

## Appearance vs. health motives for exercise and for weight loss

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### ABSTRACT

**Objective:** This study had three primary aims: (1) to investigate differences between restrained and unrestrained eaters in their reasons for exercise and their motives for losing weight; (2) to investigate the association of appearance and health motives for exercise and for losing weight with body image concerns; and (3) to determine whether appearance motives for exercise and for losing weight mediate the link between internalized societal standards of attractiveness and body image concerns.

**Design:** Cross-sectional survey.

**Method:** 205 women completed measures of dietary restraint, reasons for exercise, motivation for losing weight, internalization of societal standards of attractiveness, and body image concerns.

**Results:** Unrestrained eaters were more motivated to exercise and to lose weight for health reasons than for appearance reasons, whereas restrained eaters were equally motivated by appearance and health reasons. Appearance-based motives for exercising and for losing weight were positively associated with body image concerns, whereas health-related reasons for exercise were negatively associated with body image concerns. Furthermore, in a multiple mediation analysis, appearance motives for weight loss mediated the relation between internalization of societal standards of attractiveness and body image concerns, but appearance reasons for exercise did not.

**Conclusion:** These findings indicate that appearance-based motives for exercise and weight loss are associated with negative outcomes. Efforts to promote exercise and weight management should emphasize the health benefits rather than the implications for appearance.

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### Introduction

Exercise and weight management are important components of a healthy lifestyle. Regular exercise has benefits for overall health, for mood, and for maintaining a healthy weight. Exercise improves muscle strength, combats chronic disease, improves cardiovascular health, and lowers blood pressure and cholesterol (e.g., Brown, Mishra, Lee, & Bauman, 2000; Haskell et al., 2007). Exercise can also improve an individual's mood as it promotes better sleep (Youngstedt & Klein, 2006); reduces depression, stress, and anxiety (Mead et al., 2009); and increases self-esteem and body esteem (Martin & Lichtenberger, 2002; Spence, McGannon, & Poon, 2005). In addition, exercise can help individuals to reduce or manage their weight (Gillison, Standage, & Skevington, 2006) and subsequently aid in preventing obesity and obesity-related illnesses.

Despite the numerous physical and psychological benefits associated with exercise, there exist potential negative outcomes associated with particular motivations for exercise. For example, individuals who are motivated to exercise in order to improve their appearance, as opposed to improve their health, tend to have higher levels of disordered eating and body dissatisfaction, decreased self-esteem (Thome & Espelage, 2007), increased social physique anxiety (Crawford & Eklund, 1994), and decreased psychological well-being (Maltby & Day, 2001). In contrast, exercising for health/fitness reasons has been associated with more positive effects such as increased body satisfaction, increased self-esteem (Strelan, Mehaffey, & Tiggemann, 2003), and greater overall psychological well-being (Maltby & Day, 2001). Furthermore, working from the perspective of self-determination theory, Sebire, Standage, and Vanstreenkiste (2008, 2009) have suggested that health-related motives for exercise can be considered intrinsic motives, whereas physical appearance motives can be considered extrinsic motives. Those authors found that exercising for intrinsic motives was related to greater physical self-worth and greater psychological well-being, and to lower exercise anxiety (Sebire et al., 2009).

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Just as an individual's motivation for exercise can be associated with negative psychological outcomes, an individual's general motivation for losing weight can be associated with negative outcomes as well. For example, being motivated to lose weight in order to change one's appearance may predispose an individual to engage in more extreme dieting strategies and eating disordered behaviors (e.g., excluding food groups, avoiding meals, using laxatives, and vomiting; Putterman & Linden, 2004). Individuals who are motivated to lose weight for health-related reasons, in contrast, are less likely to use such extreme dieting techniques, are less likely to lapse in their diet, and experience less body dissatisfaction and greater self-esteem. Thus, not all motives for weight loss are equally beneficial or harmful (Putterman & Linden, 2004).

#### *Dietary restraint and motives for exercise and weight loss*

Restrained eaters (or chronic dieters) are individuals who are preoccupied with their body weight and shape and who try to regulate their food intake as a means of controlling their weight and shape (Herman & Polivy, 1980). Restraint eating is also associated with greater motivation to lose weight for appearance reasons (vs. health reasons; Putterman & Linden, 2004). Although a considerable amount is known about the eating behaviors and body image concerns of restrained eaters, relatively little is known about their exercise habits and motives. This can be particularly important given that 66% of women who are trying to lose weight report doing so through exercise (Bish et al., 2005). The few extant studies have found no differences in levels of physical activity or exercise reported by restrained and unrestrained eaters (Klesges, Isbell, & Klesges, 1992; Mulvihill, Davies, & Rogers, 2002). Furthermore, Vartanian and Herman (2006) found that restrained eaters and unrestrained eaters were equally likely to believe that body weight can be controlled through exercise, and this belief was positively correlated with self-reported frequency of exercise behavior for both groups. Considering the work of Putterman and Linden (2004), it may be that the similarities between restrained and unrestrained eaters with respect to exercise behaviors and beliefs are the result of different underlying motives (Vartanian & Herman, 2006). Specifically, restrained eaters may be more driven to exercise for appearance reasons and unrestrained eaters may be more driven to exercise for health reasons. If restrained eaters are indeed more driven to exercise for appearance reasons, this might then exacerbate their negative body image, contributing to a vicious cycle.

#### *Self-objectification and internalization of societal standards of attractiveness*

Self-objectification has played an important role in our understanding of appearance motives for exercise and its relation to body dissatisfaction. According to Objectification Theory (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998), women in Westernized cultures are pressured to have thin and attractive bodies, and women therefore come to believe that their bodies are sexual objects to be observed by others. Self-objectification occurs when individuals internalize the view that they are sexual objects and that they should conform to cultural body ideals and be sexually attractive. Self-objectification is associated with appearance anxiety, body dissatisfaction, lower self-esteem and body esteem, restrained eating, and disordered eating (Noll & Fredrickson, 1998; Strelan et al., 2003). A result of this self-objectification is that women are often more motivated to exercise for appearance-enhancement reasons, including exercising to manage their weight, improve their body tone, and enhance their attractiveness (Strelan et al., 2003). In particular, research with undergraduate

students (Prichard & Tiggemann, 2005) and with women attending fitness centers (Prichard & Tiggemann, 2008; Strelan et al., 2003) has found that the relationship between self-objectification and body esteem was mediated by appearance-related reasons for exercise.

A precursor to self-objectification may be a more general internalization of societal standards of attractiveness (i.e., thinness for women and muscularity for men). Internalization reflects the extent to which individuals endorse societal standards of attractiveness as personally relevant beliefs: Although most people are exposed to the same media images and societal pressures regarding attractiveness, not everyone internalizes those standards to the same degree (Thompson & Stice, 2001). Research has consistently shown that internalization of societal standards of attractiveness is related to body dissatisfaction, which in turn is related to disordered eating behavior (Keery, van den Berg, & Thompson, 2004; Vartanian, 2009; Vartanian & Hopkinson, 2010). Importantly, internalization has been shown to mediate the link between exposure to beauty magazines and self-objectification (Morry & Staska, 2001), as well as the link between objectification experiences and self-objectification (Moradi, Dirks, & Matteson, 2005). No study to date, however, has examined the association between internalization and people's motivation to exercise and to lose weight.

#### *The present study*

The present study had three primary aims. First, this study examined differences between restrained and unrestrained eaters in their reasons for exercise as well as their motives for losing weight. We predicted that restrained eaters would be more motivated to exercise and to lose weight for appearance reasons than for health-related reasons. Second, we examined the association of both reasons for exercise and motives for weight loss with body image concerns. We predicted that motivation to exercise and to lose weight for appearance reasons would be associated with higher levels of body image concerns, whereas motivation to exercise and to lose weight for health-related reasons would be associated with lower levels of body image concerns. Third, extending past research on self-objectification, we investigated the relation of internalization of societal standards of attractiveness with reasons for exercise and motivation for losing weight. We predicted that appearance motives for exercise and for losing weight would mediate the link between internalization and body image concerns. We also sought to determine whether the influence of reasons for exercise could be accounted for by the more general motives for losing weight, but made no firm predictions in this regard.

## **Method**

### *Participants*

Participants were 205 female students at a large private university in the northeastern United States and a large public university in the southwestern United States who completed a survey in exchange for course credit or for a chance to win a prize in a lottery drawing. Mean age was 22.65 years ( $SD = 7.84$ ), and mean body mass index (BMI;  $kg/m^2$ ) was 23.49 ( $SD = 5.03$ ; range = 15.5–44.7). The majority of the sample was White (71%,  $n = 145$ ), 13% were Asian ( $n = 26$ ), 7% were Hispanic ( $n = 15$ ), 6% were African-American ( $n = 12$ ), and 3% indicated that they were "other" ( $n = 11$ ). Of those who reported their university affiliation, 36% ( $n = 74$ ) were first year students, 22% ( $n = 46$ ) were second year

students, 15% ( $n = 30$ ) were third year students, 12% ( $n = 25$ ) were fourth year students, and 14% ( $n = 29$ ) were graduate students.

#### Measures and procedure

Participants were recruited through undergraduate research participant pools and by mass e-mailings inviting them to complete an online survey. Participants first read an informed consent document and clicked “I agree” to indicate that they wished to participate in the study. Participants then completed the following measures:

#### Reasons for exercise

The Reasons for Exercise Inventory (Silberstein, Striegel-Moore, Timko, & Rodin, 1988) is a 24-item measure that assesses reasons for exercise in seven different domains (weight control, fitness, mood, health, attractiveness, enjoyment, and tone). Participants rated the importance of each reason for exercise (e.g., “To improve my overall health”, “To improve my appearance”) on a 7-point scale (1 = *Not at all important*, 7 = *Extremely important*). In order to examine the association between appearance vs. health reasons for exercise and body dissatisfaction, Strelan et al. (2003) combined subscales of the Reasons for Exercise Inventory into two broad categories: appearance-enhancement reasons for exercise (weight control, attractiveness, and tone;  $\alpha = .91$ ) and health/fitness reasons for exercise ( $\alpha = .91$ ). We used this same approach in the present study, although our scale reliabilities were somewhat lower than those reported by Strelan et al. (2003):  $\alpha = .76$  for appearance enhancement and  $\alpha = .81$  for health/fitness.

#### Motivation for losing weight

The Motivations for Weight Loss Questionnaire (Putterman & Linden, 2004) is a 30-item measure that assesses individuals’ motivation for dieting and losing weight. Each item is rated on a 5-point scale (1 = *Definitely disagree*, 5 = *Definitely agree*), and items are categorized into four subscales (appearance, health, social anxiety, and self-respect). Putterman and Linden used the appearance and health items to create an index of the extent to which individuals were motivated to lose weight for appearance reasons over health reasons. In the present study, however, we wanted to draw parallels between motives for losing weight and reasons for exercise and we therefore kept the appearance and health subscales separate. There were 11 items related to appearance motives for losing weight (e.g., “I am motivated to lose weight so that I can wear more stylish/attractive clothing”;  $\alpha = .77$ ) and 4 items related to health motives for losing weight (e.g., “I am motivated to lose weight to improve my health”;  $\alpha = .81$ ).

#### Dietary restraint

Participants also completed the Restraint Scale (Herman & Polivy, 1980), a 10-item self-report measure of dietary concerns, eating habits, and weight fluctuations. Higher scores indicated a greater degree of dietary restraint ( $\alpha = .79$ ). Consistent with past research, individuals who scored 15 or higher on the Restraint Scale were classified as restrained eaters ( $n = 76$ ); individuals who scored 14 or lower were classified as unrestrained eaters ( $n = 129$ ).

#### Body image concerns

Two subscales of the Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983) were used to assess individuals’ concerns with body weight and shape: Body Dissatisfaction (EDI-BD;  $\alpha = .89$ ) and Drive for Thinness (EDI-DFT;  $\alpha = .91$ ). For both subscales, items were rated on a 6-point scale (1 = *Never*, 6 = *Always*), with higher scores indicating greater body dissatisfaction and greater drive for thinness. Because these two subscales

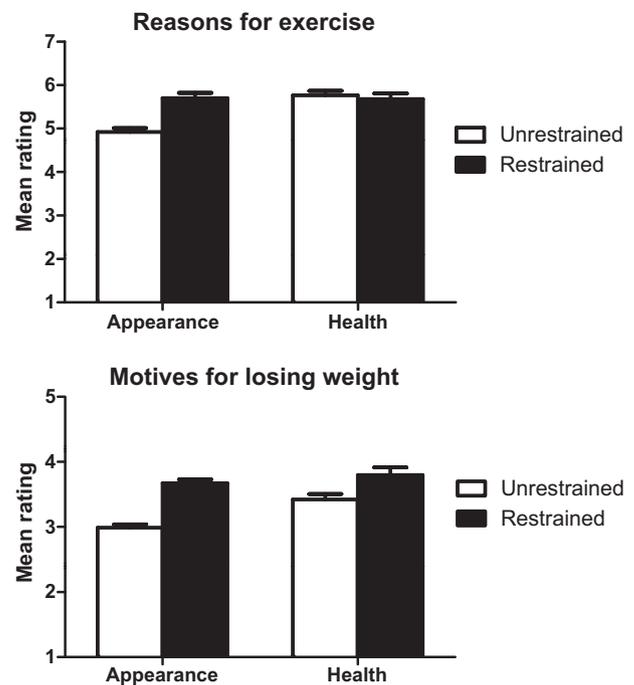


Fig. 1. Reasons for exercise (top half of figure) and motives for losing weight (bottom half of figure) as a function of dietary restraint. Error bars represent standard error of the mean.

were highly correlated ( $r = .71$ ,  $p < .001$ ), the scales were combined into a single index of body image concerns.

#### Internalization of societal standards of attractiveness

Internalization was measured using the 8-item internalization subscale of the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995), which assesses the degree to which people internalize societal standards of attractiveness as self-relevant beliefs. Each item was rated on a 7-point scale (1 = *Completely disagree*, 7 = *Completely agree*), and higher scores indicated a greater degree of internalization. Cronbach’s alpha was .91.

Participants also provided some basic demographic information, including their age, height and weight (used to calculate their BMI), ethnicity, and university affiliation. This research was approved by the Institutional Review Boards of both universities.

## Results

#### Restraint differences in exercise and weight-loss motives

Restraint differences in reasons for exercise and motives for losing weight were assessed with separate two-way mixed ANOVAs with motive (appearance vs. health) as the within-subjects factor, and restraint (unrestrained eaters vs. restrained eaters) as the between-subjects factor.

#### Reasons for exercise

Overall, health reasons for exercise were more strongly endorsed than were appearance reasons for exercise,  $F(1, 202) = 16.03$ ,  $p < .001$ ,  $\eta_p^2 = .07$ . Restrained eaters were also generally more motivated to exercise than were unrestrained eaters,  $F(1, 202) = 7.66$ ,  $p = .006$ ,  $\eta_p^2 = .04$ . These main effects were qualified by a significant motive  $\times$  restraint interaction,  $F(1, 202) = 17.94$ ,  $p < .001$ ,  $\eta_p^2 = .08$  (see top portion of Fig. 1). Simple effects analyses revealed that unrestrained eaters were more motivated to exercise

for health reasons than for appearance reasons ( $p < .001$ ), whereas restrained eaters were equally motivated to exercise for appearance and health reasons ( $p = .88$ ). Furthermore, restrained eaters were more motivated to exercise for appearance reasons than were unrestrained eaters ( $p < .001$ ), but the groups did not differ in their motivation to exercise for health reasons ( $p = .55$ ).

#### Motivation for losing weight

Overall, health motives for losing weight were rated higher than were appearance reasons for losing weight,  $F(1, 202) = 15.89$ ,  $p < .001$ ,  $\eta_p^2 = .07$ . Restrained eaters were also generally more motivated to lose weight than were unrestrained eaters,  $F(1, 202) = 31.67$ ,  $p < .001$ ,  $\eta_p^2 = .14$ . These main effects were qualified by a significant motive  $\times$  restraint interaction,  $F(1, 202) = 4.75$ ,  $p = .03$ ,  $\eta_p^2 = .02$  (see bottom portion of Fig. 1). Simple effects analyses revealed that unrestrained eaters reported greater motivation to lose weight for health reasons than for appearance reasons ( $p < .001$ ), whereas restrained eaters did not differ in their motivation to lose weight for health vs. appearance reasons ( $p = .27$ ). Furthermore, restrained eaters were more motivated to lose weight for appearance reasons than were unrestrained eaters ( $p < .001$ ), and were also more motivated to lose weight for health-related reasons although this difference was smaller in magnitude ( $p = .01$ ).

#### Motivation and body image concerns

Table 1 shows the correlations, means, and standard deviations for all variables included in this study. We then conducted a pair of regression analyses to examine the relation between reasons for exercise and motivation for losing weight, separately, and body image concerns. Because there were restraint differences in reasons for exercise and motives for losing weight, we also examined whether the associations between body image concerns and health and appearance reasons/motives would vary by participants' level of dietary restraint. First, we regressed body image concerns on appearance reasons for exercise, health reasons for exercise, restraint, the restraint  $\times$  appearance-reasons interaction, and the restraint  $\times$  health-reasons interaction. Reasons for exercise and restraint scores were mean centered prior to creating the interaction terms to control for multicollinearity among the predictors. The regression also controlled for age, BMI, and internalization due to the bivariate correlations between these variables and the predictor and outcome variables. The overall model predicting body image concerns was significant,  $F(10, 188) = 36.66$ ,  $p < .001$ ,  $R^2 = .67$ . Appearance reasons for exercise and restraint were significant positive predictors of body image concerns, and health reasons for exercise was a significant negative predictor, but neither of the interactions was significant (see top of Table 2). Second, we regressed body image concerns on appearance motives for losing weight,

**Table 2**  
Regression analyses predicting body image concerns.

	Predictor	$\beta$	$p$
Reasons for exercise	Appearance	.20	.001
	Health	-.11	.03
	Restraint	.48	<.001
	Appearance $\times$ restraint	.01	.83
	Health $\times$ restraint	.05	.34
Motivation for losing weight	Appearance	.50	<.001
	Health	-.08	.09
	Restraint	.32	<.001
	Appearance $\times$ restraint	.06	.20
	Health $\times$ restraint	-.004	.92

Note: regression analyses controlled for age, BMI, and internalization.

health motives for losing weight, restraint, the restraint  $\times$  appearance-motives interaction, and the restraint  $\times$  health-motives interaction. Motives for losing weight and restraint scores were mean centered prior to creating the interaction terms, and the regression controlled for age, BMI, and internalization. The overall model predicting body image concerns was significant,  $F(10, 187) = 50.77$ ,  $p < .001$ ,  $R^2 = .73$ . Appearance motives for losing weight and restraint were significant positive predictors of body image concerns, but health motives for losing weight was not, nor were the interactions (see bottom of Table 2).

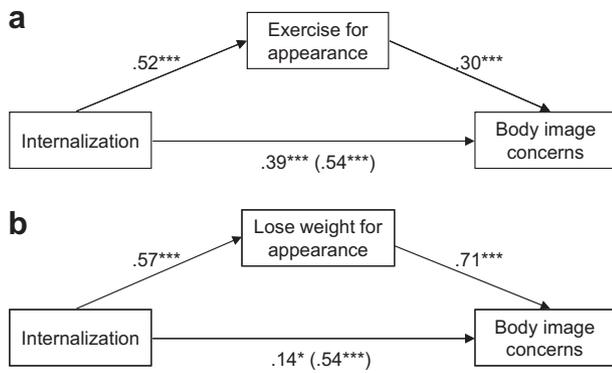
#### Mediational analysis

We next conducted a series of mediational analyses to determine whether reasons for exercise and motives for losing weight mediated the association between internalization and body image concerns. Simple mediation analyses were conducted using the steps outlined by Baron and Kenny (1986) and the SPSS macro provided by Preacher and Hayes (2008). The beta coefficients are shown in the top portion of Fig. 2 for appearance reasons for exercise, and in the bottom portion of Fig. 2 for appearance motives for losing weight. In both sets of analyses: (a) internalization was a significant positive predictor of body image concerns, (b) internalization was a significant positive predictor of appearance reasons/motives (the proposed mediators), (c) appearance reasons/motives were significant positive predictors of body image concerns when internalization was included in the model, and (d) the magnitude of the association between internalization and body image concerns was reduced when appearance reasons/motives were included in the model. Furthermore, appearance reasons for exercise significantly mediated the association between internalization and body image concerns, 95% CI = 0.12, 0.38, as did appearance reasons for weight loss, 95% CI = 0.48, 0.77. In contrast, neither health-related reasons for exercise (95% CI = -0.05, 0.07) nor health-related motives for losing weight (95% CI = -0.05, 0.06)

**Table 1**  
Correlations, means, and standard deviations for all variables included in the study.

	1	2	3	4	5	6	7	8	9
1. Exercise for appearance	–	.16*	.54***	.29***	.41***	.50***	.52***	-.004	-.25***
2. Exercise for health		–	-.07	.49***	-.10	-.17*	-.29***	.11	.23**
3. Weight-loss for appearance			–	.37***	.66***	.79***	.57***	.31***	-.05
4. Weight-loss for health				–	.24**	.19**	.01	.32***	.10
5. Restraint					–	.73***	.37***	.34***	.11
6. Body image concerns						–	.54***	.33***	-.05
7. Internalization							–	.06	-.37***
8. BMI								–	.32***
9. Age									–
Mean	5.21	5.74	3.24	3.56	13.09	54.58	34.46	23.49	22.65
SD	1.13	1.13	0.63	1.02	5.73	17.10	11.29	5.03	7.84

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



**Fig. 2.** Mediation models for (a) reasons for exercise and (b) motivation for losing weight. All numbers represent standardized beta weights. Numbers in parentheses represent the direct, unmediated effects. \* $p < .05$ , \*\*\* $p < .001$ .

were significant mediators of the association between internalization and body image concerns (steps not shown).

In order to assess the relative magnitude of the indirect effects for appearance motives for weight loss and appearance reasons for exercise, we followed-up the simple mediation analyses with a multiple mediation analysis in which both appearance reasons for exercise and appearance motives of weight loss were included as mediators of the association between internalization and body image concerns. When both mediators were included simultaneously, the indirect effect for appearance motives for weight loss was significant (95% CI = 0.48, 0.77) but the indirect effect for appearance reasons for exercise was not (95% CI = -0.04, 0.13). Moreover, the indirect effect of appearance motives for weight loss was significantly larger than the indirect effect of appearance motives for exercise, 95% CI = 0.40, 0.75.

## Discussion

The first purpose of the present study was to examine differences between restrained eaters and unrestrained eaters in their reasons for exercise and motives for losing weight. Although a great deal is known about restrained eaters' eating patterns and body image concerns, relatively little is known about their reasons for exercising. Restrained eaters were highly motivated to exercise for both appearance and health-related reasons, whereas unrestrained eaters were more motivated to exercise for health reasons than for appearance reasons. Past research has shown that women are more motivated to exercise for appearance reasons than are men (Sebire et al., 2009), and our findings extend that research by showing that some women (restrained eaters) may be particularly motivated to exercise for appearance reasons. This pattern also extends to motives for losing weight in that restrained eaters were motivated to lose weight for both appearance and health reasons, whereas unrestrained eaters were more motivated to lose weight for health reasons than for appearance reasons (cf. Putterman & Linden, 2004). Taken together, these findings suggest that weight-control efforts among restrained eaters are driven by multiple motives (including both appearance and health motives). Similarly, other research has shown that restrained eaters are high in both promotion focus (motivated by a desire to lose weight) and prevention focus (motivated by a desire to avoid gaining weight) (Vartanian, Herman, & Polivy, 2006), again suggesting that their weight-control efforts are driven by multiple motives.

In addition to examining restraint differences in reported reasons for exercise and motivation for losing weight, the present study also examined the potential consequences of these motives. Appearance reasons for exercise and appearance motives for losing

weight were both positively associated with body image concerns, although the magnitude of the association was stronger for weight-loss motives than it was for reasons for exercise. Taken with other research (Prichard & Tiggemann, 2005, 2008; Putterman & Linden, 2004; Strelan et al., 2003), there is a consistent pattern of negative psychological states (e.g., increased body dissatisfaction, decreased self-esteem) being associated with appearance-related reasons to exercise and lose weight. In contrast, exercise for health reasons appears to be somewhat protective as it was negatively associated with body image concerns. Interestingly, there were no interactions between dietary restraint and motives for exercise or weight loss; that is, although restrained eaters were more likely to endorse appearance motives, the negative associations with appearance motives and the positive associations with health motives held even for individuals relatively low in dietary restraint. Thus, a general approach of promoting exercise and weight management for health reasons as opposed to appearance reasons should be encouraged in order to minimize the potential negative impact of appearance motives on women's body image. Furthermore, exercise itself can lead to significant improvements in body image (Martin & Lichtenberger, 2002), but this may well depend on the motivation behind the exercise.

Previous research has described the important role of self-objectification in the development of body image concerns, and has found that appearance reasons for exercise mediated the link between self-objectification and body dissatisfaction (Prichard & Tiggemann, 2005, 2008; Strelan et al., 2003). Our findings extend that work by showing that appearance reasons for exercise and appearance motives for losing weight partially mediated the association between internalization and body image concerns. These findings are important because internalization may be a precursor to self-objectification (Moradi et al., 2005; Morry & Staska, 2001). Interestingly, when both appearance reasons for exercise and appearance motives for weight loss were entered into a multiple mediation analysis, only appearance motives for weight loss emerged as a significant mediator of the link between internalization and body image concerns. Thus, appearance motives for weight loss might be more directly connected to the development of body image concerns than are appearance reasons for exercise. In order to gain a better understanding of the development of body image problems in young women, future research could include a wider range of variables, including self-objectification and internalization, as well as reasons for exercise and motives for losing weight. It would also be important for research to incorporate different theoretical perspectives when examining the correlates of exercise motives. For example, research using self-determination theory has also identified the behavioral and psychological impact of different motives for exercise (e.g., Sebire et al., 2009; Thøgersen-Ntoumani & Ntoumanis, 2006, 2007), but this work has been largely independent of the work on self-objectification and reasons for exercise. It would be worthwhile for future research to examine the extent to which these literatures can inform one another in identifying the factors that lead to positive psychological outcomes and healthy exercise behaviors.

One limitation of the present study is that the cross-sectional design precludes us from making statements about the direction of causation among the variables. It is unclear, for example, if motivation to exercise and to lose weight for appearance reasons leads to increased body dissatisfaction or if body dissatisfaction increases people's motivation to exercise and lose weight in order to improve their appearance. Determining the direction of causality will be important if we hope to encourage healthy exercise and diet habits, and encourage healthy weight-management practices.

Another limitation of the present study is that we did not assess actual exercise behavior because we were primarily interested in

the psychological correlates of different motives for exercise and weight loss. It would be important for future studies to further examine the extent to which different motives for exercise and for weight loss are related to the frequency, intensity, and types of exercise that individuals engage in so that we can better understand the implications of these motives. For example, one study of women attending a fitness center found that appearance-based motives for exercise were associated with cardiovascular exercise, whereas health-related reasons for exercise were associated with involvement with yoga-based fitness classes (Prichard & Tiggemann, 2008). Other research has shown that promoting health-related exercise goals results in greater persistence and effort than does promoting appearance-related goals (Vansteenkiste, Simons, Soenens, & Lens, 2004). Putterman and Linden (2004) also found that appearance motives for losing weight were associated with more extreme dieting behaviors, indicating that the potentially harmful effects of appearance-based motives extend beyond exercise. Assessing actual exercise behavior would also allow researchers to establish the discriminant validity of the reasons for exercise and motives for weight-loss measures. We found that appearance reasons for weight loss were more predictive of body image concerns than were appearance reasons for exercise, but perhaps the reasons for exercise measure would be a stronger predictor of exercise behavior.

In summary, this research supports the hypothesis that some motives for exercise and for losing weight, particularly appearance-based motives, can be associated with negative outcomes. Taken as a whole, this body of research suggests that efforts to build motivation for exercise and weight loss should emphasize the associated health benefits rather than the implications for one's appearance. An emphasis on health over appearance could be particularly beneficial for individuals who are highly concerned with their appearance (such as restrained eaters).

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