

TESTING AN INTERVENTION TO ADDRESS THE SOCIOCULTURAL INFLUENCE OF
MASS MEDIA ON BODY IMAGE: CAN WE REVERSE THE CURSE?

by

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Photograph and commentary of *The Century Project*[®] subject "Sibby, 82" and the commentary, "You'd think an older generation of women would feel more of a sense of shame, but I felt perfectly at ease - we had a very good time."

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ABSTRACT

The adverse effects of exposure to unrealistic ideals in the media are well documented, however, this is the first study to explore the possibility that women may experience improvement in body image and affect via social comparison to women with realistic, non-ideal body shape and size. Using material from *The Century Project*[®], the impact of exposure to nude, non-pornographic photographs of women of varied shape, size, age, and physical condition, and the photographed women's personal commentaries about how they successfully cope with body image concerns was tested using an experimental design. It was hypothesized that exposure to the photographs and their associated commentaries would lead to an improvement in body image, mood, and self-esteem, and that this effect would be moderated by preexisting levels of internalization of the thin ideal and strong core beliefs about the importance of appearance (schematicity). Women exposed to the photos and comments condition experienced significantly less appearance-related anxiety than those exposed to photo-only and comments-only conditions, and internalization, but not schematicity, moderated this effect. Findings suggest women who have a greater tendency to internalize sociocultural body image standards may be more receptive to positive changes in these standards when presented with a persuasive visual and cognitive stimulus. However, without both aspects (visual and commentary) high internalizers appear to experience greater negative reactions to these stimuli.

In memory of my father, Gerald Arthur Derosier – a man with a curious mind, a soldier, a student, an educator, and my role model in many ways. I dedicate this with love and admiration.

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I would like to acknowledge the talent and dedication of Frank Cordelle. His *Century Project*[®] illustrates the true beauty of women and inspires many women as it inspired me.

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INTRODUCTION

Body image, the “view from the inside” (Cash, 1990; p. 51) is frequently associated with feelings and thoughts that are powerful enough to lead one to modify behavior in ways that are generally negative (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Not only is negative body image linked to distress in socializing with others, sexual intimacy, relating to loved ones, and functioning in the workplace (Fisher, 1990; Garner, Garfinkel, Schwartz, & Thompson, 1980), it is also related to clinical factors such as mood, social introversion, self-esteem (Abell & Richards, 1996; Archer & Cash, 1985; Cash, 1985; Cash, Cash, & Butters, 1983; Cash, Winstead & Janda, 1986; Franzoi & Shields, 1984), and eating pathology (Brown, Cash, & Lewis, 1985; Cash & Brown, 1987; Fairburn, Cooper, & Cooper, 1986). There is considerable agreement among researchers that the strongest influences on the etiology and maintenance of body image disturbance in Western culture are sociocultural factors (Fallon, 1990; Heinberg, Thompson, & Stormer, 1995). The common denominator of sociocultural theories (e.g., self-ideal discrepancy theory, feminist theory, and social comparison theory) is that dissatisfaction with body image is most often based on external or socially-based factors. The thin ideal is conveyed and reinforced by many social influences including family, peers, schools, athletics, business, and healthcare professionals (Groesz, Levine, & Murnen, 2002; Levine & Smolak, 1996, 1998; Smolak & Levine, 1996; Thompson & Stice, 2001), but none are as pervasive as the influence of the mass media (Groesz, Levine, & Murnen, 2002). After presenting a brief overview of body image disturbance this study presents empirical support for social comparison theory as a model for

understanding the etiology and maintenance of body image disturbance and the role of mass media. In addition, this study focuses on the role of cognitive processes such as internalization of the social ideal for beauty and appearance schema as problematic dispositional features that may help explain why some individuals are more susceptible to the negative impact of slender media images. In light of these factors, this study examines the efficacy of an intervention that employs social comparison to ameliorate some of the negative consequences associated with poor body image and thus lead to healthier responses to body image concerns.

Emphasis on perfecting a certain body shape or size is not a contemporary issue. The Greeks and Romans had well defined standards for appealing body and facial characteristics. The Romans even endorsed bingeing and purging as a means to enjoy overindulgence and still maintain a slender body (Fallon, 1990). The Middle Ages through the 1700s were times of extremes, opulence and luxury on one hand and poverty, deprivation, and mortal illness on the other. A round, corpulent figure represented fertility and good health and men were viewed as prosperous if their wives sported such figures (Garner, Garfinkel, & Olmstead, 1993). As the 20th century began and an industrialized society began to replace an agrarian one, women fought for basic equalities and more freedom including participation in physical activities, such as sports (Caldwell, 1981). At this time the contemporary woman removed the restraining waist cinches and bustles, displayed a thinner, smaller-busted shape, and even began to show her legs in public (Garner, Garfinkel, Schwartz, & Thompson, 1980).

As the 1960s approached and Westernized cultures became concerned with the problems caused by overpopulation, preference for the voluptuous shape associated with motherhood was replaced by a desire for an angular, ultra-thin, almost child-like form (Freedman, 1986). Data collected from Miss American pageants and Playboy centerfolds indicated that these women

displayed body weights that were dangerously thin – as much as 15% below expected weights for their heights (Wiseman, Gray, Mosimann, & Ahrens, 1992), thus meeting an essential criteria for an eating disorder (American Psychiatric Association, 1994). In reality, only 5% of women can even come close to maintaining such a shape (Kilbourne, 1994). The other 95% face the dilemma that, as the social standard continues to get thinner, women’s average weight has been getting heavier. In fact, the average weight for women under 30 increased by .3 pounds per year during the 20-year period between 1960 and 1980 (Garner et al., 1980). As the standards get thinner and women’s natural form gets heavier, the resulting negative body image often carries grave consequences for a significant number of women, including anorexia nervosa and bulimia nervosa (American Psychiatric Association, 1994). Body-size distress in women is widespread – recently as many as 56% of the female population reported dissatisfaction with their body shape and size (Cash, 1997; Cash & Henry, 1995). In fact, this distress is so widespread that researchers have coined the term "normative discontent" to describe the epidemic nature of body image disturbance (Rodin, Silberstein, & Striegel-Moore, 1985).

Body image disturbance and eating disorders are no longer problems faced only by women. As young girls experience the physical change and weight gain that naturally accompanies puberty, their desire for thinness triggers considerable distress (Freedman, 1986; Kelson, Kearney-Cooke, & Lansky, 1990). Girls as young as six- or seven-years old wish to be thinner than they are (Collins, 1991) and “during late childhood and early adolescence, when social comparison plays a significant role in self-perception, females who do not have the ideal body shape *agonize* about their bodies” (Groesz, Levine & Murnen, 2002, p. 1). Not only is weight a factor of body image concern, but general physique, fitness, desire for larger breasts, being too short or tall, wrinkles, sagging breasts, and graying hair are also common components

of body image disturbance (Ben-Tovim & Walker, 1991; Davis, Durnin, Dionne, & Gurevish, 1994; Gupta & Schork, 1993; Rosen, Reiter, & Orosan, 1994; Singh, 1994; Thomas & Freeman, 1991; Thompson & Tantleff, 1992).

Many researchers agree that factors such as culture-wide social ideals, expectations, and experiences provide a strong influence on the development of body image disturbance in Western societies (Fallon, 1990; Heinberg, 1996; Heinberg & Thompson, 1992b; Smolak, Levine, & Gralen, 1993; Thompson, Heinberg & Tantleff, 1991; also see Thompson et al., 1999, for review) and social comparison theory provides a strong empirical framework for understanding the mechanism that propels women to strive for the thin ideal. Festinger's social comparison theory (1954) states that humans possess an innate drive to evaluate themselves, and that when objective means are not available, they will evaluate by comparing themselves to others. In fact, the information that we gather by comparing ourselves to others often takes precedence and is attended to more closely than even objective comparison data that might be available (Marsh & Parker, 1984; Ruble, 1983). For example, rather than relying on actuarial charts to evaluate how one measures up to the average person's height and weight, individuals are more likely to determine their relative standing by comparing themselves to others in their environment. Contemporary extensions and revisions of social comparison theory propose that not only is the individual a "rational information seeker" attempting to gain an accurate assessment for the purpose of self-evaluation, but that one may be motivated to make comparisons for self-enhancement or self-improvement as well (Suls & Wills, 1991). In addition, rather than being limited to specific attributes, social comparisons may serve to evaluate emotions (Schachter, 1959), personality traits, and the self in general (Wood & Taylor, 1991). Although social comparisons may shift from upward to downward comparisons of

similar or dissimilar others (Major, Testa, & Blysm, 1991), Heinberg and Thompson (1992a) reported that when making comparisons regarding appearance, friends and then classmates and celebrities are viewed as important comparison targets.

Whereas Festinger (1954) implied that one typically makes a conscious choice of comparison target, Goethals (1986) asserted that the mass media floods us with images that limit our choices. In our appearance-conscious culture, every time individuals open a magazine, watch a music video, or tune in to a television program, they invariably compare their own body shape, size, and general physical attractiveness to that of super-slender professional models representing the standard for beauty. Women frequently compare themselves to media presented models (Cattarin, Thompson, Thomas, & Williams, 2000) and such comparisons rarely inspire and are most likely to result in body dissatisfaction, eating disturbances, and lowered self-perceptions and self-esteem (Irving, 1990; Kalodner, 1997; Martin & Gentry, 1997; Striegel-Moore, McAvay, & Rodin, 1986; Heinberg & Thompson, 1992a; Thompson & Heinberg, 1993; Thompson, Heinberg, & Tantleff, 1991).

After completing a meta-analysis of 25 studies reporting the impact of media images, Groesz, Levine, and Murnen (2002) emphatically stated "...the loudest and most aggressive purveyors of images and narratives of ideal slender beauty are the mass media" (p. 2). Although human images have historically been communicated through art, music, and literature, it is the readily accessible print and electronic media that have come under scrutiny and have been criticized for their contribution to body image and eating disturbance. In contrast to the round and voluptuous female figures depicted in famous works of art such as those by Renoir, today's media presents unattainably thin images of models that have been carefully manipulated and artificially produced by techniques such as airbrushing, soft-focus camera, composite figures,

editing, and filters. Images of super-slender models with flawless skin, a thin waist, long legs, and well-developed breasts serve as comparison standards for women and clearly blur the boundaries between fiction and reality (Freedman, 1986; Thompson et al., 1999; Shaw & Waller, 1995) and imply that a female's most important attribute is her slender and perfect body (Brumberg, 1997). Individuals are exposed to the thin ideal via billboards, magazines, television, film, video, and the Internet; however, fashion magazines and television are the most frequent and pernicious vehicles of the social comparison process. Magazines are readily available and not only are readers bombarded with photographs of thin and attractive females, content analysis indicates that more magazine articles feature beauty, dieting, or exercise than education, coping skills, or assertiveness techniques (Andersen & DiDomenico, 1992, Jasper, 1993; Stice, 1994; Tiggemann & McGill, 2004; Wiseman et al, 1992). The majority of Caucasian girls read fashion or self-improvement magazines (Desmond, Price, Gray & O'Connell, 1986; Evans, 1989; Levine, Smolak, & Hayden, 1994) and females who read more magazines are more likely to report eating disorder symptomatology (Harrison & Cantor, 1997), body dissatisfaction, and gender role endorsement (Stice, Schupak-Neuberg, Shaw, & Stein, 1994).

The amount of time spent watching television is also related to body image disturbance (Tiggemann & Pickering, 1996). Americans spend a great deal of time watching television, in fact almost every American household has at least one television, and television is on for over seven hours a day in the average home (Harris, 1994). Over the course of *one year*, children and adolescents spend more time watching television than any other activity except sleeping and this includes watching over 35,000 commercials (Levine & Smolak, 1996). The opportunity for upward social comparison is great since over 90% of female characters in television programs

and advertisements are thinner than the average American woman (Gonzalez-Lavin & Smolak, 1995; Kaufman, 1980; Silverstein, Perdue, Peterson, & Kelly, 1986) and studies have found that women become more depressed, angry, and have higher levels of body image disturbance following exposure to appearance and thinness-related television advertisements (Heinberg & Thompson, 1995).

Although there is considerable support for the argument that the media is the primary agent responsible for the shift to the thin ideal in Westernized society, the “chicken or the egg” controversy remains. Many researchers propose that the media negatively influences women’s body image and teaches them about maladaptive eating behaviors, diets, and exercise products (Andersen & DiDomenico, 1992; Striegel-Moore, Silberstein, & Rodin, 1986; Waller, Shaw, Hamilton, & Baldwin, 1994). However, other researchers propose that it is women’s interest in appearance, fashion, and dieting that influences the media (Raphael & Lacey, 1992; Silverstein, Perdue, Peterson, & Kelly, 1986). Although we are unable to make clear temporal inferences at this time, most researchers acknowledge that the relationship between mass media and body image is complex, multiply determined, influenced by many moderating variables, and is most likely bi-directional (Thompson et al., 1999).

It appears that exposure to media alone does not account for all the variance in body image distress (Cusumano & Thompson, 1997) and recently researchers have begun to focus more on the relationship between cognition and media exposure. Dysfunctional beliefs about appearance are predictive of body dissatisfaction, self-esteem levels, thin-ideal internalization, and dietary restriction (Spangler, 2002). Cognitive factors such as appearance schematicity (e.g., stronger core beliefs and assumptions about the importance of appearance in their lives) (Altabe & Thompson, 1996; Cash & Pruzinsky, 1990; Schilder, 1950), awareness of sociocultural

pressures for thinness and internalization of social standards may moderate the negative impact of comparison to thin ideals (Cattarin et al., 2000; Cusumano & Thompson, 1997; Heinberg & Thompson, 1995; Thompson & Heinberg, 1999). Past studies have identified a schema-driven process of self-evaluation regarding appearance that suggests that individuals who are schematic for appearance will process and react differently to appearance-related schema than will those individuals who are aschematic (Altabe & Thompson, 1996; Cash, 1994; Cash & Labarge, 1996). Internalization, or the extent to which an individual internalizes attitudes and cognitively “buys into” socially defined ideals of thinness and attractiveness, can occur when attitudes are reinforced by family, peers, and mass media communicating the benefits of thinness (Hohlstein, Smith, & Atlas, 1998). Social comparison processes are indicated as a possible mechanism for the connection between media exposure, internalization, schematicity, and body dissatisfaction. Preliminary studies indicate that thin-ideal internalization predicts increased dieting behavior, body dissatisfaction, and negative affect (Stice, 2001; Stice, Mazotti, Krebs, & Martin, 1998). In addition, individuals who internalize sociocultural ideals are more likely to compare themselves to others, engage in upward comparisons, or choose inappropriate comparison targets and are most at-risk for negative reactions to media messages (Faith, Leone, & Allison, 1997; Heinberg & Thompson, 1992b; Heinberg & Thompson, 1995; Smolak, Levine, & Gralen, 1993; Stormer & Thompson, 1996; Thompson, Covert, & Stormer, 1999; Thompson, Heinberg, & Tantleff, 1991). Fortunately, internalization is susceptible to interventions, thus there is potential for the reduction of negative consequences (Irving, DuPen, & Berel, 1998; Stice et al., 2000; Stormer & Thompson, 1998). Better understanding the mechanism for reduction of body image disturbance and the related factors influencing disturbance is important considering that it is unlikely that slender images will no longer be the featured form in mass media.

Although treatment of body image disturbance is a relatively new field, cognitive-behavioral interventions such as correcting distorted perceptions, cognitive restructuring, exposure techniques, reassurance seeking, increasing pleasurable bodily experiences, and reduction of comparison to others, have been demonstrated to be efficacious treatment strategies (Butters & Cash, 1987; Dworkin & Kerr, 1987; Grant & Cash, 1995; Rosen, Saltzberg, & Srebnik, 1989; Thompson et al., 1999). Reducing internalization and developing adaptive body schema may contribute to women developing healthy relationships with their bodies, redefining realistic standards of weight and shape, and encouraging individuals to tune out the “musts” and “shoulds” proposed by media messages (Kearney-Cooke, & Striegel-Moore, 1997). As a woman passes through life phases such as menstruation, childbearing years, and menopause, she experiences normal physical changes. Shifting to a healthy schema may induce a proactive, life-affirming focus on acceptance and a commitment to nurturing and caring for one’s body (Kearney-Cooke, & Striegel-Moore, 1997).

Compared to the sound empirically-based support for cognitive-behavioral treatment, the development and evaluation of prevention programs is a relatively young field. Prevention approaches are typically divided into three categories; primary, secondary, and tertiary prevention. Primary prevention focuses on preventing the uptake of risky health-related behaviors; secondary prevention targets identification and treatment early in the disorder to prevent further development; and tertiary prevention involves actions to treat or reverse a health problem once it has developed (Caplan, 1964). Many primary prevention programs targeting body image disturbance are psychoeducational in nature and designed for late childhood and adolescent ages. These programs are at best temporarily successful at increasing knowledge with little change in attitudes about dysfunctional eating, body image concerns, or related behaviors

(Franko, 1999; Levine, 2002; Smolak, Levine, & Schermer, 1998). Secondary prevention programs that have included awareness of the sociocultural ideal of thinness, psychoeducation on healthy eating, and identification and examination of dysfunctional beliefs and attitudes (Franko & Orosan-Weine 1998; Killen et al., 1993; Shisslak, Crago, Neal, & Swain, 1987) have resulted in positive changes in body image and attitudes, but not disturbed eating behaviors (Franko, 1999). Another program that addressed the sociocultural ideal of thinness and the negative influence of the media decreased the likelihood to diet and participants reported better body esteem than did controls (Smolak & Levine, 2001). These early attempts at modifying the influence of media on body image offer hope that interventions may be developed that may lead to a more lasting impact on women and adolescents. Researchers should “step outside the box” and create persuasive and effective prevention models designed to contrast the artificial, carefully manipulated nature of media images with the diversity of women’s natural weights and shapes.

Interventions that are more likely to generate favorable cognitive responses and be maximally persuasive should include sound arguments that are repeated a few times, but not too many, be comprehensible, and be delivered in an atmosphere free of distraction (Fiske & Taylor, 1991). In addition, there is a large body of social psychology literature that provides a rationale for using persuasion to create attitude changes (see Worchel, Cooper, & Goethals, 1988 for review). Specifically, the Elaboration Likelihood Model (ELM) of persuasion presents two cognitive pathways or strategies by which individuals might hold or change their attitude in response to a particular message (Cacioppo, Petty, Kao, & Rodriguez, 1986; Petty & Cacioppo, 1981, 1986). The *central route* of persuasion involves the process of elaboration, or carefully thinking about and examining available pertinent information to the merits of the message. The

peripheral route involves less cognitive effort and relies on characteristics such as experiencing positive or negative affect toward the cue, providing relatively simple cues or sources of information (e.g., interesting photographs or short messages), and emphasizing the perceived expertise of the source (Petty, Cacioppo, Strathman, & Priester, 1994). Thus, an intervention that consists of simple cues and messages will motivate an attitude change when the recipient is involved in the issue at hand and perceives that the communicator of the message is credible and has no ulterior motive (Worchel, Cooper, & Goethals, 1988). The intervention proposed in this study presents information designed to intervene via the peripheral route and includes these characteristics. Thus, the intervention, which is brief and easy to administer, is predicted to be persuasive without the need for additional information or time that may be required to activate central route processing.

In summary, numerous studies have demonstrated that social comparison with slender media images contributes to the etiology and maintenance of body image disturbance, eating disorders, and a host of other negative consequences. Surprisingly few studies have focused their attention on the potential for an improvement in mood, self-esteem, and body satisfaction after viewing more realistic images of women. In fact, because of the scarcity of even average-sized models in mass media, most control conditions have been non-human images (Groesz, Levine, & Murnen, 2002). One study, however, using images of women who were “average” as a control reported that women had greater appearance satisfaction when compared to women who viewed slender media images (Cattarin et al., 2000). In another study, women with various levels of bulimic symptoms exposed to heavier models exhibited greater weight satisfaction than those who were exposed to average sized models, who in turn reported greater weight satisfaction than those exposed to the thin models (Irving, 1990). Thus, compared to women

exposed to thin media images, those making comparisons with the less-than-perfect images expressed greater body image satisfaction. Although a principle of social comparison posits that subjective well-being may be *enhanced* through comparisons and that such comparisons may lead to tension reduction, and short-term improvement in mood and self-esteem (Wills, 1981), there has been no research to directly test whether viewing realistic and *imperfect* female forms may actually ameliorate body image distress or “reverse the curse” placed upon us by exposure to media images and messages. In addition, using vicarious learning to cope with body image concerns has not been studied, although there is an indication that this may be effective. For example, after participating in a short-term therapy group for disordered eating, participants reported that the personal comments that were shared in group sessions were the most important factors contributing to greater understanding of their own eating difficulties (Hobbs, Birtchnell, Harte & Lacey, 1988). Development and testing of an intervention that provides women opportunities to compare themselves to images of women who have successfully overcome their body image concerns is long overdue.

Testing a New Intervention

It is unrealistic to assume that media-presented images of thinness will be eliminated, but treatment and prevention interventions that take advantage of social comparison by providing women with more realistic comparison targets may help. Several successful treatment programs have asked eating disordered women to confront clothed and unclothed self photos as a means of modifying specific body size overestimation (Fernandez & Vandereycken, 1994; Gardner, Gallegos, Martinez, & Espinoza, 1989; Gottheil, Backup & Cornelison, 1969; Norris, 1984). However, because these were typically used in conjunction with other methods, conclusions about their efficacy cannot be made (Thompson et al., 1999).

Recently, there has been anecdotal evidence that exposure to photographs of realistic body shapes and sizes has had a positive influence on eating disordered and non-eating disordered women. Women may be willing to confront the manipulated and artificially produced images presented in the media, see them as unhealthy comparison standards (Martin & Kennedy, 1993; Shaw & Waller, 1995), and consider a more realistic image as an alternative comparison target. One example of a woman who is willing to present herself as a realistic standard is internationally famous film star, Jamie Lee Curtis. Forty-three year old Ms. Curtis, who has been nicknamed “The Body” and is identified as an icon of female perfection, was featured in the contemporary style magazine, *More*, (Wallace, 2002) without the aid of lights, make-up, or retouching and wearing a revealing sports bra and spandex briefs. In the article that accompanied the photos, Ms. Curtis stated the following:

There’s a reality to the way I look without my clothes on. I don’t have great thighs. I have very big breasts and a soft, fatty little tummy. And I’ve got back fat...It’s insidious – Glam Jamie, the Perfect Jamie, the great figure, blah, blah, blah. I don’t want the unsuspecting 40-year-old women of the world to think I’ve got it going on. It’s such a fraud. And I’m the one perpetuating it (p. 1).

There also have been anecdotal reports of the positive influence of viewing realistic, nude photographs of women. For example, anorectic patients of Dr. Ira Sacker of Brookdale Hospital Medical Center, New York, were reported to have shown “marked improvement” after viewing photographs of their own nude bodies (Levine, 2000). One of Dr. Sacker’s patients stated that after viewing photographs of herself, she was able to view her mirror image more realistically. The patient stated, “I have never ever been able to really see myself in a mirror – for me, this is an amazing breakthrough” (p. 2). There also has been a substantial impact of *The Century*

Project©, a collection of nude photographs and personal comments of females from birth to 100-years-old compiled by photographer Frank Cordelle that has been exhibited at galleries, universities, and even churches across the United States (Cordelle, 1998). The subjects are real-life people, not stars or models. In addition to spanning all ages, they span all body types and provide a rich variety of experiences regarding their bodies that they share with the reader. On his Internet Web site, the artist stated the following:

Century is about real women in real bodies, not the caricatures in the worlds of media and advertising...it has been able to stimulate thought and discussion about subjects that are often taboo in our society, namely nudity and sexuality, violence, health issues, attitudes toward women in general, and their portrayal in the media in particular (Cordelle, 1998, p. 1).

Women have responded positively, often describing the exhibit as having a therapeutic impact on their body image. For example, after viewing the exhibit, one woman wrote the following:

Thank you, and I say this with a depth that my words will never be able to express. I didn't expect this exhibit to touch me - I try to avoid that. I suppose I was surprised, but your work told me something that I must have already known but have buried deep inside. I am, I believe, a step closer to no longer hating my body (F. Cordelle, personal communication, December 11, 2001).

Another woman wrote:

I am an eighteen-year-old African-American/Caucasian woman. I often feel ugly, and I do have low self-esteem. I have often said how beautiful my face is, if only the rest of me could catch up. From the neck down, I have never felt beautiful or desirable. Your

photographs have shown me that being a size 6 is not what makes a woman beautiful.

Thank you and your subjects for showing me what beauty truly is” (F. Cordelle, personal communication, December 11, 2001).

The exhibit also has been used as an informal body image intervention with therapist and client viewing the exhibit together and then processing the impact (Cordelle, 1998). It appears that through exposure to the photographs and personal comments, some women may expand their repertoire of acceptable size and shape comparisons. Viewing realistic photos appears to have had an impact on women’s moods as well. After viewing *The Century Project*©, one woman wrote:

Wow... I am in such a good mood right now.... As someone who has struggled with my body image since the age of 15, I feel incredibly good about myself. I’m still trying to come to terms with my appearance and feel that this is a big boost for me. Thanks (F. Cordelle, personal communication, December 11, 2001).

An intervention in which women are exposed to photographs and personal comments such as those in *The Century Project*© may elevate mood and self-esteem and create an openness to an alternate, socially acceptable ideal. Although there is a considerable collection of inspirational comments from individuals who viewed *The Century Project*©, these comments were anecdotal, non-standardized, and came from women who, for a variety of reasons, had self-selected to attend the exhibit and view the photos. It was important to determine the impact of the photos and personal comments on a group of men and women who, while agreeing to participate in the study, had not sought out this experience. A pilot study indicated that female college students in general viewed their own bodies more positively after exposure to *The Century Project*© photos and commentary.

Present Study

Many prevention interventions have used a psychoeducational format of media literacy, with goals and techniques designed to reduce vulnerability to various negative outcomes of media exposure. These programs typically provide information designed to manipulate internalization by increasing awareness of media deception, teaching girls and women to be more critical consumers of media, and addressing pressures to conform. Outcome studies indicate mixed results, with many programs leading to an increase in knowledge and some fleeting reduction of negative affect, but few lead to lasting or behavioral changes (Levine, 2002). In addition, existing treatment programs that include viewing oneself in photos and using mirror exposure techniques (Cash, 1997) has been shown to provide cognitive changes that lead to healthier body image. Anecdotal reports from women who viewed the nude images in *The Century Project*[®] and from women who viewed nude photos of their own bodies, indicate that they developed more realistic and positive evaluations of their bodies. It is likely that interventions that combine realistic social comparison and positive modeling will lead to a powerful and positive impact and could be used to increase the effectiveness of secondary prevention programs; reducing or reversing the negative consequences associated with poor body image.

The goal of the present study was to explore the impact of realistic images and messages depicting healthy coping such as those found in *The Century Project*[®]. Expectations were that these components would lead to the reduction of negative consequences related to body image disturbance and viewing images from the mass media and thus provide a springboard for future studies that would test their clinical utility in prevention programs. A volume of anecdotal data indicate that women are experiencing positive cognitive and emotional reactions to viewing *The*

Century Project[®] (Cordelle, 2001) and clothed and nude self-photos and mirror images (Cash, 1997; Levine, 2000; Fernandez & Vandereycken, 1994; Gardner, Gallegos, Martinez, & Espinoza, 1989), however, this was the first attempt to dismantle the components and to identify and quantify the degree and direction of positive reactions and identify possible moderators of the effects.

Using an experimental design, this study tested the effectiveness of exposure to nude, realistic female images and personal comments about coping with body concerns on cognitive and affective features of body image disturbance: depression, self-esteem, and two aspects of body image disturbance – body dissatisfaction (satisfaction with one’s general appearance and specific body sites) and appearance-related anxiety (anxiety regarding weight-related and non-weight-related body sites). Body dissatisfaction was measured using two reliable and valid measures, one framing statements primarily in a positive way (e.g., “I am physically attractive.”) and the other framing statements primarily in a negative way (e.g., “I think my stomach is too big.”). In addition, state aspects of appearance-related anxiety were measured. Although there are also behavioral components of body image disturbance, (e.g., appearance-related avoidance behavior), constructs measured represent the cognitive and affective features of body image disturbance. Because of the cognitive and affective nature of the intervention (comparison and vicarious learning) it was predicted that change in these facets of body image is more likely. Although prior empirical studies and anecdotal reports indicate that treatment programs that include interventions such as viewing clothed and unclothed photos and mirror images lead to an increase in body satisfaction and affect, this study represents the first attempt to dismantle program contents and test the impact of this exposure. The present study attempts to determine whether exposure to photos, personal comments, or the interaction of the two leads to less body

dissatisfaction, appearance-related anxiety, and depression and higher self-esteem. In addition, because of preliminary evidence that thin-ideal internalization is predictive of body dissatisfaction and negative affect after viewing ideal media images (Stice, 2001), the present study was designed to explore whether preexisting thin-ideal internalization and appearance schematicity would moderate the positive impact of viewing realistic images.

Hypotheses

It was predicted that exposure to either nude, realistic photographs of women *or* personal comments regarding women's successful coping with body image concerns would result in lower levels of body dissatisfaction, appearance-related anxiety, and depression and higher levels of self-esteem than would exposure to nonappearance photos and comments. It was also predicted that exposure to the photographs of women combined with comments regarding body image would result in lower levels of body dissatisfaction, appearance-related anxiety, and depression and higher levels of self-esteem than will exposure to photos-only, personal comments-only, and nonappearance photos and comments. Further, it was expected that internalization of societal standards and appearance schematicity would moderate the impact of the photographs and personal comments condition on body dissatisfaction, appearance-related anxiety, depression, and self-esteem such that participants who are higher on the internalization and appearance schematicity would experience lower levels of body dissatisfaction, appearance-related anxiety, and depression and higher levels of self-esteem following exposure to the photos and personal comments condition than those who are lower on internalization and appearance schematicity.

METHOD

Pilot Study

Volunteers from an undergraduate psychology class participated in the pilot study in exchange for class extra credit. The 56 students (41 females and 15 males) viewed 15 *Century Project*© photographs and listened to the personal comments. As a group, the students viewed the photos via overhead projector as the personal comments were read aloud by the experimenter. The exposure lasted approximately 20 minutes. Following exposure, participants rated their reactions on several dimensions. Using a scale from 1 (*changed negatively*) to 5 (*changed positively*), participants indicated that their views of their own bodies were slightly more positive, with females reporting more positive change ($M = 3.9$) than males ($M = 3.3$), $t(54) = -2.72, p < .01$. Using a scale from 1 (*unimportant*) to 5 (*very important*), participants also thought it was “somewhat important” to reevaluate their personal values regarding *their own* appearance and body shape/size ($M = 3.7$) and that of *others* ($M = 3.3$). The questionnaire provided space for participants to record comments about their experience. Most were very positive. For example, one female student wrote, “It is great to know that other people have bodies just like you and that it is okay to feel uncomfortable or comfortable about it because we all do.” Others commented, “I feel more positively that the human natural body is beautiful after hearing the personal comments” and “Seeing the older women...made me feel less afraid of growing old, seeing how comfortable they were with their bodies late in age.” Effects were a

modest but positive indication that there may be beneficial effects of exposure to more realistic female images and approaches to coping with body image concerns and that individuals are receptive to this type of intervention.

In addition, the pilot data indicated that viewing non-pornographic, nude photographs of women did not make participants uncomfortable ($M = 1.6$; scale ranging from 1 (*not at all uncomfortable*) to 5 (*very uncomfortable*). This response coincides with study by Abramson (1977) who reported that when college students were presented with questionnaires and photographs regarding typical sexual behaviors and diagrams of internal and external genitalia, the experience was viewed as an enjoyable learning experience that did not produce negative aftereffects.

Participants

Participants were 164 females recruited from undergraduate psychology classes at a state university in Southeastern United States. Participants' age ranged from 17 to 35 years, with a mean age of 20.4 ($SD = 2.57$). There were 45 freshman (27.3%), 30 sophomores (18.2%), 50 juniors (30.3%), 37 seniors (22.4%) and 2 graduate students (1.2%). Participants' ethnic origin included 112 Caucasian (67.9%), 20 African American (12.1%), 17 Hispanic (10.3%), 7 Asian/Pacific Islander (4.2%), and 9 of mixed ethnic origin (5.5%). Participants' body mass index scores ranged from 16.1 to 49.6 ($SD = 5.87$), indicating that participants ranged from underweight to extremely obese (BMI <18.5 = underweight, 18.5-24.9 = healthy weight, 25.0-29.9 = overweight, 30.0-39.9 = obese, and >40 = extremely obese). Group membership was tested to determine equivalence based on body mass index, age, internalization, and appearance schematicity.

Participants were randomly assigned to one of three experimental appearance conditions or a non-appearance control group. There were 45 participants in Condition 1 (nude photos and body image comments), 37 participants in Condition 2 (nude photos only), 47 participants in Condition 3 (body image comments only), and 36 participants in Condition 4 (nonappearance photos and comments). Groups differed only on age ($F [1, 3] = 4.40, p = .005$) with participants in Condition 2 somewhat older ($M = 21.7, SD = 3.48$) than those in Condition 1 ($M = 19.9, SD = 2.16$), Condition 3 ($M = 20.3, SD = 3.33$), and Condition 4 ($M = 19.8, SD = 1.78$). Although statistically different for chronological age, all groups were the same developmental and cognitive stages (Kail & Cavanaugh, 2004).

Intervention Stimuli

Four sets of booklets and audiocassettes were prepared, one for each condition. The audiocassettes provided an introduction to the study, directions, and specific information for each condition. The audiocassette was recorded by the same female for all conditions. The use of the audiotape facilitated standardization of length of time of exposure across conditions – all conditions had the same time of exposure. In addition, all conditions facilitated cognitive activity through the peripheral route by providing quick and direct information (either visual, short narrative, or both) for processing. The 20 stimuli photographs of women (see Appendix L for sample) were selected from a collection of 42 photographs from *The Century Project*© collection based on the following criteria:

- A diverse representation of ethnic backgrounds
- A diverse representation of body shapes and sizes
- A diverse representation of age ranging from 18 to 94 and presented in chronological order

- A representation of women with disabilities or physical challenges as well as non-challenged women

Stimulus materials in *Condition 1* consisted of a 3-ring binder containing 20 nude, non-pornographic black and white and color photographs of women with various body shapes and sizes taken from *The Century Project*© collection. On a page facing each photo was a personal story written by the photo subject that described some aspect of her body image, including her positive coping with various body image concerns. The concerns described by the subjects included issues such as thinness, obesity, surgical scars, and old age. The audiocassette provided a recording of a female reading each personal story and directing the participant when to turn the page to view the next image and story.

Condition 2 consisted of a 3-ring binder containing the same 20 nude, non-pornographic black and white and color photographs depicted in Condition 1. There were no personal comments provided; participants viewed the photos in silence until instructed by a female voice on the audiocassette to turn to the next photo.

Condition 3 consisted of a 3-ring binder containing the same personal comments as depicted in Condition 1. There were no photographs provided, and participants read the personal comments and followed along as the female voice on the audiocassette read each commentary and indicated when to turn the page to the next story.

Condition 4 (control condition) consisted of a 3-ring binder of black and white and color photographs of various architectural buildings. On the page facing each photo was a description of the building and its location. Participants viewed the photos and read the descriptions, following along as the female voice on the audiocassette read each description and indicated when to turn the page to the next story.

Measures

Demographic and General Information.

After signing a consent form, participants completed a demographic questionnaire regarding age, height, weight, ethnicity, and year in college. (See Appendix A)

Multidimensional Body Self-Regulations Questionnaire

The Multidimensional Body Self-Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990) is a 69-item scale that measures multiple aspects of body image disturbance. Two of the subscales were used to measure satisfaction with one's appearance (Physical Appearance Evaluation [PAE]) and specific body sites (Body Areas Satisfaction Scale [BAS]). The PAE is a seven-item scale to assess feelings of attractiveness and satisfaction with one's appearance. Items include statements such as, "I am physically attractive," and "Most people would consider me good-looking." Participants indicated level of agreement using a scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*). The BAS, a nine-item scale, measures satisfaction with different body sites (e.g., face, mid torso, weight, and height). Participants indicated level of satisfaction with each site using a scale ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). Possible total scores on the two scales range from 16 to 80 with higher scores indicating higher levels of satisfaction or positive thinking regarding one's body. Internal consistency reported by Brown et al. (1990) was .88 for the PAE and .78 for the BAS. (See Appendix B)

Eating Disorder Inventory – II Body Dissatisfaction Scale

The Eating Disorder Inventory – II Body Dissatisfaction Scale (EDI - BDS; Garner, Olmsted, & Polivy; 1983; Garner, 1991), is a 9-item scale indicating participant's frequency of agreement on body-related statements. Participants responded using a 6-point scale ranging from

1 (*Never*) to 6 (*Always*). Items included statements such as, “I think my stomach is too big” and “I feel satisfied with the shape of my body.” Reports of internal consistency of the EDI-BDS were .90 for anorexic participants and .91 for controls, .91 for females and .86 for males. Test-retest reliability was .72 - .84 for 2-week interval, and .75 - .89 for 4-week intervals. (See Appendix C)

Physical Appearance State and Trait Anxiety Scale

The Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991) is a self-report measure of state and trait anxiety for eight weight-related and eight non-weight-related body sites. For this study, participants will completed the state scale indicating 0 (*not at all*) to 4 (*exceptionally so*) how much tension or anxiety about their body they experience *right now*. Cronbach’s alphas for both Trait and State versions were uniformly high and ranged from .82 to .92 and the test-retest correlation coefficient for the entire PASTAS was .87 (Reed, Thompson, Brannick, & Sacco, 1991). This measure converges well with other measures of body image disturbance. (See Appendix D)

Sociocultural Attitudes Towards Appearance Questionnaire

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995) is a 14-item self report measure that uses a 5-point scale of 1 (*Completely Agree*) to 5 (*Completely Disagree*) where individuals rate agreement with statements that reflect *awareness* of societal attitudes of thinness and attractiveness (e.g., “Being physically fit is a top priority in today’s society”) or *acceptance* of these societal beliefs (e.g., “Photographs of thin women make me wish that I were thin”). Internal consistency using Cronbach’s alpha is .71 for the 6-item Awareness scale and .88 for the 8-item Internalization scale. The correlation between the two subscales is .34 (Heinberg, Thompson, & Stormer, 1995). (See Appendix E)

Appearance Schema Inventory

The Appearance Schema Inventory (ASI; Cash & Labarge, 1996) is a self-report measure of core beliefs or assumptions about the importance, meaning, and effects of appearance in one's life. This 14-item scale uses a 5-point scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Reliability and validity was examined for a group of 274 college students. The ASI has acceptable internal consistency with Cronbach's alpha of .82 for males and .79 for females (Cash, 1992). The ASI converges significantly and appropriately with a variety of measures of body image and psychosocial functioning and is reasonably free of social desirability and is unaffected by participants' body mass (Cash & Labarge, 1996). (See Appendix F)

Beck Depression Inventory II

The Beck Depression Inventory II (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item self-report instrument for measuring the severity of depression in adults and adolescents aged 13 years and older. Respondents were asked to endorse the most characteristic statements (on a scale of 0 to 3) on each of 21 descriptors of depression covering the time frame of the "past week, including today." In order to measure depression level following exposure to the stimuli, the original scale will be revised to state "today." For example, for the descriptor *crying*, the statements include 0=*I don't cry anymore than I used to*, 1=*I cry more than I used to*, 2=*I cry over every little thing*, and 3=*I feel like crying, but I can't*. Optimal cut-off scores for the BDI-II were derived through the use of receiver operating characteristic curves (Beck, Steer, & Brown, 1996) and are: 0-13 non-depressed, 14-19 mildly depressed, 20-28 moderately depressed, and 29-63 severely depressed. Internal consistency is reported as Cronbach's alpha of .92 with inpatients and .93 with a college control group (Beck, Steer, & Brown, 1996). In addition, the BDI-II demonstrates good content and construct validity. It is reported to reflect not only

cognitive and affective symptoms, but also the somatic and vegetative symptoms of depression (Beck, Steer, & Brown, 1996). (See Appendix G)

Self-Esteem Inventory

The Self-Esteem Inventory (SEI; Rosenberg, 1965) is a 10-item measure that uses a 4–point scale of 1 (Strongly Agree) to 4 (Strongly Disagree) to measure positive and negative perceptions of self. The author reported a reliability coefficient of .92 based on data collected from 5,024 high school students and test-retest reliability of .85. Convergent validity reports were .56, .67, and .83, with three other measures of self-esteem (Rosenberg, 1965). (See Appendix H)

Manipulation Check

In order to ascertain that participants actually attended to the experimental stimuli, a brief questionnaire was administered post exposure to the stimuli. Ten multiple-choice questions were created to test recognition of obvious appearance-related and nonappearance-related aspects of the stimuli of the appearance-related conditions, and ten nonappearance-related aspects of the control condition. The ten questions asked about features found at the beginning, middle, and end of the stimulus booklets, therefore assessing maintenance of attention. Questions were developed by two laboratory assistants and evaluated by the principal investigator and two other assistants to ensure they were neither too obvious nor too obscure. For the two experimental conditions with nude image photos, the post-viewing questionnaire contained five multiple-choice questions about appearance-related stimuli (e.g., One of the women viewed had a surgical scar. Was this scar located on 1) her leg, 2) her chest, or 3) her face?), and five questions about non-appearance-related stimuli contained within the photos (e.g., In one photo, the woman was carrying an umbrella. Was this umbrella 1) red, 2) blue, or 3) multi-colored?). For the experimental condition with body image comments only, the post-viewing questionnaire

contained five multiple-choice questions about appearance-related content of their commentary (e.g., One of the women described her facial features in relation to her ethnic background. Did she describe her appearance related to being 1) Korean, 2) Mexican, or 3) African American?) and five questions about nonappearance-related stimuli contained within the personal commentary (e.g., In one photo, the woman states that she is standing beside an object. Was this object a 1) chair, 2) portrait, or 3) house?). For the control condition, the post-viewing questionnaire contained ten questions about nonappearance-related stimuli contained within the photos and descriptions. For example, “Of the 20 buildings shown, the tallest building was described by noting the number of stories. How many stories was this building? 1) two, 2) 14, or 3) 90? (See Appendix I)

Procedure

Participants were recruited by posting an opportunity to earn extra credit if they would agree to participate in two unrelated studies conducted on different days. They were offered one extra credit point for each study, three points if they attended both. Recruits were told that the first study would investigate adjustment for college students and the second would investigate evaluating professional photographs and would take approximately 30 minutes and 90 minutes, respectively. Participants were informed in advance that participation in the study might include viewing nude, non-pornographic photographs of women. They were offered class extra credit in exchange for their participation and informed that there would be no monetary gain or psychological harm from participation.

When participants arrived for the “first” study they were asked to complete a questionnaire packet containing a consent form, demographic questionnaire that included questions regarding housing, employment, hobbies, exercise habits, marital status, grade level,

the SATAQ, and the ASI. The experimenter instructed participants to read the instructions before completing each measure and provided ample time to complete the entire packet. Upon completion of the measures, participants were scheduled to return in 7 to 10 days to participate in the “second” study. This 7-10 day lag was used to minimize possible priming effects of these questionnaires.

To reduce hypothesis-guessing, evaluation apprehension, and similar threats to construct validity (Cook & Campbell, 1979), participants returning for the second session were told that they were participating in a study that included viewing professional photographs and/or descriptions of photographs in order to evaluate their recall of details. Participants were randomly assigned to one of the appearance conditions or the control condition. Participants read and signed a consent form and were informed that they may discontinue testing at any time without penalty or loss of extra credit. (See Appendix J for sample informed consent form.)

Three to six women at a time were seated at a table in a room large enough to ensure ample space for privacy. Partitions were placed on the table so that participants were not able to see each other while viewing the stimulus material and each place was set with a cassette player, head-phones, and a stimulus binder. Participants were instructed to sit wherever they wished, therefore assignment of participant to condition was random. All participants were given identical instructions and began at the same time. Participants were informed that their participation would involve going through the binder while listening to the cassette tape, completing a packet of questionnaires, participating in a brief exercise, and attending a debriefing session. The experimenter introduced the cassette player, explained its use, and monitored each participant’s use of the materials. At a signal from the experimenter, each participant donned the headset and turn on the cassette player. The taped narration provided

directions for viewing (and/or reading) the stimulus and cued the participant to turn the pages. The experimenter remained unobtrusively in the room to ensure compliance with the instructions. After the stimulus presentation, each participant completed a questionnaire packet that included the manipulation check, PASTAS (state), MBSRQ, EDI-BDS, BDI, and SEI. Participants were then taken to a private area and individually weighed by standing on a scale placed on front of a full-length mirror.

Because of the sensitive nature of the experimental conditions participants were given the opportunity to process their feelings and thoughts after viewing the experimental conditions, completing the questionnaires, and being weighed. They were asked the following questions:

- “What was your comfort level while participating in this study?”
- “Would you like to talk about the source of your comfort/discomfort?”
- “Was there a photo (or story) that had more impact on you than the others? If so, would you like to share your reaction to this photo (or story)?”

Qualitative data were collected during the debriefing sessions. The session was audio taped and the information was used to provide details that enhance the quantitative data by describing women’s subjective reactions to the intervention. No other qualitative analysis, however, was planned. Before leaving the session, participants were given a debriefing statement explaining that the study was designed to investigate their reaction to certain stimuli. (See Appendix L for sample debriefing statement). It also provided information about contacting the University Counseling and Testing center if they felt that they would like to discuss their participation with a counselor. Participants were asked not to share the details of their experience in the study in order to reduce the chance that other participants would learn of the

nature of the study. Participants were thanked for their participation and asked if they would like a copy of the results at the end of the study.

RESULTS

Preliminary Analyses

For all scales, internal consistency reliability coefficients, means, standard deviations and intercorrelations were calculated (see Table 1). Coefficient alphas were adequate for all measures (ranging from .75 to .93). Results of the manipulation check revealed that participants answered the ten post stimulus questions regarding the stimulus they viewed with great accuracy ($M = 9.82$, $SD = .47$), indicating a high degree of stimulus attention and comprehension across all experimental groups. As expected, there were significant intercorrelations among the three measures of body image disturbance (MBSRQ, EDI-BDS, and PASTAS) and body mass index (BMI). Also as expected, there were significant correlations between measures of internalization (SATAQ) and schematicity (ASI) and the three measures of body image disturbance; MBSRQ, EDI-BDS, and PASTAS. That is, individuals with higher internalization and those with higher schematicity also reported higher levels of body dissatisfaction and appearance-related anxiety. In addition, individuals with higher internalization and those with higher schematicity reported greater depression, and lower self-esteem. Body mass index (BMI) was correlated with depression, self-esteem, and schematicity. However, BMI was not associated with internalization.

Hypotheses

Will exposure to realistic images and/or commentary about coping with body-image concerns lead to improved body satisfaction, mood, and self-esteem?

It was predicted that exposure to the nude photos-only condition and body image personal comments-only conditions (main effects) would result in lower levels of body dissatisfaction, appearance-related anxiety, and depression and higher levels of self-esteem than exposure to the control photos and comments that were unrelated to appearance. In addition, exposure to the combination of photos and personal comments (interaction effect) was predicted to result in lower levels of body dissatisfaction, appearance-related anxiety, and depression and higher levels of self-esteem than photos-only or personal comments-only conditions or the control. A multivariate analysis of variance (MANOVA) was performed to assess the predicted differences between treatment conditions on the dependent variables of body dissatisfaction (MBSRQ and EDI-BDS), appearance-related anxiety (PASTAS), depression (BDI-II), and self-esteem (SEI). Preliminary assumption testing was conducted to check for normality, linearity, and univariate and multivariate multicollinearity; with a serious violation noted with multivariate normality only. Using the Mahalanobis Distance procedure, three cases were identified as outliers (Pallant, 2001). One case (Participant Number 69) with a Mahalanobis value (31.76) that was substantially higher than the critical value (20.52) was dropped from the data set. The other outliers (Mahalanobis values 22.94 and 22.47) did not differ greatly from the critical value and were not removed.

Roy's Largest Root criterion indicated a significant MANOVA for treatment conditions on the combined dependent variables $F(3, 144) = 2.26, p = .05$. The effect size was moderate (partial eta squared = .07) (Cohen, 1988; Tabachnik & Fidell, 1996). A significant univariate F emerged only for appearance-related anxiety (PASTAS) $F(3, 144) = 2.89, p = .038$. This effect

size was also moderate (partial eta squared = .06). Post hoc analyses revealed that individuals exposed to the nude photos and body image comments reported significantly less appearance-related anxiety ($M = 10.25$, $SD = 8.88$) than those exposed to nude photos only ($M = 16.07$, $SD = 11.17$) or body image comments only ($M = 15.33$, $SD = 10.45$). However, individuals exposed to the nude photos and comments, photos only, or the body image comments only did not differ in appearance-related anxiety from the non-appearance control group ($M = 13.94$, $SD = 9.94$). Thus, women viewing the nude photos and body image comments reported less body image anxiety than those who were exposed to the photo-only or the body image comment-only conditions, but they did not differ in anxiety from those in the control group (see Figure 1).

Will dispositional levels of internalization of societal standards and appearance schematicity moderate the impact of exposure to realistic images and/or commentary about coping with body-image concerns?

Standardized multiple regression analysis (Baron & Kenny, 1986; Cohen & Cohen, 1983) was used to test the prediction that internalization of societal body ideals and body image schematicity would moderate the effect of treatment condition on body image disturbance (MBSRQ, EDI-BDS, and PASTAS), depression (BDI-II), and self-esteem (SEI). Specifically, it was proposed that those individuals who are more likely to internalize societal ideals and/or have stronger core beliefs about the importance of appearance in their lives would be more reactive to the treatment and would report lower levels of body dissatisfaction, appearance-related anxiety, and depression and higher levels of self-esteem following exposure to nude photos and body image comments of women of various body shapes, sizes, and ages. Scores on the moderator variables were centered at their means before performing the analyses to correct for the possibility of multicollinearity effects between the interaction term and the main effects (Aiken & West, 1991).

To test for the moderator effect of internalization, each dependent variable was regressed on treatment conditions, total internalization score (SATAQ), and the treatment x internalization interaction terms. For appearance-related anxiety (PASTAS) the overall regression model was significant, $F(7, 152) = 13.12, p = .00, R^2 = .38$ suggesting that the model explains 38 percent of the variance in appearance-related anxiety. A significant main effect was found for internalization ($\beta = .48, t = 3.59, p = <.001$), suggesting that higher internalization was associated with higher appearance-related anxiety and, internalization provided the strongest unique contribution to appearance-related anxiety. In addition, the significant 2-way interaction of photo and body image comments suggests that exposure to both photo and body image comments was associated with lower appearance-related anxiety than was exposure to photos only or commentary only (See Figure 1). Moreover, there was a significant 3-way interaction between internalization, viewing photos, and reading commentary ($\beta = -.30, t = -2.09, p < .05$) (see Table 2). In other words, internalization moderated the effect of exposure to the photo and personal comments treatment condition on appearance-related anxiety. As seen in Figure 2, as internalization increases appearance-related anxiety increases regardless of treatment condition. Although individuals with less pronounced internalization responded similarly to treatment conditions and the control, they experienced less anxiety when exposed to the photo and personal comment treatment. However, women with moderate or high tendencies to internalize experienced considerably less anxiety when exposed to the nude photo and body image commentary treatment than when exposed to either the nude photo-only or body image comment-only treatments. Thus, although, in general, appearance-related anxiety increases as one internalizes societal ideals, women who were briefly exposed to nude photos of women with less-than-perfect body shapes and sizes *and* their personal comments regarding coping with body

image distress reported less anxiety. However, women who were exposed to the nude photos only or the body image comments only reported the highest levels of anxiety (see Figure 2).

The overall regression models were significant for body dissatisfaction (MSBRQ) $F(7, 152) = 7.16, p = .00, R^2 = .25$; (EDI-BDS) $F(7, 152) = 9.10, p = .00, R^2 = .29$; depression, $F(7, 149) = 4.63, p = .00, R^2 = .18$; and self-esteem, $F(7, 154) = 5.37, p = .00, R^2 = .20$. Although significant main effects were found for internalization, no interaction effects were significant for these dependent variables (see Table 2). These results suggest that although higher levels of internalization are associated with greater body dissatisfaction and depression, and lower self-esteem, no evidence that internalization moderates the impact of treatment on these variables was found.

To test for the moderator effect of schematicity, each dependent variable was regressed on treatment conditions, schematicity (ASI), and the treatment x schematicity interaction terms. For all of the dependent variables, the overall regression model was significant; PASTAS, $F(7, 153) = 17.76, p = .00, R^2 = .45$; MSBRQ, $F(7, 153) = 12.39, p = .00, R^2 = .36$, EDI-BDS, $F(7, 153) = 11.57, p = .00, R^2 = .35$, BDI, $F(7, 150) = 6.10, p = .00, R^2 = .22$, and SEI, $F(7, 154) = 9.66, p = .00, R^2 = .30$. All main effects were significant, however, no interaction effects were significant for these dependent variables (see Table 2). These results suggest that, although schematicity is associated with appearance-related anxiety, body dissatisfaction, depression, and self-esteem, there was no evidence of schematicity as a moderator.

Supplemental Analyses

Because groups differed by age, analyses were performed to explore the relationship between age and the treatment conditions. Preliminary assumption testing was conducted to check for normality, linearity, and univariate and multivariate multicollinearity, and

homogeneity of regression slopes. The homogeneity for variance assumption was violated therefore, regression analysis was used to investigate the relationship of age and the treatment conditions on appearance-related anxiety. Appearance-related anxiety was regressed on treatment conditions, age, and the treatment x age interaction terms. The overall regression model was not significant, $F(7, 152) = 1.50, p = .17, R^2 = .07$. Therefore, the interaction between age and the treatment conditions does not contribute to the variance in appearance-related anxiety scores.

Analyses also were performed to determine whether the effects of treatment conditions on appearance-related anxiety were influenced by the variance in BMI. Preliminary assumption testing was conducted to check for normality, linearity, and univariate and multivariate multicollinearity, homogeneity of variances, and of regression slopes with no violations observed. Roy's Largest Root criterion indicated a significant MANCOVA for treatment conditions on the combined dependent variables with BMI as covariate $F(3, 144) = 2.39, p = .04$ (partial eta squared = .08). A significant univariate F emerged only for appearance-related anxiety $F(3, 144) = 3.25, p = .02$, (partial eta squared = .06). Post hoc analyses of pairwise comparisons revealed that after adjusting for differences in BMI, women exposed to the photo and commentary condition ($M = 10.47$) experienced less anxiety than did those exposed to the photo-only condition ($M = 16.92$) or those exposed to the commentary-only condition ($M = 15.67$), but not less than those exposed to the control ($M = 13.00$). These results are similar to those obtained from the original multivariate and univariate analyses.

Summary of Qualitative Data

Qualitative data collected via audiotaped debriefing sessions were classified by eight psychologists and psychology doctoral interns (4 male, 4 female) who had not seen the stimulus

material but were given a brief description of the experimental procedure. Each rater scored every comment. Using a 5–point scale of 1 (Positive) to 5 (Negative), raters were asked to read a list of randomly-sorted debriefing comments and instructed to rate whether the participant’s comment was generally positive, generally neutral, or generally negative. Intraclass correlation coefficient, ICC (162, 8) = .96, indicated good interrater reliability (Shrout & Fleiss, 1979). Results were then analyzed by determining the frequency of each category (positive, neutral, and negative) for each condition (see Figure 3). Chi-square analyses indicate that the frequency of positive scores differed across the four conditions $\chi^2(3, n = 456) = 146.44, p < .00$, with women exposed to the photo x commentary condition making predominantly more positive comments (41.7%) than women exposed to the photo-only (22.9%), commentary-only (32.4%) or control (3%) conditions. The frequency of neutral scores differed across conditions $\chi^2(3, n = 542) = 84.79, p < .00$, with women exposed to the photo-only condition making more neutral comments (36.7%) than women exposed to the photo x commentary (21.4%), commentary-only (31%), or control (10.9%) conditions. Moreover, the frequency of negative scores differed across conditions $\chi^2(3, n = 284) = 175.97, p < .00$, with women exposed to the photo-only condition making more negative comments (57.4%) than women exposed to the photo x commentary (19.9%), commentary-only (13.9%), or control (4.3%) conditions. In addition, chi-square analyses indicate that frequency of positive, neutral, and negative comments differed within the photo x commentary condition, $\chi^2(2, n = 369) = 81.42, p < .00$, with more women expressing positive comments (53.4%) than neutral (31.4%) or negative (15.2%) comments. For example, one participant said, “This made me realize the ways I am beautiful...that I have good qualities. It affirmed some questions or doubt that I had.” Another woman commented, “It made me think about inner beauty, qualities that are beautiful instead of always, always focusing on our bodies,

every day, everywhere you look...” and, “No one is good enough... you get really tired of that. It’s just nice to see women focusing on something different for a change.” Some comments were more general, such as “Kind of enlightening actually, reading about others’ stories... WOW, it was a good thing!” Other women commented on a specific photo subject: “The woman at the end, she was the oldest (age 94). That was pretty cool. She seemed to have a lot of confidence in herself.”

Frequency of positive, neutral, and negative comments also differed within the photo-only condition, $\chi^2(2, n = 469) = 26.79, p < .00$, with these women expressing more neutral comments (42.4%) than positive (23%) or negative comments (34.5%). Examples representative of the comments made by women in the photos-only condition include, “If you’re not thin enough then people won’t pay attention to you” and “You don’t think about different people, different ages, you just think about yourself and how *you* look.” One woman in this group said, “All of them (were distressing), probably because they were heavy and they probably weren’t happy. Everyone puts so much emphasis on being thin, obviously they couldn’t do well” and “Looking at the pictures made me think if I don’t watch what I eat all the time I’ll gain more weight, I’ll be careless. I’m really concerned about that. Looking at the pictures made me more aware of feeling like that.”

In addition, frequency of positive, neutral, and negative comments differed within the commentary-only condition $\chi^2(3, n = 373) = 64.03, p < .00$, with women expressing more neutral comments (45%) than positive (41.0%) or negative comments (13.9%). Examples representative of the comments made by women in the commentary-only condition include, “A couple of the narratives made me sad. But in contrast, there were ones who were really happy with their bodies, it made me feel confident.” and “The 94-year old; she said she was open and

comfortable. You know, you keep the beliefs all your life and it was reassuring that when I'm 94 I won't be so upset if my skin is hanging down to my knees." It is interesting to note that the negative comments by women exposed to the commentary-only condition expressed concern regarding the questionnaire or the weighing process rather than the stimulus materials. For example, "Just the questionnaire (was distressing), thinking about how you feel about yourself" and "The whole weight thing. That whole thing definitely made me anxious."

Frequency of positive, neutral, and negative comments differed within the control condition $\chi^2(2, n = 85) = 49.86, p < .00$, with women expressing more neutral comments (69.4%) than positive (16.5%) or negative comments (14.1%). Most positive comments were brief, such as "Nothing (distressing)" or "No discomfort." With this condition as well as the commentary-only condition, the negative comments were related to the questionnaire or the weighing process rather than the stimulus material. For example, "I was nervous, it was kind of personal" and "Questions about how I feel about my breast, hips, and that (were distressing)."

DISCUSSION

There is overwhelming empirical evidence that viewing the thin-ideal images pervasive in most media forms leads to negative consequences such as poor body image, negative mood, and lower self-esteem. The present study was the first experiment to determine whether viewing realistic and *imperfect* female forms may actually ameliorate body image distress or “reverse the curse” of typical media images and messages. Using the principle of social comparison that posits that subjective well-being may be *enhanced* through comparisons and that such comparisons may lead to tension reduction and short-term improvement in mood and self-esteem (Wills, 1981), this exploratory study provides empirical supports that this novel intervention may compliment and enhance contemporary body image disturbance prevention programs. The literature indicates that women generally do make comparisons when viewing other women (Cattarin, Thompson, Thomas, & Williams, 2000) and programs designed to increase media literacy and discourage social comparison have been marginally effective (Irving & Berel, 2001; Paxton, 1996; Posavac, Posavac & Weigel, 2001; Shaw & Waller, 1995). In contrast, the present study was based on the notion that fostering healthy, realistic comparisons would decrease body image concerns and elevate mood. The findings suggest that women who experienced even a very brief exposure to realistic female images *and* positive body-image-related commentary experience less appearance-related anxiety than women who were exposed to either of these components exclusively. In addition, supplemental analyses indicated that after adjusting for body mass index, women who experience the photo and commentary intervention

experience less appearance-related anxiety and that age does not interact with the photo or commentary components, thus an intervention that combines both aspects may be effective for women regardless of age, weight, size, or shape.

Unexpectedly, exposure to either the photos alone or body image commentary alone actually contributed to higher levels of appearance-related anxiety. An explanation for this may be found in Beck's cognitive model that proposes interpretation of a stimulus is often expressed in distorted or dysfunctional thinking which influences one's mood and behavior. However, this model also suggests that realistic evaluation and modification of thinking can produce an improvement in mood and behavior (Beck, 1995). Thus, one might suggest that when presented visual stimulus of realistic photos (e.g., not electronically enhanced, no "imperfections" hidden by clothing, and representing a wide variety of body shapes and sizes, age, ethnic origins) coupled with examples of positive cognitions (body image commentary), women experienced less anxiety about the appearance of their own bodies. However, considering that 35% of the comments elicited from participants who viewed the photo-only condition were negative, it appears that these women may have inserted their own "internal commentary" as they viewed the images, thus, reinforcing their existing schema, and experiencing anxiety about their own bodies. In a similar fashion, women who experienced only the body image commentary were left to create their own "images" which may not have been realistic, and their appearance anxiety was also higher than those who experienced both components.

An unanticipated finding was that none of the appearance-related conditions differed from the control group. Photos of architectural buildings were chosen based on the frequent use of nonappearance control groups (e.g., exposure to photos of automobiles, landscapes, or homes) in the body-image literature (see Levine, 2002 for review) and the control was expected to elicit

a neutral experience. However, because many of the homes were unusual and/or quite lavish, it is possible that rather than acting in a neutral way, these photos may have altered participants' cognitions and mood either positively or negatively. For example, participants may have imagined such homes as unattainable and experienced a negative reaction or experienced an elevated mood as she imagined living in such lavish surroundings. To test this assumption, replications or extensions of this study should carefully select non-appearance images that may be less likely to elicit emotional change (e.g., office buildings or store-fronts). Although the treatment groups did not differ significantly from the control, it is interesting to note that the levels of anxiety found for the low-internalizing group (see Figure 2) approximated the hypothesis that the photo-only, commentary-only (main effects), and the photo and commentary (interaction) conditions would reduce anxiety to a greater degree than the control. A larger sample size might lead to more robust findings in the predicted direction.

No differences among groups were found for body dissatisfaction, depression, or self-esteem, all of which are typically adversely affected when women are exposed to thin models. One explanation for this finding may be that state anxiety may be more reactive than body dissatisfaction, depression, and self-esteem, particularly to such a brief intervention, and thus changed to a greater degree than the other dependent variables. Use of Visual Analogue Scales (VAS) may have captured more subtle reactions to the brief exposure. With VAS, participants are asked to place a small vertical mark across a 10cm horizontal line anchored with the labels "no" body dissatisfaction (or other variable) on the far left and "extreme" body dissatisfaction on the far right to represent how they feel at that time. Individual responses are then measured to the nearest millimeter, producing a numerical representation of the marking on a 100-point scale. Past research has indicated significant relationships between VAS measures of depression, anger,

and anxiety and their respective subscales on the Profile of Mood States (Heinberg & Thompson, 1995). VAS measures for body dissatisfaction have also been significantly correlated with the Body Dissatisfaction Subscale of the Eating Disorders Inventory (Garner, Olmstead, & Polivy, 1983).). The standardized instruments used in this study may be more suitable for measuring positive changes over a longer period of time.

Numerous studies report that individuals with higher tendencies toward internalization of sociocultural ideals and greater appearance schematicity are at risk for negative reactions to media messages (Cattarin et al., 2000; Cusumano & Thompson, 1997; Heinberg, et al., 1995; Thompson et al., 1999). This study supports previous findings that, as internalization increases, appearance-related anxiety increases (Stice, 2001; Stice, Mazotti, Krebs, & Martin, 1998). Findings also suggest that thin-ideal internalization, but not schematicity, moderates *positive* reactions to social comparisons. The literature informs us that internalization is often generated when thin-ideal attitudes are reinforced by family, peers, and mass media communicating the benefits of thinness (Hohlstein, Smith, & Atlas, 1998). The present findings that high internalizers experienced less appearance-related anxiety when exposed to visual and narrative stimuli such as those in *The Century Project*® should be a catalyst for future studies to determine whether messages of *healthy* attitudes about appearance even when made by women with *imperfect* bodies may stimulate changes in personal body-image standards.

The present study adds to the relatively small body of literature investigating the role of internalization in body image and eating disorders (see Thompson & Stice, 2001 for a review). Rather than reducing internalization, the present study revealed that internalization may positively influence women making social comparisons with realistic images and compelling stories of successful body-image coping. Although not directly tested, it is possible that women

who have a greater tendency to internalize unhealthy sociocultural body image standards may be more receptive to compelling exceptions to these standards. When presented with a persuasive visual and cognitive stimulus – they may “buy into” this new set of standards with as much fervor as they bought into thin ideals presented in the media. Another important outcome of this study was the finding that for women who have higher levels of internalization, exposure to realistic photos alone or to body image commentary alone may actually contribute to an *increase in* anxiety. Applying Beck’s cognitive model (1995) would suggest that without both the visual and commentary stimuli, high internalizers may “fill in” either the visual or commentary aspects based on their preexisting beliefs (those presented by advertising and the broader media) and therefore reinforce, or perhaps even intensify, their perceptions of body image perfection. Thus, when women who view the world through “appearance-related glasses” are left to fill in the blanks, they have negative outcomes. Although this notion appears to contradict previous findings that exposure to “average” sized or overweight images is associated with higher levels of appearance and weight satisfaction (Cattarin et al., 2000; Irving, 1990), it is important to note that appearance-related anxiety was not measured in past studies. In addition, the Irving study (1990) differed from the present study in that participants exhibited various levels of bulimic symptoms. Because of the likely influence of these clinical symptoms, results from the Irving study may not make a reliable comparison with the population in the present study. In their meta-analytic study on the effects of viewing media images, Groesz, Levine, and Murnen (2002) stated, “. . .the similar effect sizes for comparisons with average size models and inanimate objects support the proposition that the slenderness of the models as ideals of beauty contributes to the negative effect”(p 11.) – they did not make the assumption that that the impact of the average size models led to a positive effect.

Because it is unlikely that producers of mass media will embrace a dramatic change in their emphasis on ultra-slender models, the present findings are best taken in the context of secondary prevention efforts. Including realistic photos along with positive commentary in prevention programs that target individuals “at risk,” may enhance efforts to reduce the negative impact of typical media, or “reverse the curse.” An important implication of the present study is that both realistic photographs and positive commentary about body image ought to be included in prevention efforts since women who are moderate or high internalizers not only will fail to benefit, but actually are at risk of increased body image anxiety if both components are not presented together. This notion contradicts anti-slender media supporters’ demands for using heavy-size models in advertising. Although the context of advertising may be different, heavier, more realistic images alone may not result in the positive viewing experience intended.

Limitations of the current study should be considered. Although the sample size met suggestions for power (Borenstein & Cohen, 1988), there are indications that a larger sample size may have led to additional confirmations. A more diverse sample would also be beneficial. The sample was composed solely of undergraduate females with a mean age of 20 years, and, although female college students constitute a high-risk group for eating pathology and body image disturbance (Johnson & Connors, 1987; Pyle et al., 1986), generalizability would be improved using a randomly selected community sample that included a wider age range.

Future research is needed to clarify and extend the present findings. To verify the assumption that cognitions are manipulated by the different components of this intervention, participants’ thoughts should be captured and quantified. In addition, future research is needed to examine the clinical utility of using photos and commentary such as those in *The Century Project*[©]. Because of the enduring nature of the media’s negative impact, testing the temporal

stability of the positive effect with repeated posttesting is needed. Furthermore, although positive results were found with one brief exposure, it would be useful to determine the impact of longer exposure times and to conduct longitudinal studies to ascertain the extent to which the impact of repeated exposures is lasting and clinically meaningful.

Similar to mirror and self-photo exposure interventions, viewing *The Century Project*[®] was an individual activity. Future research ought to investigate the utility of exposure to the photos and commentaries in group versus individual settings. Although individual viewing activates the peripheral processing route, discussions that process thoughts and emotions would activate the central processing route and therefore enhance and reinforce the message of healthy body image. Finally, the present study used a non-clinical sample and the presence of eating disorders was not determined. It is likely that women with serious eating and body image disturbance may react differently to this exposure technique. Future studies should explore how this intervention may impact women with clinically significant symptoms.

In sum, the goals of the study were met. The components of the proposed intervention were dismantled and tested to determine if they would lead to improvement in factors that are typically associated with body image disturbance. Hopefully, this preliminary study will instigate further explorations into the reports of improved body image, mood, and self-esteem after experiencing visual and cognitive messages regarding acceptance of realistic body shapes, sizes, and ages such as those presented in *The Century Project*[®].

APPENDIX A: DEMOGRAPHICS AND GENERAL INFORMATION QUESTIONNAIRE

Participant Number _____

ADJUSTMENT TO COLLEGE LIFE STUDY

DEMOGRAPHICS AND GENERAL INFORMATION

Please provide the researchers with the following information about yourself. All information will remain confidential and anonymous. Each participant will have a research number and no participant names will be attached to data in this study.

1. Age: _____
2. Year in school: _____
3. Race (Circle one):
 - African American
 - Asian or Pacific Islander
 - Caucasian
 - Hispanic
 - Other _____
4. Height: _____
5. Weight: _____
6. Are you employed?
 - Full time (40 hours or more per week)
 - Part time (less than 40 hours per week)
 - Not employed
7. What are your hobbies or leisure-time activities (Please list up to three)?
 - a. _____
 - b. _____
 - c. _____
8. Approximately how many hours per week do you spend exercising? _____
9. Do you live (Circle one):
 - On campus
 - Off campus, not with parents or family member
 - Off campus, with parents or family member
 - Other _____
10. Are you currently married (Circle one)?
 - yes
 - no

APPENDIX B: MULTIDIMENSIONAL BODY SELF REGULATIONS QUESTIONNAIRE

MBSRQ

PART I:

Please read each statement and CIRCLE the letter that best indicates the extent to which you agree or disagree with each statement.

1 = DEFINITELY DISAGREE 2 = MOSTLY DISAGREE 3 = NEITHER AGREE NOR DISAGREE 4 = MOSTLY AGREE 5 = DEFINITELY AGREE

- 1. My body is sexually appealing. _____
- 2. I like my looks just the way they are. _____
- 3. Most people would consider me good-looking. _____
- 4. I like the way I look without my clothes. _____
- 5. I like the way my clothes fit me. _____
- 6. I dislike my physique. _____
- 7. I am physically attractive. _____

PART II:

Please read each statement and CIRCLE the letter that best indicates the extent to which you are satisfied or dissatisfied with various parts of your body.

1 = VERY DISSATISFIED 2 = MOSTLY SATISFIED 3 = NEITHER SATISFIED NOR DISSATISFIED 4 = MOSTLY SATISFIED 5 = VERY SATISFIED

- 8. Face (facial features, complexion) _____
- 9. Hair (color, thickness, texture) _____
- 10. Lower torso (buttocks, hips, thighs, legs, etc.) _____
- 11. Mid torso (waist, stomach) _____
- 12. Upper torso (chest or breasts, shoulders, arms) _____
- 13. Muscle tone _____
- 14. Weight _____
- 15. Height _____
- 16. Overall appearance _____

APPENDIX C: EATING DISORDER INVENTORY – II BODY DISSATISFACTION SCALE

EDI-BDS

Please read each statement and **CIRCLE** the number that best indicates how often you agree with the following statements:

1 = NEVER 2 = RARELY 3 = SOMETIMES 4 = OFTEN 5 = USUALLY 6 = ALWAYS

	1	2	3	4	5	6
1. I think my stomach is too big.	1	2	3	4	5	6
2. I think that my thighs are too large.	1	2	3	4	5	6
3. I think my stomach is just the right size.	1	2	3	4	5	6
4. I feel satisfied with the shape of my body.	1	2	3	4	5	6
5. I like the shape of my buttocks.	1	2	3	4	5	6
6. I think my hips are too big.	1	2	3	4	5	6
7. I think that my thighs are just the right size.	1	2	3	4	5	6
8. I think my buttocks are too large.	1	2	3	4	5	6
9. I think my hips are just the right size.	1	2	3	4	5	6

APPENDIX D: PHYSICAL APPEARANCE STATE AND TRAIT ANXIETY SCALE

Physical Appearance State-Trait Anxiety Scale

The statements listed below are to be used to describe how often TODAY you felt anxious, tense, or nervous about your body or specific parts of your body. Please read each statement and CIRCLE the number that best indicates the extent to which each statement holds true TODAY.

Remember, there are no right or wrong answers.

1 = NEVER 2 = RARELY 3 = SOMETIMES 4 = OFTEN 5 = ALMOST ALWAYS

IN GENERAL, I feel anxious, tense, concerned, or nervous about:

		Nev er	Rare ly	Someti mes	Oft en	Alwa ys
2.	the extent to which I look overweight.	1	2	3	4	5
3.	my thighs.	1	2	3	4	5
4.	my buttocks.	1	2	3	4	5
5.	my hips.	1	2	3	4	5
5.	my stomach (abdomen).	1	2	3	4	5
6.	my legs.	1	2	3	4	5
7.	my waist.	1	2	3	4	5
8.	my muscle tone.	1	2	3	4	5
9.	my ears.	1	2	3	4	5
21.	my lips.	1	2	3	4	5
22.	my wrists.	1	2	3	4	5
23.	my hands.	1	2	3	4	5
24.	my forehead.	1	2	3	4	5
25.	my neck.	1	2	3	4	5
25.	my chin.	1	2	3	4	5
26.	my feet.	1	2	3	4	5

APPENDIX E: SOCIOCULTURAL ATTITUDES TOWARD APPEARANCE
QUESTIONNAIRE

Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ)

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

- | | 1-----2-----3-----4-----5 | | | | |
|-----|--|---|-------------------------------|---|---------------------|
| | Completely
Disagree | | Neither agree
nor disagree | | Completely
agree |
| 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 |
| 2. | I believe clothes look better on thin models. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 3. | Music videos that show thin women make me wish that I were thin. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 4. | I do not wish to look like the models in the magazines. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 5. | I tend to compare my body to people in magazines and on TV. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 6. | In our society, fat people are not regarded as unattractive. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 7. | Photographs of thin women make me wish that I were thin. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 8. | Attractiveness is very important if you want to get ahead in our culture. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 9. | It is important for people to work hard on their figures/physiques if they want to succeed in today's culture. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 10. | Most people do not believe that the thinner you are, the better you look in clothes. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 11. | People think the thinner you are, the better you look in clothes. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 12. | In today's society, it's not important to always look attractive. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 13. | I wish I looked like a swimsuit model. | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| 14. | I often read magazines like Cosmopolitan, Vogue, and Glamour and compare my appearance to the models. | | | | |
| | 1 | 2 | 3 | 4 | 5 |

APPENDIX F: APPEARANCE SCHEMA INVENTORY

ASI

Indicate your beliefs about these items using the 1 to 5 scale below.

	1 = Strongly Disagree	2 = Mostly Disagree	3 = Neither Disagree nor Agree	4 = Mostly Agree	5 = Strongly Agree
1. What I look like is an important part of who I am.	1	2	3	4	5
2. What's wrong with my appearance is one of the first things that people will notice about me.	1	2	3	4	5
3. One's outward physical appearance is a sign of the character of the inner person	1	2	3	4	5
4. If I could look just as I wish, my life would be much happier.	1	2	3	4	5
5. If people know how I <i>really</i> look, they would like me less.	1	2	3	4	5
6. By controlling my appearance, I can control many of the social and emotional events in my life.	1	2	3	4	5
7. My appearance is responsible for much of what has happened to me in my life.	1	2	3	4	5
8. I should do whatever I can to always look my best.	1	2	3	4	5
9. Aging will make me less attractive.	1	2	3	4	5
10. For women: To be feminine, a woman must be as pretty as possible.	1	2	3	4	5
11. The media's messages in our society make it impossible for me to be satisfied with my appearance.	1	2	3	4	5
12. The only way I could ever like my looks would be to change what I look like.	1	2	3	4	5
13. Attractive people have it all.	1	2	3	4	5
14. Homely people have a hard time finding happiness.	1	2	3	4	5

APPENDIX G: BECK DEPRESSION INVENTORY – II

BDI – II

Date: _____

Name: _____

Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past week, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number from that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

<p>1. Sadness</p> <p>0 I do not feel sad.</p> <p>1 I feel sad much of the time.</p> <p>2 I am sad all the time.</p> <p>3 I am so sad or unhappy that I can't stand it</p> <p>2. Pessimism</p> <p>0 I am not discouraged about my future.</p> <p>1 I feel more discouraged about my future than I used to be.</p> <p>2 I do not expect things to work out for me.</p> <p>3 I feel my future is hopeless and will only get worse.</p> <p>3. Past Failure</p> <p>0 I do not feel like a failure.</p> <p>1 I have failed more than I should have.</p> <p>2 As I look back, I see a lot of failures.</p> <p>3 I feel I am a total failure as a person.</p> <p>4. Loss of Pleasure</p> <p>0 I get as much pleasure as I ever did from the things I enjoy.</p> <p>1 I don't enjoy things as much as I used to.</p> <p>2 I get very little pleasure from the things I used to enjoy.</p> <p>3 I can't get any pleasure from the things I used to enjoy.</p> <p>5. Guilty Feelings</p> <p>0 I don't feel particularly guilty.</p> <p>1 I feel guilty over many things I have done or</p> <p>2 I feel quite guilty most of the time.</p> <p>3 I feel guilty all of the time.</p>	<p>6. Punishment Feelings</p> <p>0 I don't feel I am being punished.</p> <p>1 I feel I may be punished.</p> <p>2 I expect to be punished.</p> <p>3 I feel I am being punished.</p> <p>7. Self-Dislike</p> <p>0 I feel the same about myself as ever.</p> <p>1 I have lost confidence in myself.</p> <p>2 I am disappointed in myself.</p> <p>3 I dislike myself.</p> <p>8. Self-Criticalness</p> <p>0 I don't criticize or blame myself more than usual.</p> <p>1 I am more critical of myself than I used to be.</p> <p>2 I criticize myself for all of my faults.</p> <p>3 I blame myself for everything bad that happens.</p> <p>9. Suicidal Thoughts or Wishes</p> <p>0 I don't have any thoughts of killing myself.</p> <p>1 I have thoughts of killing myself, but I would not carry them out.</p> <p>2 I would like to kill myself.</p> <p>3 I would kill myself if I had the chance.</p> <p>10. Crying</p> <p>0 I don't cry any more than I used to.</p> <p>1 I cry more than I used to.</p> <p>2 I cry over every little thing.</p> <p>3 I feel like crying, but I can't.</p>
<p>_____ Subtotal Page 1</p> <p>Continued on Back ⇒</p>	

<p>11. Agitation</p> <p>0 I am no more restless or wound up than usual.</p> <p>1 I feel more restless or wound up than usual.</p> <p>2 I am so restless or agitated than it's hard to stay still.</p> <p>3 I am so restless or agitated that I have to keep moving or doing something.</p> <p>12. Loss of Interest</p> <p>0 I have not lost interest in other people or activities</p> <p>1 I am less interested in other people or things than before.</p> <p>2 I have lost most of my interest in other people or things.</p> <p>3 It's hard to get interested in anything.</p> <p>13. Indecisiveness</p> <p>0 I make decisions about as well as ever.</p> <p>1 I find it more difficult to make decisions than usual.</p> <p>2 I have much greater difficulty in making decisions than I used to.</p> <p>3 I have trouble making any decisions.</p> <p>14. Worthlessness</p> <p>0 I do not feel I am worthless.</p> <p>1 I don't consider myself as worthwhile and useful as I used to.</p> <p>2 I feel more worthless as compared to people.</p> <p>3 I feel utterly worthless</p> <p>15. Loss of Energy</p> <p>0 I have as much energy as ever.</p> <p>1 I have less energy than I used to.</p> <p>2 I don't have enough energy to do very much.</p> <p>3 I don't have enough energy to do anything.</p> <p>16. Changes in Sleeping Pattern</p> <p>0 I have not experienced any change in <u>my sleeping pattern.</u></p> <p>1a I sleep somewhat more than usual.</p> <p>1b <u>I sleep somewhat less than usual.</u></p> <p>2a I sleep a lot more than usual</p> <p>2b <u>I sleep a lot less than usual.</u></p> <p>3a I sleep most of the day.</p> <p>3b I wake up 1-2 hours early and can't get back to sleep.</p>	<p>17. Irritability</p> <p>0 I am no more irritable than usual.</p> <p>1 I am more irritable than usual.</p> <p>2 I am much more irritable than usual.</p> <p>3 I am irritable all the time.</p> <p>18. Changes in Appetite</p> <p>0 I have not experienced any change in my <u>appetite.</u></p> <p>1a My appetite is somewhat less than usual.</p> <p>1b <u>My appetite somewhat more than usual.</u></p> <p>2a My appetite is much less than usual.</p> <p>2b <u>My appetite is much more than usual.</u></p> <p>3a I have no appetite at all.</p> <p>3b I crave food all the time.</p> <p>19. Concentration Difficulty</p> <p>0 I can concentrate as well as ever.</p> <p>1 I can't concentrate as well as usual.</p> <p>2 It's hard to keep my mind on anything for very long.</p> <p>3 I find I can't concentrate on anything.</p> <p>20. Tiredness or Fatigue</p> <p>0 I am no more tired or fatigued than usual.</p> <p>1 I get more tired or fatigued more easily than usual.</p> <p>2 I am too tired or fatigued to do a lot of the things I used to do</p> <p>3 I am too tired or fatigued to do most of the things I used to do.</p> <p>21. Loss of Interest in Sex</p> <p>0 I have not noticed any recent change in my interest in sex</p> <p>1 I am less interested in sex than I used to be.</p> <p>2 I am much less interested in sex now.</p> <p>3 I have lost interest in sex completely.</p> <p>_____</p> <p style="text-align: center;">For Administrator Use Only</p> <p>_____ Subtotal Page 2</p> <p>_____ Subtotal Page 1</p> <p>_____</p> <p style="text-align: center;">Total Score</p>
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APPENDIX H: SELF-ESTEEM INVENTORY

SEI

DIRECTIONS: Please circle the number of the response that you feel most represents how much or little you agree with the following statements. Do not skip any questions. Use the following scale:

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I feel that I am a person of worth, or at least on an equal basis with others.	1	2	3	4
2. I feel that I have a number of good qualities.	1	2	3	4
3. All in all, I am inclined to feel that I am a failure.	1	2	3	4
4. I am able to do things as well as most other people.	1	2	3	4
5. I feel that I do not have much to be proud of.	1	2	3	4
6. I take a positive attitude towards myself.	1	2	3	4
7. On the whole, I am satisfied with myself.	1	2	3	4
8. I wish I could have more respect for myself.	1	2	3	4
9. I certainly feel useless at times.	1	2	3	4
10. At times I think I'm no good at all.	1	2	3	4

APPENDIX I: MANIPULATION CHECK QUESTIONNAIRE

PHOTOGRAPH REACTION STUDY

Please answer the following questions by circling the most appropriate answer:

1. The materials depict:
 - A. Men
 - B. Women
 - C. Children

2. The materials depict only women who are all between the ages of 20-30 years old.
 - A. True
 - B. False

3. The woman in a wheelchair has been diagnosed with_____
 - A. AIDS
 - B. paralysis
 - C. Muscular Dystrophy

4. One of the women was visibly pregnant.
 - A. True
 - B. False

5. The women depicted are_____
 - A. all very thin.
 - B. all very heavy.
 - C. a wide range of body sizes, from thin to heavy.

6. One of the women depicted tells us that she is of Korean decent.
 - A. True
 - B. False

7. One of the women referred to puberty as a(n)_____
 - A. personal hell.
 - B. exciting time in a young woman's life.
 - C. pleasurable experience.

8. One of the women has a(n) _____ decorated with a tattoo.
 - A. mastectomy scar
 - B. eyebrow
 - C. finger

9. The materials include photos off ALL of the following EXCEPT:
 - A. Elderly women
 - B. Supermodels
 - C. African-American women

10. The narratives that accompany each photo are written _____
 - A. by an individual who obviously does not know the photo subject very well.
 - B. from the photo-subject's perspective.
 - C. by the mother of the photo-subject.

APPENDIX J: INFORMED CONSENT FORM

Informed Consent Form

The purpose of this study is to better understand female college students' awareness of and reactions to professional photographs and/or scripts related to the photographs. The results may help increase awareness of individuals' recall and perceptions of viewing a variety of professional photographs and/or stories.

As a participant, I understand that I will be asked to participate by viewing photographs and/or reading scripts and then completing a questionnaire. I understand that the duration of my participation will be approximately ninety (90) minutes. I understand that I may be viewing nude, non-pornographic photographs of adult females. I understand that there are no known risks associated with participation in this study, but if I experience any difficulty or distress I will be able to contact the researchers for assistance and will be able to discontinue without penalty. Upon completion of the viewing and completion of the questionnaires, I will be given a debriefing form and will have the opportunity to participate in a brief discussion about my experience. The debriefing form further explains the purposes of this study and lists the contact information for the researchers and relevant referral sources for future reference. I understand that any information that I provide will be completely anonymous, held in strict confidence, and utilized only for the purpose of this study. I understand that I must be 18 years old or older to participate in this study. I am aware that my participation is strictly voluntary, I may discontinue participation at any time without penalty, and I will receive extra credit for the duration of my participation.

I, (print): _____, having full capacity to consent, do hereby volunteer to participate in this research conducted by the Laboratory for the Study of Eating Appearance and Health (LEAH) in the Psychology Department at the University of Central Florida. I have been informed of the nature, duration, and purpose of the research, and I understand my role as a participant. I have been given an opportunity to read and sign a copy of this agreement and to ask questions concerning the research. Any such questions have been answered to my complete satisfaction. Should any further questions arise, I will be able to contact Dr. Stacey Tantleff Dunn in the Psychology Department at 407-823-3578.

Signature

Date

Witness Signature

Date

APPENDIX K: DEBRIEFING FORM

Debriefing statement

Testing an Intervention to Address the Sociocultural Influence of Mass Media on Body

Image: Can We Reverse the Curse?

Research conducted by Janet Murray, M.S., University of Central Florida under the supervision of Stacey Tantleff-Dunn, Ph.D.

Thank you for your participation in this research project. Participation by women like you is critical for the results to be relevant and contemporary. A considerable amount of empirical research supports the concept that exposure to media images of ultra-slender females is associated with a host of negative consequences for women. Women frequently compare themselves to media presented models and such comparisons often result in increased body dissatisfaction and subsequent problems with interpersonal relationships, functioning in the workplace, mood, and eating disturbance. More recently there has been anecdotal evidence that exposure to more realistic female forms may actually improve body satisfaction and related facets of a woman's life. This study attempts to experimentally test this assumption.

As a reminder, your participation will be *completely anonymous*. Your name will not be recorded on the questionnaire forms. Please remember that it is extremely important that you do not discuss your experience in this study with anyone. It is important that those who have not yet participated remain unaware of the specific details of the project. We appreciate your cooperation in this important matter. If you experience discomfort or negative feelings after participating in this research, you may call Dr. Stacey Dunn at the University of Central Florida, the UCF Counseling & Testing Center, or the national organization listed below. If you wish to learn the outcome of this study, or if you have any questions, please provide contact information to the experimenter.

Thank you, your participation is very much appreciated.

Dr. Stacey Dunn	sdunn@pegasus.cc.ucf.edu	407-823-3578
Jan Murray	jdmurray13@aol.com	407-677-6896
UCF Counseling and Testing Center		407-823-2811
National Eating Disorders Organization		918-481-4044

APPENDIX L: SAMPLE OF STIMULUS PHOTOGRAPH AND PERSONAL
COMMENTARY

“You’d think an older generation of women would feel more of a sense of shame, but I felt perfectly at ease - we had a very good time.”

APPENDIX M: SAMPLE OF CONTROL PHOTOGRAPH AND COMMENTARY



This single-family home features four Bedrooms, two bathrooms, and a two-car garage. The large kitchen and family room overlook Lake Tohopeliga and allow for great entertainment. This house is only a year old and comes complete with tile floors and Berber carpeting. The freshly landscaped yard is perfect for children at play and the fence allows for security.

APPENDIX N: TABLES

Table 1: Reliability, Means, Standard Deviations, and Intercorrelations

Variable	<u>M</u>	<u>SD</u>	α	2	3	4	5	6	7	8
1.MBSRQ	55.00	11.24	.92	-.82**	-.71**	-.45**	-.56**	-.54**	.71**	-.37**
2.EDI-BDS	31.11	10.43		.90	.75**	.52**	.56**	.47**	-.63**	.45**
3.PASTAS	14.02	10.24			.90	.56**	.63**	.53**	-.64**	.26**
4.SATAQ	45.71	10.65				.88	.68**	.39**	-.42**	.01
5.ASI	36.74	9.90					.88	.43**	-.53**	.17*
6.BDI-II	7.50	7.90						.93	-.64**	.24*
7.SEI	31.68	4.41							.75	-.16*
8.BMI	23.91	5.87								--

Note N = 163. BMI = Body Mass Index; MBSRQ = Multidimensional Body Self-Relations Questionnaire; EDI-BDS = Eating Disorders Inventory – Body Dissatisfaction Scale; Body Mass Index; PASTAS = Physical Appearance State and Trait Anxiety Scale; SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire; ASI = Appearance Schema Inventory; BDI – II = Beck Depression Inventory – II; SEI = Self-Esteem Inventory; BMI = Body Mass Index; --BMI consists of one number, thus internal consistency reliability could not be calculated.

* $p < .05$.

** $p < .01$.

Table 2: Summary of Standardized Regression Analyses (Beta Weights)^a

Variable	PASTAS	MBSRQ	EDI-BDS	BDI	SEI
Internalization as moderator					
Photo Only	.06	.00	-.02	-.11	.04
Personal Comments Only	.06	.00	.02	-.05	.02
Photo x Personal Comments	-.28*	.15	-.12	.08	.09
SATAQ	.48***	-.29*	.40**	.40**	-.30*
Photo x SATAQ	.14	.03	.07	.03	-.01
Personal Comments x SATAQ	.18	-.25	.15	.12	-.18
Photo x Personal Comments x SATAQ	-.30*	.01	-.06	-.21	.05
Multiple R ²	.38***	.25***	.29***	.18***	.20***
Schematicity as moderator					
Photo Only	.00	.04	-.04	-.17	.08
Personal Comments Only	-.08	.10	-.08	-.19	.11
Photo x Personal Comments	-.15	.06	-.06	.21	.01
ASI	.80***	-.52**	.61**	.72**	-.54**
Photo x ASI	-.13	.17	-.17	-.31	.12
Personal Comments x ASI	-.08	-.11	-.04	-.16	-.01
Photo x Personal Comments x ASI	-.04	-.15	.19	.15	-.13
Multiple R ²	.45***	.36***	.35***	.22***	.30***

Note: PASTAS = Physical Appearance State and Trait Anxiety Scale; MBSRQ = Multidimensional Body Self-Relations Questionnaire; EDI-BDS = Eating Disorders Inventory – Body Dissatisfaction Scale; BDI = Beck Depression Inventory – II; SEI = Self-Esteem Inventory; SATAQ = Sociocultural Attitudes Towards Appearance Questionnaire; ASI = Appearance Schema Inventory; ^aN = 160.
 * $p < .05$; ** $p < .01$; *** $p < .001$.

APPENDIX O: FIGURES

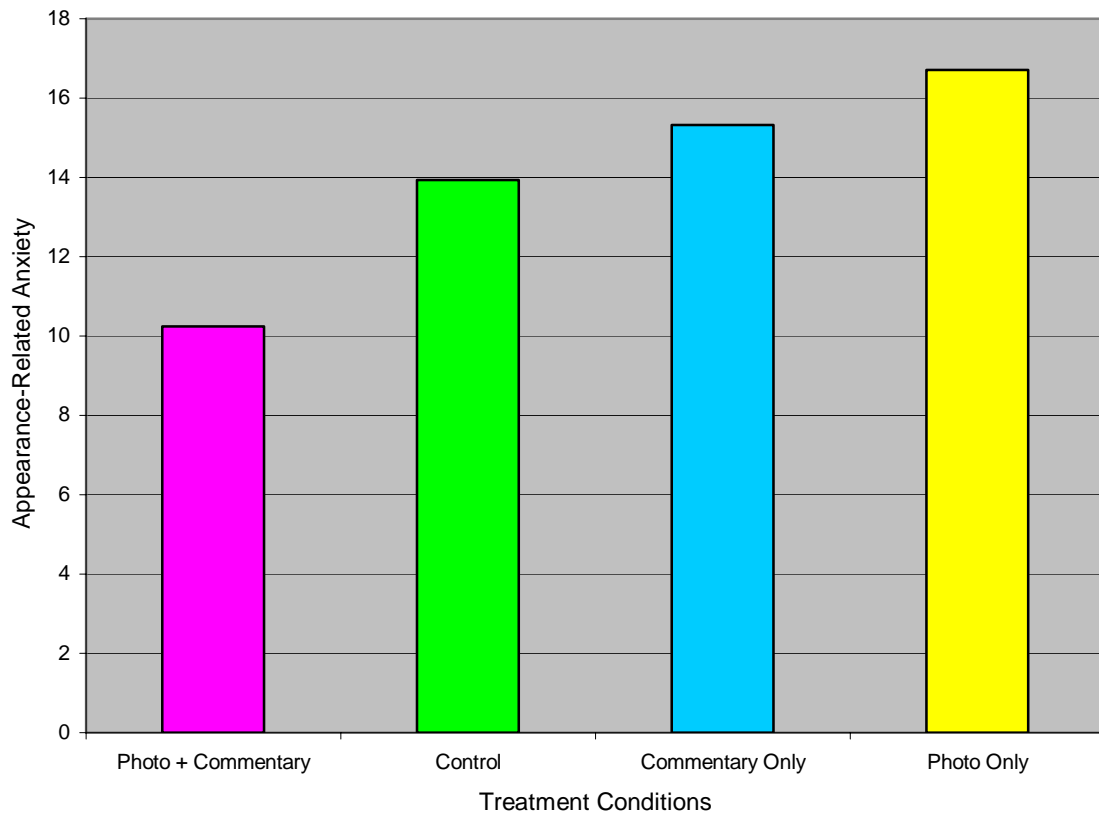


Figure 1: Two-Way Interaction Between Treatment Conditions

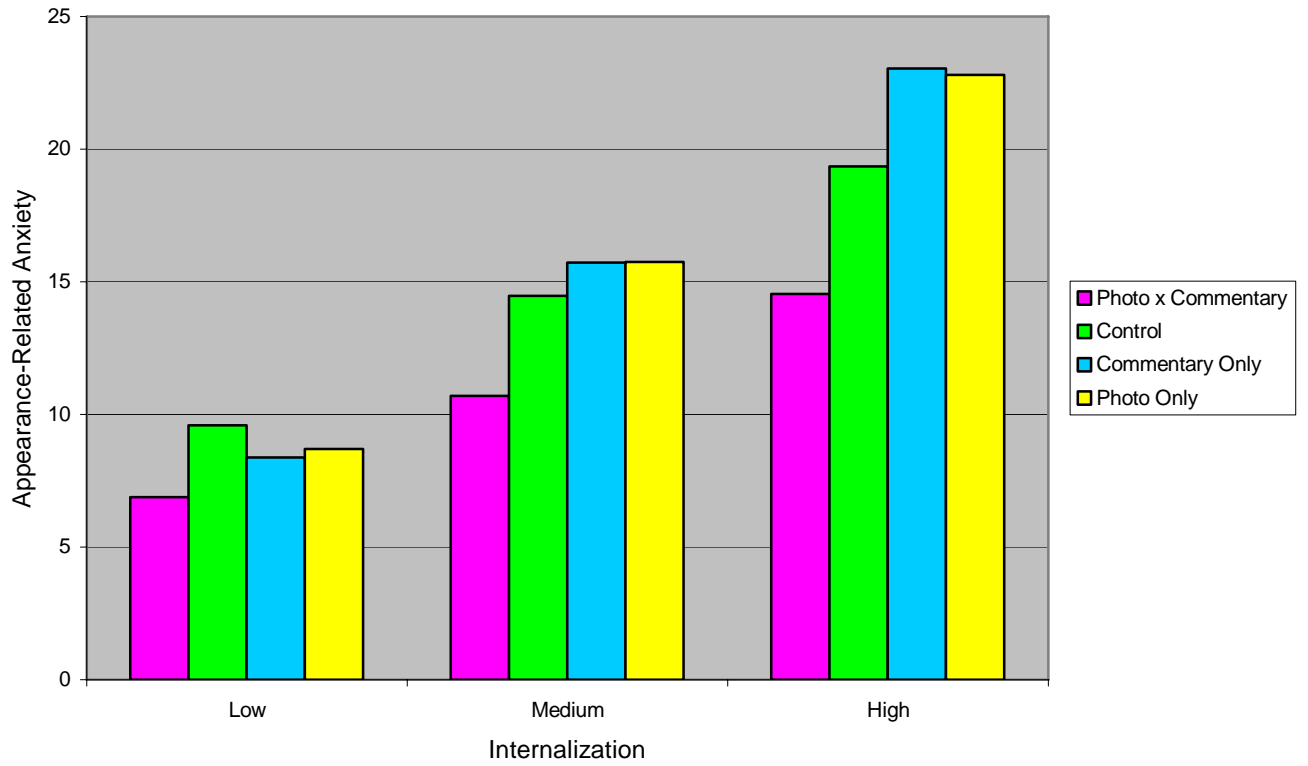


Figure 2: Three-Way Interaction Between Internalization, Viewing Photos, and Reading Personal Comments

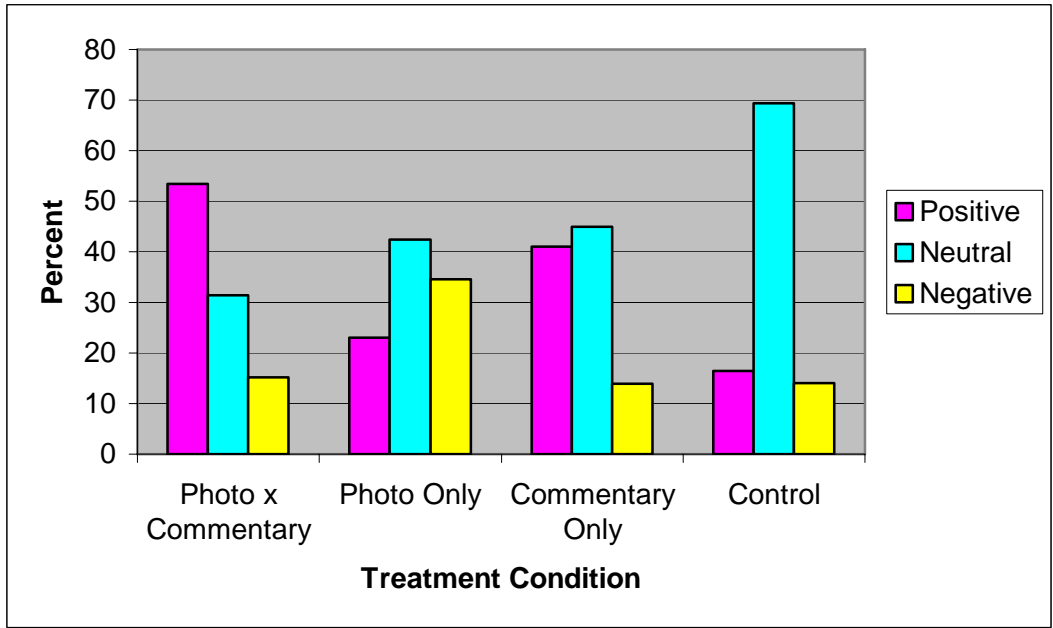


Figure 3: Frequency of Positive, Neutral, and Negative Comments from Debriefing Session

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