

THE RELATIONSHIP BETWEEN APPEARANCE COMPARISONS AND DISORDERED
EATING BEHAVIORS: A PROPOSED MODEL AND A TEST OF AN INTERVENTION

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The Relationship Between Appearance Comparisons and Disordered Eating Behaviors: A Proposed Model and a Test of an Intervention

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ABSTRACT

One sociocultural factor that has been implicated as a risk factor in the development of eating disorders is a tendency to compare one's appearance to others' (appearance-related comparisons). The aims of the current study were to propose a detailed model of the relationship between appearance comparisons and disordered eating behaviors based on a review of previous literature and to experimentally test an intervention generated from this model. Previous research reports inconsistent findings regarding the potential differential impact of comparisons to universalistic (i.e., distant sources of influences) and particularistic (i.e., close sources of influence) targets. The intervention aimed to alter appearance comparisons to either media targets or peer targets to determine if there is a differential impact of a peer-target intervention and a media-targeted intervention on body dissatisfaction, frequency of comparisons, and the relevance of the comparison target. The intervention was designed to help participants view themselves as dissimilar to their comparison targets, lowering their likelihood of making appearance comparisons and increasing appearance esteem and body image. Participants, undergraduate females, were randomly assigned to one of three conditions: peer-targeted intervention, media-targeted intervention, or a control group. Results revealed that both the media-targeted and peer-targeted interventions reduced the relevance of the comparison target, increased appearance esteem, and increased state body image. However, neither of the interventions reduced the frequency of appearance comparisons to peer or media targets in the week following the intervention. Theoretically, the current paper extends the literature by providing a comprehensive model of factors that link appearance comparisons to disordered eating behaviors. Clinically, the study provides a promising intervention for reducing the negative impact of appearance comparisons on body image, and potentially, eating behaviors.

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TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGMENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
INTRODUCTION.....	1
METHOD	16
DATA ANALYTIC STRATEGY & RESULTS	21
EXPLORATORY ANALYSES	29
DISCUSSION.....	30
REFERENCES	35
APPENDIX A. PHYSICAL APPEARANCE COMPARISON SCALE- REVISED	46
APPENDIX B. PHYSICAL APPEARANCE COMPARISONS SCALE- MEDIA	47
APPENDIX C. STATE SELF-ESTEEM SCALE	48
APPENDIX D. BODY IMAGE STATE SCALE	49
APPENDIX E. APPEARANCE COMPARISON INTERVENTION SCRIPT.....	51

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Descriptive statistics and correlations for all variables at Time 1.....	22

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. The proposed model depicting variables that impact the relationship between appearance comparisons and disordered eating behaviors.....	9
2. The interaction between condition and time on frequency of peer comparisons	23
3. The interaction between condition and time on frequency of media comparisons	24
4. The interaction between time and intervention conditions on target relevance ratings ...	25
5. The interaction between condition and time on appearance esteem	26
6. The interaction between intervention conditions and time on appearance esteem	27
7. The interaction between time and condition on state body image	28
8. The interaction between intervention conditions and time on state body image	28

INTRODUCTION

Approximately 4% of women and 3% of men suffer from an eating disorder at some point in their life (Hudson, Hiripi, Pope Jr, & Kessler, 2007). Eating disorders are a significant public health concern that result in severe medical and psychological consequences for those affected by them (Hudson et al., 2007). Some of the severe medical consequences include cardiovascular complications, osteoporosis, and increased risk of premature mortality across all eating disorder diagnoses (e.g., Mitchell & Crow, 2006; Crow et al., 2009). The wide range of psychological problems associated with disordered eating includes low self-esteem, impaired social functioning, comorbid mental disorders, and deficits in overall psychological well-being (Tomba, Offidani, Tecuta, Schumann, & Ballardini, 2014; Button, Loan, Davies, & Sonuga-Barke, 1997; De la Rie, Noordenbos, & Van Furth, 2005; Wonderlich, Gordon, Mitchell, Crosby, & Engel, 2009).

Past research has focused on identifying potential factors and etiological models that offer insight into the development of these pernicious disorders. One model that has gained attention due to the increases in media access in recent years is the sociocultural model of eating disorders. According to this model, internalizing the thin ideal increases one's body dissatisfaction and negative affect (Garner & Garfinkel, 1980). These detrimental effects are posited to make one vulnerable to developing disordered eating behaviors (Krones, Stice, Batres, & Oriada, 2005; Striegel-Moore, Silberstein, & Rodin, 1986; Stice, Schupak-Neuberg, Shaw, & Stein, 1994).

One specific sociocultural factor that has been implicated as a risk factor in the development of eating disorders is a tendency to compare one's appearance to others (appearance-related comparisons). Overall, research supports associations between appearance-

related comparisons and disordered eating (e.g., Fitzsimmons-Craft, 2011; Thompson, Covert, & Stormer, 1999), but the exact nature of the relationship is not well understood. The aims of this study were to propose a detailed model of the relationship between appearance comparisons and disordered eating behaviors based on a review of previous literature and to test two interventions generated from this model.

Social Comparison Theory

Festinger's Social Comparison Theory (1954) offers a potential explanation for the association between appearance-related comparisons and disordered eating behaviors. Festinger asserts that all people are motivated to compare themselves to others in an effort to evaluate their opinions and abilities. Furthermore, Festinger states that we are more likely to compare ourselves to others who we view as similar to ourselves and if a discrepancy exists between ourselves and the comparison target, we will initiate action in an effort to eliminate this discrepancy (p. 124). A number of factors have been found to impact the consequences of appearance-related social comparisons and are reviewed below.

Frequency of Exposure & Comparisons. Although making social comparisons is a natural process to evaluate one's standing in relation to others, there are some people who have a tendency to make more frequent social comparisons. Research suggests that more frequent appearance-related comparisons leads to increased eating disturbances including higher levels of body dissatisfaction, unhealthy weight control behaviors, and disordered eating behaviors (e.g., Keery, Van den Berg, & Thompson, 2004; Shroff & Thompson, 2006; Van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). Based on these findings, the proposed model includes frequency of comparison as a moderator in the relationship between appearance-related

comparisons and disordered eating behaviors, with more frequent comparisons resulting in more severe disordered eating attitudes and behaviors.

Direction of Comparison. Research suggests that appearance-related comparisons are unique in that most people tend to make upward, rather than downward comparisons along this dimension (e.g., Leahy, Crowther, & Mickelson, 2007; Wheeler & Miyake, 1992). The direction of comparison is thought to impact our subsequent feelings. Several studies have linked upward appearance comparisons to increased negative affect, increased body dissatisfaction, thoughts of dieting, and disordered eating behaviors (e.g., Arigo, Schumacher, & Martin, 2014; Bailey & Ricciardelli, 2010; Leahy et al., 2007; Lyubomirsky & Ross, 1997; VanderZee, Buunk, & Sanderman, 1996; O'Brien et al., 2009; White, Langer, Yariv, & Welch, 2006). Upward comparisons do not necessarily result in negative consequences. For example, they could serve as an inspiration to improve oneself in the domain related to the target of comparison if the target is viewed as attainable (e.g., Burleson, Leach, & Harrington, 2005; Buunk, Collins, Taylor, VanYperen, & Dakof, 1990). Our proposed model identifies direction of comparison as a moderator in the relationship between appearance comparisons and disordered eating, such that upward comparisons, particularly when the target is viewed as unattainable, increases one's vulnerability to disordered eating behaviors, when compared to downward comparisons.

Universalistic versus Particularistic Targets. A further distinction can be made in the nature of the target to which we compare ourselves. Miller, Turnbull, & McFarland (1988) distinguished between "universalistic" targets, distant sources of influence, such as the media, and "particularistic" targets, close sources, such as friends and family. With regard to universalistic targets, more exposure to the media is thought to result in increased negative affect, body dissatisfaction, and lower self-esteem, well-documented risk factors for eating

disorders (e.g., Vohs et al., 2001; Bardone-Cone et al., 2006) and make individuals more susceptible to developing an eating disorder (Becker et al., 2002; Tiggemann & Polivy, 2010; Tiggemann & McGill, 2004; Tiggemann, Polivy, & Hargreaves, 2009). Meta-analyses demonstrate a consistent relationship between exposure to the thin ideal in the media and disordered eating behaviors (Myers & Crowther, 2009; Groesz, Levine, & Murnen, 2002; Ferguson, 2013; Grabe, Ward, & Hyde, 2008). While these meta-analyses provide a review of variables, none provide a comprehensive overview of the relationship between appearance-related comparisons and disordered eating behaviors, taking into account demographic variables, individual differences characteristics, and also the nature of the comparison.

Research suggests people prefer to compare themselves to similar others (Festinger, 1954; Miller et al., 1988), and two randomized experimental studies have found evidence suggesting that exposure to a slender peer results in increased body anxiety and body dissatisfaction (Heinberg & Thompson, 1992; Krones, Stice, Batres, & Orjada, 2005). With regard to the differential impact of universalistic versus particularistic comparison targets on eating disorder related variables, the literature reports inconsistent findings as related to whether media images or peers lead to the most negative consequences (e.g., Leahy & Crowther, 2008; Myers & Crowther, 2009; Morrison, Kalin, & Morrison, 2004). Given these conflicting findings on the impact of making appearance comparisons to universalistic and particularistic targets, further research is needed to examine potential differential consequences and whether these negative consequences are specific to particular conditions and individuals. Our theoretical model identifies target type as a moderating variable, but further research is necessary to understand the exact nature of this relationship.

Individual Difference Characteristics

Despite our universal exposure to the media and the far-reaching influence of the thin ideal, only a subgroup of individuals develops disordered eating behaviors. To reiterate, research suggests that appearance-related comparisons are unique in that most people tend to make upward, rather than downward comparisons along this dimension (Wheeler & Miyake, 1992). If upward appearance-related comparisons are common and only some develop disordered eating behaviors, this suggests individuals are differentially affected when comparing themselves to people they deem to be more attractive. Recently, researchers have begun examining individual characteristics, including self-esteem, affect, body dissatisfaction, and internalization of the thin ideal, that would potentially mediate or moderate the relationship between the sociocultural ideals and eating disturbances (e.g., Cafri, Yamamiya, Brannick, & Thompson, 2005; Pokrajac-Bulian, Ambrosi-Randic, & Kukic, 2008).

Self-Worth. Those whose self-worth is largely contingent on appearance are more likely to engage in frequent upward comparisons and also more likely to be negatively affected (e.g., increased body dissatisfaction) by these comparisons (e.g., Corning, Krumm, & Smitham, 2006; Overstreet & Quinn, 2012; Posavac et al., 1998). Accordingly, our proposed model incorporates self-worth as a mediating variable in the relationship between appearance comparisons and disordered eating, such that upward appearance comparisons lead to low self-worth which leads to an increased likelihood of engaging in disordered eating behaviors.

Negative Affect. Negative affect is a well-established risk factor for disordered eating behaviors (e.g., Wonderlich et al., 2014; Hopwood, Ansell, Fehon, & Grilo, 2011) and it has been implicated as both a precursor and a consequence of social comparisons (e.g., Aspinwall & Taylor, 1993). Experimental research has found that exposure to the thin ideal leads to increases

in anxiety, depression, anger, and confusion (Hawkins, Richards, Granley, & Stein, 2004; Heinberg & Thompson, 1995).

In contrast, an experiment conducted by Kronen et al. (2005) did not find an increase in negative affect, measured by the Positive Affect and Negative Affect Schedule Revised (PANAS-X; Watson & Clark, 1992), following an interaction with a confederate peer who embodied the thin-ideal. Polivy & Herman (2004) speculated that the difference in outcomes might rely on whether the individual believes they can attain the thin ideal. Some may view models as an inspiration and may encourage certain individuals to imagine themselves as thinner, which would increase positive affect. Despite the difference in affect, the authors warn that both experiences, whether positive or negative, may promote dieting, which is a strong precursor to disordered eating.

Body Dissatisfaction. An overwhelming amount of evidence suggests appearance-related comparisons lead to higher levels of body dissatisfaction, defined as dissatisfaction with one's body weight or shape (e.g., Bessenoff, 2006; Engeln-Maddox, 2005; Ferreira, Pinto-Gouveia, & Duarte, 2013; Hausenblas et al., 2013; Myers & Crowther, 2009). In addition to being a negative consequence of body comparisons, body dissatisfaction is also thought to both increase the incidences of appearance-focused social comparisons and affect the nature of their impact, in that exposure to thin ideal media specifically affects those with pre-existing body dissatisfaction (Ferguson, 2013; Leahy & Crowther, 2008; Leahy, Crowther, & Mickelson, 2007; Posavac, Posavac, & Posavac, 1998). Accordingly, body dissatisfaction is identified as a bidirectional-mediating variable in the relationship between appearance comparisons and disordered eating behaviors, such that more frequent comparisons lead to increased body

dissatisfaction which increases one's risk for developing an eating disorder, and higher body dissatisfaction increases the frequency of engaging in appearance comparisons.

Internalization of the Thin Ideal. Heinberg, Thompson, & Stomer (1995) emphasize the importance of the distinction between awareness of and internalization of the thin ideal that is portrayed in the media. Awareness of the thin ideal, as defined by Heinberg et al., (1995), is understanding the importance of being thin in our society, whereas internalizing the thin ideal is incorporating it into your own belief system. Studies have shown that only those who internalize the thin ideal, as opposed to those who are merely aware of it, will experience negative effects of exposure to thin models in the media (Halliwell & Dittmar, 2004; Dittmar & Howard, 2004). Furthermore, research suggests internalization of the thin ideal does not increase following exposure to the thin ideal, but does exacerbate these symptoms for those who already have them (e.g., Hawkins et al., 2004). Thus, our proposed theoretical model positions internalization of the thin ideal as a precursor to appearance comparisons, in that only individuals who have internalized the thin ideal will be negatively affected by appearance comparisons.

Eating Disorder Symptoms Increase Frequency of Comparisons

The previous studies reviewed focused primarily on the mechanisms through which social comparisons lead to disordered eating behaviors. However, research also exists suggesting that the relationship between disordered eating behaviors and social comparison is bi-directional, in that appearance-related social comparisons lead to a number of risk factors associated with disordered eating, and disordered eating behaviors are associated with making more body shape and weight comparisons (e.g., Corning, Krumm, & Smitham, 2006). It is likely women with eating disorders, who are dissatisfied with their bodies and place excessive importance on their body weight and shape, seek out comparison targets in the media, thus increasing the frequency

in which they are exposed to the thin ideal. Thus, our theoretical model identifies a reciprocal relationship between appearance comparisons and disordered eating behaviors, in that comparing one's body to others increases one's risk for engaging in disordered eating behaviors and these eating disorder symptoms increase one's likelihood of making appearance comparisons due to their preoccupation with shape and weight.

Demographic Variables

Several demographic variables have been identified as potential moderators for the relationship between appearance-related comparisons and disordered eating behaviors. Research suggests there is a stronger relationship between social comparisons and body dissatisfaction in younger, rather than older individuals, due to their increased vulnerability to messages from media outlets (e.g., McCabe & Ricciardelli, 2005; Myers & Crowther, 2009). In addition, research suggests the relationship between media exposure and eating disordered symptoms (e.g., body dissatisfaction) is moderated by ethnicity, such that Caucasian women tend to be more likely to engage in appearance comparisons and are more severely affected by them (e.g., DeBraganza & Hausenblaus, 2010; Chen & Jackson, 2012). Although the majority of research on appearance-related comparisons involves female samples, research on the impact of appearance comparisons on men has received increased attention recently (e.g., Myers & Crowther, 2009). Research has shown that both men and women engage in appearance comparisons (e.g., Strahan, Wilson, Cressman, & Buote, 2006) and these comparisons have been shown to result in negative consequences for both men and women (Halliwell & Harvey, 2006). Although appearance-based social comparisons negatively affect both males and females, research suggests there is a stronger association for females than males, which is attributed to the greater societal pressure on women with regards to their appearance as well as women's

tendency to make more frequent appearances and more upward comparisons than men (e.g., Morrison, Kalin, & Morrison, 2004; Myers & Crowther, 2009; Strahan et al., 2006). Given these findings, the proposed model incorporates age, ethnicity, and gender as a moderating variable, in that Caucasian, adolescent women are more susceptible to engaging in disordered eating behaviors following appearance comparisons.

The Proposed Model

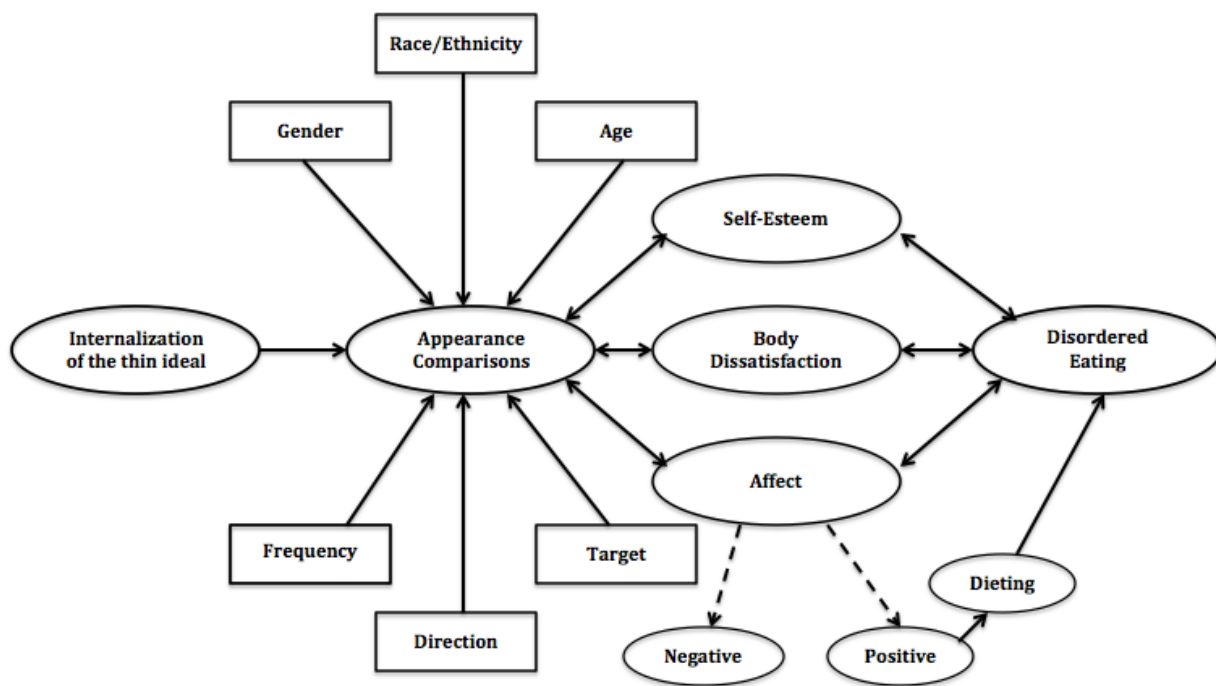


Figure 1. The proposed model depicting variables that impact the relationship between appearance comparisons and disordered eating behaviors.

A comprehensive model is needed to more fully understand the relationship between appearance comparisons and disordered eating behaviors. Thus, a model summarizing key variables identified in the literature and their impact on the relationship between appearance comparisons and disordered eating behaviors has been proposed (See Figure 1). The proposed

model begins with internalization of the thin ideal, as previous research suggests appearance comparisons only negatively impact those who have adopted the thin ideal as a personal belief (Rodgers, McLean, & Paxton, 2015). Several moderating variables, including variables related to the nature of the target and demographics, are identified in the model. Gender, race and ethnicity, and age are incorporated as moderators in the relationship between appearance comparisons and disordered eating as previous research has shown that adolescent girls from Western countries are particularly susceptible to the negative consequences of appearance-related comparisons (Meyers & Crowther, 2009; Chen & Jackson, 2012). In addition, the type of target, the frequency of appearance comparisons, and the direction have been included due to their impact on the relationship between appearance comparisons and disordered eating. More specifically, engaging in frequent upward comparisons, particularly when the target is viewed as unattainable, has been found to more negatively impact individuals' body image and weight-related behaviors (e.g., Keery et al., 2004; Leahy et al., 2007). Research has produced inconsistent results regarding the impact of the type of target (universalistic vs. particularistic) on disordered eating symptoms. Therefore, this factor requires further testing to specify the nature of the relationship.

Additionally, research suggests some individuals are more vulnerable to developing eating disorder symptoms following exposure to the thin ideal. Specifically, body-dissatisfied individuals who have internalized the thin ideal whose self-worth is largely based on body shape and weight are more likely to develop unhealthy weight control behaviors after engaging in appearance-related comparisons (e.g., Halliwell & Dittmar, 2004; Leahy, Crowther, & Mickelson, 2007). In addition, both positive and negative affect has been implicated as mediating variables. However, while negative affect has been shown to have a direct relationship to disordered eating behaviors, positive affect has been linked to eating disorders indirectly through

dieting. Self-esteem, body dissatisfaction, and negative affect are depicted as mediating the relationship between appearance comparisons and disordered eating.

Finally, double-arrows indicate a reciprocal relationship. Previous research has found to evidence to support reciprocal relationships between appearance comparisons and body dissatisfaction and disordered eating. For example, individuals who compare their appearance to others are at an increased risk of developing disordered eating behaviors, and alternately, individuals with eating disorders are more likely to engage in appearance comparisons due to their preoccupation with weight and shape.

The Current Study

Researchers have been examining interventions and strategies proposed to help individuals interpret comparisons differently and encourage them to avoid making appearance-related comparisons by focusing on dimensions unrelated to appearance. For example, an experimental study with a sample of female undergraduates with elevated levels of body dissatisfaction, examined the effectiveness of an intervention aimed at minimizing negative consequences of appearance comparisons to models (Lew, Mann, Myers, Taylor, & Bower, 2007). The intervention, which included three home writing exercises over a course of three weeks, encouraged participants to make downward comparisons and instructed participants to compare along dimensions unrelated to appearance that is a source of pride to the participants such as personal strengths (Lew et al., 2007). Compared to a control group, the intervention group reported less desire to lose weight, less physical appearance anxiety, and more positive changes in body satisfaction.

In addition, there have been promising findings in regard to the use of media literacy as a preventive intervention. For example, Halliwell, Easun, & Harcourt (2011) showed adolescents a

brief video outlining the factitious nature of media images prior to exposure to images of thin models. Adolescent girls who viewed the intervention video prior to viewing thin-ideal images reported higher body satisfaction levels than those who viewed a control video. Similarly, Posavac, Posavac, & Weigel (2001) developed and compared the efficacy of three interventions, an “Artificial Beauty” intervention, a “Genetic Realities” intervention and a “Combination” intervention. Each intervention involved a video recording of a male psychologist providing psychoeducation and media literacy. The “Artificial Beauty” intervention argued that it was unfair for women to compare themselves to media figures as their beauty is artificial via airbrushing, professional make-up and hair styling, etc., while the “Genetic Realities” intervention argued that media figures were unfair comparison targets because the thin body type of media figures cannot be realistically attained by the majority of women. The “Combination” intervention included content from both the “Artificial Beauty” and “Genetic Realities” interventions. Their results indicated that all three interventions reduced the likelihood of making appearance comparisons to media images and also mitigated body image disturbances following exposure to media images.

Yamamiya, Cash, Melnyk, Posavac, & Posavac (2004) expanded the original interventions developed by Posavac et al. (2001) to include a dissonance-based component. Specifically, participants were asked to argue against the thin ideal propagated in the media. Similar to the previous study, Yamamiya et al. (2004) found that the media literacy intervention prevented body disturbances following exposure to media images. However, the dissonance-based component did not enhance the preventive effects of the intervention.

The detrimental effects of appearance-related comparisons highlight the need for effective interventions. While previous interventions have produced promising results, they have

focused almost exclusively on comparisons to media images (e.g., Lew et al., 2007; Posavac et al., 2001). The negative effects of particularistic targets on body image have been shown to be comparable to those of universalistic targets (Myers & Crowther, 2006). Thus, it is essential to develop and test interventions that target particularistic comparisons as well.

The current study tested an intervention aimed at altering appearance comparisons to either universalistic targets or particularistic targets. We were interested in determining if there is a differential impact of a peer-targeted intervention and a media-targeted intervention on body dissatisfaction, frequency of comparisons, and the relevance of the comparison target. Furthermore, we examined whether the benefits of an intervention focusing on one type of comparison target (i.e., universalistic, particularistic) generalizes to other types of comparison targets.

Based on the aforementioned tenets of social comparison theory regarding the tendency to compare oneself to people viewed as similar (Festinger, 1954; Strahan et al., 2006), we designed an intervention with the goal to help people view others as dissimilar with the goal of reducing social comparisons, and in turn, eating disorder symptoms. Previous research has provided some support for dissonance-based prevention programs targeting body image disturbances (e.g., Posavac et al., 2001; Stice, Butryn, Rohde, Shaw, & Marti, 2013). Specifically, the *Body Project* is an intervention that encourages adolescent girls and young women to argue against the thin ideal, with the intention that this will lower their likelihood of subscribing to this unattainable ideal (Stice, Mazotti, Weibel, & Agras, 2000). The intervention was designed to help individuals view themselves as dissimilar to their comparison targets, lowering their likelihood of making appearance comparisons. We hypothesized that doing so

would make the comparison target less relevant, which would reduce the frequency of appearance comparisons and increase appearance esteem and body image.

Components of a few well-established approaches were integrated into the two interventions. First, we incorporated Fairburn's recommendations for evaluating and reducing social comparisons in his book, *Overcoming Binge Eating* (Fairburn, 2013). Although Fairburn's cognitive behavioral therapy for treating binge eating disorder has been shown to be effective through several clinical trials, there has been less research regarding the individual components of the treatment. These components include examining the types of people to whom you typically compare yourself, the thoughts and feelings evoked from making such comparisons, and the fairness of the comparisons.

Similarly, treatment protocols aimed at alleviating body image disturbance include sections that provide strategies to prevent the negative consequences of making social comparisons (e.g., Cash, 2008). Specifically, Cash's *Unfair-to-Compare* section focuses on using cognitive restructuring skills to challenge the negative thoughts that result from comparing your body to others. While these skills are effective at challenging one's interpretation of a comparison, they do not necessarily decrease the frequency in which individuals compare their bodies to others'. The primary objective of the intervention was to lower the target relevance of upward appearance comparisons so individuals were less likely to engage in such comparisons. Furthermore, informed by motivational interviewing (Miller & Rollnick, 2012), participants, as opposed to the facilitator, were encouraged to highlight the costs and negative consequences resulting from appearance comparisons.

Previous interventions targeting appearance comparisons have involved recordings of researchers presenting intervention information and take-home assignments (e.g., Posavac et al.,

2001; Lew et al., 2007). In the current study, the interventions were conducted in a group setting with a facilitator who presented the intervention-related information and guided discussion. Micari & Pazos (2014) found small-learning groups produce greater reductions in college students' social comparisons along the dimension of intelligence compared to a study-skills intervention. Thus, the proposed study tested two interventions, targeting media appearance comparisons and peer appearance comparisons, purposed to reduce the relevance of upward comparison targets by eliciting differences between that of the individual and the target.

Hypotheses

- 1) Participants would report engaging in less frequent media appearance comparisons and peer appearance comparisons following both the media and peer-targeted interventions, respectively. Participants in the control group would not exhibit a change in the frequency of media or peer appearance comparisons.
- 2) Participants would rate targets as being less relevant following both the media and peer-target interventions, but the decline in relevance of the ratings of participants in the media-targeted intervention would be significantly greater than that of the peer-targeted intervention.
- 3) Participants in the media-targeted intervention and peer-targeted intervention would experience an increase in appearance esteem following the intervention. The participants in the control condition would not exhibit a change in appearance esteem.
- 4) Participants in the intervention conditions would report increases in state body image following the intervention, while the control condition would not.

METHOD

Participants

Participants were undergraduate female students at a Midwestern university. Students in psychology classes were recruited using an online system and they received either course credit or a small monetary amount for their participation. Participants had to be 18 years or older to participate in the study. A total of 137 undergraduate women participated at Time 1, with 41, 46, and 47 participants in the control, media-targeted, and peer-targeted conditions, respectively. The mean age of participants was 19.72 ($SD = 2.10$) and the ethnic composition of the sample was 83.9% White ($n = 115$), 8.8% Asian/Pacific Islander ($n = 12$), 3.6% African American or Black ($n = 5$), 2.2% Hispanic/Latino ($n = 3$), and 1.5% Other ($n = 2$).

Procedures

Participants were randomly assigned to one of three conditions. Two of the conditions were interventions focusing on appearance comparisons, with one targeting media appearance comparisons and the other targeting peer appearance comparisons. The third condition was a control group, which did not receive an intervention. After providing informed consent, participants in both the intervention and control conditions completed a series of questionnaires. These questionnaires served as measures for baseline levels (Time 1) of state body esteem, and frequency of appearance comparisons. In addition to the baseline questionnaires, participants in the intervention conditions viewed five images of either media figures or peers, based on the group to which they were randomly assigned, and rated the relevance of the image as a comparison target. The control session concluded following the completion of the baseline questionnaires.

Each intervention consisted of a 60-minute group session facilitated by the same researcher. Group sessions were scripted and videotaped to ensure uniformity across groups. Each group consisted of approximately 3-12 participants.

The interventions took place in classrooms located on a university campus and chairs were positioned in a circle to encourage group interaction. At the beginning of the intervention session, the facilitator provided a brief description of the study and informed participants about confidentiality. Next, the facilitator provided a brief overview of the session and initiated introductions among the participants.

Participants completed a series of questionnaires at the end of the intervention (Time 2). One week later (Time 3) participants in each of the three conditions completed questionnaires via a secure online system. In addition, participants in the two intervention conditions viewed and rated the target relevance of five images of media figures or peers. These images were different from those used at baseline as images were counterbalanced. All participants received a debriefing email following the completion of the last assessment.

Measures & Stimuli

Media & Peer Images. To determine the effectiveness of the appearance comparison interventions, participants in the intervention conditions (peer or media) rated the target relevance of five images before the intervention and five images immediately following the intervention. Images of female media figures were retrieved from the Internet and images of college-aged women utilized in a previous study (Smith, 2008) were included in the current study as peer targets. Participants assigned to the media-targeted intervention only viewed images of media figures and participants assigned to the peer-targeted intervention only viewed

images of their peers. Images were counterbalanced and participants did not rate the same image more than once.

Target Relevance. To determine the participants' beliefs regarding the relevance of the comparison target, participants in the two intervention conditions were asked to read the following statement and indicate on a scale of 1 (not relevant at all) to 7 (extremely relevant) the relevance of each comparison target. The statement, developed in a previous study conducted by Strahan et al. (2006), read "When we view photographs of people who are the same sex as us, it is sometimes natural to compare ourselves with these people. Some people can be seen as relevant to make a comparison with, whereas others can be seen as irrelevant to make a comparison with. We are interested in finding out how relevant you think the person in this image is to you. That is, we would like to know how relevant you think this person is to compare yourself with." Participants in the peer-targeted and media-targeted interventions were asked to indicate the target relevance of each comparison target at baseline and immediately following the intervention.

Physical Appearance Comparison Scale- Revised (PACS-R; Schaefer & Thompson, 2014). The PACS-R is an 11-item scale designed to measure people's tendency to compare their physical appearance to others in various situations (See Appendix G). The PACS-R was administered at Times 1 and 3 to participants in all three conditions to measure participants' frequency of peer comparisons. Participants were asked to indicate the frequency in which they make each type of comparisons using a Likert scale ranging from 0 (Never) to 4 (Always). Scores range from 0 to 44, with higher scores indicating the tendency to make more frequent appearance comparisons. A sample item includes "When I'm out in public, I compare my physical appearance to the appearance of others." At Time 3, the PACS-R was modified to

assess participants' comparison behaviors during the past week only (i.e., since the completion of the intervention). Thus instructions read, "Please circle the answer that best describes how often you have done each of the following during the past seven days." The PACS-R has demonstrated adequate reliability and validity (Schaefer & Thompson, 2014).

Frequency of Media Comparisons. To measure the frequency in which participants compare their bodies to those of media figures, we developed a questionnaire similar in format to that of the PACS-R consisting of 7 items (See Appendix H). Consistent with the PACS-R, participants were instructed to indicate the frequency in which they have engaged in the following types of comparisons using a 5-point Likert scale ranging from 0 (never) to 4 (always). The measure will be administered at Time 1 and Time 3 to all participants. The instructions of the scale were modified at Time 3 to assess frequency of comparisons during the past week only. Sample items include "When I look at a magazine, I compare my body fat to the body fat of the models" and "When I watch television, I compare my physical appearance to the appearance of the actors/actresses."

State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991). The Appearance Subscale of the SSES was used in the current study (See Appendix I). The subscale consists of 6 items designed to measure participants' momentary self-esteem with regard to appearance. Items were rated on a 5-point scale ranging from 1 (not at all) to 5 (extremely). Participants were asked to indicate how they were feeling at the moment. A sample item from the appearance subscale includes "I feel satisfied with the way my body looks right now." Participants in the intervention conditions completed the SSES at all three time points and participants in the control condition completed the SSES at Times 1 and 3. The SSES has demonstrated sufficient reliability and validity (Heatherton & Polivy, 1991).

Body Image State Scale (BISS; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002). The BISS is a 6-item self-report questionnaire that measures individuals' momentary feelings and appraisals of their physical appearance. Each item consists of several statements, which range from negative to positive evaluations pertaining to one's physical appearance. Participants were instructed to select the statement that best describes how they feel at that moment. A sample items includes statements ranging from "Right now I feel extremely dissatisfied with my body size and shape" to "Right now I feel extremely satisfied with my body size and shape." The reliability and validity of the BISS has been established (Cash et al., 2002).

DATA ANALYTIC STRATEGY & RESULTS

Statistical analyses were performed using IBM SPSS Statistics, Version 24. Prior to running analyses to test our hypotheses, the data was assessed for missing data, outliers, and adherence to assumptions. Of the 137 participants with Time 1 measurements, 137 completed measures at Time 2, and 101 (75.3%) completed measures at Time 3. Of the 101 returners, twelve did not complete all items on the measures (i.e., missing individual items on a measure or missing an entire measure). There were 89 participants with complete data. Testing of assumptions was conducted separately for the control group and the intervention groups. Little's MCAR test indicated the missing data in the control group were missing completely at random, $\chi^2(43) = 32.12, p = .89$, and the missing data in the intervention groups were missing completely at random, $\chi^2(74) = 79.14, p = .32$. Pairwise deletion was used in the following analyses. There were no cases with z-scores greater than 3.29, indicating there were no univariate outliers and Mahalanobis distance did not detect the presence of any multivariate outliers. P-P plots revealed the distributions of each of the dependent variables at each level of the independent variable (i.e., control, media-targeted, and peer-targeted) were approximately normal. Nonsignificant Levene's tests indicated the data does not violate the assumption of homogeneity of regression. Finally, bivariate scatterplots displayed equal variances satisfying the assumption of homoscedasticity.

Single-factor between-subjects ANOVAs revealed no significant differences between participants in the three conditions on any variables of interest (i.e., BMI, frequency of peer comparisons, frequency of media comparisons, and two measures of state body image) at Time 1. Additionally, the media-targeted ($M = 15.82, SD = 6.98$) and peer-targeted conditions ($M = 15.77, SD = 5.44$) did not differ on the baseline measure of target relevance ($t(94) = .04, p = .97$). Non-returners did not differ from returners on Time 1 measures of BMI ($t(132) = .86, p = .39$),

frequency of peer appearance comparisons ($t(131) = -1.79, p = .08$), body image ($t(133) = .03, p = .97$), and appearance esteem ($t(134) = .46, p = .65$). In regard to frequency of media appearance comparisons, non-returners ($M = 15.83, SD = 6.18$) reported comparing their bodies to that of media figures significantly more often than returners ($M = 12.94, SD = 6.43; t(134) = -2.31, p = .02$).

Table 1

Descriptive statistics and correlations for all variables at Time 1

Measure	PACS-R	FMC	SSES-A	BISS	TR	BMI
PACS-R	-					
FMC	.61**	-				
SSES-A	-.58**	-.41**	-			
BISS	-.57**	-.40**	.86**	-		
TR	.22*	.38**	-.04	.02	-	
BMI	.31**	.22*	-.42**	-.46**	-.31**	-
Mean	23.81	13.69	19.53	30.68	15.70	24.02
SD	9.17	6.45	4.57	8.18	6.06	4.14
Observed Range	1-44	0-28	6-30	7-53	5-30	15.95-43.04

Note. PACS-R= Frequency of Peer Comparisons; FMC= Frequency of Media Comparisons; BISS= Body Image State Scale; SSES-A= State Self-Esteem Scale Appearance Subscale; TR= Target Relevance; BMI= Body Mass Index; SD= Standard Deviation.

** $p < .01$.

Hypothesis #1

Two 2×3 mixed design ANOVAs were conducted to examine the hypothesized differential impact of the three conditions on the frequency of peer and media appearance comparisons. The first ANOVA included condition (media-targeted, peer-targeted, control) and assessment time (Time 1, Time 3) as the independent variables, and frequency of peer appearance comparisons, measured using the PACS-R, as the dependent variable. Results revealed there was not a significant main effect of condition, $F(2, 85) = 1.21, p = .30$, or time, $F(1, 85) = 2.29, p = .13$. Finally, there was no significant interaction between time, and condition, $F(2, 85) = .86, p = .43$. The second ANOVA included condition (media-targeted, peer-targeted, control) and assessment time (Time 1, Time 3) as the independent variables, and frequency of media appearance comparisons, measured using the modified PACS-R, as the dependent variable. Analyses indicated there was not a significant main effect of time, $F(1, 86) = 1.24, p = .27$, or condition, $F(2, 86) = .86, p = .43$. The interaction between time and condition was not significant, $F(2, 86) = 1.08, p = .35$.

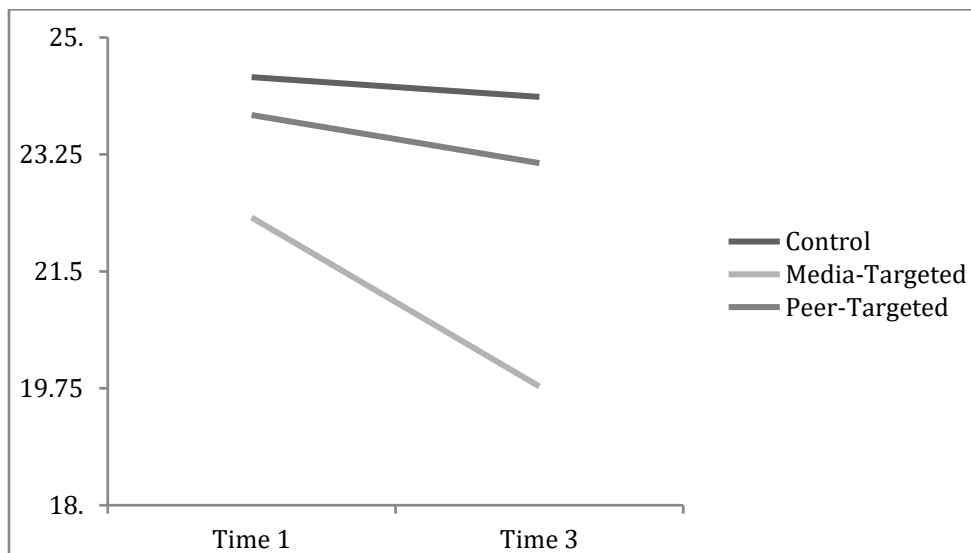


Figure 2. The interaction between condition and time on frequency of peer comparisons.

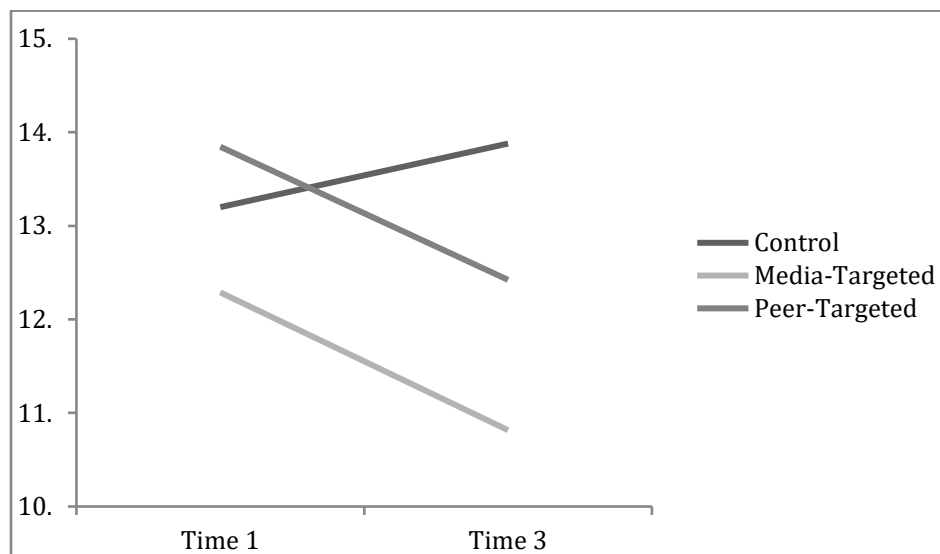


Figure 3. The interaction between condition and time on frequency of media comparisons.

Hypothesis #2

A 2×2 mixed design ANOVA was performed to investigate the effect of the intervention conditions on subsequent ratings of relevance of appearance targets. Intervention type (media-targeted, peer-targeted) and assessment time (Time 1, Time 3) were entered as independent variables, and the target relevance of the images was entered as the dependent variable. There was a significant main effect of time, $F(1, 65) = 5.60, p = .02$. Pairwise comparisons revealed target relevance ratings at Time 3 ($M = 13.58, SD = .83$) were significantly lower than those at Time 1 ($M = 15.47, SD = .82$). There was not a significant main effect of condition, $F(1, 65) = 1.18, p = .28$. Finally, the interaction between time and condition was not significant, $F(1, 65) = 1.46, p = .23$.

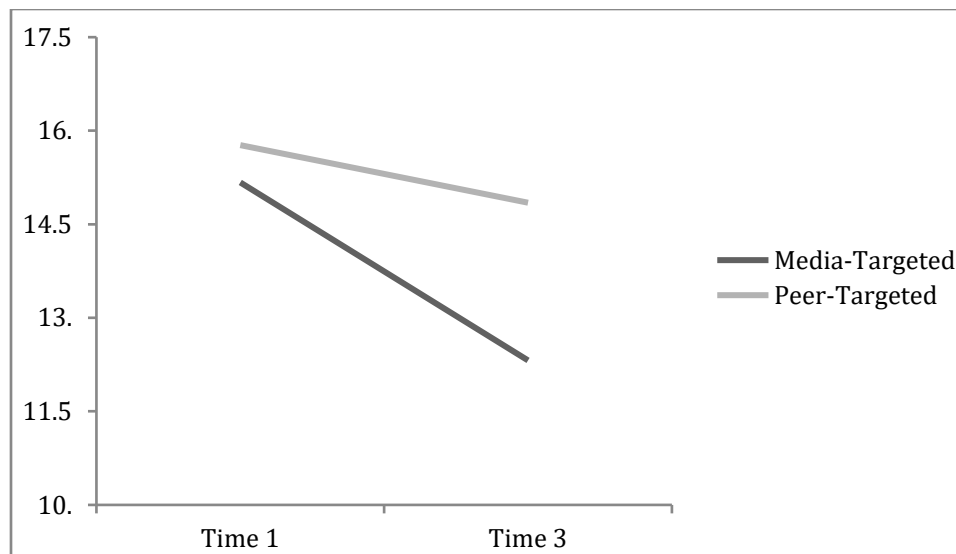


Figure 4. The interaction between time and intervention conditions on target relevance ratings.

Hypothesis #3

A 3×2 mixed design ANOVA was conducted to examine the impact of the three conditions on appearance esteem at two time points. The independent variables were condition (i.e., media-targeted, peer-targeted, control) and time of assessment (Time 1, Time 3), and the dependent variable was appearance esteem as measured by the Appearance Subscale of the State Self-Esteem Scale as the dependent variable. The main effects of time, $F(1, 95) = .01, p = .91$, and condition, $F(2, 95) = 1.96, p = .15$, were not significant. The interaction between condition and time was significant, $F(2, 95) = 5.37, p < .01$. That is, the change in appearance self-esteem across time was affected by the condition to which the participant was assigned. Pairwise comparisons and an interaction graph were used to examine the nature of the interaction. There was a significant decrease from Time 1 ($M = 18.93, SD = 3.88$) to Time 3 ($M = 17.93, SD = 4.76$) in appearance esteem in the control condition, $F(1, 26) = 5.32, p = .03$. There was not a significant difference between Time 1 ($M = 20.37, SD = 4.83$) and Time 3 ($M = 20.20, SD = 4.25$) appearance esteem in the peer-targeted condition, $F(1, 29) = .13, p = .72$. Finally,

appearance esteem was significantly higher at Time 3 ($M = 20.83, SD = 4.18$) than at Time 1 ($M = 19.76, SD = 4.28$) in the media-targeted condition, $F(1, 40) = 5.58, p = .02$.

In addition, a 2×3 mixed design ANOVA was conducted to examine the effect of the two intervention conditions on appearance esteem at three time points. Intervention type (i.e., media-targeted, peer-targeted) and time of assessment (Time 1, Time 2, Time 3) were entered as the independent variables and scores on the SSES Appearance Subscale were used on the dependent. Analyses revealed a significant main effect of time, $F(2, 136) = 11.99, p < .01$, but no main effect of condition, $F(1, 68) = .05, p = .83$. In addition, the interaction between time and condition was not significant, $F(2, 136) = 1.72, p = .18$. In regard to the main effect of time, pairwise comparisons indicated the appearance esteem at Time 1 ($M = 19.99, SD = .55$) was significantly lower than at Time 2 ($M = 21.60, SD = .47$), $p < .01$, appearance esteem at Time 2 ($M = 21.60, SD = .47$) was significantly higher than at Time 3 ($M = 20.47, SD = .51$), $p < .01$, and appearance esteem at Time 1 ($M = 19.99, SD = .55$) was not significantly different from Time 3 ($M = 20.47, SD = .51$), $p = .50$.

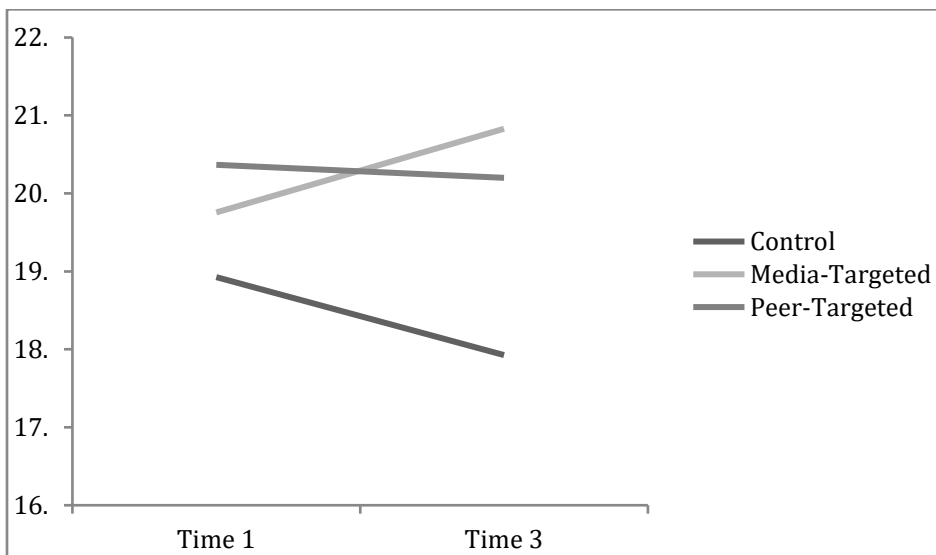


Figure 5. The interaction between condition and time on appearance esteem.

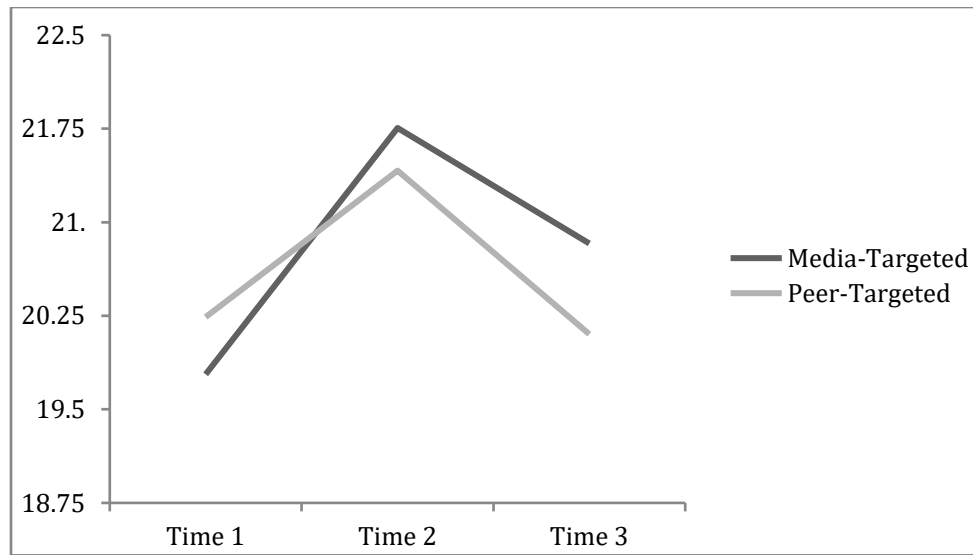


Figure 6. The interaction between intervention conditions and time on appearance esteem.

Hypothesis #4

A 2×3 mixed model ANOVA was conducted to examine differences across conditions in body image at baseline and one week later. The two independent variables were condition (i.e., control, media, peer) and time (i.e., Time 1, Time 3) and the dependent variable was state body image, which was measured using the BISS. The main effects of time ($F(1, 92) = .42, p = .52$) and condition ($F(1, 92) = 1.51, p = .23$) were not significant. Similarly, the time \times condition interaction was not significant ($F(2, 92) = 2.06, p = .13$). Next, we conducted a 2×3 ANOVA to test for differences in body image in the two interventions at baseline, immediately following the intervention, and one week later. Time (Time 1, Time 2, Time 3) and intervention (Media, Peer) were entered as independent variables and state body image (BISS) was entered as the dependent variable. A significant main effect of time was found ($F(2, 132) = 10.92, p < .01$). Pairwise comparisons indicated body image at Time 2 ($M = 34.42, SD = .93$) was significantly higher than body image at Time 1 ($M = 30.95, SD = 1.00$), $p < .01$, and body image at Time 3 ($M = 31.69, SD$

= 1.06), $p < .01$. Body image at Time 1 ($M = 30.95$, $SD = 1.00$) was not significantly different from body image at Time 3 ($M = 31.69$, $SD = 1.06$), $p = 1.0$.

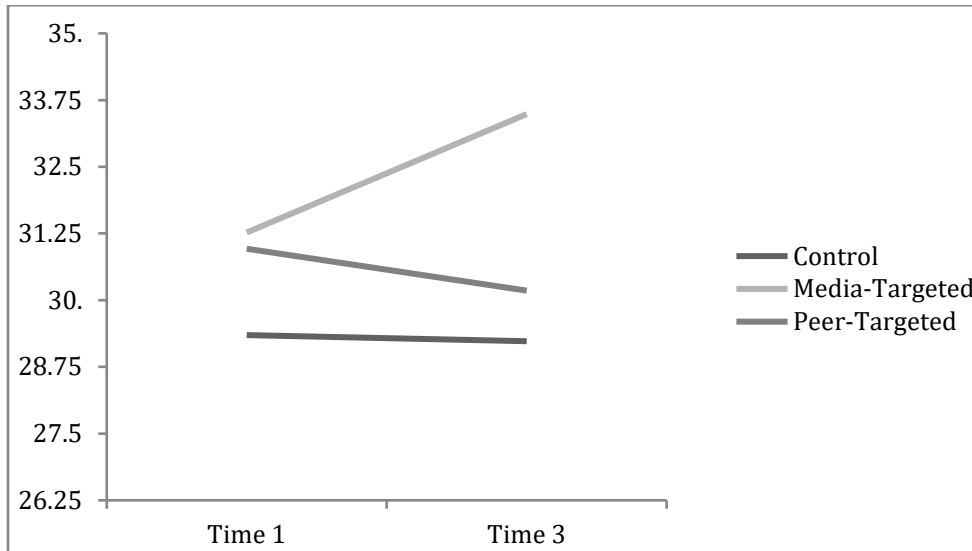


Figure 7. The interaction between time and condition on state body image.

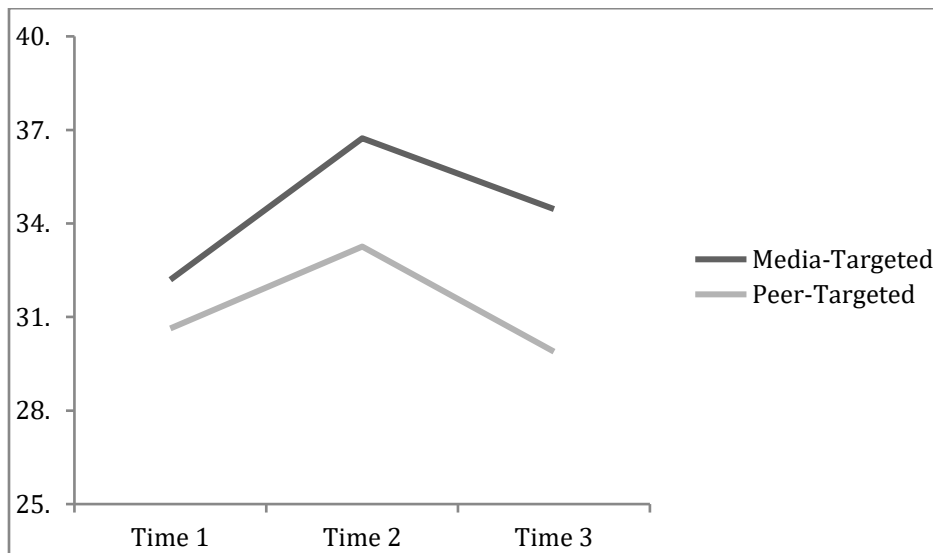


Figure 8. The interaction between intervention conditions and time on state body image.

EXPLORATORY ANALYSES

Following our planned analyses, we conducted an exploratory analysis to examine the impact of group size, which ranged from 3 to 12 participants, on the effectiveness of the interventions. To do this, we conducted several simple regressions with group size as the predictor variable and the following as dependent variables: Time 2 appearance esteem, Time 2 state body image, Time 3 frequency of peer comparisons, Time 3 frequency of media comparisons, Time 3 appearance esteem, Time 3 state body image, and Time 3 target relevance. Results revealed group size did not significantly predict any of the dependent variables (T2 SSES, $b = .04$, $t(94) = .28$, $p = .78$; T2 BISS, $b = .11$, $t(93) = .39$, $p = .70$; T3 PAC, $b = -.02$, $t(61) = -.06$, $p = .96$; T3 FMC, $b = .02$, $t(64) = .08$, $p = .94$; T3 SSES, $b = -.16$, $t(70) = -1.1$, $p = .28$; T3 BISS, $b = -.29$, $t(68) = -.80$, $p = .43$; T3 target relevance, $b = -.10$, $t(67) = -.42$, $p = .68$).

DISCUSSION

The current paper proposed a model, based on prior research, detailing the relation between appearance comparisons and disordered eating behaviors and tested two interventions, informed by this model, targeting particularistic (i.e., peer) and universalistic (i.e., media) appearance comparisons. The group-formatted interventions consisted of a discussion regarding the costs of making upward appearance comparisons as well as an activity in which participants identified dissimilarities between themselves and the comparison target. It was hypothesized that these interventions would reduce the relevance of the comparison targets making participants less likely to compare themselves to these targets. Additionally, we predicted participants would report increased appearance esteem and state body image following both interventions.

Our hypothesis that the interventions would reduce the target relevance of comparison targets was supported. Participants' ratings of the relevance of the images one week following the interventions were significantly lower than their ratings at baseline, providing evidence that the intervention effectively lead participants to view targets as inappropriate for comparison. Of note, target relevance was not assessed immediately following the interventions. Thus, it is possible that the decline in target relevance was even more pronounced immediately following the interventions. The relevance ratings of peer and media targets were not significantly different from one another at either time point. Although the images of the peer targets were tested in a previous study (Smith, 2008), the individuals in the images may not be accurate depictions of the participants' peers, and therefore, may not have been considered to be appropriate comparison targets.

The interventions were developed based on the premise that individuals are less likely to compare themselves to targets viewed as irrelevant. Although participants viewed the targets as

being less relevant after the interventions, neither of the interventions reduced the frequency of appearance comparisons to peer or media targets in the week following the interventions, and the frequencies were comparable to those of participants who did not receive an intervention. To the authors' knowledge, this was the first study to objectively measure a change in behaviors following an intervention targeting appearance comparisons. It is possible that one 60-minute session is not sufficient to produce changes in behaviors and more sessions may be beneficial. For example, a well-researched intervention targeting internalization of the thin ideal, *The Body Project*, consists of four or six sessions (Rohde et al., 2014), suggesting multiple sessions may be needed. Additionally, comparing ourselves to others is often an unconscious or automatic behavior. Therefore, participants may have underreported the frequency of their comparison behaviors at baseline. Furthermore, at the end of the interventions, participants were instructed to be attentive to instances of comparison during the next week. It is possible that this increased awareness caused individuals to take notice of their comparison behaviors, causing them to more accurately report the frequency to which they compare their bodies to others'.

Consistent with our prediction, participants reported increased appearance esteem immediately following both the media-targeted and peer-targeted interventions. While there was a decrease in appearance esteem from Time 2 to Time 3 in both interventions, appearance esteem in the media-targeted condition was still significantly higher at Time 3 than at Time 1, suggesting that some of the benefits from the media-targeted intervention were maintained through the following week. In contrast, appearance esteem in the peer-targeted condition at Time 3 was not significantly different than at Time 1, indicating the peer-targeted intervention did not have lasting effects on appearance esteem.

State body image increased immediately following both interventions, but returned to baseline one week later. As stated above, the media-targeted group exhibited increased appearance esteem one week later. While the BISS and SSES Appearance Subscale measure similar constructs, the items are not identical, which could account for the difference in these findings. These increases in appearance esteem and state body image following the interventions are consistent with similar studies examining appearance comparison interventions (e.g., Posavac et al., 2001; Yamamiya et al., 2004). To our knowledge, there is no evidence that the effectiveness of previously tested interventions was measured beyond the intervention session, and thus, we cannot make any conclusions regarding how our intervention compares to others' on the longevity of the effects.

Finally, the size of the intervention groups did not influence appearance esteem, state body image, target relevance or the frequency of media and peer appearance comparisons. Results from our exploratory analyses are consistent with a previous study examining factors that may influence the effectiveness of a dissonance-based program targeting the thin ideal (Butryn, Rohde, Marti, & Stice, 2014). Butryn et al. (2014) found that group size and baseline disordered eating symptoms did not predict intervention effects. These findings can be used to inform the implementation of these interventions.

There are a few limitations that should be considered. First, the number of participants who completed assessments at Time 3 ($n = 89$) may not be sufficient to detect an effect. Relatedly, non-returners reported a significantly higher frequency of media comparisons at baseline than did returners, suggesting a potential attrition bias. However, the difference in frequencies was small and thus, may not be clinically meaningful. In addition, non-returners did not differ from returners on any of the other variables at baseline.

Second, the interventions consisted of a discussion regarding the costs and negative consequences of engaging in appearance comparisons and an activity in which participants generated differences between themselves and a comparison target. Therefore, it is not possible to determine which aspect of the intervention is responsible for increases in body image and appearance esteem immediately following the intervention and a reduction in target relevance ratings one week later. Future research is needed to determine the effects of each intervention component on subsequent body evaluations and comparison behaviors.

Third, due to the ineffectiveness of the interventions in reducing the frequency of peer and media comparisons, we cannot speak to the generalizability of the benefits from an intervention focusing on one type of comparison target to another type. Future studies should examine whether targeting one type of appearance comparison (i.e., particularistic, universalistic) helps prevent comparisons to another type as well.

Although body dissatisfaction, a construct measured in this study, is a robust risk factor for disordered eating behaviors, research is needed to examine the impact of the interventions on disordered eating behaviors. In addition, individuals' choices of comparison targets differ. The selection of media and peer images used in the present study may not represent some participants' typical comparison targets and therefore, their ratings of target relevance may not capture a shift in target relevance to their typical comparison targets. Future studies should consider using participant-selected images that are representative of their day-to-day comparison targets to more accurately detect target relevance shifts.

Despite these limitations, the proposed model and the experiment conducted have several theoretical and clinical implications. Theoretically, the proposed model expands upon previous research by providing a comprehensive display of the factors that impact the relationship

between appearance comparisons and disordered eating behaviors and provides a framework for researchers to test in future studies. Additionally, we tested a novel intervention that was developed from a strong theoretical foundation.

In regard to clinical implications, this experiment provides clinicians and college campuses with an effective intervention to increase body satisfaction and reduce the target relevance of appearance comparisons. To our knowledge, this is the first study examining an intervention targeting peer appearance comparisons. Although comparisons to unrealistically thin media figures have been found to be harmful, there is evidence that suggests peer comparisons can be just as destructive, highlighting the need for effective interventions. The peer-targeted intervention tested in this study produced promising results.

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APPENDIX A. PHYSICAL APPEARANCE COMPARISON SCALE-REVISED

Please circle the answer that best describes how often you do each of the following.

0	1	2	3	4
Never	Seldom	Sometimes	Often	Always

1. When I'm out in public, I compare my physical appearance to the appearance of others.
2. When I meet a new person (same sex), I compare my body size to his/her body size.
3. When I'm at work or school, I compare my body shape to the body shape of others.
4. When I'm out in public, I compare my body fat to the body fat of others.
5. When I'm shopping for clothes, I compare my weight to the weight of others.
6. When I'm at a party, I compare my body shape to the body shape of others.
7. When I'm with a group of friends, I compare my weight to the weight of others.
8. When I'm out in public, I compare my body size to the body size of others.
9. When I'm with a group of friends, I compare my body size to the body size of others.
10. When I'm eating in a restaurant, I compare my body fat to the body fat of others.
11. When I'm at the gym, I compare my physical appearance to the appearance of others.

APPENDIX B. PHYSICAL APPEARANCE COMPARISON SCALE- MEDIA

Please circle the answer that best describes how often you do each of the following.

0	1	2	3	4
Never	Seldom	Sometimes	Often	Always

1. When I look at a magazine, I compare my physical appearance to the appearance of the models.
2. When I look at a magazine, I compare my body size to the models' body sizes.
3. When I look at a magazine, I compare my body fat to the body fat of the models.
4. When I watch television, I compare my physical appearance to the appearance of the actors'/actresses.
5. When I watch television, I compare my body weight to the actors'/actresses' body weight.
6. When I see media figures on the Internet, I compare my body shape and size to the body shape and size of the media figures.
7. When I see media figures on the Internet, I compare my physical appearance to the appearance of the media figures.

APPENDIX C. STATE SELF-ESTEEM SCALE

This is a questionnaire designed to measure what you are thinking at this moment. There is of course, no right answer for any statement. The best answer is what you feel is true of yourself at the moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you **RIGHT NOW**.

1	2	3	4	5
Not at all	A little bit	Somewhat	Very much	Extremely

1. I feel confident about my abilities
2. I am worried about whether I am regarded as a success or failure.
3. I feel satisfied with the way my body looks right now.
4. I feel frustrated or rattled about my performance.
5. I feel that I am having trouble understanding things that I read.
6. I feel that others respect and admire me.
7. I am dissatisfied with my weight.
8. I feel self-conscious.
9. I feel as smart as others.
10. I feel displeased with myself.
11. I feel good about myself.
12. I am pleased with my appearance right now.
13. I am worried about what other people think of me.
14. I feel confident that I understand things.
15. I feel inferior to others at this moment.
16. I feel unattractive.
17. I feel concerned about the impression I am making.
18. I feel that I have less scholastic ability right now than others.
19. I feel that I'm not doing well.
20. I am worried about looking foolish.

APPENDIX D. BODY IMAGE STATE SCALE

For each of the items below, check the box beside the one statement that best describes how you feel **RIGHT NOW AT THIS VERY MOMENT**. Read the items carefully to be sure the statement you choose accurately and honestly describes how you feel right now.

1. Right now I feel ...
 - Extremely dissatisfied with my physical appearance
 - Mostly dissatisfied with my physical appearance
 - Moderately dissatisfied with my physical appearance
 - Slightly dissatisfied with my physical appearance
 - Neither dissatisfied nor satisfied with my physical appearance
 - Slightly satisfied with my physical appearance
 - Moderately satisfied with my physical appearance
 - Mostly satisfied with my physical appearance
 - Extremely satisfied with my physical appearance

2. Right now I feel ...
 - Extremely satisfied with my body size and shape
 - Mostly satisfied with my body size and shape
 - Moderately satisfied with my body size and shape
 - Slightly satisfied with my body size and shape
 - Neither dissatisfied nor satisfied with my body size and shape
 - Slightly dissatisfied with my body size and shape
 - Moderately dissatisfied with my body size and shape
 - Mostly dissatisfied with my body size and shape
 - Extremely dissatisfied with my body size and shape

3. Right now I feel ...
 - Extremely dissatisfied with my weight
 - Mostly dissatisfied with my weight
 - Moderately dissatisfied with my weight
 - Slightly dissatisfied with my weight
 - Neither dissatisfied nor satisfied with my weight
 - Slightly satisfied with my weight
 - Moderately satisfied with my weight
 - Mostly satisfied with my weight
 - Extremely satisfied with my weight

4. Right now I feel ...
 - Extremely physically attractive
 - Very physically attractive
 - Moderately physically attractive
 - Slightly physically attractive
 - Neither attractive nor unattractive
 - Slightly physically unattractive

- Moderately physically unattractive
 - Very physically unattractive
 - Extremely physically unattractive
5. Right now I feel ...
- A great deal worse about my looks than I usually feel
 - Much worse about my looks than I usually feel
 - Somewhat worse about my looks than I usually feel
 - Just slightly worse about my looks than I usually feel
 - About the same about my looks as usual
 - Just slightly better about my looks than I usually feel
 - Somewhat better about my looks than I usually feel
 - Much better about my looks than I usually feel
 - A great deal better about my looks than I usually feel
6. Right now I feel that I look...
- A great deal better than the average person looks
 - Much better than the average person looks
 - Somewhat better than the average person looks
 - Just slightly better than the average person looks
 - About the same as the average person looks
 - Just slightly worse than the average person looks
 - Somewhat worse than the average person looks
 - A great deal worse than the average person looks

APPENDIX E. APPEARANCE COMPARISON INTERVENTION SCRIPT

Materials: Pictures of models/celebrities or college-aged females, depending on the group
Whiteboard and markers
Handouts
Video camera
Name tags

Agenda: I. Informed consent
II. Questionnaires
III. Session overview and introductions
IV. Definition of appearance comparisons and types of comparisons
V. Questionnaires

Note: Verbal instructions that the facilitator should say, paraphrase, to participants are presented in italics.

Informed Consent

Thank you all for agreeing to participate in this study. Before we begin, I would like to go over the consent form and provide a brief overview of what you will be expected to do prior to signing the consent form. Broadly, we are interested in examining college females' attitudes and behaviors related to your body and others' bodies.

The study consists of two parts. We will complete the first part today and in one week you will receive an email asking that you complete a few short questionnaires. Today, we will discuss issues related to appearance, as a group. You will be asked to complete a few short questionnaires both before and after the group discussion.

Participation in this study is voluntary. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty.

The group discussion will be video-recorded. The purpose of this is to ensure that I am consistent across groups. You can choose to not be video-recorded if you wish. The video will only be viewed by myself and a few other researchers and will be kept in a secure location.

Questionnaires

Participants will be asked to complete the following questionnaires using paper and pencil: Target Relevance of Media or Peer Images, Physical Appearance Comparison Scale- Revised, Frequency of Media Comparisons Measure, State Self-Esteem Scale, Body Images States Scale.

Session Overview & Introductions

There are a few things that I would like to go over before we begin our group discussion. First, we will be addressing sensitive topics that can be difficult for people to discuss. We want this to be a safe environment where everyone feels comfortable sharing if they choose to do so. Therefore, I will ask that everything that is said in this group remain within the group. Your

willingness to share and participate in the discussion is very important and so I thank you in advance for your willingness to do so.

I'll be referring to this script throughout the session to ensure that I cover everything.

Research shows that comparing ourselves, on a variety of dimensions including intelligence, status, and appearance, is a natural behavior. Today we are going to focus on (media or peer) appearance comparisons. That is, comparing our bodies to the bodies of (media figures or peers).

During this 60-minute session, we will:

- 1) Identify whom we normally compare ourselves to, what body part we normally focus on, and how these comparisons make us feel (the costs of making the comparisons).*
- 2) Identify why it may be unfair to compare yourself to that individual (identify dissimilarities between yourself and the target).*
- 3) Learns skills that you can use to prevent negative consequences of appearance comparisons.*

We are going to start by introducing ourselves to each other. Please tell the group your name, your major, and something interesting about themselves (e.g., what they enjoy doing in their free time, a particular experience they have had, etc).

I will start. My name is _____. I am studying _____ and I enjoy _____ in my free time.

[Go around circle and allow participants to introduce themselves]

Definition and Types of Appearance Comparisons

First, we are going to talk about the different types of body comparisons.

When we compare our bodies to the bodies of (media figures or peers), we are making a judgment about whether our bodies are better or worse than theirs. We can make general comparisons (e.g., I could say that I am heavier than (my peer or a media figure)) or we can make more specific comparisons (e.g., his/her stomach is flatter than mine.). In addition, we can compare our bodies to those viewed as being more attractive or thinner than us. These are called upward comparisons. In contrast, we can make comparisons to people we view as being not as attractive or as thin as us. These are downward comparisons.

I would like each of you to think about your peers/media figures to whom you tend to compare yourself. What do these people look like? We are going to go around the circle and I would like each of you to describe the peers/media figures you compare yourself to.

Also, please tell us if there is a certain part of the body that you tend to focus on or if you focus on their body as a whole.

[Participants describe their typical comparison target and also if there is a certain part of the body they tend to focus on]

Is there anything you notice about the type of people we tend to compare ourselves to?

[Yes, we tend to make more upward comparisons than downward comparisons]

How does making these comparisons make you feel? What types of thoughts do you have when you compare yourself to others?

[Write feelings on whiteboards]

These comparisons make us feel negatively about ourselves. Do we get anything out of making comparisons? In other words, do we benefit from making these comparisons?

Research has shown that comparing ourselves to others increases body dissatisfaction, lowers self-esteem, increases negative affect, and increases our risk for developing disordered eating behaviors.

Why is it unfair to compare ourselves to our peers/media figures?

[Media figures: Have money to spend on products related to appearance, images are digitally retouched, only 5% of women have the body type seen in most media outlets. Both: genetics (differences in height, body type; we were all born with different body, our bodies have different ideal body weights, etc.)]

So, we know that it is usually unfair to compare ourselves to our peers/media figures because [list a few reasons provided by participants]. Now we are going to do an activity in which we will identify differences in appearance that would make it unfair for their bodies to be compared. First, we are going to practice with two images.

[Hand out paper for participants to write dissimilarities on]

This is a picture of a female college student. We are going to call her Sarah. This is a picture of media figure/Sarah's peer. Our job is to generate a list of reasons why it would be unfair for Sarah to compare her body to that of the media figure's/peer's. When we generate this list it's important to think of differences that are not unhelpful body comparisons. For example, a statement like "The individual in the image has thinner legs than Sarah" would be an unhelpful comparison statement.

[Generate list on board]

Now we are going to do the same activity but this time I want you to focus on your own bodies. For this next image, I want you to generate a list of ways in which you are not like this person. I will give you a few minutes to work on this.

What was it like thinking about your typical body comparison behaviors and doing these exercises?

[Give participants the opportunity to reflect on their experiences]

During the next week, I encourage you to try to “catch” yourself when you compare yourself to a peer/media figure. It is important to recognize that you are engaging in appearance comparisons so that you have the opportunity to generate dissimilarities.

Questionnaires

Participants will be asked to complete the following questionnaires using paper and pencil: Target Relevance of Media or Peer Images, State Self-Esteem Scale, Body Images States Scale.

Thank you all for participating in this study. As a reminder, you will receive an email in one week asking you to complete a series of questionnaires. You will receive credit for participating in this study after you complete these questionnaires.