THE EFFECT OF THIN-IDEAL MEDIA ON BODY IMAGE:
AN EXPERIMENT USING THE SOLOMON FOUR-GROUP DESIGN

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THE EFFECT OF THIN-IDEAL MEDIA ON BODY IMAGE:
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ABSTRACT

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In general, research suggests that exposure to thin-ideal media has a negative effect on the body image of women, but there are some contradictory findings in the empirical literature. One possible reason for contradictory findings is that there are inconsistencies across studies with regard to which specific dimension of body image is assessed. In the present study, this methodological problem was addressed by employing a multidimensional assessment of the body image construct. First, the study aimed to demonstrate that body image becomes more negative after viewing thin-ideal media, and second, that this change occurs across all dimensions of body image. Limited support was found for the first hypothesis, and the second hypothesis was not supported. Another problem in existing research is the failure to rule out the possibility that changes in body image after exposure to thin-ideal media are somewhat due to pre-test sensitization effects. This study attempted to identify pre-test sensitization effects by utilizing the Solomon Four-Group Design and a post-experimental inquiry. The third and fourth
hypotheses were that after controlling for pre-test sensitization effects, there would still be evidence of the negative effect of thin-ideal media on body image, and change would remain evident across all dimensions assessed. Due to the lack of significant results in this study, these hypotheses could not be examined in full. Results of the post-experimental inquiry indicated that most participants were aware of the general purpose of the study, but this did not influence the impact of thin-ideal media exposure on changes in body image. This study exemplifies the discrepancies in existing body image literature, and highlights the need for continued research that addresses contradictory findings for the effect of thin-ideal media on dimensions of body image. Limitations and recommendations for the future are presented.
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CHAPTER I
INTRODUCTION

The purpose of this thesis is to examine the effect of thin-ideal media on body image in college age women. The introduction is divided into five sections. In the first section, a general description of the two major types of eating disorders (anorexia nervosa and bulimia nervosa) will be provided, including associated disorders and subclinical eating disorders. The second section will discuss thin-ideal media and give a selective review of literature demonstrating the effect that thin-ideal media portrayals have on body image. In the third section, the various dimensions of body image will be presented, along with examples of measures that assess each dimension of the construct. Discrepancies exist in current research regarding which dimensions of body image are measured within a given study. The fourth section will discuss the potential problem that assessment reactivity presents and will describe the Solomon Four-Group Design, as well as how this experimental design is instrumental in evaluating the extent of reactivity effects. The final section will lay the groundwork for the present study and state the hypotheses to be examined.

Description of Eating Disorders

Body image disturbances are a fundamental feature of eating disorders as conceptualized in the Diagnostic and Statistical Manual of Mental Disorders, fourth
edition text revision (DSM-IV-TR), as published by the American Psychiatric Association (APA, 2000). Anorexia Nervosa and Bulimia Nervosa are the two specific types of eating disorders that are included in the DSM-IV-TR. Anorexia Nervosa represents a severe disturbance in eating behavior in which an individual refuses to maintain a minimally normal body weight. This translates to maintenance of a body weight that is less than 85% of what is expected for a certain age and height. One of the diagnostic features of Anorexia Nervosa is that the individual exhibits a significant disturbance in the perception of the shape or size of his or her body (APA, 2000). The experience and significance of body weight and shape are distorted in individuals with Anorexia Nervosa, and their self-esteem is highly dependent on the perception of their body shape and weight (i.e. body image) (APA, 2000). The undue influence of body weight or shape on self-evaluation can be conceptualized as low body image satisfaction and low self-esteem. Clearly, body image is directly tied to the disturbance in the way in which one’s body weight or shape is experienced in those with eating disorders. Other criteria for the disorder consist of intense fear of gaining weight even though severely underweight in reality, and denial that the seriously low body weight is a problem. Also, in postmenarcheal females, amenorrhea or the absence of at least three consecutive menstrual cycles may occur (APA, 2000).

There are two subtypes for Anorexia Nervosa, used to determine the presence or absence of regular binge eating or purging behaviors that occur during an individual’s episode of the eating disorder. One of the subtypes is known as the restricting type, which denotes that weight loss is the result of dieting, fasting or excessive exercise. Binge
eating and purging are not regularly engaged in as primary methods of maintaining the severely low body weight. The second subtype is the binge-eating/purging type, characterized by regular engagement in binge eating and/or purging behavior with the misuse of laxatives, diuretics, or through self-induced vomiting. Individuals who fall under this subtype of Anorexia Nervosa may not binge but still use purging after consuming small amounts of food (APA, 2000).

As discussed above, body image and eating behavior disturbances equally apply to Bulimia Nervosa, where the self-evaluation of the individual is also excessively influenced by body shape and weight. For those with Bulimia Nervosa, binge eating can be triggered by feelings related to body weight and body shape, both of which are terms that have been used interchangeably in research to represent body image (APA, 2000). The essential feature of this disorder is the occurrence of binge eating and inappropriate compensatory behavior in order to prevent weight gain. This usually consists of eating a large amount of food in a discrete period of time that is in excess of what the average person would eat under the same circumstances, followed by a compensatory action such as self-induced vomiting. While binge eating, the individual feels that they have a lack of control over how much or what they are consuming. On average, binging and purging occur at least twice a week for three months and the eating behavior disturbance does not occur only within an episode of Anorexia Nervosa (APA, 2000).

Similar to Anorexia Nervosa, Bulimia Nervosa has two subtypes that differentiate between the presence or absence of the regular use of purging behavior. The purging type indicates that an individual regularly uses purging methods as a means to compensate for
their binge eating. Purging methods consist of self-induced vomiting, the misuse of laxatives, or the misuse of diuretics or enemas during an episode. Within the second subtype, the nonpurging type, inappropriate compensatory behaviors occur, but not in the same manner. Rather than purging, an individual will engage in fasting or excessive exercise in order to prevent weight gain (APA, 2000).

It is important to note that in addition to individuals with the clinical diagnosis of Anorexia Nervosa or Bulimia Nervosa, many exhibit eating behavior disturbances that do not meet the criteria designated by the DSM-IV-TR. The lifetime prevalence of eating disorders in women is about 0.5% for Anorexia Nervosa and 1% to 3% for Bulimia Nervosa, but subthreshold levels of these disorders are much more commonly experienced (APA, 2000). In a study by Hoyt and Ross (2003), it was found that 12.9% of the population in a college setting struggled with subclinical levels of an eating disorder. With the potential of subclinical prevalence rates to be extremely high, it is critical to consider the number of individuals, especially college age women, suffering from a subclinical eating disorder. For example, an individual who displays many of the destructive symptoms of Anorexia Nervosa such as the refusal to maintain a normal body weight and an intense fear of gaining weight, but does not meet the criteria for amenorrhea, is still participating in problematic behaviors (Herzog, Hopkins, & Burns, 1993).

Associated Disorders

Individuals who meet the criteria for Anorexia Nervosa or Bulimia Nervosa often exhibit features associated with other disorders. Depressive symptoms such as depressed
mood, social withdrawal, and irritability can manifest when a person is seriously underweight. In light of this, Major Depressive Disorder is differentiated by the fact that, while depressed individuals sometimes experience weight loss, they do not have a desire to lose weight or an intense fear of weight gain (APA, 2000). However, comorbidity for these two disorders does exist, and prevalence rates for the occurrence of Anorexia Nervosa with Major Depressive Disorder range from 46% to 74%, while the prevalence of Bulimia Nervosa with Major Depressive Disorder ranges from 50% to 65% (Pearlstein, 2002). Anxiety disorders may develop more often in people suffering from an eating disorder since, for example, those with Bulimia Nervosa often have an increase in anxiety symptoms (APA, 2000). Obsessive-compulsive features associated with an eating disorder are also prominent, and can be related or unrelated to food. Yet when the obsessions and compulsions are not related to food, body shape, or weight, Obsessive-Compulsive Disorder may be additionally diagnosed (APA, 2000).

Another major associated disorder is substance abuse or dependence, and it has been found that individuals with an eating disorder are more likely to abuse alcohol or other drugs. For Bulimia Nervosa, the lifetime prevalence of substance abuse or dependence is at least 30% (APA, 2000). Specifically, for college students, studies have demonstrated an association between unhealthy eating patterns and the use or abuse of alcohol. A new line of research has developed looking at the cluster of problematic behaviors termed “drunkorexia,” occurring mostly among college age women. Individuals with this problem engage in disordered eating and calorie restriction prior to the planned consumption of alcohol in order to prevent weight gain and increase the
effects of the alcohol (Burke, Cremeens, & Vail-Smith, 2010). This behavior is dangerous and can result in serious consequences in the binge drinking environments of college campuses.

*The Effect of Thin-Ideal Media*

It is important to note how the ideal body and the relative pressure placed on achieving that ideal differ according to gender in various social contexts. For the majority of females with body image disturbances, dissatisfaction with their shape stems from a desire to be thinner. Thin-ideal media present in Western culture instills the message that, to be considered attractive, one must be thin (APA, 2000). The models presented as the ideal body in thin-ideal media are a driving force behind women’s desire for thinness. Disturbance in body image appears to be a central factor in the development of eating disorders (DSM-IV-TR; APA, 2000). In recent years, body image and weight concerns have become increasingly apparent to the point of being considered normative, and the standards for thinness within the media may be a major influence on both clinical and subclinical eating disorders (Berel & Irving, 1998).

The discrepancy between the ideal presented in the media and the reality for most individuals is thought to be a significant source of body dissatisfaction. If thinness is valued and frequent comparisons between the self and the media ideal are made, there will be negative implications for the self-evaluation and experience of the body for an individual (Wertheim, Paxton & Blaney, 2004). Three constructs have been found to be especially relevant to the impact of thin-ideal media on body image, including awareness of the thin ideal, internalization of the thin ideal and perceived pressures to be thin. All
three of these factors had a significant relationship with body image in a study by Cafri, Yamamiya, Brannick, and Thompson (2005), with internalization and perceived pressures of the thin ideal demonstrating the strongest relationship to body image. Specifically, the impact of an environment that promotes the thin ideal is extremely detrimental for women, and exposure to thin-ideal media is linked to women’s generalized dissatisfaction with their bodies (Grabe, Ward, & Hyde, 2008).

As documented in literature reviews (e.g., Grabe et al., 2008; Groesz et al., 2002), numerous studies have found that exposure to thin-ideal media negatively affects an individual’s body image. In a meta analytic review, Grabe et al. (2008) examined experimental and correlational studies testing the effects of thin-ideal media, and it was found that 57% of experimental studies included in the review provided evidence of a link connecting thin-ideal media to body dissatisfaction in women. The findings regarding effect sizes for the internalization of eating behaviors and beliefs suggested that exposure to thin-ideal media images is related to multiple factors, including higher body dissatisfaction, higher anorexic and bulimic attitudes and behaviors, and higher overall internalization of the thin ideal. Importantly, internalization effects were stronger for studies in the 2000’s compared to the 1990’s, which does not come as a surprise when considering the increasing prevalence of extremely thin and objectifying images of women in the media (Grabe et al., 2008). Overall, both the experimental and correlational studies examined supported the general idea that the media’s depiction of the thin ideal corresponds with women’s body image concerns.
In a similar meta analytic review by Groesz, Levine, and Murnen (2002), data from 25 different studies was used to examine the effect of thin-ideal media images on body image and body satisfaction. It was found that body image for women did become increasingly more negative after participants were exposed to media images upholding the thin ideal compared to neutral images such as cars or houses. These results were also replicated when viewing thin-ideal media images compared to images showing averaged size female models or plus size models (Groesz et al., 2002). Taking into account results from existing meta analyses, the majority of findings throughout the literature strongly support the idea that exposure to the thin ideal in mass media is related to vulnerability to disturbances in body image, especially for women (Grabe, Ward, & Hyde, 2008).

According to research in a meta analysis by Stice (2002), the thin ideal portrayed in the media tends to negatively influence women’s body image. Internalization of the thin ideal contributes to body dissatisfaction and may lead to increases in negative affect. Research has further shown that the thin ideal promotes dieting and restrictive eating practices that coincide with eating disorder pathology (Stice, 2002). When participants in one study experienced an intervention that reduced their internalization of the thin ideal, it resulted in increased body satisfaction and increased positive affect. The intervention asked women who reported that they had adopted the thin ideal to take a stance against it. In order to induce them into adopting the anti-thin-ideal stance, the women were asked to design a program to help high school girls avoid adopting the thin ideal (Stice, Mazotti, Weibel, & Agras, 2000). In consideration of the fact that the intervention succeeded in reducing internalization of the thin ideal, thereby improving body image, results provide
experimental evidence of the connection between body image and thin-ideal media. Taken as a whole, studies within this meta analysis demonstrated that the internalization of the thin ideal promoted, specifically, in the media, is an influencing factor that may lead to body dissatisfaction, negative affect and eating disorder symptomology (Stice, 2002).

In a recently completed study by Folger and Reeb (2010), the extent to which body image becomes more negative after viewing thin-ideal media was examined. Folger and Reeb (2010) employed an experimental design to determine the effects of thin-ideal media on women’s body image, and participants were randomly assigned to either an experimental condition, in which participants viewed thin-ideal media, or a control condition, in which participants viewed neutral media. Before and after viewing the media, participants completed body image questionnaires. The study was unique in that it attempted to provide a more comprehensive assessment of the body image construct above what previous research had accomplished. Relative to participants who viewed neutral media, participants who viewed thin-ideal media showed a statistically significant change in scores in the expected direction (i.e., indicating poorer body image) on the Body Esteem Scale and the Appearance Self-Efficacy Scale. Changes in scores on the Physical Appearance State and Trait Anxiety Scale were in the expected direction and closely approached significance. With regard to this finding, further analyses showed that physical appearance anxiety became significantly more negative after viewing thin-ideal media. Participants also completed the internalization subscale of the Sociocultural
Attitudes Towards Appearance Questionnaire, but scores were not found to change significantly from pre-to-post media viewing for this measure.

The Folger and Reeb (2010) study was also unique in that it was the first study of this nature to incorporate the use of a post-experimental inquiry in an attempt to identify assessment reactivity. Folger (2010, p. 87) summarized the findings of the post-experimental inquiry as follows:

About 73% of responses from participants in the experimental group who articulated that the purpose was to explore factors affecting body image also reported that their responses to body image measures changed in the negative direction due to viewing the thin-ideal media. Thus, it is important to note that, even among participants who had a general idea about the purpose of the study, qualitative responses supported the view that exposure to thin-ideal media led to more negative body image. Furthermore, no participants indicated that knowing the purpose of the study led them to purposely complete body image measures in ways that either conformed to, or went against, what they perceived to be the expectation (Folger, 2010, p. 87).

In other words, the results of the post-experimental inquiry give the impression that, above and beyond any effects of assessment reactivity, exposure to thin-ideal media had a negative effect on body image. However, further research is needed to confirm this notion, since the extent to which pre-test sensitization contributed to pre-to-post changes in body image is unclear.
While a good number of studies have found that thin-ideal media negatively impacts body image, several studies have found little to no immediate effect of thin-ideal media on body image (Halliwell, Dittmar, & Howe, 2005). Halliwell et al. (2005) investigated the impact of thin-ideal media on the body image of women with a history of eating disorders, and found that exposure to images promoting the thin ideal did not lead to increased body-focused anxiety or body image negativity. Within this study, the participants who were exposed to average size models demonstrated a relief effect, where their body-focused anxiety actually decreased after viewing models who were not promoting the thin ideal body size. The authors did note the possibility of a ceiling effect influencing the results, where women with a history of eating disorders already had high levels of body dissatisfaction to begin with, and would not be significantly swayed by thin-ideal media (Halliwell et al., 2005). Further, a study by Irving (1990), found that there was no significant difference between the body image of participants who were exposed to the thin ideal and participants who viewed neutral pictures of cars. Yet Irving (1990) did find that there was a significant decrease in body satisfaction when participants saw thin-ideal images compared to images of plus size models.

Similarly, null effects were found in a study by Thornton and Maurice (1997) that examined the effect of the thin ideal on dieting attitudes and behaviors. The study found that there was no immediate effect of exposure to thin-ideal media on eating behaviors and beliefs. No directional relationship was found between media exposure and disordered eating, suggesting that in some cases it is difficult to find conclusive evidence of the effect of thin-ideal media. This may be because a brief manipulation is less likely
to have a significant impact on an individual’s body image or eating behaviors compared to the prolonged and repeated exposure to thin-ideal media within society that leads to internalization of the ideal (Thornton & Maurice, 1997). However, a long-term study found that extended exposure to thin-ideal media had no main effect on body dissatisfaction, dieting behaviors, negative affect or internalization of the thin ideal (Stice, Spangler, & Agras, 2001).

In addition to contradictory findings regarding the effect of thin-ideal media on body image, there are also discrepancies across studies regarding which body image dimension is assessed. This may further account for contradictory findings in the literature, so there is a need for research that employs a comprehensive assessment of the body image construct. Body image as a concretely defined concept remains rather elusive in part because it represents different things to different scientists and practitioners. As Grabe et al. (2008) states: “What is perhaps the greatest challenge to drawing sound conclusions from this growing literature is that results vary depending on the particular dimension of body image that is being measured” (Grabe et al., 2008, p. 462). Therefore, a complete assessment of the body image construct is necessary in order to validate research findings and address discrepancies in existing literature. Since body image has multiple dimensions, it is crucial to employ measures that assess various components of the construct. This would allow researchers to examine if thin-ideal media impacts all parts of the body image construct or only certain dimensions.
**Body Image Dimensions**

Within existing scholarship, body image is shown to play an integral role in our emotions, thoughts, and behaviors in everyday life, affecting us from early childhood through adulthood. Body image has the ability to dramatically shape an individual’s quality of life, especially for women, considering that body image problems are a central criterion of eating disorders (Cash & Pruzinsky, 2002; APA, 2000). As research demonstrates, body image is a multidimensional phenomenon and includes thoughts, feelings, and behavioral responses concerning the body (Thompson & van den Berg, 2002). One way in which the present study aims to contribute to existing research on body image is to provide a comprehensive assessment of the body image construct. A complete assessment of the body image construct is necessary in order to address discrepancies in the existing literature. Comprehensive assessment would allow researchers to examine the different ways that thin-ideal media may impact the various dimensions of the body image construct.

Grabe, Ward and Hyde (2008) defined four main dimensions that can be used in the measurement of the body image construct in their meta-analysis of experimental and correlational studies looking at the media’s impact on body image concerns in women. The existing research on the effects of thin-ideal media on body image shows that different measures of body image have been used across studies, perhaps contributing to the contradictory findings. Differing assessments and methodology indicate that a firm or complete understanding of the effect of thin-ideal media on women’s body image may be lacking (Grabe, Ward, & Hyde, 2008). The four dimensions of body image identified by
Grabe et al. (2008) consist of (1) body dissatisfaction, (2) body self-consciousness/objectification, (3) internalization of the thin ideal/drive for thinness, and (4) eating behaviors/beliefs. Two components, the body self-consciousness/objectification dimension and the internalization of the thin ideal and drive for thinness dimension stem from Thompson and van den Berg’s (2002) identification and definition of a cognitive facet of body image. This cognitive dimension represents the beliefs, thoughts, and attributions within the body image construct, and was initially designed to measure self-attentional focus, investment in one’s appearance, and internalization of social stereotypes regarding appearance (Thompson & van den Berg, 2002). A more comprehensive examination of body image can be achieved in part by using measures that assess each of the four identified dimensions.

Within existing literature, it is common for researchers to use several measures of body image or related constructs in one study. The use of several different measures that may assess several different dimensions of body image poses a problem to finding conclusive evidence regarding the effect of thin-ideal media. Mixed results across measures used as well as what dimension of body image was assessed make it extremely difficult to determine what construct of body image is linked to media exposure. In regard to the first dimension, body satisfaction/dissatisfaction, results from a comprehensive literature review demonstrated that there is an influence of thin-ideal media. Exposure to media depicting the thin ideal has been linked to women’s dissatisfaction with their own bodies (Grabe et al., 2008). Inconclusive evidence exists for the relationship between thin-ideal media and the second dimension, body self-
consciousness/objectification, because too few studies have tapped into this category. The lack of data looking at the relationship between the media and this aspect of body image warrants further examination. For the dimensions of internalization of the thin-ideal and eating behaviors and beliefs, both have demonstrated consistent relationships with thin-ideal media. Media exposure is related overall to increases in body dissatisfaction, internalization of the ideal, and bulimic and anorexic behaviors and attitudes (Grabe et al., 2008).

**Body Satisfaction/Dissatisfaction**

Body satisfaction/dissatisfaction, represents a global and subjective evaluation of one’s body (Grabe, Ward, & Hyde, 2008). It is the overall level of approval or lack thereof that an individual has with their body. The body dissatisfaction category consists of measures that assess the evaluative component of body image, i.e. satisfaction/dissatisfaction with the body. Examples of measures of this dimension include the Body Satisfaction Questionnaire (Berscheid, Walster, & Bohnstedt, 1973), the Body Esteem Scale (Franzoi & Shields, 1984), and the Multidimensional Body-Self Relations Questionnaire (Brown, Cash, & Mikulka, 1990).

**Body Self-Consciousness/Objectification**

The body self-consciousness/objectification dimension is designed to measure self-attentional focus or preoccupation with the body and self-objectification. Self-objectification refers to an individual adopting a view of the self as an object whose value is based on appearance. The body self-consciousness/objectification dimension reflects the presence of dysfunctional cognitive schema (Grabe, Ward, & Hyde, 2008), and is
assessed using scales such as the Body Self-Consciousness Questionnaire (Miller, Murphy, & Buss, 1981) and the Self-Objectification Questionnaire (Noll & Fredrickson, 1998).

**Internalization of the Thin Ideal and Drive for Thinness**

Also broken down from the cognitive dimension of body image, the internalization of the thin ideal and drive for thinness factor consists of an individual’s adoption of sociocultural appearance ideals as a personal goal and standard. This is typically assessed by measuring how strongly a person values thinness for themselves as well as for others, by various scales like the Ideal-Body Stereotype Internalization Scale (Stice et al., 1994) and the Internalization subscale of the Multidimensional Media Influence Scale (Cusumano & Thompson, 2001).

**Eating Behaviors and Beliefs**

Finally, the dimension of eating behaviors and beliefs represents behaviors related to body image, specifically behaviors related to eating and beliefs related to eating, such as feeling guilty after eating. Body image dissatisfaction is related to various eating beliefs and behaviors, such as restrained eating, excessive exercise after eating, or bingeing and purging. Many measures look at beliefs and attitudes as well as behaviors for eating, such as the Bulimia subscale of the Eating Disorders Inventory (Garner et al., 1983) and the Eating Disorder Diagnostic subscale (Stice, Telch, & Rizvi, 2000).

Findings in the past have been mixed regarding an effect of media portrayals on body image concerns (Halliwell, Dittmar, & Howe, 2005), implicating the need for a complete and thorough use of evaluative measures. To provide a more comprehensive
assessment of the relationship between thin-ideal media and body image, all four dimensions of the body image construct should be employed by researchers.

**Self-Efficacy**

In addition to the four dimensions of the body image construct discussed above and indicated by Grabe et al. (2008), other researchers have cited factors that may impact or be connected to body image satisfaction (Folger & Reeb, 2010). One important factor to consider is self-efficacy, which has also been examined within the existing literature on body image using the Appearance Self-Efficacy Scale (ApSES). Thin-ideal media may have a negative impact on self-efficacy, which is conceptualized by the ApSES as self-efficacy regarding the ability to change one’s own appearance. Bardone-Cone and Cass (2006) found that self-efficacy scores on the ApSES decreased significantly after viewing pro-anorexia websites compared to neutral websites. Folger and Reeb (2010) examined self-efficacy and demonstrated a decrease in self-efficacy scores after viewing thin-ideal media.

**Anxiety Related to Body Image**

Another notable factor that impacts body image is anxiety related to certain parts of the body. Anxiety related to body image is assessed using the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991). Research has shown that body image anxiety is impacted by exposure to thin-ideal media, and increases in physical appearance anxiety are observed from pre-media viewing to post-media viewing (Folger & Reeb, 2010).


Affect Related to Body Image

Also in addition to the four dimensions of body image, research has shown that affect related to body image is another important factor to consider (Folger & Reeb, 2010). This has been examined using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), which assesses the degree to which women feel positive and negative emotions while viewing thin-ideal or neutral media. Research has shown that the Negative Affect subscale of the PANAS becomes more negative after viewing thin-ideal media, demonstrating an increase in negative affect from exposure to the thin ideal (Folger & Reeb, 2010).

Solomon Four-Group Design

There is a dearth of research examining the extent to which reactivity of body image assessment (pre-test sensitization) accounts for changes in scores on body image measures that have been observed in women following exposure to thin-ideal media. Pre-test sensitization occurs when the administration of a pre-test measure in some way influences participants and causes them to be affected differently by an experimental intervention (Kazdin, 1992). In addition, the effects of assessment reactivity may vary across measures of different body image dimensions. Only one study in the literature (Folger & Reeb, 2010) has attempted to examine reactivity of body image assessment. Since the examination of assessment reactivity was not a major objective in the Folger and Reeb (2010) study, only a post-experimental inquiry was employed. Some evidence of assessment reactivity was observed in the Folger and Reeb (2010) study, which found that participants who exhibited decreases in body image after viewing thin-ideal media
were still aware of the purpose of the study. A high percentage of participants were aware of the study’s purpose, yet thin-ideal media still had a negative effect on body image. It is unclear the extent to which pre-test sensitization may play a role in pre-to-post changes in body image for participants who view thin-ideal media. Therefore, it is crucial for future research on thin-ideal media and body image to examine the effects of assessment reactivity in a more systematic way. This can be done by using the Solomon Four-Group Design in conjunction with a post-experimental inquiry.

The Solomon Four-Group Design is the most sophisticated way to identify and examine pre-test sensitization in an experiment. As Kazdin (1992, p. 97) writes, “…the design has excellent properties that provide a more persuasive demonstration than other designs…” The various combinations of tested and untested groups with treatment and control groups ensure that confounding variables and extraneous factors have not influenced the results. Using the Solomon Four-Group Design within research to control for pre-test sensitization, participants would be randomly assigned to four conditions: (a) pre-test assessment, exposure to experimental manipulation, and post-test assessment; (b) pre-test assessment, neutral exposure (control), and post-test assessment; (c) no pre-test assessment, exposure to experimental manipulation, and post-test assessment; and (d) no pre-test assessment, neutral exposure (control), and post-test assessment (Kazdin, 1992). This experimental design allows the researcher to exert more control over the variables and check that the pre-test did not influence the results.
The Present Study

As indicated in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition text revision (DSM-IV-TR), body image disturbances are central to eating disorders (APA, 2000). Overall, it is important to note that the majority of studies in existing literature have found that even a brief exposure to thin-ideal media has negative implications for the body image of female participants, providing a basis for the present research (Groesz, Levine, & Murnen, 2002). However, since several studies have shown that the experimental effect of exposure to thin-ideal media on body image is not consistently observed, more sophisticated methodology is needed (Grabe et al., 2008). Results of research examining the effect of thin-ideal media on body image are somewhat inconclusive for at least two reasons.

First, there are inconsistencies across studies regarding which body image dimension is assessed, and so there is a need for research that employs a comprehensive assessment of the body image construct. Researchers employ instruments to measure body image that in actuality assess different dimensions of the construct. In the Folger and Reeb (2010) study, two of the four body image dimensions identified by Grabe et al. (2008) were assessed, including the dimension of body satisfaction/dissatisfaction (using the Body Esteem Scale) and the dimension of internalization of the thin ideal and drive for thinness (using the Sociocultural Attitudes Towards Appearance Questionnaire). Folger and Reeb (2010) also assessed two relevant dimensions not identified by Grabe et al. (i.e., self-efficacy for changing one’s appearance and negative affect related to viewing thin-ideal media). Two of the four dimensions identified by Grabe et al. (i.e.,
Objective and Eating Behaviors/ Beliefs) were not assessed by Folger and Reeb (2010) and, as noted in the literature review, the particular dimension of self-consciousness/objectification has been rarely assessed in studies examining effects of thin-ideal media on body image. To provide a complete and comprehensive assessment of the body image construct, all of the above dimensions were measured in the present study, consisting of body satisfaction/dissatisfaction, body self-consciousness/objectification, internalization of the thin ideal and drive for thinness, eating behaviors and beliefs, self-efficacy, anxiety related to body image, and affect related to body image.

Second, there is a dearth of research that controls for effects of assessment reactivity (e.g., pre-test sensitization), indicating further need to address the issue. The purpose of some studies may be more transparent than others, which could influence participant responding and create inconsistencies in results. Folger and Reeb (2010) employed a post-experimental inquiry and, while this inquiry revealed that many participants were aware of the general purpose of the study, the extent to which this awareness contributed to pre-to-post changes in body image (as opposed to changes in body image being completely due to exposure to thin-ideal media) is somewhat unclear.

In sum, existing literature lacks a complete and comprehensive assessment of the body image construct, and the ability to control for pre-test sensitization effects. This study addressed these two methodological limitations of previous research, and aimed to provide more conclusive findings regarding the effects of thin-ideal media on body image. Results of the present study also have clinical implications. For instance, a better
understanding of the ways that thin-ideal media influences the different dimensions of body image will guide and inform the development of interventions designed to prevent body image problems and eating disorder tendencies.

A college sample was used for the present study since eating disorders and body image problems are prevalent in college age women. The eating disorders Anorexia Nervosa and Bulimia Nervosa have a typical onset occurring in late adolescence or early adulthood (DSM-IV-TR; APA, 2000). Eating disorder prevalence rates for at-risk females, age 15 to 29, are estimated to be between 3 to 10% (Polivy & Herman, 2002). Lifetime prevalence rates for Anorexia Nervosa are estimated to be 0.5% and rates for Bulimia Nervosa are estimated to range from 1-3% for females (DSM-IV-TR; APA, 2000). It is important to note that regarding all prevalence rates of eating disorders, subthreshold levels of these disorders are much more commonly experienced (APA, 2000). Also in college, young women often engage in various patterns of disordered eating and calorie restriction prior to the planned consumption of alcohol in order to prevent weight gain (Burke, Cremeens, & Vail-Smith, 2010).

The purpose of the present study was to examine the following hypotheses:

1. The first objective of the present study was to examine the effect that thin-ideal media had on body image. Consistent with past research, Hypothesis 1 was that women’s body image will become more negative after viewing thin-ideal media, whereas such a change was not expected in women viewing neutral media.
2. A second objective of the present study was to look at how the effect of thin-ideal media varies across the different dimensions of the body image construct, as delineated by Grabe et al. (2008). A comprehensive assessment of body image was necessary in order to allow researchers to examine the different ways that thin-ideal media may have impacted the various dimensions of the body image construct. Hypothesis 2 was that thin-ideal media would have a negative effect on body image across all dimensions assessed.

3. The third objective of this study was to employ the Solomon Four-Group Design and a post-experimental inquiry in order to determine whether changes in scores on body image measures following exposure to thin-ideal media were due to reactivity effects of body image assessment (pre-test sensitization). Hypothesis 3 was that, after controlling for participant reactivity, there would still be evidence of the effect of thin-ideal media on body image.

4. Similar to Hypothesis 2, Hypothesis 4 was that the effect of thin-ideal media would be observed on all dimensions of body image assessed, even after controlling for pre-test sensitization.
CHAPTER II
METHOD

Participants
The sample consisted of 112 female undergraduate students at a private Midwestern university. The age of participants ranged from 18 to 23 years, with an average of 19.79 years and a standard deviation of 1.378. Participants were recruited from psychology courses and received course credit for their participation. Prior to data collection, the study was approved by the Research Review and Ethics Committee, Department of Psychology, University of Dayton, and procedures within the study were in accordance with the Ethical Principles of Psychologists (American Psychological Association, 2002).

Materials

Demographic questionnaire. Participants completed a demographic questionnaire (Appendix A) at the beginning of the study, consisting of items regarding age, ethnicity, height, weight, and the desired weight of the women. The demographic questionnaire also had items relating to the socioeconomic status of the participants, and asked about the level of education and yearly income achieved by the individual’s parents. One item asked the individual to indicate the current marital status of their biological parents.
Finally, participants were asked to indicate if they were involved in therapy with a mental health practitioner at the time of the study.

*Body Esteem Scale.* The Body Esteem Scale (Appendix B) was used to measure the first dimension of body image as defined by Grabe et al. (2008). The first dimension is body satisfaction/dissatisfaction, and is the overall level of approval or lack of approval that one has with their body. This specific scale was employed in the present study to assess the first dimension of body image because past research has found significant changes in response to thin-ideal media. Scores on the Body Esteem Scale decreased significantly for participants who viewed thin-ideal media in a recent study within this specific program of research (Folger & Reeb, 2010). The Body Esteem Scale (BES; Franzoi & Shields, 1984) was administered to participants before and/or after viewing the media according to which experimental group they were assigned to at the onset of the study. For females, this scale examines aspects of body satisfaction dealing with sexual attractiveness, weight concern and physical condition, and scores are derived for each of these three dimensions. Sexual attractiveness relates to body features that can change through cosmetic procedures but not exercise, weight concern relates to body parts that can change through exercise or eating habits, and physical condition pertains to physical abilities such as stamina, agility and strength (Franzoi & Shields, 1984). The BES uses a Likert-type scale to examine how an individual feels towards their body parts and body shape. Scores for each item range from 1 (strong negative feelings) to 5 (strong positive feelings). Strong internal consistency has been found for the scale, with an alpha coefficient of .78 for the factor of attractiveness, .87 for the factor of weight concern, and
Franzoi and Herzog (1986) demonstrated convergent validity for the BES and found that it significantly correlated with the Body Consciousness Questionnaire. Construct validity has additionally been shown, and Folger and Reeb (2010) found that scores on all three of the BES subscales decreased significantly after viewing thin-ideal media. Higher scores indicate higher body esteem and lower scores represent lower body esteem.

_Self-objectification questionnaire._ The Self-Objectification Questionnaire (Appendix C; Noll & Fredrickson, 1998) was used to measure the second dimension of body image, the body self-consciousness/objectification dimension, as defined by Grabe et al. (2008). This specific questionnaire was used since it has been recognized as a measure that assesses the second dimension of body image. To date, results regarding measures of this dimension are inconclusive because very few studies have examined this outcome variable (Grabe et al., 2008). It is crucial to conduct further research using measures such as the Self-Objectification Questionnaire in order to gain an understanding of the effect of thin-ideal media on this dimension of body image. The questionnaire was administered to participants before and/or after viewing the media according to which experimental group they were assigned to at the onset of the study. This measure looks at individual differences in self-objectification and assesses the degree to which women view their body in an observable and appearance-based way. This is the opposite of viewing the body in a non-objectified, which consists of non-observable and competence based self-evaluations. It is crucial to measure this dimension of body image as separate from the dissatisfaction dimension that consists of measures of body esteem and body
satisfactions, because this dimension taps into how concerned participants are with their own appearance without an evaluative component. As Noll and Fredrickson (1998) describe, body self-consciousness and self-objectification occur solely because an individual is concerned with physical appearance, regardless of their level of satisfaction with their personal physical appearance. Both women who are satisfied or who are dissatisfied with their own body can experience feelings of self-objectification and self-consciousness, and the negative consequences of these feelings, simply by being concerned with appearance (Fredrickson & Roberts, 1997). Respondents are asked to rank a list of body attributes in order of importance to physical self-concept. There are a total of 10 body attributes listed, half of which are based on appearance, such as weight, and the other half of which are based on competence, such as health. Rankings are made on a Likert-type scale ranging from 9 (indicating the body attribute that has the most impact) to 0 (indicating the body attribute with the least impact) (Noll & Fredrickson, 1998). Construct validity for the Self-Objectification Questionnaire has been demonstrated, and the questionnaire has a positive correlation of .52 with a measure assessing preoccupation with observable aspects of the physical self, known as the Appearance Anxiety Questionnaire (Dion, Dion, & Keelan, 1990).

Sociocultural attitudes towards appearance questionnaire (SATAQ). The SATAQ (Appendix D; Heinberg, Thompson, & Stormer, 1995) was used to look at the third dimension of body image, the internalization of the thin ideal and drive for thinness, which describes an individual’s adoption of sociocultural appearance ideals as their personal goal and standard (Grabe et al., 2008). In this specific program of research,
recent studies have employed the scale and it is recognized as an accurate assessment of this dimension in the literature (Folger & Reeb, 2010; Grabe et al., 2008). The SATAQ specifically examines a woman’s recognition and endorsement of society’s standards of appearance. For the present study, the SATAQ internalization subscale was used since it has been found to be a strong predictor of body image disturbance (Heinberg et al., 1995). The internalization subscale consists of eight items, and has an alpha coefficient of .88, with convergent validity coefficients ranging from .36 to .61 with differing eating disorder symptomology measures. The SATAQ internalization subscale was administered to participants before and/or after viewing the media according to which experimental group they were assigned to at the onset of the study. Participants are asked to rate items on a Likert-type scale ranging from 1 (completely disagree) to 5 (completely agree). An example of an item is “I believe that clothes look better on thin models.” Higher scores indicate greater internalization and adoption of the thin ideal and lower scores indicate less endorsement of the standard (Heinberg et al., 1995). The SATAQ internalization subscale has been employed in past studies as a pre and post media measure, and findings suggest that internalization of the thin ideal is a stable variable that may not change from a pre-to-post-media viewing (Folger & Reeb, 2010). However, it is important to assess this dimension of body image in order to look at the degree of acceptance for society’s standards of appearance.

Brief Eating Beliefs and Behavioral Intentions Scale. One of the four dimensions identified by Grabe et al. (2008) is eating behaviors and beliefs. While Grabe et al. (2008) listed measures that assess this dimension, none of the measures listed would be
appropriate to use in a pre-to-post assessment of changes in body image. In other words, the measures listed for the dimension of eating behaviors and beliefs include items that assess beliefs or behaviors that could not possibly change within a short time frame or after only a brief exposure to thin-ideal media. For example, in one of the measures that Grabe et al. (2008) identifies as tapping into this dimension, the Eating Disorder Diagnostic subscale (Stice, Telch, & Rizvi, 2000), an item is as follows: “During the past 6 months have there been times when you felt you have eaten what other people would regard as an unusually large amount of food (e.g., a quart of ice cream) given the circumstances?” Therefore, the Brief Eating Beliefs and Behavioral Intentions Scale was created for use in the present study to assess this dimension (Appendix E). The Brief Eating Beliefs and Behavioral Intentions Scale is a 5 item scale that asks participants to rate the degree to which they endorse statements about their eating beliefs. Individuals are asked to rate items on a Likert-type scale ranging from 1 (completely disagree) to 5 (completely agree). An example of an item is “I believe that I need to eat less.” Higher scores indicate a greater endorsement of disordered eating behaviors and eating beliefs that support the thin-ideal. Since this is a newly developed measure, research on reliability and validity is not available. However, in the current study, correlations between items on this scale and other well-validated measures of body image will be examined in order to establish concurrent validity.

*Appearance Self-Efficacy Scale (ApSES).* The ApSES (Appendix F; Bardone-Cone & Cass, 2006) was used to measure an individual’s feelings of self-efficacy in terms of their appearance. This scale is a modified version of the general subscale of the
Self-Efficacy Scale developed by Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs and Rogers (1982). The ApSES was administered to participants before and/or after viewing the media according to which experimental group they were assigned to at the onset of the study. Higher scores on this scale indicate greater appearance self-efficacy and lower scores indicate lesser levels of appearance self-efficacy. A sample item on the ApSES is: ‘I feel insecure about my ability to develop my desired body weight and shape.’ The general self-efficacy subscale has demonstrated good psychometrics (Sherer et al., 1982), and use of the ApSES in the past has produced a coefficient alpha of 0.93 (Bardone-Cone & Cass, 2006). In a study that examined the affective and cognitive consequences of exposure to a pro-anorexia website, the coefficient alpha of the ApSES was 0.90 pre-website and 0.86 post-website (Bardone-Cone & Cass, 2006).

Physical appearance state and trait anxiety scale (PASTAS). The PASTAS (Appendix G; Reed, Thompson, Brannick, & Sacco, 1991) was used to examine body image anxiety. This scale consists of questions that ask an individual to rate how anxious, tense, or nervous they feel about certain parts of their body such as the hips or legs. The PASTAS has been found to have a test-retest reliability of .87 when used in college students, and alpha coefficients range from .82 to .92. Validity has also been well demonstrated for the scale, and convergent validity with subscales of the Eating Disorder Inventory (EDI) has ranged from .36 to .74 (Reed et al., 1991). Responses are recorded on a five point Likert-type scale that ranges from 0 (not at all anxious) to 4 (exceptionally so). The state version of the PASTAS has a total of 48 items; however a shortened adaptation of the state version of the PASTAS was utilized in the present study. The
shortened version of the scale consists of 16 items that assess anxiety towards weight related parts of the body. For this version of the PASTAS, a coefficient alpha of .94 has been obtained (Halliwell & Dittmar, 2004). In the present study, the PASTAS was administered as both a pre and post measure since it is expected that state anxiety about the body will increase after viewing thin-ideal media images (Folger & Reeb, 2010). Higher scores on the PASTAS signify greater body anxiety about an individual’s physical appearance and lower scores signify lower body anxiety about appearance.

*Positive and negative affect schedule (PANAS).* The PANAS (Appendix H; Watson, Clark, & Tellegen, 1988) looks at positive and negative affect using a Likert-type rating scale that ranges from 1 (very slightly or not at all) to 5 (extremely). For the present study, only the Negative Affect Scale was employed since previous research has found nonsignificant effects when looking at the relationship between thin-ideal media exposure and changes in positive affect (Folger & Reeb, 2010). The Negative Affect (NA) Scale of the PANAS was used to measure pre- to post- media changes in negatively valenced mood, and asked participants to rate affect items such as ‘distressed’ or ‘upset.’ For the Negative Affect Scale of the PANAS, internal consistency alphas range from .84 to .87 and convergent validity has been demonstrated by a .74 correlation of the NA with the Hopkins Symptoms Checklist (Watson et al., 1988). Negative Affect using the PANAS has been found to increase in college women after viewing pro-anorexia websites compared to neutral websites (Bardone-Cone & Cass, 2006). Similarly, research has shown that thin-ideal media exposure leads to changes in the clinical direction, where negative affect increases, from pre-media to post-media viewing (Folger & Reeb, 2010).
High scores on NA indicate greater negative affect and lower scores indicate less negative affect.

**Procedure**

Participants signed up online for a specific time slot and were asked to read and sign a consent form before involvement in the study. Following informed consent, each participant completed body image measures and viewed the media individually. Depending on which group participants were assigned to at the outset of the study according to the Solomon Four-Group design, they completed a packet of self-report questionnaires before and/or after media exposure which included the demographic form, the Body Esteem Scale, the Self-Objectification Questionnaire, the Sociocultural Attitudes Towards Appearance Questionnaire, the Brief Eating Beliefs and Behavioral Intentions Scale, the Appearance Self-Efficacy Scale, the Physical Appearance State and Trait Anxiety Scale and the Positive and Negative Affect Schedule.

An experimental design was utilized with participants randomly assigned to one of four groups, in accordance with the Solomon Four-Group design. In the first condition, participants completed the pre-test body image self-report assessments, underwent exposure to thin-ideal media, and then completed the same self-report post-test body image assessments. Using the Solomon Four-Group design, the second group of participants completed the pre-test self-report body image assessments, underwent exposure to the neutral (control) media, and afterwards completed the same post-test self-report body image assessments. The third group of participants had no pre-test body image assessment, were exposed to thin-ideal media, and asked to complete post-test
body image self-report assessments. Within the experimental design, the fourth group of participants also had no pre-test body image assessment, and experienced a neutral (control) media viewing, after which they were asked to complete post-test self-report body image assessments.

For the present study, 10 pictures of models found on various fashion websites were used to represent the thin-ideal media. For the neutral (control) media exposure, 10 images were used that depicted magazine advertisements from various websites, and did not have models represented in the images. These specific images were utilized in the study because Bosse and Reeb (2008) and Folger and Reeb (2010) found significant effects in the expected direction after participant exposure to the pictures. In other words, these studies found that after viewing the ten images that endorse the thin ideal as described above, body image became more negative, however no change in body image occurred after participants viewed the neutral advertisement images. The thin-ideal and neutral media images were viewed by participants for 10 seconds per picture on a computer. This amount of time was designated for the images since a study by Brown and Dittmar (2005) demonstrated that using this exposure time led to increases in weight-related anxiety after viewing media that enforced the societal thin ideal. Subsequently after media exposure and post-test body image measures were completed, a post-experimental inquiry (Appendix H) was employed and the participant was debriefed both verbally and orally. The post-experimental inquiry was used to assess if participants were able to detect the purpose of the study during their involvement.
CHAPTER III

RESULTS

Overview of Research Design and Approach to Statistical Analyses

As illustrated in Table 1 below, the Solomon Four-Group Design was employed, and participants were randomly assigned to four different groups. By including additional control groups, this design allowed the researcher to determine (a) if the pre-test influenced changes in scores on body image measures and (b) if other variables influenced changes in body image scores. In the Solomon Four-Group design,

Table 1

Solomon Four-Group Design

<table>
<thead>
<tr>
<th>Randomized Group</th>
<th>Pre-test</th>
<th>Intervention</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>Assessment of Body Image</td>
<td>Thin-Idea Media</td>
<td>Assessment of Body Image</td>
</tr>
<tr>
<td>Group B</td>
<td>Assessment of Body Image</td>
<td>Neutral Media</td>
<td>Assessment of Body Image</td>
</tr>
<tr>
<td>Group C</td>
<td>No Assessment</td>
<td>Thin-Idea Media</td>
<td>Assessment of Body Image</td>
</tr>
<tr>
<td>Group D</td>
<td>No Assessment</td>
<td>Neutral Media</td>
<td>Assessment of Body Image</td>
</tr>
</tbody>
</table>
Groups A and B are identical to groups used in a standard two-group pre-test-post-test design. Thus, this aspect of the study attempted to replicate the part of the Folger and Reeb (2010) study that examined the effects of thin-ideal media on body image, and it extended the study by including a more comprehensive assessment of body image.

**Intercorrelations Among Body Image Measures: Setting the Stage for MANOVA**

Many of the analyses utilized in this study employed MANOVA, with all of the body image measures collectively serving as a “joint” dependent variable. MANOVA is used in this way when the different dependent measures are believed to be interrelated and to represent different aspects of the same underlying construct. Therefore, to determine the extent to which MANOVA is justified, intercorrelations among body image measures were examined in ways that correspond with the major analyses to be performed, even though the examinations of these intercorrelations do not directly correspond with any specific hypotheses. This included examination of intercorrelations among body image measures at pre-test (Groups A and B; see Table 2), as well as examination of intercorrelations among body image measures at post-test across all groups (Groups A, B, C, and D; see Table 3), across Groups A and B (see Table 4), and across Groups C and D (see Table 5). Collectively, it can be seen that the body image measures tended to covary. At pre-test, for example, 36 out of the 42 correlations (Table 2) were statistically significant, and significant correlations ranged in magnitude from .264 to .631. Thus, the use of MANOVA seemed justified.
### Table 2

**Intercorrelations of Body Image Measures for Pre-test Assessment (Groups A and B)**

<table>
<thead>
<tr>
<th>Body Image Measures</th>
<th>BES</th>
<th>SObj</th>
<th>SATAQ</th>
<th>BEBBI</th>
<th>ApSES</th>
<th>PASTAS</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>BES</td>
<td>1</td>
<td>-0.264*</td>
<td>-0.312*</td>
<td>-0.448*</td>
<td>0.422*</td>
<td>-0.528*</td>
<td>-0.264*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.049)</td>
<td>(0.019)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(&lt;0.001)</td>
<td>(0.050)</td>
</tr>
<tr>
<td>SObj</td>
<td>-0.264*</td>
<td>1</td>
<td>0.494*</td>
<td>0.330*</td>
<td>-0.145</td>
<td>0.443*</td>
<td>0.196</td>
</tr>
<tr>
<td></td>
<td>(0.049)</td>
<td></td>
<td>(&lt;0.001)</td>
<td>(0.013)</td>
<td>(0.286)</td>
<td>(0.001)</td>
<td></td>
</tr>
<tr>
<td>SATAQ</td>
<td>-0.312*</td>
<td>0.494*</td>
<td>1</td>
<td>0.479*</td>
<td>-0.341*</td>
<td>0.570*</td>
<td>0.453*</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(&lt;0.001)</td>
<td></td>
<td>(&lt;0.001)</td>
<td>(0.010)</td>
<td>(&lt;0.001)</td>
<td>(&lt;0.001)</td>
</tr>
<tr>
<td>BEBBI</td>
<td>-0.448*</td>
<td>0.330*</td>
<td>0.479*</td>
<td>1</td>
<td>-0.107</td>
<td>0.619*</td>
<td>0.394*</td>
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<tr>
<td></td>
<td>(0.001)</td>
<td>(0.013)</td>
<td>(&lt;0.001)</td>
<td></td>
<td>(0.432)</td>
<td>(&lt;0.001)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>ApSES</td>
<td>0.422*</td>
<td>-0.145</td>
<td>-0.341*</td>
<td>-0.107</td>
<td>1</td>
<td>-0.445*</td>
<td>-0.279*</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.286)</td>
<td>(0.010)</td>
<td>(0.432)</td>
<td></td>
<td>(0.001)</td>
<td>(0.037)</td>
</tr>
<tr>
<td>PASTAS</td>
<td>-0.528*</td>
<td>0.443*</td>
<td>0.570*</td>
<td>0.619*</td>
<td>-0.445*</td>
<td>1</td>
<td>0.631*</td>
</tr>
<tr>
<td></td>
<td>(&lt;0.001)</td>
<td>(0.001)</td>
<td>(&lt;0.001)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>-0.264*</td>
<td>0.196</td>
<td>0.453*</td>
<td>0.394*</td>
<td>-0.279*</td>
<td>0.631*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(0.050)</td>
<td>(0.148)</td>
<td>(&lt;0.001)</td>
<td>(0.003)</td>
<td>(0.037)</td>
<td>(&lt;0.001)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes.**
1. Abbreviations of Measures. BES = Body Esteem Scale; SObj = Self-Objectification Questionnaire; SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire; BEBBI = Brief Eating Beliefs and Behavioral Intentions Scale; ApSES = Appearance Self-Efficacy Scale; PASTAS = Physical Appearance State and Trait Anxiety Scale, State Version; NA = Negative Affect Scale.
2. Significance Levels. *p* = Correlations are significant according to the 0.05 level.
3. Direction of Correlations. As noted in the Method section, high scores on the BES and the ApSES mean high body esteem and appearance self-efficacy, whereas high scores on the SObj, SATAQ, BEBBI, PASTAS, and NA mean high self-objectification, internalization of appearance ideals, disordered eating behaviors, anxiety about appearance, and negative emotion.
Table 3
Intercorrelations of Body Image Measures for Post-test Assessment (Groups A, B, C, D)

<table>
<thead>
<tr>
<th>Body Image Measures</th>
<th>BES</th>
<th>SObj</th>
<th>SATAQ</th>
<th>BEBBI</th>
<th>ApSES</th>
<th>PASTAS</th>
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Table 4
*Intercorrelations of Body Image Measures for Post-test Assessment (Groups A and B Only)*

<table>
<thead>
<tr>
<th>Body Image Measures</th>
<th>BES</th>
<th>SObj</th>
<th>SATAQ</th>
<th>BEBBI</th>
<th>ApSES</th>
<th>PASTAS</th>
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<td>-.327*</td>
<td>-.471*</td>
<td>.447*</td>
<td>-.609*</td>
<td>-.465*</td>
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<td>(.014)</td>
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<td>.529*</td>
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</tbody>
</table>

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Table 5
Intercorrelations of Body Image Measures for Post-test Assessment (Groups C and D Only)

<table>
<thead>
<tr>
<th>Body Image Measures</th>
<th>BES</th>
<th>SObj</th>
<th>SATAQ</th>
<th>BEBBI</th>
<th>ApSES</th>
<th>PASTAS</th>
<th>NA</th>
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<td>-0.311*</td>
<td>-0.387*</td>
<td>-0.756*</td>
<td>0.374*</td>
<td>-0.623*</td>
<td>-0.611*</td>
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<td>(0.020)</td>
<td>(0.003)</td>
<td>(&lt;0.001)</td>
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<td>0.552*</td>
<td>0.204</td>
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<td>(0.132)</td>
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<td>(0.094)</td>
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<td>0.552*</td>
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<td>0.368*</td>
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<td>(0.004)</td>
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<td>(0.005)</td>
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<td>(0.004)</td>
<td>(0.024)</td>
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<td>(0.358)</td>
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Hypothesis 1

Hypothesis 1 was that women’s body image would become more negative after viewing thin-ideal media, whereas such a change was not expected in women viewing neutral media. To examine this hypothesis, a 2 x 2 multivariate analysis of variance (MANOVA) was employed, with group (thin versus neutral media) as the between-subjects factor, and time (pre- versus post-media) as the within-subjects factor. The body image measures served as the dependent variables for this analysis. As expected, there was a statistically significant interaction between group and time, $F(7, 48) = 2.69, p = .02$. The main effect for time (pre-versus post-media viewing) was significant, $F(7, 48) = 4.14, p = .001$, but the main effect for group (thin versus neutral media) was nonsignificant, $F(7, 48) = 1.02, p = .43$. As presented in the subsection below, a follow-up 2 x 2 ANOVA was employed for each of the dependent body image measures, and there is some evidence that the specific findings are in the expected direction. The question regarding the extent to which the finding is observed across all (or most) dependent variables is actually directly pertinent to Hypothesis 2, as shown below.

Hypothesis 2

Hypothesis 2 stated that exposure to thin-ideal media will have a negative effect on body image across all dimensions assessed. Given the significant MANOVA interaction presented above, a follow-up ANOVA was employed for each dependent measure, with group as the between-subjects factor and time as the within-subjects factor. One of the seven body image measures was used as the dependent variable in each
follow-up analysis. Table 6 presents the means and standard deviations for each group at each point of measurement.

With the State version of the Physical Appearance State and Trait Anxiety Scale as the dependent variable, there was a significant interaction between group and time, $F(1, 54) = 11.22, p = .001$. Post-hoc t-tests were utilized to determine specific differences between the groups. As expected, there was not a significant difference in physical appearance anxiety between groups at pre-media viewing, $t(54) = .913, p = .37$. Also as expected, the following pattern provided partial support for Hypothesis 1: (a) the thin-ideal media group changed in the clinical direction (physical appearance anxiety increased) from pre-media viewing to post-media viewing, $t(27) = -3.45, p = .002$; (b) in contrast, the neutral media group showed no change from pre-media viewing to post-media viewing, $t(27) = .535, p = .597$; and (c) there was a significant difference in the expected direction between the groups on the PASTAS at post-test, $t(54) = 2.13, p = .038$.

For the next ANOVA, with the Self-Objectification Questionnaire serving as the dependent variable, the interaction between group and time closely approached significance, $F(1, 54) = 3.52, p = .066$. Since the $p$ value closely approached the .05 criterion, post-hoc t-tests were used to explore specific group differences. As expected, there was not a significant difference in self-objectification between groups at pre-media viewing, $t(54) = .438, p = .663$. However, contrary to the hypothesis, the following pattern was observed: (a) the thin-ideal media group did not change from pre-media viewing to post-media viewing, $t(27) = 1.26, p = .22$; (b) the neutral media group
showed change in the clinical direction (increase in self-objectification) from pre-media to post-media viewing that closely approached significance, $t (27) = -1.91, p = .067$; and (c) the difference between the groups on the body image measure at post-test was not significant $t (54) = -.569, p = .572$.

The interaction between group and time was nonsignificant when ANOVA was employed with the other dependent measures of body image, including the Body Esteem Scale (BES) ($F (1, 54) = .207, p = .65$), the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) ($F (1, 54) = 1.47, p = .23$), the Brief Eating Beliefs and Behavioral Intentions Scale ($F (1,54) = 2.73, p = .10$), the Appearance Self-Efficacy Scale (ApSES) ($F (1, 54) = 1.35, p = .25$), and the Negative Affect subscale of the PANAS ($F (1, 54) = 1.23, p = .27$). Although the interaction was nonsignificant in these analyses, exploratory follow-up analyses were employed to examine trends in specific group differences. Body esteem changed in the expected direction (decreased) after viewing thin-ideal media, $t (27) = 3.52, p = .002$; however, a similar change in body esteem was also documented for those viewing neutral media, $t (27) = 4.03, p = <.001$. Unexpectedly, endorsement of societal attitudes towards appearance did not change after viewing thin-ideal media, $t (27) = .134, p = .895$, but increased for those viewing neutral media, $t (27) = -2.61, p = .014$. No other body image measures demonstrated significant change after participant exposure to thin-ideal or neutral media.

Overall, for Hypotheses 1 and 2, there was one dependent variable of body image (i.e., the State version of the Physical Appearance State and Trait Anxiety Scale) that changed in the expected direction and became more negative after viewing thin-ideal
media. As a general summary statement, there was evidence that body image, specifically anxiety regarding physical appearance, increased in participants who viewed thin-ideal media. In this study, support for Hypothesis 1 is limited at best, and Hypothesis 2 was clearly not supported.

Hypotheses 3 and 4

Hypothesis 3 stated that, after controlling for participant reactivity, there would still be evidence of the effect of thin-ideal media on body image. Further, Hypothesis 4 extended this expectation and stated that the effect of thin-ideal media would be observed on all dimensions of body image assessed, even after controlling for pre-test sensitization. Additional comparisons, using MANOVAs and follow-up ANOVAs, were necessary to examine these hypotheses, as presented below.

With reference to the Solomon Four-Group Design (see Table 1 above), a comparison of the difference between post-test results between Groups C and D versus the difference between post-test results for Groups A and B allowed us to determine the extent to which the act of pre-testing influenced the results. If the difference between the post-tests for Groups C and D was incongruent with the difference between the post-tests for Groups A and B, then this would suggest that the pre-test had an effect on changes in scores on body image measures.

A multivariate analysis of variance (MANOVA) was first employed to compare the difference between the post-tests of Groups C and D, with group (thin versus neutral media) as the between-subjects factor. The body image measures at post-test served as the dependent variables for this analysis. There was not a statistically significant
difference between scores at post-test for Groups C and D, $F(7, 48) = 1.003, p = .441$.

For exploratory purposes, a follow-up ANOVA was employed for each dependent measure, with group as the between-subjects factor. For the Self-Objectification Questionnaire specifically, there was a significant difference between post-tests of Groups C and D, $F(1, 54) = 4.29, p = .043$. However, results were not in the expected direction, and scores for self-objectification were higher on average for Group D at post-test compared to Group C (See Table 6). According to ANOVA, the difference between Groups C and D was not significant for any other body image measure.

A multivariate analysis of variance (MANOVA) was then used to compare the difference between the post-tests of Groups A and B, with group (thin versus neutral media) as the between-subjects factor. The body image measures at post-test served as the dependent variables for this analysis. There was not a statistically significant difference between scores at post-test for Groups A and B, $F(7, 48) = 1.972, p = .079$.

For exploratory purposes, follow-up ANOVA was employed for each dependent measure, with group as the between-subjects factor. For the Physical Appearance State and Trait Anxiety Scale specifically, there was a significant difference between post-tests of Groups A and B, $F(1, 54) = 4.525, p = .038$. Results were in the expected direction, and Group A had significantly higher anxiety regarding physical appearance on average at post-test compared to Group B (See Table 6). No other body image measures indicated a significant difference for the two groups who took both a pre-test and a post-test.
## Table 6
Means and Standard Deviations for Body Image Measures as a Function of Group and Time

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<td>N</td>
<td>Mean</td>
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</tr>
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<td>115.61</td>
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<tr>
<td>Neutral Media/No Pre-test Group</td>
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<td>8.07</td>
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<td><strong>SATAQ: Appearance Attitudes</strong></td>
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<td><strong>BEBBI: Eating Beliefs and Behaviors</strong></td>
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<tr>
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<td>17.18</td>
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<td><strong>ApSES: Appearance Self-Efficacy</strong></td>
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Notes. 1. Abbreviations. SD = Standard Deviation; BES = Body Esteem Scale; SObj = Self-Objectification Questionnaire; SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire; BEBBI = Brief Eating Beliefs and Behavioral Intentions Scale; ApSES = Appearance Self-Efficacy Scale; PASTAS = Physical Appearance State and Trait Anxiety Scale, State Version; NA = Positive and Negative Affect Schedule, Negative Affect Scale.
In sum, these findings do not provide support for Hypotheses 3 and, since Hypothesis 4 is contingent upon obtaining support for Hypothesis 3, it may be concluded that it was not possible to fully examine Hypothesis 4 in this particular study. The overall analyses did not find significant differences between the post-tests of Groups C and D, nor Groups A and B. Further, even exploratory analyses yielded results that either provided only minimal support for the hypotheses or ran contrary to the hypotheses.

*Pre-test Sensitization Effects*

Additional analyses were conducted in an attempt to reveal any pre-test sensitization effects. A comparison between the Group B post-test and the Group D post-test was conducted to reveal the extent to which the pre-test itself had influenced changes in scores on body image measures, independent from effects of thin-ideal media. A multivariate analysis of variance (MANOVA) was used to compare the difference between the post-test of Group B and the post-test of Group D, with group (pre-neutral-post versus neutral-post) as the between-subjects factor. The body image measures at post-test served as the dependent variables for this analysis. There was not a statistically significant difference between scores at post-test for Group B and D, $F (7, 48) = 1.732, p = .124$. When exploratory follow-up ANOVAs were employed for each dependent measure, with group as the between-subjects factor, there were no significant differences between groups in terms of each body image measure. These findings indicate that the pre-test itself did not influence changes in scores on body image measures for participants who viewed neutral media.

A comparison between Group A post-test and Group C post-test allowed a determination of the extent to which the pre-test enhanced or detracted from the effect of
thin-ideal media on body image. A multivariate analysis of variance (MANOVA) was used to compare the difference between the post-test of Group A and the post-test of Group C, with group (pre-thin-post versus thin-post) as the between-subjects factor. The body image measures at post-test served as the dependent variables for this analysis.

There was not a statistically significant difference between scores at post-test for Groups A and C, $F(7, 48) = .497, p = .832$. When follow-up ANOVAs were employed for each dependent measure, with group as the between-subjects factor, there were no significant differences between groups on any of the body image measures. These findings indicate that the pre-test itself did not influence changes in scores on body image measures for participants who viewed thin-ideal media.

It can be concluded that, collectively, the results of various comparisons reported in this section do not generally support the notion that thin-ideal media influenced changes on body image measures; and therefore, any hypotheses regarding the extent to which pre-test sensitization influenced (enhanced or detracted from) media effects could not be examined fully in this study.

**Exploratory Qualitative Data: The Post-Experimental Inquiry**

The results of the post-experimental inquiry (Appendix H) were examined in a qualitative fashion (Kazdin, 1992). In the post-experimental inquiry (Kazdin, 1992), participants were asked to answer two additional questions at the end of the study, as a way to obtain additional information regarding participants’ level of awareness regarding the purpose of the study. Participants were asked to respond to, in writing, the following questions: (1) *What do you think was the purpose of this study?* (2) *In the present study,*
you may have been asked to complete measures twice. If you did complete measures twice, do you think your answers changed on these measures? Why? After examining the qualitative responses, themes were noted for the participants according to each condition of the Solomon Four-Group Design. Therefore, themes were examined for those who viewed thin-ideal media (i.e., Group A and C) and for participants who viewed neutral media (i.e., Group B and D), as well as for participants who completed pre-test measures (Group A and B) and for those who did not (Group C and D). There were 28 participants in each condition of the experimental design. While several themes were repeated across groups, there were several variations or discrepancies. Therefore, the results of the qualitative analysis are presented in order of the four groups of the Solomon Four-Group Design.

Perceptions by Participants in Group A

Participants in Group A completed pre-test measures of body image, viewed thin-ideal media, and completed post-test measures of body image.

Perceptions Regarding the Purpose of the Study

Impact of media on body image. In answering the question about the purpose of the study, the main theme identified was exploration of the relationship between media and body image. The majority of participants in this condition, 24 out of 28 (85.71%), gave responses that pertained to this theme in some way, noting that the purpose of the study was to examine the effect of media on body image or how women felt about their body.
Increased desire for thinness. The second theme identified was exploration of change in participant responses and an increased desire to be thinner. That is, 4 out of the 28 responses (14.29%) pertained to this theme, with participants noting that the purpose of the study was to see if responses changed from the pre-test to the post-test, specifically looking at if the change indicated an increased desire for thinness.

Perceptions Regarding the Reasons for Body Image Change

Participants also answered if they believed their answers to the same questions on the body image measures changed from the pre-test to the post-test in the study. Participants were asked to indicate why they felt this way, and themes were generated from their responses.

Perceived significant negative change because of thin-ideal media. The main theme identified in the responses given by Group A was a negative change in body image because of viewing thin-ideal media. That is, 18 out of 28 responses (64.29%) pertained to this theme in some way, with participants reporting that yes, their answers had changed, and the change was due to the impact of the media exposure.

Perceived slight negative change because of media. The second theme noted for this condition was a slight perceived change on some items in a negative direction (7 responses, 25%). Participants noted that while their answers had not significantly been altered, they felt that there had been a slight change due to the fact that exposure to the media images had made them feel more critical of their own body.

No perceived change. Some participants believed that answers on their body image measures had not changed from pre-test to post-test (3 responses, 10.71%). When
the participants indicated reasons as to why there was no change, it was due to the fact that they did not want to look like the models in the images, since they were too skinny.

*Perceptions by Participants in Group B*

Participants in Group B completed pre-test measures of body image, viewed neutral media, and completed post-test measures of body image.

*Perceptions Regarding the Purpose of the Study*

*Impact of media on body image.* In answering the question about the purpose of the study, the main theme identified was exploration of the relationship between media or advertising and body image. The majority of responses, 23 out of 28 (82.14%), pertained to this theme in some way, with participants noting that the purpose was to examine the effect of media or advertising on body image or how women felt about their body.

*Change in self-image from evaluation.* The second theme identified for the perceived purpose of the study was exploration of the changes in one’s self-image when asked to rate aspects of your body and self: That is, 5 out of 28 (17.86%) participants responded that the purpose of the study was to look at how being asked to rate or evaluate your body led to changes in an individual’s self-image.

*Perceptions Regarding the Reasons for Body Image Change*

Participants also answered if they believed their answers to the same questions on the body image measures changed from the pre-test to the post-test in the study. Participants were asked to indicate why they felt this way, and themes were generated from their responses.
**Perceived significant negative change in body image.** The first theme identified in the responses given by Group B was a negative change in body image. That is, 14 out of 28 responses (50%) pertained to this theme, with participants reporting that yes, their answers had changed, and the change occurred because their body image had become more negative. Importantly, one subset of participants (10 out of 14, 71.43%) indicated that change occurred across measures due to the fact that they were asked to complete the questionnaires a second time. These individuals reported that they felt more insecure about their body after the pre-test, were more aware of their body evaluations at post-test, and were also more critical or body-conscious. Conversely, the second subset of participants (4 out of 14, 28.57%), reported that they felt their body image had become more negative because the neutral media images reminded them of the media in general, and of the pressures that media and advertising place on women’s bodies.

**Perceived slight negative change because of pre-test.** The second theme noted for this condition was a slight perceived change on some items in a negative direction (6 responses, 21.43%). Participants noted that while their answers had not significantly been altered, they felt that there had been a slight change, and that their body image had become more negative. Participants indicated, however, that change was due to the fact that taking the questionnaires a second time had caused them to put more thought into ratings on the post-test. Responses further indicated that participants in this condition felt more self-conscious after taking the pre-test, which influenced their responses on the second evaluation.
No perceived change. Some participants believed that answers on their body image measures had not changed from pre-test to post-test (8 responses, 28.57%). When the participants indicated reasons as to why there was no change, it was due to the fact that the pictures of random objects in the slideshow had no effect on their body image.

Perceptions by Participants in Group C

Participants in Group C did not complete pre-test measures of body image, viewed thin-ideal media, and completed post-test measures of body image.

Perceptions Regarding the Purpose of the Study

Impact of media on body image. In answering the question about the purpose of the study, the main theme identified was exploration of the relationship between media and body image. Half of the participants in this condition, 14 out of 28 (50%), gave responses that pertained to this theme in some way, noting that the purpose of the study was to examine the influence of media on body image or how women felt about their body.

Impact of comparing self to very thin women. The second theme identified was exploration of comparing the self to very thin women or models. That is, 7 out of the 28 responses (25%) pertained to this theme, with participants noting that the purpose of the study was to see what happened when they compared their body to that of an extremely thin woman.

Exploration of how young women evaluate the self. A third theme identified for this condition was that the study aimed to see how young women evaluate themselves, evaluate their own self-esteem, or evaluate their own self-concept. That is, 7 out of the 28
participants (25%) suggested that the purpose of the study was to examine the self-evaluation of women in some way.

Perceptions Regarding the Reasons for Body Image Change

Participants in Group C did not respond to the second question of the post-experimental inquiry since they did not take the body image measures twice.

Perceptions by Participants in Group D

Participants in Group D did not complete pre-test measures of body image, viewed neutral media, and completed post-test measures of body image.

Perceptions Regarding the Purpose of the Study

Effect of media on the self. In answering the question about the purpose of the study, one theme identified was exploration of the relationship between media and self-esteem or self-image. A portion of participants in this condition, 9 out of 28 (32.14%), gave responses that pertained to this theme, noting that the purpose of the study was to examine the effect of media images on a woman’s self-esteem or self-concept.

Women’s views of their body. Another theme identified for the responses of Group D was exploration of how women view their body in general. Responses indicating this theme contained no mention of media. That is, 10 out of 28 participants (35.71%) perceived the purpose of the study to be an examination of how women or girls feel about their body.

Exploration of concepts related to body image. The final theme identified in the responses given by Group D was that the purpose of the study was to explore body image and how it related or compared to other constructs. That is, 9 out of 28 responses
(32.14%) pertained to this theme in some way, and participants mentioned body image analysis as the purpose of the study. Further, one subset of these participants (4 out of 9, 44.44%) indicated that the purpose of the study was to compare body image and self-esteem or emotion about the self. The second subset of participants (5 out of 9, 55.56%), indicated that the purpose of the study was to explore the relationship of body image and self-consciousness or confidence.

Perceptions Regarding the Reasons for Body Image Change

Participants in Group D did not respond to the second question of the post-experimental inquiry since they did not take the body image measures twice.

In general, qualitative responses from the two groups who viewed thin-ideal media (Group A and C) indicated that these participants had a somewhat more accurate idea of the purpose of the study in comparison to the two groups who viewed neutral media (Group B and D). Out of the 56 participants who were exposed to thin-ideal media images, 67.86% identified the purpose as a direct exploration of media and body image. Those who viewed thin-ideal media were able to discern the connection between exposure to media images depicting the thin ideal and changes in body image. However, out of the 56 participants who viewed neutral media, 57.14% still identified the purpose as the effect of media on body image or self-image. This shows that the ability to correctly identify the purpose of the study was only somewhat more accurate in those who viewed thin-ideal media.

Overall differences were examined between groups that took a pre-test assessment of body image (Group A and B) compared to the groups who did not (Group C and D).
The qualitative responses indicated that 83.93% of participants who took a pre-test correctly identified the purpose of the study as an exploration of the impact of media on body image. Only 25% of participants who did not take a pre-test were able to identify the exact purpose of the study. Taken together, this suggests that taking a pre-test increased participants’ knowledge of the purpose of the study.

For participants who viewed thin-ideal media (Group A and C), it appears that, in general, those who received a pre-test were the most successful in correctly identifying the purpose of the study. In the group that took a pre-test of body image assessment, 85.71% indicated that the purpose of the study was to explore the impact of the media on body image, in comparison to 50% of responses in the group that did not take a pre-test. Furthermore, 100% of the Group A participants who felt that their answers had changed from pre-test to post-test (significantly or slightly) indicated that the media was the cause of their more negative body image. No participants who viewed thin-ideal media and took a pre-test indicated that the pre-test had influenced changes in their body image.

For participants who viewed neutral media (Group B and D), 82.14% of the participants who took a pre-test correctly identified the purpose of the study to be an exploration of the connection between media and body image. None of the participants who did not take a pre-test (Group D) and viewed neutral media identified both media and body image in their responses, but the responses did relate to one of the two concepts for all cases. Since the participants who completed a pre-test, viewed neutral media, and then completed a post-test (Group B) were able to delineate a more accurate idea of the study’s purpose, this suggests that the pre-test influenced participants’ ability to identify
the purpose of the study above and beyond exposure to thin-ideal media. Also, 80% of the participants in Group B who felt that their answers had changed (significantly or slightly) indicated that the pre-test was the cause of their responses showing more negative body image on the post-test. Due to this finding, it is likely that pre-test sensitization occurred for those participants in Group B in the sense that participants in this group seemed significantly more aware of the purpose of the study relative to Group D (who did not take a pre-test and viewed neutral media), and indicated the pre-test as the source of change for their body image.

In brief, the qualitative analysis suggests that participants who completed a pre-test assessment of body image and then viewed thin-ideal media were the most successful in detecting the purpose of the study. However, participants who completed a pre-test assessment of body image and then viewed neutral media were almost as successful in identifying the study’s purpose. Since participants who did not complete a pre-test were less successful in detecting the study’s purpose (regardless of which type of media they viewed), it seems that the pre-test measures augmented the ability of participants to identify the study’s purpose, above and beyond the impact of media on participants’ perceptions.
CHAPTER IV
DISCUSSION

The discussion is divided into three major sections. The first section discusses results that correspond with Hypotheses 1 and 2, and the effect of thin-ideal media on body image. In the second section, results are discussed that correspond with the evidence of pre-test sensitization effects in the present study. Within this section, findings from the qualitative analysis are integrated and discussed, and recommendations for future research are provided. The third section provides a general summary of the main findings of the present study as well as conclusions.

Effect of Thin-Ideal Media on Body Image

Hypothesis 1 stated that women’s body image will become more negative after viewing thin-ideal media, whereas such a change was not expected in women viewing neutral media. Similarly, Hypothesis 2 stated that thin-ideal media would have a negative effect on body image across all dimensions assessed. The present study found very limited support for Hypothesis 1, since there was only one dependent variable (anxiety regarding physical appearance) that changed in the expected direction and became more negative after viewing thin-ideal media. Hypothesis 2 was clearly not supported, since body image became more negative after exposure to thin-ideal media for only one dimension and did not change across all other dimensions that were assessed in the study.
The overall lack of evidence for the negative effect of thin-ideal media on body image in the present findings is consistent with some of the studies in existing literature. In experimental research, studies have found that there is little to no effect of thin-ideal media on women’s body image and related concerns (Halliwell, Dittmar, & Howe, 2005; Thornton & Maurice, 1997). Research looking at the impact of exposure to thin-ideal media ads on adult women’s body satisfaction also found null effects (Irving, 1990). Several studies have even found that media exposure is negatively related to body dissatisfaction, and after viewing thin-ideal media, women’s dissatisfaction decreased (Coolican, 1999; Cusumano & Thompson, 1997). This effect relates to the present study with regard to self-objectification, where scores were higher in participants who viewed neutral media as opposed to those who viewed thin-ideal media images. However, the findings in the present study are inconsistent with a large majority of the studies in existing literature which have shown that exposure to thin-ideal media images is linked to increases in women’s dissatisfaction with their bodies (Grabe, Ward, & Hyde, 2008; Groesz et al., 2002; Stice, 2002). The Introduction discussed two possible reasons for these contradictory findings in current body image research, which the present study aimed to examine. One is that there are inconsistencies across studies regarding which dimensions of body image are assessed. The second is that studies have not controlled for the effects of assessment reactivity on changes in body image.

Further, it is likely that other, yet unidentified, reasons exist for contradictory findings. The present study asked participants to report their current weight as well as what they feel would be their ideal weight. Since some women may be far from their
ideal weight and others may be at or even below their ideal weight, it is likely that exposure to thin-ideal media will influence participants differently depending on the size of this discrepancy. The discrepancy between current weight and ideal weight may act as a moderator for the effect of thin-ideal media on body image. If a woman is at or close to her ideal weight, she may view images of thin-ideal media as unhealthy or unattractive. Studies are also likely to vary according to the extremity of thinness represented in the media shown to participants. The use of differing types of stimulus materials may be another potential cause for inconsistencies in current literature. Future research could examine how the discrepancy between current weight and ideal weight, use of different types of stimulus materials, and use of different interventions influence results.

Given the conceptual similarity between the present study and the study by Folger and Reeb (2010), the contradictory results between the two are surprising. Using the same thin ideal and neutral media images, participants in the Folger and Reeb (2010) study were randomly assigned to the experimental or control condition, and completed body image measures before and after media viewing. Folger and Reeb (2010) found that participants who viewed thin-ideal media showed a statistically significant change in scores in the expected direction compared to those who viewed neutral media. Exposure to thin-ideal media resulted in more negative body images scores on the Body Esteem Scale and the Appearance Self-Efficacy Scale, while changes on the Physical Appearance State and Trait Anxiety Scale closely approached significance. Folger and Reeb (2010) did not find that scores on the Sociocultural Attitudes Towards Appearance Questionnaire changed after media exposure. In comparison, the present study found that
the Physical Appearance State and Trait Anxiety Scale was the only measure to show significant change in the expected direction after media viewing. Physical appearance anxiety significantly increased from pre-media viewing to post-media viewing for those exposed to thin-ideal media. The results of the present study further differed due to the lack of significant findings in the expected direction for any of the other body images measures, including those which had been employed in both studies.

Considering the conceptual similarity between the present study and the Folger and Reeb (2010) study, it is important to speculate about reasons for the contradictory findings. Despite the overlap between the two, certain procedural differences may account for the discrepancies in results. One speculation is that Folger and Reeb (2010) had participants complete an eating disorder inventory (prior to completing pre-test body image measures or being exposed to media), which may have augmented the effects of thin-ideal media on the body image measures. Future research could address this though a study similar to the present one, with the addition that some participants complete an eating disorder inventory and some participants do not.

There are other speculations as to why the findings of the present study differed from those in existing literature that have evidenced a negative effect of thin-ideal media on body image. A subset of responses on the post-experimental inquiry for participants who took a pre-test, viewed neutral media, and took a post-test, indicated that some individuals (4 out of 14, 28.57%), felt their body image had become more negative due to exposure to neutral media. Participants indicated this was because the neutral media images reminded participants of the media in general and of the pressures that media and
advertising place on women’s bodies. Therefore, a limitation of the present study is that several of the “neutral” images were pictures of women’s perfume, blush, and facial cleanser products. These images appear to have reminded participants of the standards and ideals that the media enforces for women’s appearance. Studies in existing literature that found a negative effect of thin-ideal media images compared to neutral images may have used different images, such as a car or house, which maintained a higher level of “neutrality.”

In the present study, only one body image measure changed in the expected direction in response to thin-ideal media; however, responses on the post-experimental inquiry seemed to suggest that the thin-ideal media negatively influenced body image. For responses given by participants who took a pre-test, viewed thin-ideal media, and took a post-test, 18 out of 28 responses (64.29%) reported that yes, their answers on the body image measures had changed, and the change was due to the impact of the media exposure. This suggests that many participants did indeed experience a negative effect on their body image after viewing thin-ideal media, despite the fact that this was not identified by most of the body image measures.

The post-experimental inquiry also showed that a high percentage of participants were aware of the purpose of the study. Future research needs to examine the extent to which this awareness impacts results, which was difficult to determine in the present study due to lack of significant findings. It may be that awareness of the study’s purpose causes participants to monitor their responses and answer items in a more conservative fashion. On the other hand, awareness of the general purpose of the study may lead to a
greater endorsement of certain items. In the case that knowing the study’s purpose influences the results, future studies should employ techniques to decrease the likelihood that the purpose is so transparent. Methods such as this may involve having participants complete a variety of measures, some of which assess body image and some of which assess irrelevant factors. Researchers could also employ different types of media, for example, movie clips or television shows, which may decrease the ability of participants to discern the study’s purpose after exposure to the thin-ideal.

*Evidence of Pre-test Sensitization*

Another central purpose of the present study was to employ the Solomon Four-Group Design and a post-experimental inquiry in order to determine whether changes in scores on body image measures following media exposure were due to reactivity effects of body image assessment (pre-test sensitization). However, there was limited evidence that the participants who viewed thin-ideal media images experienced adverse effects on their body image. Due to this lack of support, it was not fully possible to examine the extent to which pre-test sensitization augmented or detracted from the effect of thin-ideal media on body image. Regardless of the effects of media, comparisons were conducted to reveal the extent to which the pre-test itself had influenced changes in scores on body image measures. Statistical analyses revealed that there was not a significant difference between scores at post-test for Group B (pre-test, neutral media, post-test) and Group D (no pre-test, neutral media, post-test). This finding indicates that pre-test sensitization did not occur in the neutral media groups. Further, when a similar comparison was done for the thin-ideal media groups, between Group A post-test and Group C post-test, there were
no significant differences on any of the body image measures. This finding indicates that
pre-test sensitization did not occur in the participants who viewed thin-ideal media.
Overall, results of the statistical analyses suggest that, in the present study, the act of pre-
testing did not significantly impact the body image of either media group.

Given the above findings regarding pre-test sensitization, several
recommendations can be made for future research. While the pre-test did not influence
body image regardless of the effects of media in the present study, additional studies
conducted in this area of research should continue to employ procedures that detect pre-
test sensitization. Future studies that evidence a significant effect of thin-ideal media on
body image can inform this body of research by examining their results after controlling
for sensitization effects. It may be that pre-test sensitization occurs when the assessment
consists of longer, more in-depth measures of body image, or when the media exposure
time is lengthened. Differing research protocols may foster pre-test sensitization effects;
therefore, it is important for researchers to continue to employ strategies to detect for pre-
test effects in order to validate their research findings. Certain populations such as
participants of a younger age range may be more vulnerable to sensitization effects.
Members of clinical populations may be more vulnerable to sensitization effects as well.
Overall, the majority of studies in existing literature do not control for pre-test
sensitization, demonstrating a need for continued research utilizing such procedures.

Summary and Conclusion

The present study explored the effect of thin-ideal media on body image in
college women, and whether this effect varied across dimensions of the body image
construct. It also investigated the potential influence that pre-test sensitization has on the relationship between thin-ideal media exposure and changes in body image. Overall, the study found very limited support for the negative effect of thin-ideal media on body image, and no support for the effect across all dimensions of the construct. There was evidence that only one dimension of body image, specifically anxiety regarding physical appearance, changed in the expected direction for participants who viewed thin-ideal media. With regard to the results of the qualitative analysis, many participants seem to have been aware of the study’s purpose, and the ability to identify the purpose may have been augmented by the administration of pre-test measures. Nevertheless, in consideration of the lack of statistically significant results, there is little evidence that pre-test sensitization effects influenced any of the dimensions of body image. The lack of evidence for pre-test sensitization, as well as the lack of evidence that exposure to thin-ideal media had a negative effect on body image, suggests that simply being aware of the purpose of the study did not impact the results.

In general, the findings of the present study are highly inconclusive, as are many of the contradictory findings in existing literature on body image and the media. One limitation of the present study is the lack of diversity within the sample of participants, the majority of which consisted of Caucasian female students from the private, Midwestern University. Although the sample was representative of the typical population in which eating disorders arise, there was a lack of racial and ethnic diversity. To address this, future studies may use community samples in order to gain a more diverse group of participants. It may be the case that by college, young women have already experienced
such significant exposure to thin-ideal media that their body image is not affected by a brief manipulation in an experimental context. The brief exposure to media images that participants experienced in the present study did not yield significant changes in body image. One explanation for this may be that coming into the study, college women are somewhat desensitized to the thin-ideal, and therefore their body image may not change from simply viewing images on a computer screen. This limitation can be addressed in future research studies that focus on the effect of thin-ideal media on body image in, for example, middle school students. This age group may have not internalized or become accustomed to the thin-ideal yet, but have still most likely been exposed to the images which are so prevalent in our society. Examining the relationship between thin-ideal media and body image in younger female populations would identify which age group may benefit most from intervention and prevention programs for eating disorders and body image problems. It is also important to use participants from certain clinical samples in future research, such as women with a background diagnosis of an eating disorder, to understand how certain populations may be exceptionally sensitive to the negative impact of thin-ideal media.

Another limitation in the present study may have been the use of self-report questionnaires, which rely on the participants to subjectively report on their body image and any changes that occur in response to media exposure. Additional methods of assessment in future research may shed light on the influence of thin-ideal media on body image. For example, since the present study found a significant increase in anxiety regarding physical appearance after exposure to thin-ideal media, physiological measures
could be used to track changes in heart rate. Other methods of assessment that could be used include daily journal entries regarding exposure to thin-ideal media, projective tests or implicit association tests after media exposure, or measures that track changes in mood after viewing images endorsing the thin ideal.

Overall, it is crucial to consider the high exposure to thin-ideal images that female participants have already experienced prior to enrolling in this study, simply because they are unavoidable in the media. Participants may have experienced negative effects on their body image over time due to the societal ideal, but may not be influenced by brief exposure to several images during the study. Certain factors may also make some women more vulnerable than others to the effects of brief media exposure. The present study is indicative of the contradictory findings that occur in existing literature, and stresses the need for continued work in this field. Further research in this area remains of upmost importance to gaining knowledge about the effect of the media on body image and eating disorder pathology in young women.
REFERENCES


APPENDIX A

DEMOGRAPHIC QUESTIONNAIRE

Date of Birth: ___________

Height: __________

Weight: __________ (lbs.)

Desired Weight: __________ (lbs.)

Ethnicity: __ Caucasian __ African American __ Asian __ Hispanic

Other (please specify) ___________________

Are you currently in therapy with a mental health practitioner?    Yes    No

If yes, for what diagnosis or symptoms? _________________________________

Are your biological parents divorced?    Yes    No

Age when parents divorced: _________________

Please answer the following questions as they pertain to the male parental figure and female parental figure in the household in which you grew up. For example, if you primarily were raised by your step-mother and father, then rate your step-mother and father. If there was only one parental figure in your home as you grew up, please answer only the questions that apply to you.
Annual Income Categories: 1 = 10,000-30,000 per year  
2 = 30,000-50,000 per year  
3 = 50,000-80,000 per year  
4 = 80,000-100,000 per year  
5 = more than 100,000 per year

What is your father’s occupation? ________________________________
What is your father’s annual income category? ____________________

What is your mother’s occupation? ________________________________
What is your mother’s annual income category? ____________________

Please rate your father’s educational level by circling the appropriate number on the following scale:

1 = completed grade school and/or high school
2 = completed some college or graduated from college
3 = completed some graduate work or a master’s degree
4 = earned a professional degree, such as a Ph.D. or M.D.

Please rate your mother’s educational level by circling the appropriate number on the following scale:

1 = completed grade school and/or high school
2 = completed some college or graduated from college
3 = completed some graduate work or a master’s degree
4 = earned a professional degree, such as a Ph.D. or M.D.
APPENDIX B

BODY ESTEEM SCALE (BES)

Instructions: On this page are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:

1 = Have strong negative feelings
2 = Have moderate negative feelings
3 = Have no feeling one way or the other
4 = Have moderate positive feelings
5 = Have strong positive feelings

1. body scent
2. appetite
3. nose
4. physical stamina
5. reflexes
6. lips
7. muscular strength
8. waist
9. energy level
10. thighs
11. ears
12. biceps
13. chin
14. body build
15. physical coordination
16. buttocks
17. agility
18. width of shoulders
19. arms
20. chest or breasts
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>appearance of eyes</td>
</tr>
<tr>
<td>22.</td>
<td>cheeks/cheekbones</td>
</tr>
<tr>
<td>23.</td>
<td>hips</td>
</tr>
<tr>
<td>24.</td>
<td>legs</td>
</tr>
<tr>
<td>25.</td>
<td>figure or physique</td>
</tr>
<tr>
<td>26.</td>
<td>sex drive</td>
</tr>
<tr>
<td>27.</td>
<td>feet</td>
</tr>
<tr>
<td>28.</td>
<td>sex organs</td>
</tr>
<tr>
<td>29.</td>
<td>appearance of stomach</td>
</tr>
<tr>
<td>30.</td>
<td>health</td>
</tr>
<tr>
<td>31.</td>
<td>sex activities</td>
</tr>
<tr>
<td>32.</td>
<td>body hair</td>
</tr>
<tr>
<td>33.</td>
<td>physical condition</td>
</tr>
<tr>
<td>34.</td>
<td>face</td>
</tr>
<tr>
<td>35.</td>
<td>weight</td>
</tr>
</tbody>
</table>
APPENDIX C

THE SELF-OBJECTIFICATION QUESTIONNAIRE

The questions below identify 10 different body attributes. Please rank order these body attributes from that which has the greatest impact on your physical self-concept (rank this a "9"), to that which has the least impact on your physical self-concept (rank this a "0").

Note: It does not matter how you describe yourself in terms of each attribute. For example, fitness level can have a great impact on your physical self-concept regardless of whether you consider yourself to be physically fit, not physically fit, or any level in between. *Please first consider all attributes simultaneously, and record your rank ordering by writing the ranks in the rightmost column.*

IMPORTANT: Do Not Assign The Same Rank To More Than One Attribute

Use the following scale to record your answers:

<table>
<thead>
<tr>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatest Impact</td>
<td>Least Impact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When considering your physical self-concept:

1. What rank do you assign to physical coordination?
2. What rank do you assign to health?
3. What rank do you assign to weight?
4. What rank do you assign to strength?
5. What rank do you assign to sex appeal?
6. What rank do you assign to physical attractiveness?
7. What rank do you assign to energy level (e.g. stamina)?

8. What rank do you assign to firm/sculpted muscles?

9. What rank do you assign to physical fitness level?

10. What rank do you assign to measurements (e.g. chest, waist)?
APPENDIX D

SOCIOCULTURAL ATTITUDES TOWARDS APPEARANCE QUESTIONNAIRE (SATAQ)

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

1. Women who appear in TV shows and movies project the type of appearance that I see as my goal.
   1  2  3  4  5
   Completely Disagree  Neither Agree nor Disagree  Completely Agree

2. I believe that clothes look better on thin models.
   1  2  3  4  5
   Completely Disagree  Neither Agree nor Disagree  Completely Agree

3. Music videos that show thin women make me wish that I were thin.
   1  2  3  4  5
   Completely Disagree  Neither Agree nor Disagree  Completely Agree

4. I do not wish to look like the models in the magazines.
   1  2  3  4  5
   Completely Disagree  Neither Agree nor Disagree  Completely Agree

5. I tend to compare my body to people in magazines and on TV.
   1  2  3  4  5
   Completely Disagree  Neither Agree nor Disagree  Completely Agree
6. Photographs of thin women make me wish that I were thin.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Agree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. I wish I looked like a swimsuit model.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Agree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. I often read magazines like *Cosmopolitan*, *Vogue*, and *Glamour* and compare my appearance to the models.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Agree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E

BRIEF EATING BELIEFS AND BEHAVIORAL INTENTIONS SCALE

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

1. I intend to monitor my diet closely.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. I am someone who really has to be careful in watching my weight and shape.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. I intend to lose weight.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. I believe that I am overweight.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. I believe that I need to eat less.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Completely Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Completely Agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

APPEARANCE SELF-EFFICACY SCALE (ApSES)

Please read each statement carefully and decide how well that statement describes you in general in terms of body weight and shape. If you strongly agree, circle 5; if you strongly disagree, circle 1; if you feel somewhere in between, circle a number between 1 and 5.

1) When I make plans to change my body weight and shape, I am certain I can carry the plan through.

1 2 3 4 5
Strongly Disagree Neutral Strongly Agree

2) One of my problems is that I cannot get down to the work of changing my body weight and shape when I should.

1 2 3 4 5
Strongly Disagree Neutral Strongly Agree

3) If I can’t get to the body weight and shape I want the first time, I keep trying until I can.

1 2 3 4 5
Strongly Disagree Neutral Strongly Agree

4) When I set important body weight and shape goals for myself, I rarely achieve them.

1 2 3 4 5
Strongly Disagree Neutral Strongly Agree
5) I give up on my body weight and shape goals before achieving them.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

6) I avoid facing the difficulty of changing my body weight and shape.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

7) If changing my body weight and shape seems too complicated, I will not even bother to try it.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

8) Even if making changes in my body weight and shape is unpleasant, I stick to it until I accomplish it.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

9) When I decided to work towards a different body weight or shape, I go right to work on it.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

10) When trying to develop a new body weight and shape, I soon give up if I am not initially successful.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree
11) When unexpected weight gain occurs, I don’t handle it well.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

12) I avoid trying to develop a new body weight and shape when it looks too difficult for me.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

13) Failure to achieve my desired body weight and shape just makes me try harder.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

14) I feel insecure about my ability to develop my desired body weight and shape.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

15) I can count on my abilities to change my body weight and shape.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

16) I give up easily when it comes to achieving my desired body weight and shape.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree

17) I do not seem capable of dealing with most problems that come up in trying to achieve or maintain my desired body weight and shape.

1  2  3  4  5

Strongly Disagree  Neutral  Strongly Agree
APPENDIX G

PHYSICAL APPEARANCE STATE AND TRAIT ANXIETY SCALE (PASTAS): STATE VERSION

The statements listed below are used to describe how anxious, tense, or nervous you feel Right Now about your body. Use the following scale:

<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Very Much So</th>
<th>Exceptionally So</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Right now, I feel anxious, tense, or nervous about:

1. The extent to which I look overweight. 0 1 2 3 4
2. My thighs. 0 1 2 3 4
3. My buttocks. 0 1 2 3 4
4. My hips. 0 1 2 3 4
5. My stomach (abdomen). 0 1 2 3 4
6. My legs. 0 1 2 3 4
7. My waist. 0 1 2 3 4
8. My muscle tone. 0 1 2 3 4
9. My ears. 0 1 2 3 4
10. My lips. 0 1 2 3 4
11. My wrists. 0 1 2 3 4
12. My hands. 0 1 2 3 4
13. My forehead. 0 1 2 3 4
14. My neck. 0 1 2 3 4
15. My chin. 0 1 2 3 4
16. My feet. 0 1 2 3 4
This scale consists of a number of words that describe different feelings and emotions. Please read each item and then mark the appropriate answer in the space next to that word. Indicate the extent to which you feel this way right now, that is, at the present moment.

Use the following scale to record your answers:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>very slightly</td>
<td>a little</td>
<td>moderately</td>
<td>quite a bit</td>
<td>extremely</td>
</tr>
<tr>
<td></td>
<td>or not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

____ guilty       ____ irritable
____ distressed   ____ scared
____ hostile      ____ ashamed
____ jittery      ____ upset
____ nervous      ____ afraid
APPENDIX I

POST-EXPERIMENTAL INQUIRY

1. What do you think was the purpose of this study?

2. In the present study, you may have been asked to complete measures twice. If you DID complete measures twice, do you think your answers changed on these measures? Why?
APPENDIX J

INFORMED CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

**Project Title:** Dimensions of Body Image and Personal Characteristics

**Investigator(s):** Sara Mason and Roger N. Reeb, PhD (faculty sponsor)

**Description of Study:**

In a group setting, participants will complete questionnaires regarding various aspects of body image, self-efficacy, and eating behaviors. Participants will complete these questionnaires after, or before and after viewing media images. Each individual will (a) view media (magazine images) on a computer screen and (b) complete questionnaires that measure aspects of body image and self-perception.

**Adverse Effects and Risks:**

Adverse effects associated with participation are not anticipated. If, due to the potential sensitive nature of questions regarding body image you feel that you need counseling for any reason, please contact the University of Dayton Counseling Center at (937) 229-3141. The University of Dayton Counseling Center provides free services to all undergraduate students at the University of Dayton, and if services are needed after business hours, students can call the counseling center and will be directed to emergency services.

**Duration of Study:**

The study will take approximately two hours to complete.

**Confidentiality of Data:**

Your name will be kept separate from the data. Both your name and the data will be kept in a locked filing cabinet. Only the investigators named above will have access to the locked filing cabinet. Your name will not be revealed in any document resulting from this study.
Contact Person:

Participants may contact the primary investigator (Sara Mason) by email (s.mason1288@gmail.com), or the faculty sponsor (Roger N. Reeb, Ph.D.) by telephone (937-229-2713) or email (Roger.reeb@notes.udayton.edu) if they have questions or problems regarding the study. Dr. Reeb’s office is in St. Joseph’s Hall (Room 306). If you have questions about your rights as a research participant you may also contact the chair of the Research Review and Ethics Committee, Greg Elvers, PhD in SJ 312, (937) 229-2171, Greg.Elvers@notes.udayton.edu.

Consent to Participate:

I have voluntarily decided to participate in this study. The investigator named above has adequately answered any and all questions I have about this study, the procedures involved, and my participation. I understand that the experimenter will be available to answer any questions about research procedures throughout this study. I also understand that I may voluntarily terminate my participation in this study at any time and still receive full credit. I also understand that the investigator named above may terminate my participation in this study if s/he feels this to be in my best interest. In addition, I certify that I am 18 (eighteen) years of age or older.

_________________________________________________________________
Signature of Student                  Student’s Name (printed)                  Date
_________________________________________________________________

Signature of Witness                  Date
APPENDIX K
DEBRIEFING FORM

Information about the Dimensions of Body Image and Personal Characteristics Study

**Objective:**

The primary purpose of this study is to examine the ways in which thin-ideal media influences an individual’s body image in various dimensions. Thin-ideal media refers to media that features and promotes individuals that are significantly thinner than average American women, and this type of media has been related to eating disorder tendencies and body image problems. Research suggests that body image has multiple dimensions and each dimension may be differently influenced by the media. Some participants viewed neutral media (e.g., shoes), whereas other participants viewed media that emphasized the thin ideal. Overall, this study was done to determine the extent to which viewing thin-ideal media influences participants’ body image.

**Hypothesis:**

For the present study, it was hypothesized that body image would become more negative for those participants who viewed thin-ideal media. It was also hypothesized that thin-ideal media would have a negative effect on all four of the specific dimensions of body image measured in the study.

**Your Contribution:**

One questionnaire that you completed measures self-efficacy. You also completed a questionnaire regarding your anxiety towards physical appearance. In addition, one questionnaire asked about eating behaviors that are associated with clinical problems, and finally, a set of surveys asked questions regarding body image and the extent to which you endorse the thin-ideal. By completing these questionnaires, you allowed the researcher to determine if, in fact, thin-ideal media does have a negative impact on body image. Your participation further contributed to the study by allowing a specific experimental design to be used in order to advance research in this area.
Benefits:

Findings from this study will benefit existing research on the connection between thin-ideal media, body image, and eating disorders. This study also employed a research design that allowed it to be determined if results were due to a true effect of thin-ideal media on body image or if findings were due to participant reactivity to the measures administered. A major benefit of the present study is that it assessed whether thin-ideal media has a negative effect on body image as a whole, or only on certain dimensions.

Assurance of Privacy:

We are studying the effect of thin-ideal media on body image and are not evaluating you personally in any way. Your responses will be kept completely confidential and will only be identified by a participant number in the data set with other participant numbers. Your name will not be revealed in any document resulting from this study.

Please note:

- We ask you to kindly refrain from discussing this study with others in order to help us avoid biasing future participants.
- If you have any questions please do not hesitate to contact any of the individuals listed on this page.
- For further information about this area of thin-ideal media and body image research, you may consult the references cited on this page.

Contact Information:

Students may contact Sara Mason (s.mason1288@gmail.com) or Roger N. Reeb, Ph.D. (937-229-2713, roger.reeb@notes.udayton.edu) if you have questions or problems after the study. If you have questions about your rights as a research participant you may also contact the chair of the Research Review and Ethics Committee, Greg Elvers, PhD in SJ 312, (937) 229-2171, Greg.Elvers@notes.udayton.edu. Due to the fact that responses are anonymous, researchers cannot contact individuals who might show signs of psychological problems. People who endorse items that indicate an excessive concern for weight or body image (e.g., “I am terrified of gaining weight”) have found counseling services to be beneficial. If you endorsed these items (or items similar to these), we encourage you to consider contacting the University of Dayton Counseling Center at (937) 229-3141.
References:

For further information about this area of psychological research, the following articles are recommended:


Thank you for your participation!