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Emphasizing appearance versus health outcomes in exercise: The influence of the instructor and participants' reasons for exercise

Shannon E. O'Hara, Anne E. Cox*, Anthony J. Amorose

School of Kinesiology and Recreation, Illinois State University, Normal, IL, United States

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ABSTRACT

The objectifying nature of exercise environments may prevent women from reaping psychological benefits of exercise. The present experiment manipulated self-objectification through an exercise class taught by an instructor who emphasized exercise as either a means of acquiring appearance or health outcomes. The purpose of this study was to test for interactions between the class emphasis and participants' reasons for exercise (i.e., appearance, health) predicting participants' state self-objectification, state social physique anxiety, exercise class enjoyment, and future intentions of returning to a similar exercise class. Results, obtained via pre- and post-exercise questionnaires, revealed a significant interaction between class emphasis and health reasons for exercise predicting state self-objectification. Participants with lower health reasons for exercise reported greater state self-objectification in the appearance-focused class compared to those with higher health reasons for exercise. Adopting stronger health reasons for exercise may buffer exercise participants from the more objectifying aspects of the group exercise environment.

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Introduction

In Western cultures, women tend to be valued more for their physical appearance than what they are capable of achieving and, in some ways, their body tends to be viewed as representative of their entire identity (Fredrickson & Roberts, 1997; Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; Hill & Fischer, 2008). The term cultural sexual objectification refers to the societal practice of treating women as merely a body or object valued primarily for its use to others (Fredrickson & Roberts, 1997). Objectification theory (Fredrickson & Roberts, 1997), designed to describe how women internalize this ambush of objectifying images in the media, suggests that objectifying the female body in this way not only encourages onlookers to view a woman's body as an object, but also socializes girls and women to value their own bodies as such and, thus, engage in self-objectification (Fredrickson et al., 1998; Henry, Anshel, & Michael, 2006; Hill & Fischer, 2008). Self-objectification refers to taking on the perspective of an observer and tends to encourage women to place higher value on the way their body appears to others rather than how it functions or performs. This shift in awareness typically results in habitual

appearance monitoring that can either be a general tendency (i.e., trait self-objectification) or be triggered as a result of situational factors (i.e., state self-objectification). Regardless, it is usually paired with constant comparisons of one's body to others or to a cultural ideal, increasing one's risk for negative psychological, emotional, and behavioral consequences (Calogero, Tantleff-Dunn, & Thompson, 2011; Fredrickson & Roberts, 1997; Fredrickson et al., 1998; Greenleaf, 2005; Tylka & Sabik, 2010).

A common negative psychological consequence of self-objectification is body dissatisfaction (Breines, Crocker, & Garcia, 2008; Fredrickson & Roberts, 1997; Fredrickson et al., 1998; Greenleaf, 2005). Frequent comparisons to the unattainably thin, Western cultural ideal usually results in an awareness of the impossibility of measuring up to that ideal. This discrepancy between what one desires to look like and current physical self-evaluations is the degree to which women experience body dissatisfaction (Fredrickson & Roberts, 1997; Lox, Martin Ginis, & Petruzzello, 2010). When women feel that these perceived shortcomings are being evaluated by others, they are more likely to experience negative emotions such as shame or social physique anxiety (i.e., apprehension or distress about others negatively evaluating one's body; Hart, Leary, & Rejeski, 1989) along with the desire to hide it from further evaluation and possible scrutiny. In such cases, it is also common for women to avoid situations where their body is at risk for being on display all together (Breines et al., 2008; Fredrickson & Roberts, 1997; Fredrickson et al., 1998; Greenleaf, 2005). Overall, self-objectification, along with its associated negative cognitions and affective responses, can motivate women to

* Corresponding author at: Department of Educational Leadership, Sport Studies, and Educational/Counseling Psychology, Washington State University, PEB 106, Pullman, WA 99164-1410, United States. Tel.: +1 509 335 7504.

E-mail addresses: shan.eliz.ohara@gmail.com (S.E. O'Hara), anne.cox@wsu.edu (A.E. Cox), ajamorose@ilstu.edu (A.J. Amorose).

engage in corrective behaviors such as dieting, excessive exercise, or plastic surgery in an attempt to approximate their perceived body ideal. Over time, these behaviors can lead to physical and mental health risks such as disordered eating or depression (Breines et al., 2008; Calogero et al., 2011; Fredrickson & Roberts, 1997; Fredrickson et al., 1998; Greenleaf, 2005; Hill & Fischer, 2008).

Due to the negative consequences associated with self-objectification, it is important to differentiate between lifestyle factors that may intensify or reduce it. One such factor is participation in exercise. In terms of self-objectification, exercise may serve as a double-edged sword for women. At times, it has been found to improve the way women feel about their body (Lox et al., 2010), but it has also been shown to reinforce self-objectification and, as a result, make women feel worse about their body (Greenleaf, 2005). There are several characteristics of exercise that appear to moderate the effect it has on women's tendency to self-objectify.

The first of these characteristics is the different reasons why women choose to engage in exercise. Women exercising for appearance-related reasons, or to modify weight or change the shape of their body, have been found to experience significantly higher levels of self-objectification and lower levels of adherence to exercise (Prichard & Tiggemann, 2005, 2008; Strelan, Mehaffey, & Tiggemann, 2003). This finding is likely due to the fact that, for women, attaining their ideal body is impossible through exercise alone and often leads to disappointment and discouragement (Lox et al., 2010; Prichard & Tiggemann, 2008; Strelan et al., 2003). Women who exercise for health-related reasons, or to improve the fitness or function of their body, however, have been found to experience significantly lower levels of self-objectification and higher levels of exercise adherence (Prichard & Tiggemann, 2005, 2008; Strelan et al., 2003). These findings are likely due to the fact that adopting a functional view of the body has been associated with higher levels of body satisfaction and clearer observations of personal progress and success, which in turn have been associated with higher enjoyment during the activity the woman is engaging in (Lox et al., 2010; Prichard & Tiggemann, 2008; Raedeke, Focht, & Scales, 2007; Strelan et al., 2003). These research findings support the role of reasons for exercise in predicting self-objectification; however, the environment in which exercise takes place is another important factor to consider.

Exercise settings, such as fitness centers, can induce self-objectification by creating an environment that promotes a focus on outward appearance and unrealistic physical body ideals (Prichard & Tiggemann, 2005). Elements of exercise settings that may promote self-objectification include an abundance of mirrors, an emphasis on exercising for weight loss, and the promotion of the cultural female body ideal through promotional materials. Not surprisingly, research shows that time spent exercising in a fitness center is positively correlated with self-objectification, while exercising in other settings, such as the outdoors, is inversely related to self-objectification (Melbye, Tenenbaum, & Eklund, 2007; Prichard & Tiggemann, 2005).

Within fitness centers, fitness professionals may impact self-objectification through multiple behaviors that can send messages about the importance of physical appearance. Specifically, group exercise instructors have been found to have a significant impact on outcomes related to self-objectification such as body dissatisfaction (Fox, Rejeski, & Gauvin, 2000; Martin & Fox, 2001; Martin Ginis, McEwan, Josse, & Phillips, 2012; Raedeke et al., 2007; Turner, Rejeski, & Brawley, 1997). For example, when an exercise video instructor's attire was manipulated to either be revealing and "physique-salient" or conservative and "physique non-salient", female participants reported greater body dissatisfaction while exercising with an instructor emphasizing her physique with revealing attire (Martin Ginis, Prapavessis, & Haase, 2008). Since revealing attire is common for group exercise instructors, female

participants may experience higher levels of body dissatisfaction due to social comparison with their instructor in these settings (Martin Ginis et al., 2008).

In addition to the influence of an instructor's clothing choice, research has also shown that the overall exercise climate of the class, created by the instructor, can influence a variety of different responses to exercise among female participants as well as their exercise adherence. For example, Raedeke et al. (2007) found that an exercise instructor's approach to and promotion of exercise, whether it emphasized exercise as a means of appearance modification or health improvement, influenced female participants' exercise enjoyment and future intentions of returning to a similar exercise class. In Raedeke's study, females high in social physique anxiety exercised in either an appearance-focused class with the presence of mirrors, an appearance-focused class without the presence of mirrors, a health-focused class with the presence of mirrors, or a health-focused class without the presence of mirrors. Women exercising in the appearance-focused classes were led by an instructor who emphasized exercise as a means of appearance-modification, by using comments such as "these squats will make your legs toned so they look good," and by wearing revealing clothing. Those exercising in the health-focused classes, however, were led by an instructor who emphasized exercise as a means of improving health, by using comments such as "these squats will make your legs stronger," and by wearing conservative clothing. Women who exercised in the health-focused environment reported enjoying the class more and had higher intentions of returning to a similar exercise class in the future compared to those exercising in an appearance-focused environment (Raedeke et al., 2007). The presence or absence of mirrors had no significant effect on these outcomes. As with reasons for exercise, an exercise instructor's emphasis on health and fitness outcomes appears to lead to the most positive psychological responses to exercise.

Research evidence clearly supports a link between reasons for exercise and self-objectification (Prichard & Tiggemann, 2005, 2008; Strelan et al., 2003) and suggests that specific exercise climates may elicit higher or lower levels of self-objectification (Martin Ginis et al., 2008; Segar, Eccles, & Richardson, 2008). Evidence also points to the potential for the exercise instructor's emphasis on appearance versus health to promote more or less positive exercise experiences (e.g., enjoyment; Prichard & Tiggemann, 2008; Raedeke et al., 2007; Segar et al., 2008; Segar, Spruijt-Metz, & Nolen-Hoeksema, 2006; Strelan et al., 2003). However, to our knowledge, no research has examined how women's reasons for exercise may interact with an exercise instructor's emphasis on appearance versus health (independent of instructor attire) to predict both state self-objectification and consequent psychological responses in exercise participants. For example, women who have higher appearance-related reasons for exercise *and* have an instructor who emphasizes appearance outcomes may experience the most self-objectification during class and associated consequences (e.g., higher social physique anxiety, lower enjoyment, lower intentions of returning). On the other hand, women who have higher health-related reasons for exercise *and* have an instructor who emphasizes health outcomes may experience the least self-objectification and associated consequences.

Thus, the purpose of this study was to test for potential interactions between women's reasons for exercise (i.e., appearance versus health) and the emphasis a group exercise instructor places on appearance versus health in predicting state self-objectification, state social physique anxiety, exercise class enjoyment, and future intentions of returning to a similar exercise class. Participation in this study was restricted to college-aged females because women are more likely to experience elevated levels of self-objectification compared to men (Breines et al., 2008; Fredrickson & Roberts, 1997; Tiggemann & Boundy, 2008). It was predicted that participants

exercising in an appearance-focused class would report higher levels of state self-objectification and state social physique anxiety, as well as lower class enjoyment and future intentions of returning to a similar exercise class, compared to those exercising in a health-focused class. This effect was expected to be stronger for women with higher appearance-related reasons for exercise and weaker for women with higher health-related reasons for exercise. It was also anticipated that those with stronger appearance-related reasons for exercise would experience more state self-objectification and state social physique anxiety and lower enjoyment and future intentions of returning to a similar exercise class compared to those with lower appearance reasons, and that this effect would be stronger in the appearance-focused class. Finally, it was predicted that women with stronger health reasons for exercise would report lower state self-objectification and state social physique anxiety as well as higher exercise class enjoyment and future intentions of returning to a similar exercise class and that this effect would be weaker in the appearance-focused class. In order to isolate the influence of the class manipulation on participants' body conscious experiences, we controlled for trait self-objectification when predicting state self-objectification and state social physique anxiety.

Method

Participants

The sample consisted of predominantly Caucasian (89.6%; 2.1% Hispanic; 8.3% Multi-racial), college-aged ($M_{\text{age}} = 20.54$; $SD = 1.30$), female participants ($N = 48$) from a Midwestern university. Most of the participants were Exercise Science (35.4%), Education (14.6%), or Recreation (12.5%) majors, with the remaining coming from other degree programs (6.3% in each of Athletic Training, Health Education, Science, Nursing, and undeclared; 2.1% in each of Communications, Fashion, and Business). Also, the majority of participants were in their sophomore (35.4%) or junior (39.6%) year in school (16.7% senior, 4.2% first-year, 2.1% graduate, 2.1% students enrolled in coursework additional to a completed degree). Participants were excluded from the study if they were screened as unable to participate in physical activity (Physical Activity Readiness Questionnaire; Thomas, Reading, & Shephard, 1992) or if they were acquainted with the exercise instructor (first author). Participants were recruited from undergraduate classes and were initially told that the purpose of the study was to "examine the influence of a group exercise class on the general exercise experience of women." Interested participants were emailed the Physical Activity Readiness Questionnaire to complete and the consent form describing the study. Participants who returned the completed Physical Activity Readiness Questionnaire and were cleared for physical activity were invited to participate in the study.

Measures

Trait self-objectification. Trait self-objectification was measured using Fredrickson and Noll's (1998) Self-Objectification Questionnaire. This measure was designed to assess the extent to which individuals consider objectified attributes (i.e., appearance-based) to be more important than non-objectified attributes (i.e., competence-based) to their physical self-concept. Participants were instructed to rank 10 different physical attributes in order of perceived importance to their physical self-concept from 0 (*least important*) to 9 (*most important*). Five of these attributes were competency-based (physical coordination, health, strength, energy level, physical fitness) and five were appearance-based (weight, sex appeal, physical attractiveness, firm/sculpted muscles, measurements). The final self-objectification scores were then obtained

by summing the competence rankings and summing the appearance rankings, and then subtracting the sum of the competence rankings from the sum of the appearance rankings. Possible scores ranged from -25 to $+25$ with higher and positive scores indicating higher levels of self-objectification (Fredrickson et al., 1998). Trait self-objectification was included as a covariate in the models predicting state self-objectification and state social physique anxiety. Estimates of the relationships between this particular measure and appearance anxiety ($r = .52$, $p < .01$) and body-size dissatisfaction ($r = .46$, $p < .01$) support the validity of this instrument in undergraduate females (Fredrickson et al., 1998).

State self-objectification. The degree to which participants took on the observer's perspective during their exercise class was measured using a modified version of the Body Surveillance subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996). The Body Surveillance subscale consists of eight items referring to the extent to which women think about how their body looks as opposed to how it feels and includes statements like "During the day, I think about how I look many times," or "I often worry about whether the clothes I am wearing make me look good." Items were modified to refer to what participants experienced during their experimental exercise class. For example, "During the day, I think about how I look many times," was modified to "During the class, I thought about how I looked many times." Respondents rated each item on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Additionally, individuals had the opportunity to choose "does not apply" if the statement was unrelated to their exercise experience. Participants' scores were calculated by taking the mean of the eight items; if participants chose "does not apply" it was removed from scoring. Higher scores indicated higher state self-objectification. The original subscale's internal consistency estimate, obtained on undergraduate women, was quite high ($\alpha = .89$; McKinley & Hyde, 1996) as was the internal consistency estimate in this study ($\alpha = .81$).

State social physique anxiety. The extent to which participants worried about how others were evaluating their body was measured using the state version of the Social Physique Anxiety Scale (Martin Ginis, Murru, Conlin, & Strong, 2011). This 9-item measure referred to feelings of social physique anxiety experienced in the exercise class. Participants were asked to rate how much they experienced each of the items on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). Some items included "I felt uptight about my physique/figure," or "In this setting I felt apprehensive about my physique/figure." Scores were calculated by taking the mean of the nine items with higher values indicating higher levels of state social physique anxiety. The internal consistency estimates obtained with this measure have been relatively high in other female college student samples (Martin Ginis et al., 2011) as well as the current sample ($\alpha = .90$).

Reasons for exercise. Participants' motives for exercise were measured with the Reasons for Exercise Inventory (Silberstein, Striegel-Moore, Timko, & Rodin, 1988). This inventory consists of 24 items that reflect seven different types of motives for exercising. These motives include weight control, attractiveness, body tone, health, fitness, enjoyment, and improved mood. Participants rated these reasons for exercise in terms of perceived importance on a 7-point scale ranging from 1 (*not at all important*) to 7 (*extremely important*). To ease interpretation and consistent with Strelan et al. (2003), the seven subscales were reduced to three distinct categories of motives due to the correlations among certain subscales. Weight control, body tone, and attractiveness are all highly correlated and thus scores of each were averaged to produce an overall index of "appearance-reasons for exercise." Correspondingly, the function-related subscales (health and fitness) are highly correlated, thus averaged for an overall index of "health/fitness reasons for exercise." The enjoyment and mood improvement

subscales were not used in the analyses as they were not included in study hypotheses. Higher scores in each category indicate stronger motives for exercising for those reasons. The high internal consistency estimates of the health/fitness reasons ($\alpha = .91$; .87 in the current sample) and appearance reasons for exercise ($\alpha = .89$; .85 in the current sample) indices support the use of this measure in undergraduate females (Cash, Novy, & Grant, 1994).

Exercise class enjoyment. To assess the extent to which participants enjoyed the exercise class they engaged in, the 18-item Physical Activity Enjoyment Scale (Kendzierski & DeCarlo, 1991) was used. Each item was rated on a 7-point bipolar scale with a score of four representing neutral in terms of how positive individuals felt about the experience. Sample anchors included “I enjoyed it” versus “I hated it” and “I found it pleasurable,” versus “I found it unpleasurable.” Scores from this measure reflect high internal consistency estimates both in other samples of college women ($\alpha = .91$; Kendzierski & DeCarlo, 1991) and in the current sample ($\alpha = .95$).

Future intentions of returning to a similar exercise class. Consistent with prior research procedures (e.g., Fox et al., 2000; Raedeke et al., 2007), the present study used a 1-item measure that asked participants to rate the likelihood that they would return to a similar exercise class in the future from 0% to 100%.

Current physical activity level and mode. For descriptive purposes, the present study used the Godin-Shephard Leisure-Time Exercise Questionnaire (Godin & Shephard, 1985) to determine the current physical activity level of the sample. Since current physical activity behavior is a relevant predictor of physical activity enjoyment and future physical activity behavior, an index of overall physical activity was included as a covariate predicting class enjoyment and future intentions of taking a similar class. The researchers of the present study also modified the same measure to determine the specific types of exercise participants typically engaged in. The original measure includes a 7-day physical activity recall that asks individuals to reflect on how much of their spare time was spent engaging in strenuous, moderate, or mild physical activity within the past seven days. The measure also included a final item that asked participants to reflect on how often they typically engaged in any regular activity that lasted long enough for them to break a sweat. Overall physical activity level is then scored in arbitrary units by multiplying the time spent engaging in strenuous, moderate, or mild activity by the number of METs associated with each intensity level (strenuous: 9; moderate: 5; mild: 3) and then summing all three computed intensity levels (Godin & Shephard, 1985). According to Godin (2011), the proper interpretation of these arbitrary units suggests that a score of 24 units and more is considered a higher physical activity level (i.e., about 14 kcal/kg/week or more), 14 to 23 units is considered moderate (i.e., between 7 and 13.9 kcal/kg/week), and less than 14 units is considered a lower physical activity level (i.e., less than 7 kcal/kg/week; Godin, 2011). Evidence for the construct validity of this measure is reflected in positive correlations between the questionnaire scores and percentile VO_{2max} ($r = .24$, $p < .001$) and percentile body fat ($r = .13$, $p < .01$; Godin, 2011; Godin & Shephard, 1985).

The modified version, created by the researchers of the present study, asked participants to reflect on how much time during the past week they spent engaging in weight lifting, cardio machines, group exercise (strength-based), group exercise (aerobic-based), outdoor activities, or any other exercise they engaged in that was not included on the survey. Physical activity mode preference was determined simply by identifying which mode of exercise (i.e., weight lifting, cardio machines, aerobic-based group exercise, strength-based group exercise, outdoor, or other) the individual spent the most time engaging in within the past week and was used for descriptive purposes.

Demographic information. Participants also completed several demographic and descriptive items including one item asking

participants to reflect on how often they experienced exercise classes similar to the one they engaged in for the study on a 10-point scale ranging from 1 (*never*) to 10 (*always*). Participants also provided their height and weight (used to calculate body mass index [BMI]), age, year in school, major, and race.

Procedures

After receiving ethical approval for the study, participants were randomly assigned to participate in one of two exercise class conditions designed to vary in eliciting state self-objectification. To randomly assign participants to a condition, all women were first assigned a date and time to attend a class that was conducive to their schedules. Once all participants were scheduled, all groups were randomly assigned a condition. About half were placed in an appearance-focused class designed to elicit state self-objectification ($n = 26$), while the other half were placed in a health-focused class ($n = 22$). Throughout the study, eight appearance-focused and six health-focused classes were conducted with class sizes ranging from 2 to 7 participants. In order to achieve a .80 power level to detect moderate effect sizes, we aimed to have a total of 50 participants with 25 assigned to each condition. The inequality between class conditions was a result of scheduling conflicts among participants. Subjects engaged in only one class and were unaware of which group they were assigned to until they were debriefed following their participation.

Upon arriving at the data collection site, participants read and signed an informed consent form and then completed a pre-exercise survey assessing trait self-objectification, reasons for exercise, current physical activity level, and current physical activity mode preference. The pre-exercise survey was administered by a research assistant trained specifically for this study. Participants then participated in their designated exercise condition.

For the exercise class manipulation, the instructor followed a script modeled after the one used by Raedeke et al. (2007) and reviewed by the Group Exercise Coordinator of the university's Student Recreational Services (see Table 1 for examples). The instructor (i.e., the first author) in the appearance-focused condition attempted to elicit state self-objectification by emphasizing exercise as a means of appearance modification. The comments used were not directed toward any individual personally or done to derogate participants. The instructor simply used appearance related comments to tell the participants how each exercise could possibly change the appearance of the body part it was targeting. For example, when referring to a core exercise, the instructor stated “these crunches will help us get the abs we have always wanted.” The instructor also included various smaller comments throughout the class to further emphasize exercise for weight loss or as a means of appearance modification. These smaller comments included “burn those calories,” or “burn that fat.” In the health-focused condition, however, the instructor emphasized exercise as a means of improving the health and function of the body. For example, when referring to a core exercise the instructor stated “these crunches will help strengthen your core and increase your range of motion.” In this condition, the instructor also included various smaller comments to further promote exercise as a means of improving health and function of the body. These smaller comments included “get healthy” or “feel your body getting stronger.”

Each group exercise class was 30 minutes in length and included a 5-minute warm-up, 20-minute resistance training session, and a 5-minute cool down. The format of each class was a specific routine, choreographed by the first author, and was consistent across conditions to strengthen the internal validity of the study. The amount of feedback given by the instructor was also consistent across conditions.

Table 1
Appearance versus health class instructor script examples.

Appearance-focused class	Health-focused class
	Greeting:
"Today we are going to burn up those calories from the weekend and turn our fat into tight, sculpted, and toned muscle!"	"Today we are going to work all of our major muscles groups to improve our strength and endurance as well as get our heart rate up and break a sweat!"
	Warm-up:
"First, we are going to do a quick warm-up to kick-start that calorie burn! The more calories we burn, the faster we burn fat!"	"First, we are going to do a quick warm-up to get those 'feel-good' endorphins going!"
	Squats:
"These squats are great for firming up that butt and slimming down those legs!"	"These squats are great for strengthening our entire lower body because all of our muscles are working together to execute one movement!"
	Push-ups:
"We are going to do push-ups. This will help us get rid of that under-arm fat and tone up our arms!"	"We are going to do push-ups that focus, primarily, on our upper body, but we're using more muscles than that!"
	Bicycle Crunches:
"Our next ab exercise is the bicycle crunch. This is the one that will give you that nice 6-pack definition!"	"Our next core exercise is the bicycle crunch. This exercise will increase our core's range of motion."
	Cool down:
"Now that we finished transforming the look of our bodies, we are going to do a brief cool-down to wrap up our class."	"Now we are going to thank our bodies for all they've done for us today with a brief cool down."

In each condition, the music, instructor, and conservative instructor attire were the same to ensure that the results of the study were due to the instructor's feedback alone. The exercise instructor (i.e., the first author) is a certified group exercise instructor through the Aerobics and Fitness Association of America (AFAA), a certified personal trainer through the American Council on Exercise (ACE), and has six years of experience teaching group exercise. The class format and script were practiced extensively by the instructor with students involved in an exercise related program.

Upon completion of the designated class condition, each participant spent about 15 minutes completing a post-exercise survey assessing state self-objectification, state social physique anxiety, enjoyment of the class, future intentions to take a similar class, as well as self-reported height and weight. All post-exercise surveys were administered by the same trained research assistant. Upon completion of the post-exercise survey, participants received a debriefing letter describing the study in full and the intent of the manipulations. At this point the emails of the participants were entered into a drawing to receive a gift-certificate to a local department store.

Manipulation checks. In order to evaluate the effectiveness of the class manipulations, the post-exercise survey included two items that asked participants to identify the extent to which they felt the purpose of the exercise class they engaged in was for improving health and then the extent to which they felt it was for modifying appearance. Participants responded to these two items on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Participants were also asked verbally, by the trained assistant, what they felt was emphasized (i.e., appearance or health) in the exercise class after they were debriefed. Finally, the trained research assistant, blinded to each class condition, sat in an adjacent room where she could hear the instructor during each class and identified each class as being either appearance- or health-focused.

Data Analyses

Preliminary analyses were first conducted to screen for missing data as well as for normality and outliers using SPSS. Since no missing data were found, means, standard deviations, and correlations were then calculated among all study variables. Cronbach's alpha coefficients were calculated to examine the internal consistency reliability of all subscales. Multivariate analyses of the variance (MANOVAs) were used to test for differences in the manipulation check questions, trait self-objectification, appearance reasons for exercise, health reasons for exercise, physical activity level, body mass index (BMI), and year across class conditions. In order to address the main study purpose, a series of hierarchical regression analyses were conducted to test whether reasons for exercise (appearance versus health) interacted with instructor emphasis on appearance versus health to predict differences in state self-objectification, state social physique anxiety, exercise class enjoyment, and future intentions of returning to a similar exercise class. Trait self-objectification and BMI were included as covariates in the analyses predicting state self-objectification and state social physique anxiety, whereas overall physical activity level was included as a covariate in the analyses predicting exercise class enjoyment and future intentions of returning to a similar exercise class. Prior to conducting these analyses, both reasons for exercise variables and covariates were standardized and then interaction terms were calculated by multiplying the two reasons for exercise variables by the dichotomous instructor emphasis variable (appearance vs. health). These standardized variables were used in all regression analyses.

Results

Descriptive Statistics

Study variables met the assumptions for univariate normality with skewness and kurtosis scores that were under 2.5, and no outliers were identified. The female participants in the study had an average BMI of 22.72 ($SD = 3.98$; range: 15.21–37.69), reported a high physical activity level ($M = 52.99$ units; $SD = 22.33$; range: 12–110), were more likely to use cardio machines during their leisure time exercise ($M = 2.82$ times/week; $SD = 1.66$; range: 0–4), and were moderately experienced ($M = 4.50$; $SD = 2.32$; range: 1–8) in classes similar to the experimental conditions. Table 2 illustrates the results of preliminary analyses including means and standard deviations as well as bivariate correlations and internal consistency reliabilities for the entire sample. Descriptive statistics for each of the subgroups (i.e., appearance vs. health class) examined in the main analyses appear in Table 3. Across the sample, descriptive results for trait self-objectification indicated that, overall, participants reported moderate levels of trait self-objectification. In terms of reasons for exercising, the means suggested that the sample reported stronger health and fitness motives for exercise compared to appearance motives, but both types were above the mid-point of the scale. Descriptive statistics for state self-objectification and state social physique anxiety revealed that the sample experienced relatively low state self-objectification and anxiety concerning the appearance of their bodies during the experimental classes. Finally, the sample experienced relatively high exercise class enjoyment and reported relatively high intentions of returning to a similar class in the future. The bivariate correlations reflected relationships that were in theoretically consistent directions (see Table 2).

Prior to conducting the main analyses, we tested for differences in key study variables across experimental conditions. MANOVA results showed no differences (Wilks' Lambda = .85, $F_{6,41} = 1.26$, $p = .30$) across classes in trait self-objectification, appearance

Table 2
 Descriptive statistics for study variables (N=48).

Variable	1	2	3	4	5	6	7	8
1 Instructor emphasis ^a	–							
2 TSO	–.24	–						
3 Appearance reasons	–.07	.13	.85					
4 Health reasons	–.03	–.27	.23	.87				
5 SSO	–.02	.28	.30	–.34*	.81			
6 SSPA	.06	.22	.24	–.53**	.39**	.90		
7 Class enjoyment	–.16	.09	–.12	.38**	.02	–.35*	.95	
8 Future intentions	–.19	.22	–.05	.25	–.15	–.43**	.54**	–
Possible range	–	–25 to 25	1–7	1–7	1–7	1–5	1–7	0–100
M	–	0.50	5.14	5.69	3.02	2.15	5.52	80.15
SD	–	12.71	1.02	0.94	1.07	0.82	0.97	19.27

Notes: Alpha values in bold along the diagonal. Correlation values below diagonal. TSO, trait self-objectification; SSO, state self-objectification; SSPA, state social physique anxiety.

^a Instructor emphasis (1 = health; 0 = appearance).

* $p < .05$.

** $p < .01$.

reasons for exercise, health reasons for exercise, physical activity behavior, BMI, or year in school. This pattern of findings indicates that the randomization procedure created similar groups, effectively distributing participants across experimental conditions.

Manipulation Checks

The results of the manipulation checks suggested the exercise class manipulations were effective overall. Specifically, the MANOVA testing for class differences in the perceived purpose of the class was significant, Wilks' Lambda = .73, $F(2, 45) = 8.16$, $p = .001$. Follow-up univariate tests showed that participants in the appearance-focused class agreed more strongly that the purpose of the class was to improve one's appearance compared to those in the health-focused class ($M = 3.96$ and 2.86 , respectively, $p < .001$). There was no difference in participants' belief that the purpose of the class was to improve health across experimental conditions ($M = 4.46$ and 4.27 , respectively). This finding suggests that participants' belief that the purpose of exercise is to improve health outcomes was not affected by the instructor's commentary on appearance-related outcomes during class.

In addition, the research assistant who listened to the content of the class correctly identified the class 13 out of 13 times (on one occasion, there was no research assistant present during the class). Finally, when participants were asked verbally which class they participated in after being debriefed about the true purpose of the study, 35 out of 48 correctly identified the emphasis in their class (i.e., appearance versus health). All main analyses were also conducted with and without the participants who did not correctly identify the focus of their class and there were no interpretable differences in the results.

Table 3
 Means and standard deviations by instructor emphasis.

Variable	Possible range	Health class (n = 22)		Appearance class (n = 26)	
		M	SD	M	SD
TSO	–25–25	–2.82	9.60	3.31	14.44
Appearance reasons	1–7	5.07	1.07	5.21	1.00
Health reasons	1–7	5.66	1.16	5.72	0.74
SSO	1–7	2.99	0.85	3.04	1.24
SSPA	1–5	2.20	0.87	2.11	0.78
Class enjoyment	1–7	5.35	1.09	5.65	0.84
Future intentions	0–100	76.14	20.52	83.54	17.83

Notes: TSO, trait self-objectification; SSO, state self-objectification; SSPA, state social physique anxiety.

Main Analyses

Predicting state self-objectification. Neither trait self-objectification nor BMI were significant predictors of state self-objectification, and therefore were removed as covariates from the hierarchical regression analyses. Results of the hierarchical regression analysis, which are summarized in Table 4, found that the interaction terms explained a significant amount of additional variance in state self-objectification ($\Delta F = 3.41$, $df = 2$, $p = .04$, $\Delta R^2 = .10$). Specifically, appearance reasons for exercise was a marginally significant positive predictor ($p = .06$) and the interaction between instructor emphasis and health reasons for exercise significantly predicted ($p = .02$) state self-objectification, $F(5, 42) = 4.85$, $p = .001$, $R^2 = .37$. Graphing the 2-way interaction (see Fig. 1) revealed that those with higher health reasons for exercise experienced less state self-objectification in the appearance class compared to those with lower health reasons for exercise ($t = -21.89$, $p < .001$). In the health class, there was no relationship between health reasons for exercise and state self-objectification.

Predicting state social physique anxiety. The results of the hierarchical regression analyses predicting state social physique anxiety are summarized in Table 4. As with the previous analysis, trait self-objectification was found to be a non-significant covariate, and therefore was removed from the analyses. The interaction terms did not explain a meaningful amount of additional variance in predicting state social physique anxiety ($\Delta F = 0.03$, $df = 2$, $p = .97$, $\Delta R^2 = .00$). However, BMI and appearance reasons for exercise were positive predictors ($p = .01$ for both) and health reasons for exercise a negative predictor ($p < .001$) of state social physique anxiety, $F(4, 43) = 10.89$, $p < .001$, $R^2 = .50$.

Predicting enjoyment. In the regression analysis predicting class enjoyment, the interactions did not explain a significant ($p > .05$) amount of additional variance according to traditional

Table 4
 Results of the hierarchical regression analyses predicting state self-objectification and state social physique anxiety.

Independent variables	Dependent variable								
	State self-objectification				State social physique anxiety				
	R ²	B	SE B	β	R ²	B	SE B	β	
<i>Step 2</i>	.26				.50				
BMI		-	-	-		0.28	0.10	.34*	
Instructor emphasis		-0.02	0.28	-.01		-0.01	0.18	-.01	
Appearance reasons		0.42	0.14	.40**		0.25	0.09	.31*	
Health reasons		-0.46	0.14	-.43**		-0.36	0.10	-.45**	
<i>Step 3</i>	.37				.50				
BMI		-	-	-		0.28	0.11	.34*	
Instructor emphasis		-0.02	0.26	-.01		-0.01	0.19	-.01	
Appearance reasons		0.36	0.19	.34		0.27	0.13	.33*	
Health reasons		-0.94	0.23	-.88**		-0.36	0.16	-.44*	
Appearance × Instructor emphasis		0.08	0.27	.05		-0.04	0.19	-.04	
Health × Instructor emphasis		0.71	0.29	.54*		-0.01	0.21	-.01	

Notes: For the sake of brevity, Step 1 of the hierarchical regression analyses is not presented.

* $p < .05$.

** $p < .01$.

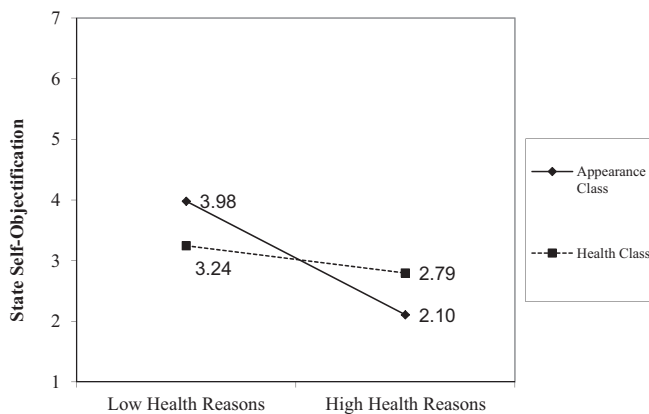


Fig. 1. The interaction between instructor emphasis and health-related reasons for exercise predicting state self-objectification. High and low health reasons for exercise were operationalized as 1 standard deviation above and below the mean, respectively.

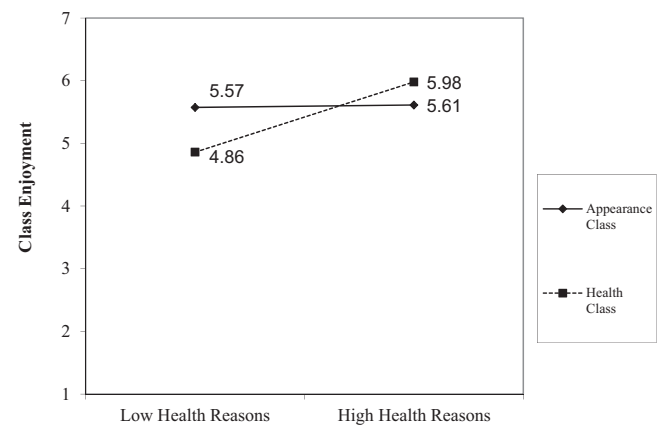


Fig. 2. The interaction between instructor emphasis and health-related reasons for exercise predicting class enjoyment. High and low health reasons for exercise were operationalized as 1 standard deviation above and below the mean, respectively.

cut-off criteria; however, they did explain meaningful additional variance ($\Delta F = 2.50, df = 2, p = .10, \Delta R^2 = .08$). In Step 3 of this analysis (see Table 5), physical activity level was a positive predictor ($p = .02$), and the interaction between health reasons for exercise and instructor emphasis was a significant predictor ($p = .04$)

of class enjoyment, $F(6, 41) = 4.19, p < .01, R^2 = .38$. Therefore, we graphed this interaction which revealed participants in the health-focused class experienced greater enjoyment when they had higher health reasons for exercise compared to those with lower health reasons for exercise ($t = 3.54, p < .01$; see Fig. 2). Those in the

Table 5
 Results of the hierarchical regression analyses predicting class enjoyment and intentions of returning.

Independent variables	Dependent variables								
	Class enjoyment				Intentions of returning				
	R ²	B	SE B	β	R ²	B	SE B	β	
<i>Step 2</i>	.31				.11				
Physical activity		0.32	0.13	.33*		-0.92	3.00	-.05	
Instructor emphasis		-0.16	0.25	-.08		-7.84	5.69	-.21	
Appearance reasons		-0.28	0.13	-.29*		-2.20	2.90	-.11	
Health reasons		0.35	0.13	.36**		5.37	2.90	.28	
<i>Step 3</i>	.38				.15				
Physical activity		0.30	0.13	.31*		-1.07	3.02	-.06	
Instructor emphasis		-0.17	0.24	-.09		-8.02	5.71	-.21	
Appearance reasons		-0.16	0.17	-.16		-1.03	3.98	-.05	
Health reasons		0.02	0.21	.02		0.52	4.89	.03	
Appearance × Instructor emphasis		-0.29	0.25	-.21		-2.98	5.77	-.11	
Health × Instructor emphasis		0.54	0.26	.46*		7.71	6.05	.33	

Notes: For the sake of brevity, Step 1 of the hierarchical regression analyses is not presented.

* $p < .05$.

** $p < .01$.

appearance-focused class had the same level of enjoyment whether they had lower or higher health reasons for exercise.

Predicting future intentions of returning. In the regression analyses predicting intentions of returning to a similar class, none of the models were significant (see Table 5).

Discussion

The present study was designed to test whether the effect of a group exercise instructor's emphasis on appearance versus health on participants' psychological responses to exercise would depend on participants' reasons for exercise (i.e., appearance versus health). Specifically, we tested potential interactions between an exercise instructor's class emphasis and reasons for exercise predicting participants' state self-objectification, state social physique anxiety, class enjoyment, and future intentions of returning to a similar exercise class in a sample of college-aged females. Results showed that the effect of the instructor's emphasis on appearance versus health on participants' state self-objectification and enjoyment during the class depended on their reasons for exercise. Consistent with past research (Prichard & Tiggemann, 2008; Strelan et al., 2003), the bivariate correlations suggested that women who had stronger health-related motives for exercise were less likely to experience state self-objectification and state social physique anxiety during the exercise class. Those having stronger appearance-related motives for exercise, on the other hand, were more likely to engage in state self-objectification during the class, also supporting past research (Prichard & Tiggemann, 2008; Strelan et al., 2003).

The main results of this study demonstrate how an exercise instructor's emphasis on appearance during class interacts with participants' health reasons for exercise to predict state self-objectification. In partial support of hypotheses, the results revealed that when participants had higher health-related reasons for exercise, they experienced lower levels of state self-objectification in the appearance-focused class compared to those with lower health-related reasons for exercise. There were no differences in state self-objectification during the health-focused class in participants with higher versus lower health-related reasons for exercise. In support of previous literature, lower levels of state self-objectification for those with higher health-related reasons for exercise in the appearance-focused class suggest that focusing predominantly on exercising to improve the body's physical capabilities (i.e., health-related motives), may aid in minimizing self-conscious thoughts while engaging in exercise, even if an exercise environment is conducive to self-conscious thoughts (Lox et al., 2010; Prichard & Tiggemann, 2008; Segar et al., 2008; Strelan et al., 2003). The findings from this study extend this literature by showing that exercising for health-related reasons seems to protect women from the objectifying comments of an exercise instructor who is emphasizing appearance-related outcomes, allowing participants to focus on the task at hand rather than being distracted by negative thoughts regarding their body.

Unlike state self-objectification, the class manipulation did not interact with reasons for exercise to predict how much state social physique anxiety participants would experience. However, supporting previous research (Crawford & Eklund, 1994), women with higher appearance reasons and lower health reasons for exercise did report greater anxiety about the appearance of their body during class. This suggests that women with higher appearance reasons for exercise and/or lower health reasons for exercise may experience elevated social physique anxiety, regardless of the particular emphasis of their instructor. Therefore, whereas having higher health reasons for exercise may decrease self-objectification in an appearance-focused class, the same cannot be said for social

physique anxiety. This finding highlights the relative importance of reasons for exercise over the specific exercise outcomes an instructor is promoting in class.

Although it was not statistically significant, the interaction between health reasons for exercise and the class manipulation explained an additional 8% of the variance in exercise class enjoyment. Specifically, this interaction showed that participants had more fun in the health-focused class when they had higher health reasons for exercise compared to lower health reasons. In the appearance-focused class, enjoyment was relatively high regardless of how strongly the women endorsed health reasons for exercise. Perhaps women who had lower health reasons for exercise in the health-focused class had less fun due to the mismatch between their own goals and the exercise outcomes that were emphasized in the class. On the other hand, women who had higher health reasons for exercise clearly enjoyed the instructor's emphases on health and fitness outcomes perhaps due to a perception that the class would fulfill their exercise goals. This finding suggests that it is not enough to promote health outcomes in an exercise class, but that it must also be consistent with the participants' reasons for exercise. Given the negative outcomes associated with appearance reasons for exercise (Prichard & Tiggemann, 2005, 2008; Strelan et al., 2003), strategies are needed to help exercisers effectively shift their reasons for exercise to more of a health-focus.

The significant bivariate correlations also support similar past research on the role of body consciousness during exercise. For example, participants experiencing higher state social physique anxiety during the exercise class were less likely to enjoy the class and less likely to return to a similar one. This finding supports research on social physique anxiety indicating that greater anxiety concerning one's body is associated with lower enjoyment and may lead to lower physical activity participation (Crawford & Eklund, 1994; Eklund & Crawford, 1994; Melbye et al., 2007). Overall, these findings demonstrate that a distracting preoccupation with one's appearance and perceived physical "shortcomings" (i.e., state self-objectification and state social physique anxiety) are associated with less exercise class enjoyment and a lower likelihood of returning in the future.

The experimental design of the present study as well as the manipulated exercise instruction were modeled after previous research (Raedeke et al., 2007) and served as strengths of the study. However, several limitations of the present study should be acknowledged. Due to the relatively specific sample, the generalizability of the study's results is limited to predominantly Caucasian, college-aged females. Results may have varied if the sample was more diverse in terms of age, race, body composition or physical activity experience. Future research utilizing the same experimental design with a larger, more diverse sample of females, varying in age or body size, would be informative. A larger sample would also afford greater power to detect even minor effects of the manipulation as well as increase the generalizability of the study's findings. It is also plausible that since the participants of the present study only participated in one experimental class, the manipulation could have a stronger influence on participants' exercise class enjoyment, body-conscious thoughts, and future intentions of returning to a similar exercise class if participants engaged in more of the same experimental class condition. Thus, future research should be conducted to examine the effects of the exercise class manipulation on participants who participate over an extended period of time. Future research should be conducted to examine the effects of the exercise class manipulation on participants who participate over an extended period of time. It may also be beneficial for exercise participants to experience both manipulated class types in order to provide a more stringent test of the differences in these same outcome variables between an appearance- and a

health-focused class. Future research should also examine the effect of an instructor's emphasis using instructors who are blind to the study's purpose. This may eliminate potential instructor biases that could influence their behavior or demeanor in the two different types of classes.

The results of the present study suggest that young adult women's exercise experience and body-conscious thoughts can be influenced by the reasons they have for exercising. Based on these findings, exercisers may allow themselves to reap both psychological and physical benefits associated with exercise by adopting a functional view of the body and focusing on the health benefits exercise provides. This orientation may allow participants to direct their attention away from how their body looks during the activity and, thus, allow them the opportunity to experience intrinsic motivation for the activity, which has ultimately been associated with higher levels of exercise adherence (Cury, Biddle, Famose, Sarrazin, Durand, & Goudas, 1996; Greenleaf, 2005; Huberty et al., 2008; Segar et al., 2006, 2008; Strelan et al., 2003; Quinn, Kallen, Twenge, & Fredrickson, 2006; Quinn, Chaudoir, & Kallen, 2011). By setting goals related to improving physical capabilities such as strength or endurance and using them to fuel an exercise regimen, exercise participants' attentional focus can be trained to concentrate on how much their body's fitness level is improving as opposed to the appearance changes that may also occur. Since promoting body functionality has been associated with more positive bodily experiences (Avalos & Tylka, 2006; Avalos, Tylka, & Wood-Barcalow, 2005), exercise professionals should take note of the current findings and further benefit their participants or clients by creating an atmosphere that encourages appreciating the body for the way it functions or performs as opposed to an object evaluated by others. Fitness facilities can also benefit from disseminating these findings and encouraging their exercise instructors to create a health-centered atmosphere in their exercise classes because a more positive exercise experience could lead to sustained memberships. In a society that is constantly portraying a female's body as something that can be molded into perfection, it becomes difficult for women to appreciate their own physical abilities. By using exercise as a source of empowerment and a means of improving these physical capabilities, women may be less likely to be influenced by society's constant ambush of objectifying images and messages designed to create the normative discontent they tend to experience for their body (Fredrickson & Roberts, 1997; Fredrickson et al., 1998).

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