Through Their Eyes: Exploring the Relationship between College Females’ Body Perceptions and Recreation Center Messaging

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ABSTRACT

International Journal of Exercise Science 14(5): 1112-1122, 2021. The study aimed to investigate the influence that recreation center promotional messaging had on college females’ body perceptions. Female participants 18 to 25 years of age (N = 137, Mage = 20.41) from a mid-sized, Midwestern university completed two separate body perception questionnaires. These questionnaires assessed body appreciation (functionality) and body shame (appearance). Participants were divided into three groups and shown a collage of recreation center messages that were portraying one of three conditions: (a) body functionality, (b) body appearance, or (c) neutral images. Participants then completed post-collage surveys to capture acute responses in body perceptions based on the collage that was viewed. Results indicated that those who viewed the body functionality collage had a significant decrease in body shame scores from pre- to post-survey completion, but those who viewed the body appearance collage had no significant change in body perception. This study provides preliminary work for researchers to expand upon in order to enhance recreation center usage among female students.

KEY WORDS: Body functionality, self-objectification, college recreation centers

INTRODUCTION

Universities can serve as a unique environment for monitoring and facilitating their students’ health decisions and behaviors. College campus recreation centers can serve as a resource that are often included in student fees and could aid students in addressing and maintaining mental and physical health behaviors (12). However, according to the 2014 National Intramural-Recreational Sports Association (NIRSA) report on collegiate recreation center usage, only 39% of students are consistently using the recreation center three or more times a week (9). Moreover, Wilson et al. (2020) examined gender differences in recreation center use and found that not only are females less likely to use the recreation center, but also felt uncomfortable exercising in the
recreation center compared to males (27). Thus, in order to target a broader audience, understanding the reason for gender disparities of recreation center usage is needed.

It is plausible that recreation centers may need to consider the promotional messages they send to students regarding health and wellness programs to target more gender diverse student groups. Historically, promotional messages in Western media culture tend to depict an inaccurate representation of what the female body should look like—placing an emphasis on body appearance and unhealthy thinness (11, 13, 14, 28). In their effort to understand the reasons of sport cessation among adolescent girls, Slater and Tiggemann (2010) discovered that the participants were concerned about appearance while describing the “ideal” female body as “thin”, with an “hour glass figure”, “tight butt”, “nice boobs”, and a “pretty face” (23, p.625). The “ideal” female body is often used as promotional messaging in the fitness industry (6, 26). Willis and Knobloch-Westerwick (2013) analyzed 5,000 magazine pages published in a variety of women’s health and fitness magazines and discovered that one fifth (~1000 pages) of the content promoted weight loss and appearance behaviors over sustainable health behaviors (26). Consequently, women who use appearance and weight management as a motivator for physical activity tend to have higher exercise attrition rates and higher levels of self-objectification (4, 21, 24). Self-objectification can result in appearance internalization (i.e., perception of being objects to be viewed rather than human beings), negatively impact mental and emotional health, and has been found to be correlated to feelings of body shame in females (10, 15, 17). Fortunately, promotional messages focusing on health instead of appearance have been found to protect women from objectifying images and could be a possible strategy to increase campus recreation center participation of the female student population (3).

Body functionality is a health-centered term that places emphasis on what the body is able to accomplish physiologically (5). Campbell and Hausenblas (2009) conducted a systematic review to examine the effects of body functionality-focused exercise and discovered an overall positive body image response (8). Additionally, Mulgrew et al. (2018) found that women who were shown internet videos of other women engaging in health-related functionality-focused exercises (e.g., cardiovascular training, resistance training, and flexibility exercises) reported an increase in appearance satisfaction as well as an acute increase in exercise intention (19). When focusing on body functionality, women reported having higher body appreciation than those who focused on losing weight or enhancing body appearance (1, 28). Furthermore, simply talking about health benefits versus appearance outcomes from exercise can elicit greater body appreciation in female students (25). While prior researchers have established a perceptual difference in body functionality and body appearance-focused messages, to date, no studies have been designed to determine how promotional messages might be perceived in a campus recreation center setting.

In order to determine ways to encourage all students to use the recreation center, a necessary first step is to understand how current promotional messages are being perceived by female students. Therefore, the purpose of this study was to determine if promotional messages utilized by college recreation centers could elicit a body perception response in female students. We
hypothesized that the body functionality and body appearance promotional messages would elicit a significant response in body appreciation and body shame, respectively.

METHODS

Participants
This research was carried out fully in accordance to the ethical standards of the International Journal of Exercise Science (20). College females age 18-25 years (M= 20.41, SD= 1.50) were recruited from a mid-sized (~11,000 students), Midwestern university for study participation. Participant inclusion criteria included age 18 to 25, female, and self-reported attendance at the recreation center and/or participation in at least one recreation center event outside of class (i.e., fitness classes, intramural sports, pool, fitness areas) in the last 12 months. This attendance item was included in order to ensure students may have adequate context for recreation center messaging. If participants did not fit the above criteria, they were excluded from completing the study. A total of 179 participants completed the survey with 42 of those responses being omitted due to survey incompletion, leaving 137 eligible participants. A MANOVA repeated measures, between factors power analysis conducted with G*POWER 3.1 (Universitat Kiel, Germany) determined that 129 participants were needed for a power of 0.95, an effect size of 0.25, and a significance level of $\alpha = 0.05$. All participants provided written informed consent prior to participation and the university’s Institutional Review Board (IRB) and Protections for Human Research Participants approved the protocol.

Protocol
Recruitment emails were sent to participants through the university’s student list-serves across a variety of different university programs. Students were provided information about the study and criteria for participation (i.e., female students/age/recreation center involvement) as well as the survey link. Full study and survey instructions were provided and participants consented to participate by beginning the electronic survey.

Qualtrics survey software was used to administer the body perception surveys and the promotional message (Qualtrics, Provo, UT). The survey link was sent to 31 different department secretaries for distribution to students in their respective cohorts and took approximately 10 minutes to complete. Three different collages (mixed text and photo media images - independent variables) were designed to showcase two different body-focused messages and one general college-life message: (a) body functionality, (b) body appearance, and (c) neutral (control condition). Two body perception surveys (dependent variables) were completed pre- and post- collage viewing. Participants were instructed to answer the surveys based on how they were feeling in that moment. Participants reported demographic information and then completed the pretest measures of the two body perception surveys assessing body appreciation (a subscale of body functionality) and body shame (a subscale of body objectification). Participants were then randomly assigned to one of the three collage groups and shown the corresponding collage for a 20 second interval. Participants then completed posttest measures of the two body perception surveys.
Demographic information included gender, age, race, and year in school. The body perception surveys included the Functionality Appreciation Scale (FAS, 2) which assessed the perception of body appreciation and the Body Shame Subscale (BSS) from the Objectified Body Consciousness Scale (16) was used to capture level of body shame.

FAS: The FAS is a 7-item measure scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Total scores from each question are averaged together therefore scores ranged from 1 to 5. Those who score high on the scale, have a strong appreciation for their bodies. This measure was developed to demonstrate the benefits of focusing on what the body can do and how this mindset might offset the thoughts of self-objectification. Example items on the scale include, “I appreciate my body for what it is capable of doing” and “I respect my body for the functions that it performs”. The FAS has strong internal consistency (Cronbach’s α = 0.86; current sample α = 0.91 [pretest], 0.78 [posttest]) and has shown adequate psychometric qualities across young adult female populations (2).

BSS: The BSS is a subscale of a larger body perception measure (i.e., The Objectified Body Consciousness Scale) and was developed to understand the social pressure that women experience to conform to societal standards. The BSS is an 8-item measure scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Total scores are averaged together therefore scores range from 1 to 7. Females who score high on this measure, indicate feelings of self-dislike for failing to live up to societal body expectations. Example items from this measure include, “I would be ashamed for people to know what I really weigh” and “When I’m not the size I think I should be, I feel ashamed”. The internal consistency for the BSS is acceptable (Cronbach’s α = 0.75; current sample α = 0.94 [pretest], 0.84 [posttest]; 16).

The promotional message collages were developed from a variety of different images collected from the social media and website pages of approximately 100 U.S. university recreation centers similar to the single Midwestern University that participants were recruited from (i.e., public university, baccalaureate or higher, similar enrollment numbers). Brown and colleagues found that group-fitness class names evoke feelings of pressure when promoting appearance as opposed to health (7), therefore class titles from the university recreation centers were added to the collages. The body functionality collage (Figure 1) contained pictures representing a diversity of females partaking in a variety of workouts (e.g., strength training, boxing, climbing) and group fitness class titles promoting body appreciation (e.g., Functional Strength, Feel Good Yoga, Full Body Power). The body appearance collage (Figure 2) contained pictures representing females that had the “ideal body”. The body appearance collage also included group fitness class titles such as “Waist Watchers” and “Fit and Flirty”. The control collage (Figure 3) was composed of neutral images that depicted aspects of college life (e.g., pencils, books, laptops) with corresponding text that read “Homework” and “Semester”. The collages were examined for content validity by experts in physical self-perceptions and body image and sport and exercise psychology graduate students to ensure the images in the collages aligned with the underlying body perception. Content validity for the three collages was also demonstrated through a confirmation question at the end of the study when participants were asked what their randomized collage represented through a multiple-choice confirmation question.
Figure 1. The body functionality collage placed an emphasis on physical health.

Figure 2. The body appearance collage placed an emphasis on physical appearance.
For the pre-test protocol, the participants completed the FAS and BSS in randomized order and then were randomly shown one of the three promotional collages for a 20 second time interval. Each collage was composed of pictures and text to elicit a body perception reaction appropriate to the specific condition (i.e., body functionality to body appreciation, body appearance to body shame, and neutral). At the end of the 20 second viewing, the collage disappeared and participants completed the FAS and BSS again in randomized order. A multiple choice confirmation response was captured after participants completed the post-collage questionnaires so participants could verify what body-message they believed their collage was promoting (i.e., physical health [body functionality], physical appearance [body shame], or neutral). A large percentage of participants correctly identified their respective collage message with 88% perceiving the body functionality collage as portraying physical health, 93% of participants perceiving the body appearance collage as portraying physical appearance, and 80% correctly identifying the control image as portraying neither physical health nor appearance.

Statistical Analysis
IBM SPSS Statistics for Windows, Version 25.0 was then used to analyze the data. This study utilized a 3 (promotional messaging) x 2 (body perception measures) repeated measures multivariate analysis of variance (MANOVA) design to determine any statistically significant differences in the pre-post survey subscale scores across the three conditions. Post hoc Tukey comparisons were used to determine where specific group differences emerged.
RESULTS

A total of 137 eligible participants (48 body functionality group, 45 body appearance group, 44 control group) completed the pre-post surveys. The demographic data revealed that a majority of the participants were White/Caucasian (n = 130, 95%). The mean age of participants was 20.41 years (SD = 1.50), with an age range between 18-25 years. Consequently, a majority of participants reported to be seniors (n = 41, 29.9%) and juniors (n = 38, 27.7%). Full participant characteristics can be found in Table 1.

Table 1. Participant Characteristic Table by Condition.

<table>
<thead>
<tr>
<th>Background Variable</th>
<th>Body Functionality Group (n=48)</th>
<th>Body Appearance Group (n=45)</th>
<th>Control Group (n=44)</th>
<th>Total (N=137)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>18-19</td>
<td>19</td>
<td>39.60</td>
<td>12</td>
<td>26.60</td>
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<td>20-21</td>
<td>21</td>
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<td>22</td>
<td>48.90</td>
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<tr>
<td>22-23</td>
<td>8</td>
<td>16.70</td>
<td>8</td>
<td>17.70</td>
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<tr>
<td>24-25</td>
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<td>0.00</td>
<td>3</td>
<td>6.60</td>
</tr>
<tr>
<td>School Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>13</td>
<td>27.10</td>
<td>6</td>
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<tr>
<td>Sophomore</td>
<td>8</td>
<td>16.70</td>
<td>7</td>
<td>15.60</td>
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<td>Junior</td>
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<td>14.60</td>
<td>14</td>
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</tr>
<tr>
<td>Senior</td>
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<td>39.60</td>
<td>14</td>
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<td>Graduate</td>
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<td>2.10</td>
<td>4</td>
<td>8.90</td>
</tr>
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<td>93.30</td>
</tr>
<tr>
<td>More than one</td>
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<td>4.20</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Other</td>
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<td>2.10</td>
<td>0</td>
<td>0.00</td>
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Table 2. Reported Pre-Posttest Measure Reliability, Mean Differences, and Standard Deviations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Pre (SD)</td>
</tr>
<tr>
<td>Functionality Appreciation Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Functionality Group</td>
<td>48</td>
<td>4.53 (0.45)</td>
</tr>
<tr>
<td>Body Appearance Group</td>
<td>45</td>
<td>4.27 (0.79)</td>
</tr>
<tr>
<td>Control Group</td>
<td>44</td>
<td>4.43 (0.42)</td>
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<tr>
<td>Body Shame Subscale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Functionality Group</td>
<td>48</td>
<td>3.89 (1.0)</td>
</tr>
<tr>
<td>Body Appearance Group</td>
<td>45</td>
<td>4.23 (1.0)</td>
</tr>
<tr>
<td>Control Group</td>
<td>44</td>
<td>3.86 (1.1)</td>
</tr>
</tbody>
</table>

Note. * = Significant difference (p < 0.001); FAS Responses = 1-5 point Likert scale; BSS Responses = 1-7 point Likert scale

The 3x2 MANOVA revealed that the type of collage that was viewed was significantly associated with body perception \( F(2, 133) = 4.0, p < .05, \eta^2 = 0.06 \). Further post-hoc Tukey test analyses revealed that participants who saw the body functionality collage, had a significant decrease in their pre- to post- body shame measures with a medium effect size \( F(2, 133) = 8.5, \)
No significant differences in body perception emerged for those who viewed the body appearance collage \([F (2, 133) = 0.11, p > 0.05, \eta^2 = 0.00]\) and the control collage \([F (2, 133) = 1.2, p > .05, \eta^2 = .02]\) (Table 2).

**DISCUSSION**

This purpose of this study was to determine whether promotional messages produced by college recreation centers could influence female body perception. The results showed a significant reduction in body shame scores after viewing the body functionality collage, however the hypothesis that the body appearance collage would elicit a body perception response was not supported. This research extends prior research of promotional messaging and body perception to a recreation center setting and provides preliminary work for future research to expand upon.

The main finding of the current study was that women who viewed the body-functionality collage had significantly lower post-test scores on the body shame measure. This finding coincides with prior research that suggests that focusing on body functionality could be beneficial for overall body image (1). Additionally, it supports the research that specific physical activity messaging focused on body functionality may safeguard women from feelings of body shame (3). While using body-functionality promotional messages might not be able to counteract the effects of body shame altogether, this type of messaging may provide a more neutral and comfortable setting for female users. Interestingly, participants who viewed the body functionality collage did not have a significant change in body appreciation scores. Females in this study scored fairly high on the FAS at pretest \((M = 4.42\) on a 5 point Likert scale) which may suggest a ceiling effect of this measure.

Contrary to the hypothesis, there was no significant change in body shame for those who viewed the body appearance collage. This finding contradicts prior research that has shown an increase in body shame in response to viewing objectifying images (18). Surprisingly, there was also no change in body appreciation. It is plausible that participants may not have had a significant body perception response to the body appearance collage because they are used to seeing objectifying images. For example, modern technology is heavily media based, therefore females are typically exposed to these images on social media everyday (11). Additionally, Bazzini et al. (2015) investigated the difference in how health is marketed to men and women. After analysis of 54 covers of men and women’s health magazines, the researchers concluded that women’s health covers were more likely to promote appearance and thin-ideal images than males (6). Since the body appearance collage was comprised of images similar to those seen in health magazines, the single study design of the present study might not have been influential enough to elicit a change in body perception. Future researchers might investigate the degree that objectifying images are normalized in society-- more specifically, a campus recreation center setting, and how this might have a long-term effect on body perception as well as psychological comfort for recreation center use.
Additionally, an inclusionary criteria for the study was that participants were required to have attended the recreation center once within the last 12 months. This criteria was included to ensure that participants were aware of the promotional messaging in the recreation center. However, this inclusion criteria may have been the reason that participants did not have a significant change in body perception after viewing the body appearance collage. Prior research has shown that participation in physical activity is linked to less negative and more positive body image whereas low physical activity participation is linked to high negative body image (22). This inclusion criteria could have affected the external validity of the results since explicit information about physical activity participation was not collected. Future researchers might replicate this study and objectively measure physical activity in order to gain a better understanding of how physical activity participation could be related to body-focused promotional messages.

There were several limitations for the present study. The study protocol captured single, acute responses from the recreation center messaging and did not examine any long term (chronic) responses or feelings about body perceptions. Given that the study was a survey design, response bias was a limitation for the present study. To minimize response bias, the two standardized measures that were used contained a “neutral” option so participants were not required to answer the question. Additionally, participants were ensured in the instructions that the survey would be anonymous. We chose a convenient sample to test our hypotheses, therefore participants were close in age and from a single Midwest university with low diversity (i.e., primarily Caucasian, 95%). The randomization design of the collages was useful in ensuring that each collage was seen by different ages. Future researchers might replicate this study with larger and more diverse universities and colleges to examine differences in recreation center messaging and the possible impact on body perceptions across multiple races and ethnicities, as research has shown racial and cultural differences in body image/perceptions (13). Further, information regarding participant body type (e.g., BMI) or current physical activity behaviors was not collected, therefore it is plausible that participants could have identified more with the body appearance collage than they did with the body-functionality collage.

The finding that body functionality-focused messages can reduce acute feelings of body shame provides a framework of how recreation center directors might consider promoting their services. For example, they might use promotional messages that focus on how the recreation center and activity programming can be used to enhance mental and physical health through regular exercise while using gender-and body-diverse images of university students who use the recreation center. Additionally, the observation that the body appearance collage had no impact on body perception warrants further research of the degree of normalization of objectifying images in recreation center promotional messaging and/or how this type of promotional message might affect a non-recreation center user. Overall, this study adds to the literature regarding gender disparity of recreation center use and provides preliminary work for researchers to expand upon in order to enhance recreation center usage among female students. Campus recreation centers have the tools and resources to equip female students with healthy behavior practices that could assist them in college. Therefore, evaluation of current efforts to encourage female recreation center usage is warranted.
REFERENCES


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