnaire (EDE-Q 6.0; Fairburn & Beglin, 2008). There are five items that measure dietary restraint, as experienced over the past 28 days. These items, such as "Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?," are quantified on a 7-point scale from 0 = *no days* to 6 = *every day*, with the midpoint of 3 = *13-15 days*. These items were averaged to compute an overall dieting score, with higher scores reflecting higher dietary restraint. In the

original version of the EDE-Q, the Restraint subscale demonstrated good internal consistency in a sample of undergraduate women ($\alpha = .85$), and good test-retest reliability ($r = .81$) (Luce & Crowther, 1999). Furthermore, the Restraint subscale of the EDE-Q used in this study showed good convergent validity ($r = .37$) with frequency of regular meals (Berg, Peterson, Frazier, & Crow, 2012). In the current study, $\alpha = .81$ at Time 1 and $.85$ at Time 2.

Excessive Exercise. Excessive exercise was assessed using the following question from the Eating Disorder Examination-Questionnaire: “How many times have you exercised in a ‘driven’ or ‘compulsive’ way as a means of controlling your weight, shape or amount of fat, to burn off calories?” (EDE-Q 6.0; Fairburn & Beglin, 2008). Participants responded with their frequency of this type of exercise over the past 28 days.

Competitiveness. Items from the Hypercompetitive Attitude Scale (HCA) were used to assess an individual’s degree of competitiveness (Ryckman, Hammer, Kaczor, & Gold, 1990). This 26-item scale aims to measure hypercompetitiveness, a concept developed by Horney (1950) that describes a maladaptive, manipulating attitude toward competition. We used a short version of the HCA that included five items (e.g., “I compete with others even if they are not competing with me”) that measure competitiveness on a 5-point scale, where 1 = *strongly disagree* and 5 = *strongly agree*. Higher scores indicate a higher degree of competitiveness. Dru (2003) used factor analytic methods to identify a subset of nine items from the HCA that captured a core set of competitive tendencies; we selected the five of these that had the best face validity at capturing competitiveness in broad terms (e.g., excluded items referring to athletic competition or games/activities). While there is no information in the published literature on the psychometric properties of the 5-item scale that we used, it has been established that the 26-item

scale has strong internal consistency ($\alpha = .91$), and good test-retest reliability ($r = .81$) (Ryckman et al., 1990). Furthermore, it demonstrated convergent validity with a Win-at-any-Cost Sports Competition Scale ($r = .24$) (Ryckman et al., 1990). In the current study, $\alpha = .75$.

Analytic Strategy

I conducted descriptive analyses to obtain means, standard deviations, and percentiles, as relevant, for the study variables. I also conducted correlational analyses to identify relationships between the appearance-related factors of thin-ideal internalization and appearance contingent self-worth, the hypothesized moderator of competitiveness, and disordered eating attitudes and behaviors. To test the interactive models, I conducted a series of hierarchical multiple regression analyses following the guidelines prescribed by Cohen, Cohen, West, and Aiken (2003). In Step 1, the appearance-related independent variables (i.e., thin-ideal internalization or appearance contingent self-worth) and the moderator of competitiveness were entered simultaneously. In Step 2, the two-way interaction of the independent variable and the moderator was entered (e.g., thin-ideal internalization x competitiveness). I created interaction terms by multiplying together the appearance-related variable (i.e., thin-ideal internalization or appearance contingent self-worth) and competitiveness, both centered. I ran separate regression analyses for the dependent variables of body dissatisfaction, dieting, and excessive exercise and graphed significant interactions to determine the nature of the interactions.

Results

Attrition Analyses

The completers ($n = 237$), that is, those who participated in both Time 1 and Time 2 of the study, did not differ significantly from the noncompleters ($n = 204$), that is, those who only

completed Time 1 of the study, on thin-ideal internalization, appearance contingent self-worth, competitiveness, body dissatisfaction, dieting, excessive exercise, or the demographic variables of age, BMI, or highest parental education (used as a proxy for socioeconomic status) ($ps > .254$). Groups did differ, however, in the distribution of self-identified race; a significantly lower percentage of completers identified as Caucasian (69.1%) than did noncompleters (77.9%), $\chi(1) = 4.39, p = .040$.

Descriptive Statistics

Table 1 contains means and standard deviations for the full sample for the study variables at T1, as well as their correlations. As shown in Table 1, all correlations between the independent variables (i.e., thin-ideal internalization, appearance contingent self-worth, and competitiveness) and the dependent variables (i.e., body dissatisfaction, dieting, excessive exercise) were significant. Of note, it appears that both thin-ideal internalization and appearance-contingent self worth have a stronger bivariate relationship with body dissatisfaction and dieting compared with excessive exercise.

Thin-ideal internalization x competitiveness interaction predicting body dissatisfaction. Three categories of regression analyses were run to test the thin-ideal internalization x competitiveness interaction in relation to body dissatisfaction: cross-sectional (independent and dependent variables all from Time 1), prospective (independent variables from Time 1 and dependent variables from Time 2), and change (independent variables from Time 1 and dependent variables from Time 2, controlling for Time 1 levels of the dependent variables), the results of which are displayed in Table 2.

For the cross-sectional analyses, the thin-ideal internalization x competitiveness interaction was not significant in identifying levels of T1 body dissatisfaction, $t(1, 425) = 1.53$, $\beta = .06$, $\Delta R^2 = .003$, $p = .127$.

For the prospective analyses, the thin-ideal internalization and competitiveness interaction was significant in predicting T2 body dissatisfaction, $t(1, 229) = 2.11$, $\beta = .12$, $\Delta R^2 = .01$, $p = .036$. As depicted in Figure 1, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of T2 body dissatisfaction one year later. For all figures, high and low levels of the independent variables were determined by one standard deviation above and below the mean, respectively, with the exception of the graphs depicting the interactions of thin-ideal internalization and competitiveness in relation to T2 excessive exercise, both prospectively and controlling for initial levels of excessive exercise. In these two graphs, high and low levels of the independent variables were determined by one half of a standard deviation above and below the mean, respectively, in order to evade negative predicted values of T2 excessive exercise.

For the change analyses controlling for baseline levels of T1 body dissatisfaction, the thin-ideal internalization and competitiveness interaction was significant in predicting change in body dissatisfaction, $t(1, 228) = 2.69$, $\beta = .10$, $\Delta R^2 = .01$, $p = .008$. As depicted in Figure 2, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of body dissatisfaction one year later after controlling for initial levels of body dissatisfaction.

Thin-ideal internalization x competitiveness interaction predicting dieting. Three categories of regression analyses were run to test the thin-ideal internalization x competitiveness

interaction in relation to dieting: cross-sectional, prospective, and change, the results of which are displayed in Table 3.

For the cross-sectional analyses, the thin-ideal internalization x competitiveness interaction was significant in identifying levels of T1 dieting, $t(1, 425) = 4.22$, $\beta = .17$, $\Delta R^2 = .03$, $p < .001$. As depicted in Figure 3, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of T1 dieting.

For the prospective analyses, the thin-ideal internalization and competitiveness interaction was significant in predicting T2 dieting, $t(1, 229) = 1.99$, $\beta = .11$, $\Delta R^2 = .01$, $p = .048$. As depicted in Figure 4, and similar to the cross-sectional findings, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of dieting one year later.

For the change analyses controlling for baseline levels of T1 dieting, the thin-ideal internalization and competitiveness interaction was not significant in predicting change in dieting, $t(1, 228) = .57$, $\beta = .03$, $\Delta R^2 = .001$, $p = .571$.

Thin-ideal internalization x competitiveness interaction predicting excessive exercise. Three categories of regression analyses were run to test the thin-ideal internalization x competitiveness interaction in relation to excessive exercise: cross-sectional, prospective, and change, the results of which are displayed in Table 4.

For the cross-sectional analyses, the thin-ideal internalization x competitiveness interaction was significant in identifying levels of T1 excessive exercise, $t(1, 418) = 3.77$, $\beta = .17$, $\Delta R^2 = .03$, $p < .001$. As depicted in Figure 5, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of T1 excessive exercise.

For the prospective analyses, the thin-ideal internalization and competitiveness interaction was significant in predicting T2 excessive exercise, $t(1, 229) = 3.95$, $\beta = .25$, $\Delta R^2 = .06$, $p < .001$. As depicted in Figure 6, and similar to the cross-sectional findings, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of excessive exercise one year later.

For the change analyses controlling for baseline levels of T1 excessive exercise, the thin-ideal internalization and competitiveness interaction was significant in predicting change in excessive exercise, $t(1, 226) = 2.93$, $\beta = .18$, $\Delta R^2 = .03$, $p = .004$. As depicted in Figure 7, individuals who were high in thin-ideal internalization and were competitive exhibited the highest levels of excessive exercise one year later one year later after controlling for initial levels of excessive exercise.

Appearance contingent self-worth x competitiveness interaction predicting body dissatisfaction. Three categories of regression analyses were run to test the appearance contingent self-worth x competitiveness interaction in relation to body dissatisfaction: cross-sectional, prospective, and change, the results of which are displayed in Table 5.

For the cross-sectional analyses, the appearance contingent self-worth x competitiveness interaction was not significant in identifying levels of T1 body dissatisfaction, $t(1, 428) = .47$, $\beta = .02$, $\Delta R^2 = .00$, $p = .638$.

For the prospective analyses, the appearance contingent self-worth and competitiveness interaction was not significant in predicting T2 body dissatisfaction, $t(1, 229) = 1.11$, $\beta = .07$, $\Delta R^2 = .004$, $p = .269$.

For the change analyses controlling for baseline levels of T1 body dissatisfaction, the appearance contingent self-worth and competitiveness interaction was not significant in predicting change in body dissatisfaction, $t(1, 228) = 1.36$, $\beta = .05$, $\Delta R^2 = .003$, $p = .177$.

Appearance contingent self-worth x competitiveness interaction predicting dieting.

Three categories of regression analyses were run to test the appearance contingent self-worth x competitiveness interaction in relation to dieting: cross-sectional, prospective, and change, the results of which are displayed in Table 6.

For the cross-sectional analyses, the appearance contingent self-worth x competitiveness interaction was significant in identifying levels of T1 dieting, $t(1, 428) = 2.36$, $\beta = .10$, $\Delta R^2 = .01$, $p = .019$. As depicted in Figure 8, individuals who were high in appearance contingent self-worth and were competitive exhibited the highest levels of T1 dieting.

For the prospective analyses, the appearance contingent self-worth and competitiveness interaction was not significant in predicting T2 dieting, $t(1, 229) = 1.20$, $\beta = .07$, $\Delta R^2 = .01$, $p = .233$.

For the change analyses controlling for baseline levels of T1 dieting, the appearance contingent self-worth and competitiveness interaction was not significant in predicting change in dieting, $t(1, 228) = .44$, $\beta = .02$, $\Delta R^2 = .00$, $p = .662$.

Appearance contingent self-worth x competitiveness interaction predicting excessive exercise. Three categories of regression analyses were run to test the appearance contingent self-worth x competitiveness interaction in relation to excessive exercise: cross-sectional, prospective, and change, the results of which are displayed in Table 7.

For the cross-sectional analyses, the appearance contingent self-worth x competitiveness interaction was significant in identifying levels of T1 excessive exercise, $t(1, 421) = 2.73$, $\beta = .13$, $\Delta R^2 = .02$, $p = .007$. As depicted in Figure 9, individuals who were high in appearance contingent self-worth and were competitive exhibited the highest levels of T1 excessive exercise.

For the prospective analyses, the appearance contingent self-worth and competitiveness interaction was not significant in predicting T2 excessive exercise, $t(1, 229) = 1.38$, $\beta = .09$, $\Delta R^2 = .01$, $p = .169$.

For the change analyses controlling for baseline levels of T1 excessive exercise, the appearance contingent self-worth and competitiveness interaction was not significant in predicting change in excessive exercise, $t(1, 226) = 1.22$, $\beta = .07$, $\Delta R^2 = .01$, $p = .224$.

Discussion

As expected, the present study showed a pattern of significant positive correlations between appearance contingent self-worth, thin-ideal internalization, competitiveness, body dissatisfaction, dieting, and excessive exercise. It is noteworthy that appearance contingent self-worth and thin-ideal internalization both appeared to have stronger bivariate relationships with body dissatisfaction and dieting compared with excessive exercise. Perhaps excessive exercise is less narrowly appearance-focused than body dissatisfaction and dieting. It is possible that individuals are dissatisfied with their bodies and turn to dieting because they want to be thinner, but these same individuals over-exercise for a wider variety of motivations, including a desire to be thinner, but also including an aspiration to be healthy or an intrinsic motivation for accomplishment.

In the cross-sectional analyses, the thin-ideal internalization x competitiveness interaction was significant in identifying T1 dieting and excessive exercise, but was not significant in identifying T1 body dissatisfaction. Similarly, the appearance contingent self-worth interaction was significant in identifying T1 dieting and excessive exercise, but was not significant in identifying T1 body dissatisfaction. This suggests that individuals who are high in thin-ideal internalization or appearance contingent self-worth and who are competitive are more likely to exhibit dieting and excessive exercise (but not body dissatisfaction) than individuals who are only high in thin-ideal internalization or appearance contingent self-worth, or who are only high in competitiveness. It could be that competitiveness only moderates the relationship between concurrent appearance-related factors and disordered eating behaviors (i.e., dieting and excessive exercise) and not attitudes (i.e., body dissatisfaction). Perhaps the combination of being appearance-focused and competitive encourages deliberate action in the form of food restriction and over-exercise as attempts to “catch up” to their peers who may be perceived as outperforming them in appearance. On the other hand, appearance-focused individuals may not need the extra boost of competitiveness in order to feel dissatisfied with their bodies, which does not require planning or action like dieting and exercise do. In this way, dieting and excessive exercise may serve as appearance-focused individuals’ attempts to approximate the appearance-level of their peers when they realize they do not match up, or alternatively, these behaviors may serve as ways to continue to gain fulfillment from outperforming others in the appearance domain if they believe that they do match up.

Compared to the cross-sectional analyses, the prospective analyses showed a different pattern of results. The thin-ideal internalization x competitiveness interaction was significant in

predicting T2 body dissatisfaction, dieting, and excessive exercise, whereas the appearance contingent self-worth interaction was not significant in predicting T2 body dissatisfaction, dieting, or excessive exercise. This suggests that individuals who are high in thin-ideal internalization (but not appearance contingent self-worth) and who are competitive are more likely to exhibit body dissatisfaction, dieting, and excessive exercise one year later than individuals who are only high in thin-ideal internalization or appearance contingent self-worth, or who are only high in competitiveness. Because the thin-ideal internalization x competitiveness interaction has predictive power while the appearance contingent self-worth x competitiveness interaction does not, it appears that there is something in particular about buying into and striving for the thin ideal that interacts with competitiveness to produce disordered eating attitudes and behaviors. Individuals high in appearance contingent self-worth derive their sense of self-esteem from others' approval of their appearance. Appearance approval may include liking of one's outfit, makeup, hair style, or body shape. Therefore, it may be pursued in multiple ways and not just limited to dieting and exercise. Additionally, it seems to be that thin-ideal internalization has a more competitive element inherent in it than appearance contingent self-worth, given that thin-ideal internalization entails buying into the importance of the thin ideal and believing one should *strive* for it. Therefore, the combination of thin-ideal internalization and competitiveness may be powerful enough to predict changes in the body dissatisfaction, dieting, and excessive exercise over time. In this way, we start to see the differences between thin-ideal internalization and appearance contingent self-worth, as they do not interact the same way with competitiveness.

The change analyses controlling for baseline levels of Time 1 body dissatisfaction, dieting, and excessive exercise showed a similar pattern to the prospective analyses. The thin ideal internalization x competitiveness interaction was significant in predicting T2 body dissatisfaction and excessive exercise (but not dieting) one year later, controlling for baseline levels of body dissatisfaction and excessive exercise. The appearance contingent self-worth x competitiveness interaction was not significant in predicting T2 body dissatisfaction, dieting, or excessive exercise. In this way, individuals high in thin-ideal internalization (but not appearance contingent self-worth) and who are competitive are more likely to exhibit change (increases) in body dissatisfaction and excessive exercise (but not dieting) one year later than individuals who are only high in thin-ideal internalization or appearance contingent self-worth, or who are only high in competitiveness. It is unclear why the thin-ideal internalization x competitiveness interaction did not apply to change in dieting. Future research is needed to replicate and understand this finding.

The current research extends our knowledge in important ways. Not all people who internalize the thin ideal or whose self-worth is highly dependent on their appearance will develop disordered eating attitudes and behaviors. Therefore, it is crucial to be able to identify which individuals are most at risk for developing these maladaptive attitudes and behaviors so that we can create effective interventions. Proactively, if we can identify individuals that are both highly competitive and high in thin-ideal internalization or appearance contingent self-worth, we can intervene in order to prevent eating- and body-related pathology. For example, to counter competitiveness, we can design team-building programs or teach groups about community activism to encourage cooperativeness instead of competitiveness, and to counter

thin-ideal internalization and appearance contingent self-worth, we can use a cognitive dissonance intervention. Given that competitiveness does interact with these appearance-related factors, at-risk groups may include those who are encouraged to be competitive, such as athletes, dancers, and individuals who participate in academic competitions. The interactive prospective and change findings have clinical implications in that intervening by decreasing competitiveness or challenging the thin ideal should contribute to decreases in body dissatisfaction, dieting, and excessive exercise. In sum, psychologists interested in designing interventions and therapists working with individuals with disordered eating could use these findings to guide their prevention and treatment efforts.

The current study has several strengths. The introduction of competitiveness as it relates to the independent and dependent variables is novel and adds to the crucial understanding of which individuals are likely to develop eating disorder symptoms. Additionally, to my knowledge, this is the first study that directly compares thin-ideal internalization and appearance contingent self-worth in relation to body dissatisfaction, dieting, and excessive exercise. Because both independent variables are appearance-related but do not interact with competitiveness in exactly the same way, it is important to distinguish them in both research and practice. Another strength is that the longitudinal design permitted cross-sectional analyses, prospective analyses, and change analyses predicting body dissatisfaction, dieting, and excessive exercise after controlling for initial levels.

Some limitations include generalizability, a higher rate of attrition than desired, significant differences between completers and noncompleters in regard to race, and lack of psychometric data for the excessive exercise construct. While a predominantly white

undergraduate female sample is appropriate given the high occurrence of disordered eating symptomology in this population, the generalizability of these findings to other groups is unclear. These groups include men, racial minorities, and adolescents, all who are affected by eating disorders. Second, only 54% of the T1 participants completed T2, which represented 67% of those who agreed to be contacted for T2. This is a higher rate of attrition than desired. However, the T2 subsample did not differ on the core study variables. Third, a significantly lower percentage of completers identified as Caucasian than did noncompleters. It is unknown why this occurred or what the implications are. Lastly, excessive exercise was measured by a single item, which limits the ability to draw conclusions about this construct. Furthermore, we do not know specific information about the excessive exercise, such as its duration, intensity, or compulsive nature, which may be helpful in further characterizing exercise in meaningful ways in relation to pathology. It should be noted, however, that other studies have found using one item to assess similar constructs to be a reliable approach (e.g., Joiner and Tickle, 1988; Mechanic and Hansell, 1987).

Future research directions should include collecting data on a more diverse sample, which would increase the generalizability of the results in terms of gender, race, and age. It would be interesting to test a sample with a wide array of socioeconomic statuses (SES), as low SES individuals do not have the same degrees of freedom of behavior as middle to high SES individuals. In particular, low SES individuals may not have the same access to diet foods or safe places to exercise as high SES individuals, which may affect their frequency or patterns of disordered eating behaviors. Also, it would be interesting to see if these interaction effects hold

up or are amplified in a sample of men, given that society generally encourages and rewards competitiveness in men, as opposed to cooperativeness in women.

Future research should also continue to explore differences between thin-ideal internalization and appearance contingent self-worth, as this information may yield important disparities in which individuals may be most at risk for eating disorder symptoms. Lastly, it may be interesting to investigate the potentially differential effects of competitiveness and competition on these relationships between appearance-related factors and disordered eating attitudes and behaviors. While competitiveness is trait-level and thereby relatively stable over time, competition is state-level and fluctuates according to the circumstances and situation. It would be interesting to see if situational competition with other individuals, especially if it is repeated over time such as on a sports team or a reality television dating show, interacts with appearance-related factors in a similar way to trait competitiveness.

In sum, thin-ideal internalization and appearance contingent self-worth both interact with competitiveness concurrently to identify dieting and excessive exercise (but not body dissatisfaction). Results also exhibited predictive value; individuals who were high in thin-ideal internalization (but not appearance contingent self-worth) and high in competitiveness were most likely to exhibit body dissatisfaction, dieting, and excessive exercise one year later. Lastly, after controlling for baseline levels of the dependent variables, results showed that individuals who were high in thin-ideal internalization (but not appearance contingent self-worth) and high in competitiveness were most likely to exhibit increases in body dissatisfaction and excessive exercise (but not dieting) one year later. Thus, given the support of competitiveness as a moderator of some of the relationships between appearance-related factors and disordered eating

attitudes and behaviors, the current study provides researchers and clinicians with a better understanding of which individuals experience body dissatisfaction, dieting, and excessive exercise. Overall, competitiveness looks promising as a potential risk factor for eating disorder-related attitudes and behaviors.

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Table 1

Correlations Among Means and Standard Deviations of Time 1 Measures

Variable	1	2	3	4	5	6	M	SD
1. Appearance Contingent Self-Worth	-	.40**	.24**	.49**	.43**	.18**	5.12	0.94
2. Thin-Ideal Internalization		-	.29**	.59**	.54**	.32**	17.18	4.42
3. Competitiveness			-	.22**	.26**	.20**	17.39	3.89
4. Body Dissatisfaction				-	.77**	.31**	2.33	1.59
5. Dieting					-	.38**	0.89	1.14
6. Excessive Exercise						-	3.20	7.45

Note. ** $p < .01$.

Table 2

Hierarchical Multiple Regression Analyses of the Interaction of Thin-Ideal Internalization and Competitiveness Predicting Body Dissatisfaction Cross-Sectionally and Longitudinally (With and Without Controlling for Baseline Levels)

Step and predictors	B	SE B	β	t (dfs)	ΔR^2
Step 1	DV = Body Dissatisfaction T1				.36***
Thin-Ideal Internalization	0.21	0.02	0.58***	14.38 (2, 426)	
Competitiveness	0.02	0.02	0.05	1.33 (2, 426)	
Step 2	Thin-Ideal Internalization x Competitiveness				.003
	0.01	0.004	0.06	1.53 (1, 425)	
Step 1	DV = Body Dissatisfaction T2				.24***
Thin-Ideal Internalization	0.17	0.02	0.46***	7.67 (2, 230)	
Competitiveness	0.04	0.03	0.09	1.48 (2, 230)	
Step 2	Thin-Ideal Internalization x Competitiveness				.01*
	0.01	0.01	0.12*	2.11 (1, 229)	
Step 1	DV = Body Dissatisfaction T2				.66***
Body Dissatisfaction T1	0.79	0.04	0.81***	21.01 (1, 231)	
Step 2	Thin-Ideal Internalization				.004
	-0.001	0.02	-0.004	-.08 (2, 229)	
Competitiveness	0.03	0.02	0.07	1.71 (2, 229)	
Step 3	Thin-Ideal Internalization x Competitiveness				.01**
	0.01	0.004	0.10**	2.69 (1, 228)	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Hierarchical Multiple Regression Analyses of the Interaction of Thin-Ideal Internalization and Competitiveness Predicting Dieting Cross-Sectionally and Longitudinally (With and Without Controlling for Baseline Levels)

Step and predictors	B	SE B	β	t (dfs)	ΔR^2
Step 1	DV = Dieting T1				.31***
Thin-Ideal Internalization	0.13	0.01	0.51***	12.08 (2, 426)	
Competitiveness	0.03	0.01	0.11**	2.65 (2, 426)	
Step 2	Thin-Ideal Internalization x Competitiveness				.03***
	0.01	0.003	0.17***	4.22 (1, 425)	
Step 1	DV = Dieting T2				.25***
Thin-Ideal Internalization	0.14	0.02	0.45***	7.53 (2, 230)	
Competitiveness	0.04	0.02	0.11	1.85 (2, 230)	
Step 2	Thin-Ideal Internalization x Competitiveness				.01*
	0.01	0.004	0.11*	1.99 (1, 229)	
Step 1	DV = Dieting T2				.43***
Dieting T1	0.76	0.06	0.65***	13.09 (1, 231)	
Step 2	Thin-Ideal Internalization				.02*
	0.05	0.02	0.15*	2.54 (2, 229)	
Competitiveness	0.02	0.02	0.06	1.09 (2, 229)	
Step 3	Thin-Ideal Internalization x Competitiveness				.001
	0.002	0.004	0.03	.57 (1, 228)	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4

Hierarchical Multiple Regression Analyses of the Interaction of Thin-Ideal Internalization and Competitiveness Predicting Excessive Exercise Cross-Sectionally and Longitudinally (With and Without Controlling for Baseline Levels)

Step and predictors	B	SE B	β	t (dfs)	ΔR^2
Step 1	DV = Excessive Exercise T1				.12***
Thin-Ideal Internalization	0.49	0.08	0.29***	6.01 (2, 419)	
Competitiveness	0.23	0.09	0.12*	2.45 (2, 419)	
Step 2	Thin-Ideal Internalization x Competitiveness				.03***
	0.07	0.02	0.17***	3.77 (1, 418)	
Step 1	DV = Excessive Exercise T2				.07**
Thin-Ideal Internalization	0.32	0.12	0.18**	2.70 (2, 230)	
Competitiveness	0.27	0.13	0.14*	2.03 (2, 230)	
Step 2	Thin-Ideal Internalization x Competitiveness				.06***
	0.11	0.03	0.25***	3.95 (1, 229)	
Step 1	DV = Excessive Exercise T2				.18***
Excessive Exercise T1	0.57	0.08	0.42***	7.00 (1, 229)	
Step 2	Thin-Ideal Internalization				.01
	0.08	0.12	0.05	.69 (2, 227)	
Competitiveness	0.19	0.13	0.10	1.53 (2, 227)	
Step 3	Thin-Ideal Internalization x Competitiveness				.03**
	0.08	0.03	0.18**	2.93 (1, 226)	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5

Hierarchical Multiple Regression Analyses of the Interaction of Appearance Contingent Self-Worth and Competitiveness Predicting Body Dissatisfaction Cross-Sectionally and Longitudinally (With and Without Controlling for Baseline Levels)

Step and predictors	B	SE B	β	t (dfs)	ΔR^2
Step 1	DV = Body Dissatisfaction T1				.25***
Appearance Contingent Self-Worth	0.79	0.07	0.46***	10.79 (2, 429)	
Competitiveness	0.05	0.02	0.11*	2.59 (2, 429)	
Step 2					0.00
Appearance Contingent Self-Worth x Competitiveness	0.01	0.02	0.02	.47 (1, 428)	
Step 1	DV = Body Dissatisfaction T2				.20***
Appearance Contingent Self-Worth	0.65	0.10	0.39***	6.44 (2, 230)	
Competitiveness	0.06	0.03	0.14*	2.31 (2, 230)	
Step 2					.004
Appearance Contingent Self-Worth x Competitiveness	0.03	0.02	0.07	1.11 (1, 229)	
Step 1	DV = Body Dissatisfaction T2				.66***
Body Dissatisfaction T1	0.79	0.04	0.81***	21.01 (1, 231)	
Step 2					.01
Appearance Contingent Self-Worth	0.06	0.07	0.04	.86 (2, 229)	
Competitiveness	0.03	0.02	0.06	1.59 (2, 229)	
Step 3					.003
Appearance Contingent Self-Worth x Competitiveness	0.02	0.02	0.05	1.36 (1, 228)	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6

Hierarchical Multiple Regression Analyses of the Interaction of Appearance Contingent Self-Worth and Competitiveness Predicting Dieting Cross-Sectionally and Longitudinally (With and Without Controlling for Baseline Levels)

Step and predictors	B	SE B	β	<i>t</i> (<i>dfs</i>)	ΔR^2
Step 1	DV = Dieting T1				.21***
Appearance Contingent Self-Worth	0.48	0.05	0.39***	8.94 (2, 429)	
Competitiveness	0.05	0.01	0.17***	3.78 (2, 429)	
Step 2					.01*
Appearance Contingent Self-Worth x Competitiveness	0.03	0.01	0.10*	2.36 (1, 428)	
Step 1	DV = Dieting T2				.16***
Appearance Contingent Self-Worth	0.44	0.09	0.32***	5.11 (2, 230)	
Competitiveness	0.06	0.02	0.18**	2.82 (2, 230)	
Step 2					.01
Appearance Contingent Self-Worth x Competitiveness	0.03	0.02	0.07	1.20 (1, 229)	
Step 1	DV = Dieting T2				.43***
Dieting T1	0.76	0.06	0.65***	13.09 (1, 231)	
Step 2					.01
Appearance Contingent Self-Worth	0.08	0.08	0.06	.97 (2, 229)	
Competitiveness	0.03	0.02	0.08	1.46 (2, 229)	
Step 3					0.00
Appearance Contingent Self-Worth x Competitiveness	0.01	0.02	0.02	.44 (1, 228)	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7

Hierarchical Multiple Regression Analyses of the Interaction of Appearance Contingent Self-Worth and Competitiveness Predicting Excessive Exercise Cross-Sectionally and Longitudinally (With and Without Controlling for Baseline Levels)

Step and predictors	B	SE B	β	t (dfs)	ΔR^2
Step 1	DV = Excessive Exercise T1				.06***
Appearance Contingent Self-Worth	1.11	0.39	0.14**	2.85 (2, 422)	
Competitiveness	0.32	0.09	0.17**	3.42 (2, 422)	
Step 2					.02**
Appearance Contingent Self-Worth x Competitiveness	0.24	0.09	0.13**	2.73 (1, 421)	
Step 1	DV = Excessive Exercise T2				.05**
Appearance Contingent Self-Worth	1.10	0.53	0.14*	2.08 (2, 230)	
Competitiveness	0.32	0.13	0.16*	2.41 (2, 230)	
Step 2					.01
Appearance Contingent Self-Worth x Competitiveness	0.17	0.13	0.09	1.38 (1, 229)	
Step 1	DV = Excessive Exercise T2				.18***
Excessive Exercise T1	0.57	0.08	0.42***	7.00 (1, 229)	
Step 2					.02
Appearance Contingent Self-Worth	0.55	0.50	0.07	1.11 (2, 227)	
Competitiveness	0.19	0.12	0.09	1.52 (2, 227)	
Step 3					.01
Appearance Contingent Self-Worth x Competitiveness	0.14	0.12	0.07	1.22 (1, 226)	

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

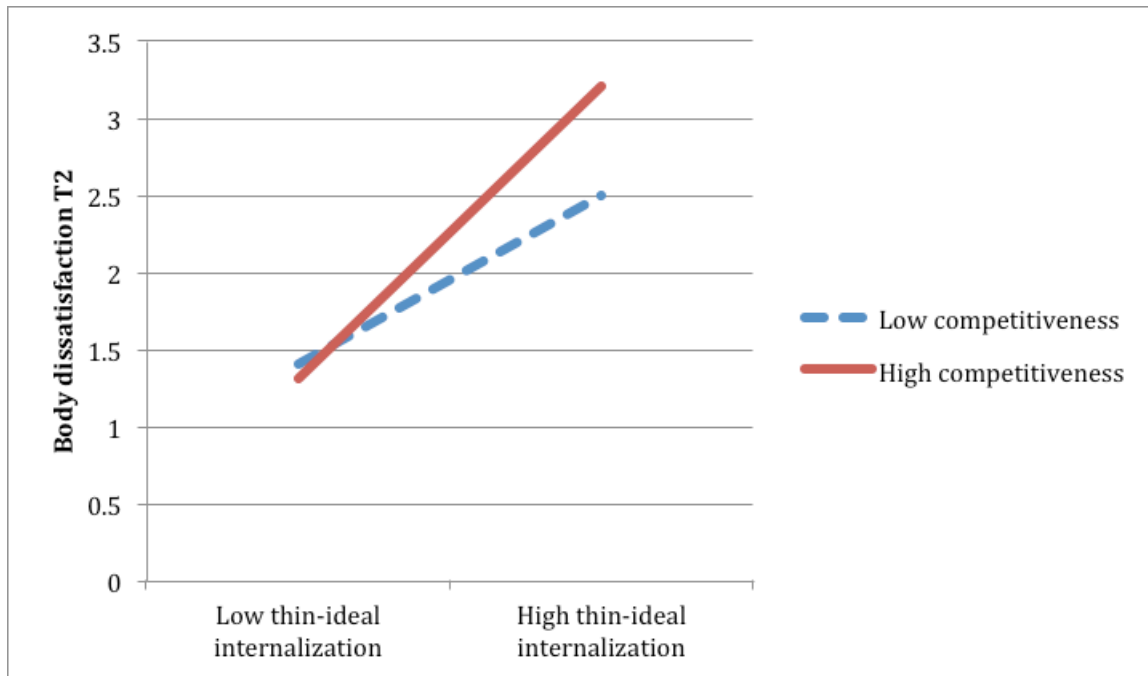


Figure 1. Interaction of thin-ideal internalization and competitiveness predicting Time 2 (T2) body dissatisfaction (prospective analyses).

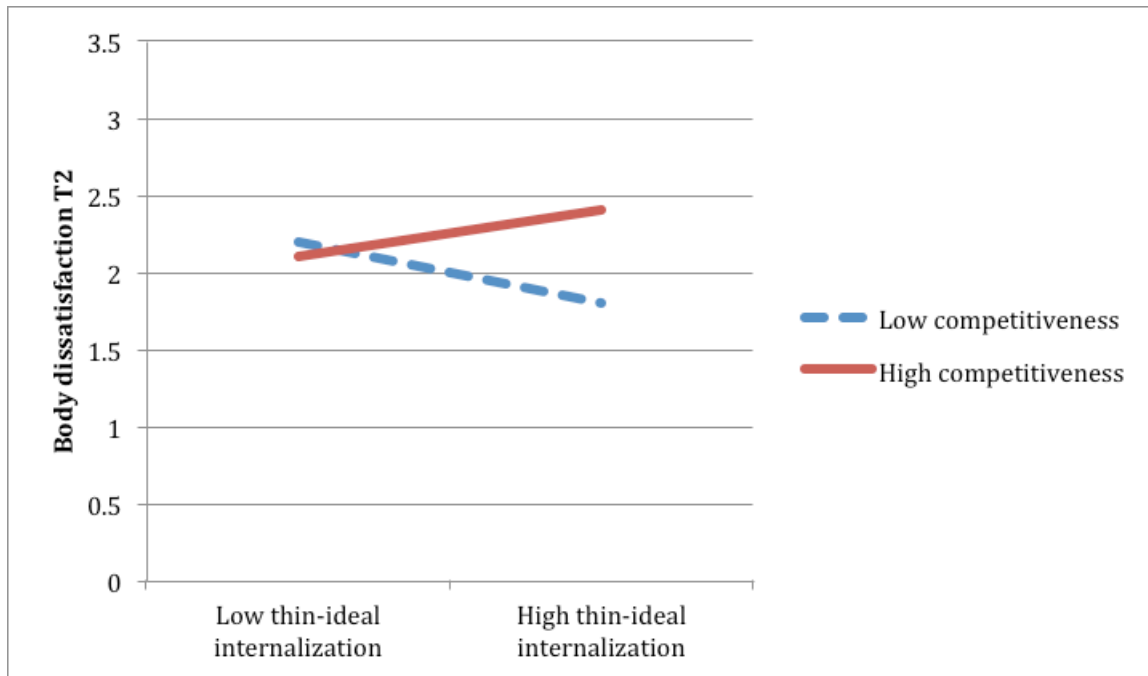


Figure 2. Interaction of thin-ideal internalization and competitiveness predicting Time 2 (T2) body dissatisfaction, controlling for Time 1 levels of body dissatisfaction (change analyses).

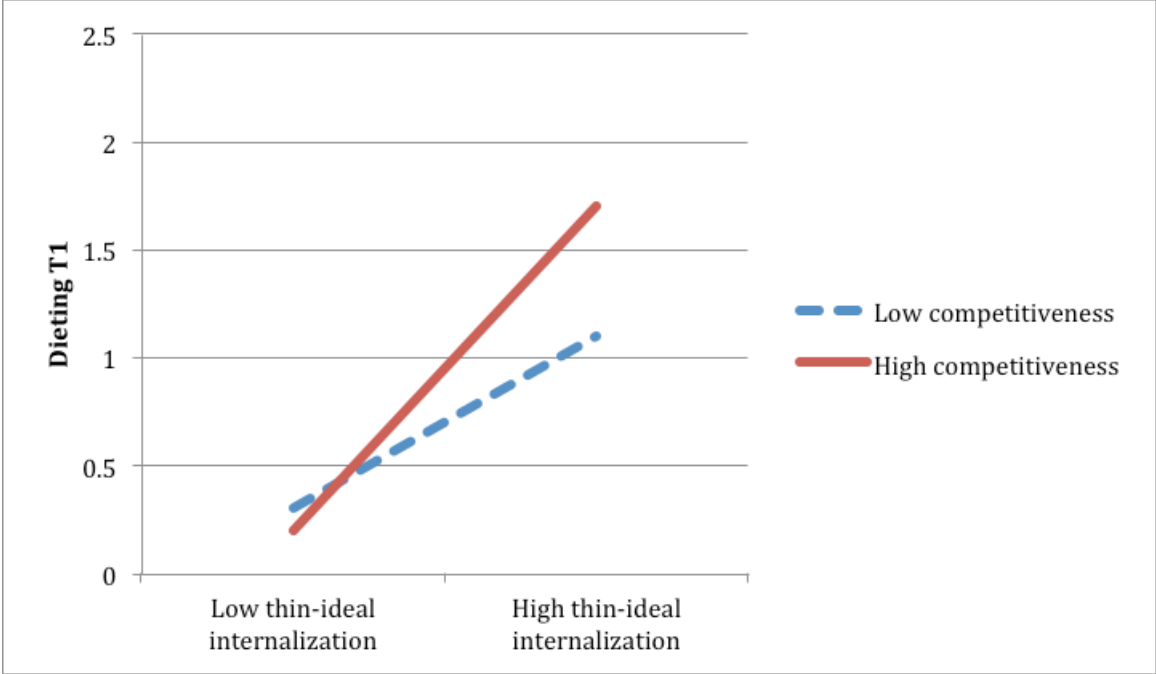


Figure 3. Interaction of thin-ideal internalization and competitiveness in relation to Time 1 (T1) dieting (cross-sectional analyses).

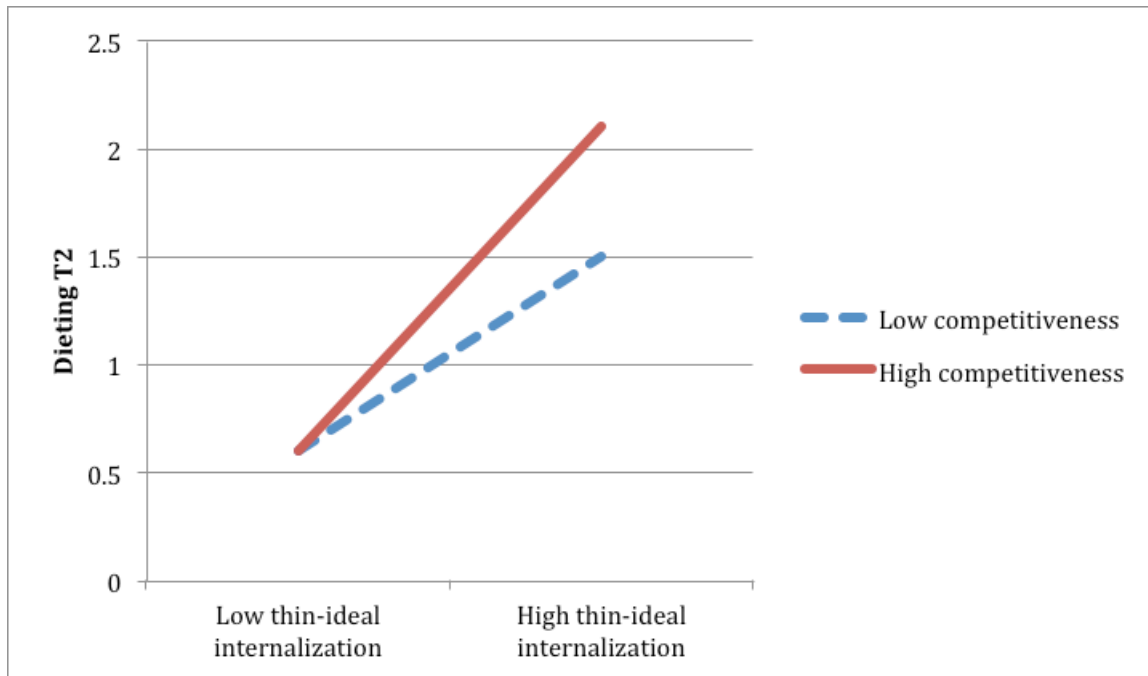


Figure 4. Interaction of thin-ideal internalization and competitiveness predicting Time 2 (T2) dieting (prospective analyses).

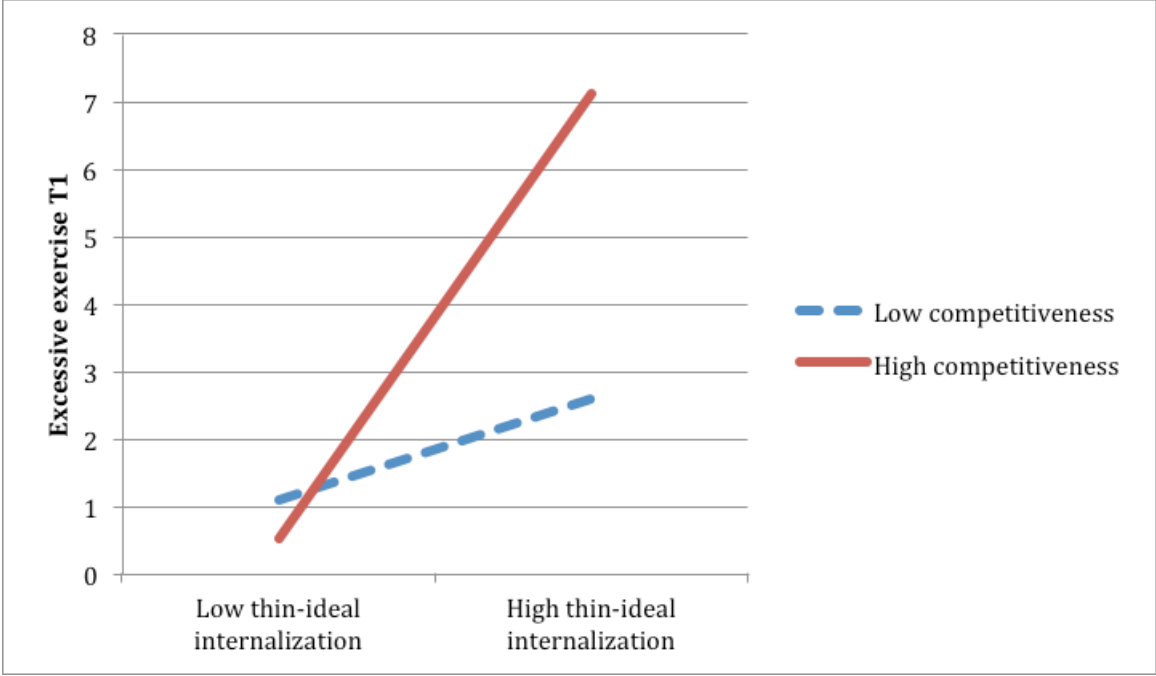


Figure 5. Interaction of thin-ideal internalization and competitiveness in relation to Time 1 (T1) excessive exercise (cross-sectional analyses).

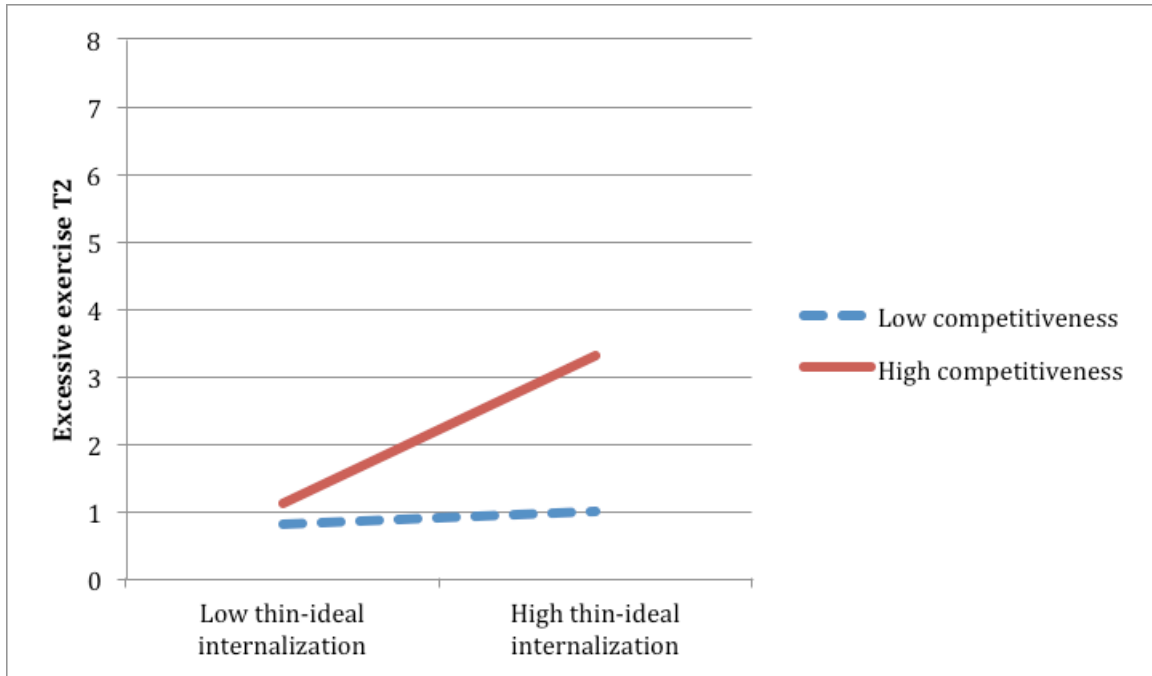


Figure 6. Interaction of thin-ideal internalization and competitiveness predicting Time 2 (T2) excessive exercise (prospective analyses).

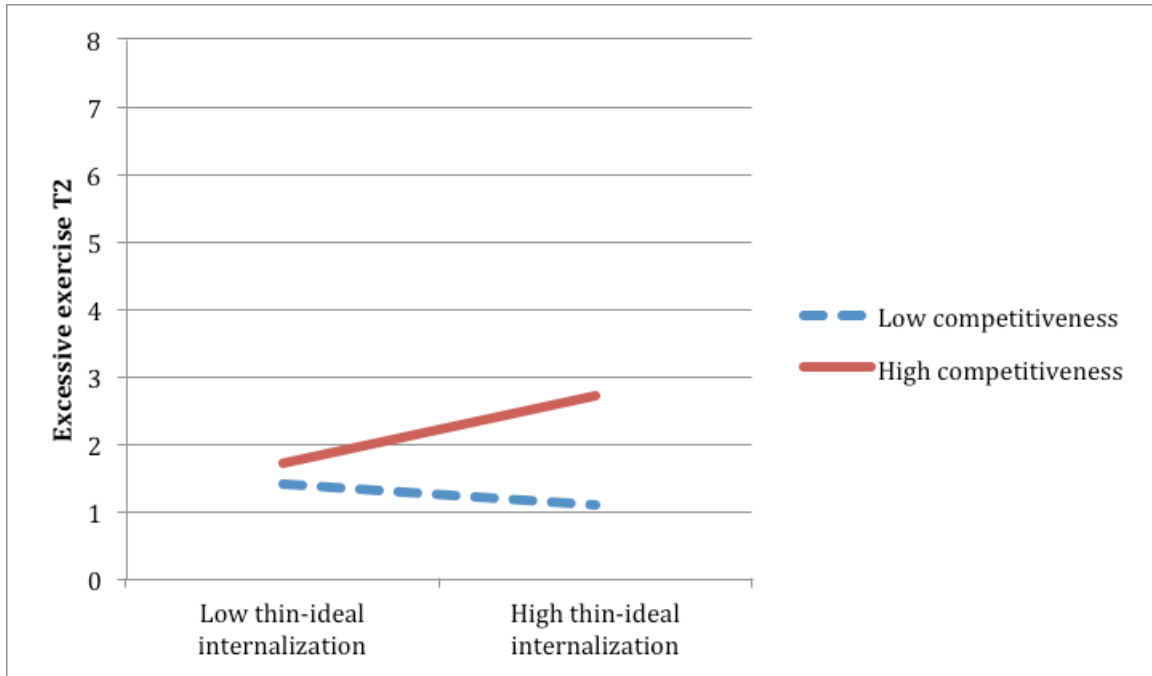


Figure 7. Interaction of thin-ideal internalization and competitiveness in relation to Time 2 (T2) excessive exercise, controlling for Time 1 levels of excessive exercise (change analyses).

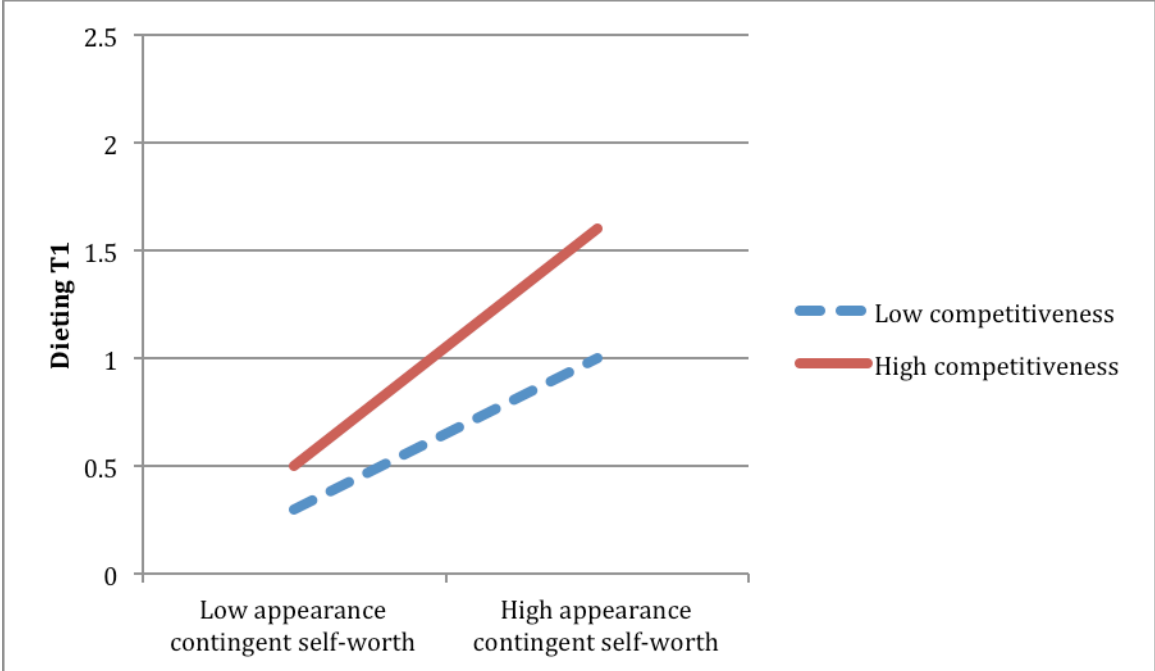


Figure 8. Interaction of appearance contingent self-worth and competitiveness in relation to Time 1 (T1) dieting (cross-sectional analyses).

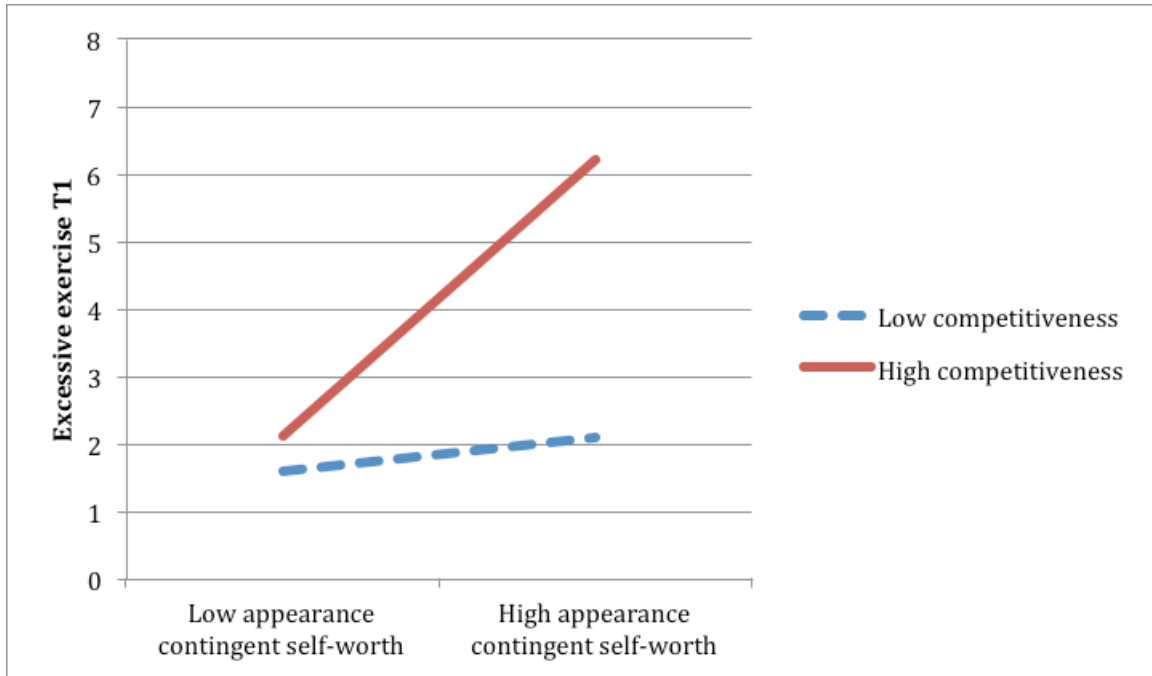


Figure 9. Interaction of appearance contingent self-worth and competitiveness in relation to Time 1 (T1) excessive exercise (cross-sectional analyses).