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The Effects of Media Literacy Programs on the
Body Image of Undergraduate Women
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Chapter I
Review of the Literature

According to a recent body image survey (Women are losing, 1998), it was found that a staggering 89% of women would like to lose weight. Fifteen percent of those women would sacrifice five years of their lives to be the weight they desire and almost a quarter of them would give up three years for the perfect weight. Sadly, the results of this survey are not surprising to anyone. A significant number of studies have revealed the “substantial difficulties that people have in experiencing their own appearance as acceptable and satisfying” (Lavin & Cash, 2000, p.52). Furthermore, statistics such as “90% of women over the age of 14 have gone on a diet at least once” (“Women and Body Image”, 2000, p.36) support the notion that, in today’s society, women suffer from body dissatisfaction in substantial numbers. With 55% of the adults in the United States categorized as clinically obese (Holm et al., 2001) and 90% of the adult population is trying to lose weight, the discrepancy between the two statistics suggests a significant problem.

As dieting and restrained eating continue to be problematic for American women, “it is likely there will be even more of an increase in eating pathology” (Nicolino, Martz, & Curtin, 2001, p.354). Therefore, as women grow increasingly more concerned with their figures, attention should be paid to the repercussions of discontent with their physical appearance. Body dissatisfaction has been one of the most consistent predictors of problematic eating in longitudinal studies of women (Cooley & Toray, 2001). As a matter of fact, according to the Diagnostic and Statistical Manual-IV (American Psychiatric Association, 1994), the presence of body image disturbance is one of the
criteria for a clinical diagnosis of anorexia and bulimia. "Body image disturbance is a significant factor in both the development and outcome of clinical and subclinical eating disorders" (Mazzeo, 1999, p.42). In other words, even for those individuals who fall short of a clinical diagnosis, "maladaptive eating and dieting patterns represent a significant enough source of distress and interference with life tasks to warrant attention” (Cooley & Toray, 2001, p.229).

Body Image

Body image is defined as any disruption that is directly concerned with an aspect of physical appearance (Allison, 1995). There are three components of body image that are consistently represented in the literature: perception, attitude, and preoccupation (Mazzeo, 1999). The first component, perception, involves the ability of an individual to accurately assess his/her size and shape. The second component, attitude, involves the level of satisfaction with one’s figure. The last component, preoccupation, refers to the strength, or degree, of the attitudes towards the figure. This final component, although the least studied and measured, seems to be a key feature of body image (Mazzeo, 1999). For example, a person could accurately identify that he/she is a few pounds overweight (perception) and not be satisfied with that (attitude), but he/she could not be very concerned with this fact (low preoccupation) or could be obsessively concerned about the possibility of gaining more weight (high preoccupation) (Mazzeo, 1999).

The third component, preoccupation, is diagnostically similar to perception in that it is a key piece of the criterion for eating disorders. “This aspect of body image may be particularly relevant to disordered eating, because it addresses the importance of body image” (Mazzeo, 1999, p.43) rather than satisfaction alone. Previous studies in the area
of body image have reported mixed results when comparing different aspects (through measurement) of body image. However, this may be because not all three components were assessed. Therefore, most researchers agree that body image should continue to be assessed with an attempt to include all components, but with a particular emphasis on preoccupation (Mazzeo, 1999).

Etiology of body image disturbances

The origin of body image concerns is controversial. Although several risk factors have been identified and agreed upon by researchers, there remains disagreement about which factors have the most impact and for whom (Harrison & Cantor, 1997). There are four main categories of risk factors that have been identified as contributors to body image concerns: biological, psychological, familial, and socio-cultural.

Biologically, someone may be more at-risk for developing body disturbance and, therefore, disordered eating behavior. Both the noradrenergic and serotonergic systems have been implicated as sites for genetic abnormalities in both anorexics and bulimics (Mash & Barkley, 1996). Also, family and twin studies point to a genetic component in the development of eating disorders (Mash & Barkley, 1996). In addition, the personal and family weight histories have been identified as important components in the development of disordered eating behaviors and body image concerns. However, these variables seem to be stronger for bulimia than anorexia (Mash & Barkley, 1996). Therefore, this component could be more related to achieving or maintaining the socio-cultural standards of thinness rather than being a strictly biological factor. Regardless, the precise role of genetics in eating disorders is not currently well established.
Psychologically, there seem to be several personality characteristics that are related to individuals with body concerns and disordered eating. Perfectionistic, rigid, introverted, obsessional/compulsive, and conscientious are all characteristics that have been associated with those who suffer from anorexia (Bemis, 1978). Those with bulimia have been described as affectively labile and impulsive (Mash & Barkley, 1996). Objective studies regarding personality characteristics are sparse, though, mainly because it is difficult to separate the premorbid personalities from those characteristics that are a result of the eating disorder (Mash & Barkley, 1996).

Familial factors are also linked to those with body disturbance difficulties. Minuchin (1980) theorized that families with eating disorders are enmeshed, overprotective, rigid, conflict avoidant, and exhibit poor conflict resolution skills. Often, they have high expectations of success and achievement; therefore, the children learn not to disclose fears and anxieties. However, empirical data have been inconclusive and fragmentary (Mash & Barkley, 1996). More definitively, families do serve as role models, particularly the female ones, as a mediator of the socio-cultural norms. Some researchers "hypothesize that risk may be increased if family members model weight preoccupation and dieting, if weight is a form of evaluation and thinness valued, and also if weight is believed to be something one can and should control" (Mash & Barkley, 1996, p. 561). Family variables do impact an individual; but, again, the research indicates that familial aspects are a risk factor, not a sole determinant.

The fourth category is the socio-cultural environment, which plays a role in the body image difficulties that exist, particularly in the Western culture. "Changes in the norms throughout the past 30 years suggest that the sociocultural set of risk factors may
have been especially important in effecting the reported rise in prevalence (in problematic eating behaviors)” (Harrison & Cantor, 1997, p.40-41). It is argued that the socialization of girls to assess themselves in terms of their appearance results in low self-esteem and negative body image when they cannot meet this ideal (Mash & Barkley, 1996). With a society that clearly values and emphasizes appearance, particularly thinness; then, equates this with power and influence in society, it is no surprise that women who cannot attain the ideal are going to extreme measures to attempt to do so.

“Women’s bodies are perceived as their tool, the instrument with which they seduce men, their sole mechanism of power in society” (“Women and Body Image”, 2000, p. 36). In other words, the message that society sends is: If you are not thin and beautiful, then you will not hold power or influence in society. And without these attributes, you cannot and will not achieve success or happiness. This sets the stage for body image concerns.

The Influence of Mass Media

“The loudest and most aggressive purveyors of images and narratives of ideal slender beauty are the mass media...targeting markets to sell products such as diets, cosmetics, and exercise gear, the media construct a dreamworld of hopes and high standards that incorporates the glorification of slenderness and weight loss” (Groesz, Levine, & Murnen, 2001, p.2). In glorifying the standard of thinness, the message of “thin is beautiful and powerful” is constantly reinforced. “Through the flashy images of “perfect” female beauty promoted ubiquitously in magazines, television, and films, females and male viewers alike may quickly infer that a female’s body is her most important attribute” (Groesz et al., 2001, p.2). In a study conducted by Tiggemann, Gardiner, and Slater (2000), “the media was identified most frequently and strongly as
the source of the thin ideal to which the girls subscribed” (p.655). The women (mean age = 16) clearly “described how the constant barrage by the media of thin, attractive, glamorous women leads to the belief that thinness and attractiveness are the cultural norm” (Tiggemann et al., 2000, p.655). Moreover, they recognized that other characteristics not associated with physical appearance are important, but that the volume and intensity of the images presented by the media leads them to strive towards a thin ideal (Tiggemann et al., 2000).

As the women in the study articulated, a particular area of concern with the mass media is magazines. “All it takes is a quick flip through any fashion magazine to see that the pages are filled with pictures of young, slim, conventionally beautiful women” (Humphrey, 2001, p.18). Andersen & DiDomenico (1992) found that women’s magazines contained 10.5 times more weight loss articles and advertisements than men’s magazines. This is similar to the sex-ratio found in the prevalence of eating disorders. Therefore, it has been suggested that there is a “dose-response” relationship between the media content that emphasizes the ideal slim figure and the frequency of eating disorders in the dominant female target audience, such that the greater the exposure to such media content, the greater the levels of disordered eating (Andersen & DiDomenico, 1992).

**Historical Trends**

The “thin ideal” body type has not always been coveted by American women. In the early 1940’s, Sheldon and Stevens (as cited in Turner et al., 1997) found that the thin, or ectomorphic, body type was associated with negative characteristics. Others perceived those with an ectomorphic, as opposed to mesomorphic (medium-frame) or endomorphic (fuller-frame), as nervous, submissive, and socially withdrawn. By the end of the 1980’s,
these cultural norms had reversed. “Compared to individuals with endomorphic and mesomorphic body types, ectomorphic individuals were rated most positively and considered to be the most sexually appealing” (Turner et al., 1997, p.603).

“Changes in eating disorder epidemiology over the past 30 years appear to mirror changes in mass media representations of women throughout the same time span” (Harrison & Cantor, 1997, p.41). In other words, as the number of “thin-ideal” images grows, the reported incidence of eating disorders in this country continues to rise as well. When the actual number of thin images appearing in magazines was examined, it was found that the number of thin models increased from 1950 to 1984, with a high of 46 in the 1980’s (Harrison & Cantor, 1997).

The standard of beauty for women, as implied by the mass media, has become much thinner and less curvaceous (Turner et al., 1997). One study examined the curvaceousness of models appearing in Vogue and Ladies Home Journal from 1901 to 1981, as well as popular movie actresses from 1941 to 1979. The curvaceousness was determined by the bust-to-waist ratio. This study found a significant decline in the curvaceousness of women being portrayed in the media. These results were supported by additional studies by Turner et al. (1997) regarding curvaceousness.

Body measurements and weights of Miss America Pageant contestants and Playboy Centerfolds were also studied to confirm the dramatic slimming of the woman’s body (Garner, Garfinkel, Schwartz, & Thompson, 1980). They found that the weight of Miss America Pageant contestants decreased sharply from 1959 to 1978. Moreover, for the majority of the years, the pageant winners weighed significantly less than other contestants. The study also reported a substantial increase in the number of diet articles
in popular women’s magazines, from a yearly mean of 17.1 for the 1960’s to a mean of 29.6 for the 1970’s.

Continuing to examine the decreasing body measurements and weights of Miss America contestants and Playboy models, Wiseman, Gray, Mosimann, and Ahrens (1992) found these measurements to continue to significantly decrease during the period from 1979 to 1988. By 1988, 69% of Playboy models and 60% of Miss America contestants weighed 15% or more below the expected weight for their age and height category. This is a significant finding in that according to the Diagnostic and Statistical Manual-IV (American Psychiatric Association, 1994), one of the criteria for anorexia is the maintenance of a body weight at or below 15% of one’s expected weight.

Currently, dozens of supermodels fill the pages of popular women’s magazines. These women do not depict the average woman. Today, the average woman is 5’4” and weighs 140 pounds, whereas the average model is 5’11” and weighs 117 pounds (Rader Programs, 2001). A popular model found in magazines who has been linked to the “ultra-thin” look is Kate Moss. She is 5’7” and weighs 95 pounds. This is 30% below ideal body weight, twice that of the criteria for anorexia (Rader Programs, 2001). Niki Taylor and Elle Macpherson, also popular models, meet the body mass index criteria for anorexia, as well. Ironically, Gisele Bundchen was named Vogue’s model of the year, partly because the magazine states that she shies away from the “ultra-thin” image. Gisele is 5’11” and weighs only 115 pounds, which is 25% below her ideal body weight (Rader Programs, 2001). This is not to say that these women have an eating disorder, but that their body mass index is significantly lower than the average woman.
In a study conducted by Thompson et al. (1999), adolescents (ages 13 – 17) reported that the “perfect body has flawless skin, a thin waist, long legs, and well-developed breasts.” “Perfect” criteria can get even more specific. One study found that adolescents wanted to be 5’7”, 100 pounds, a size 5, with long blond hair and blue eyes (Nichter & Nichter, 1991). This is an extremely slender beauty standard (BMI = 15.61), unattainable for the majority of women.

**Exposure to the thin images**

What happens to women after they view these images? This exact question has been studied in a variety of different situations. Overall, the findings indicate that “the increasing pressure to be thin and the unrealistic images portrayed in the mass media may have a devastating effect on women’s self-perceptions, self-esteem, and identity development” (Turner et al., 1997, p.611). It has not been found that exposure to media images of thinness leads directly to disordered eating; however, numerous studies have found evidence that images of their (women) own bodies are influenced by the mass media’s depiction of ideal body types (Harrison & Cantor, 1997, p.). In fact, three out of ten women say “very thin models make them want to lose weight, while 29% say thin models make them feel insecure about their own weight” (“Women are Losing”, 1998).

In a meta-analysis study conducted by Groesz et al. (2001), data from 25 different studies (N=2,292) were evaluated in order to examine the overall effect of mass media’s slender images on women viewers. Body satisfaction was found to be significantly more negative after viewing thin media images than after viewing images of average-size models, plus-size models, or inanimate objects. Furthermore, this effect was stronger when the research design did not expose participants to both the control and experimental...
images. Their findings support the idea that media establishes and promotes a standard of beauty that leads many women to be dissatisfied with their own figures (Groesz et al., 2002).

In another study, by Wilcox and Laird (2000), 41 women between the ages of 18 and 35 years participated in, what they thought, was a memory test related to features of models. The women were randomly assigned to (1) a group that would view thin models (n = 21) or (2) a group that would view normal sized women (who did not look overweight, but were not exceptionally slender) (n = 20). After viewing 10 pictures of their assigned group, the women filled out measures of self-esteem and body esteem (Body Esteem Scale). They were also asked to write down what they felt while viewing the ten pictures. Participants were further divided into a “personal cue group” and a “situational cue group” by means of frown and smile expressions regarding their feelings. Those who reported feeling happier when smiling and angrier when frowning were assigned to the personal cue group while the other participants were placed in the situational cue group.

The study found that “viewing pictures of conventionally slender models has the expected effects of inducing some participants to feel unhappy, to become more concerned about their own weight, and even to report reduced self-esteem” (Wilcox & Laird, 2000, p. 283). Interestingly, these effects occurred among the women who had been further divided into the personal cue group, as opposed to the situational cue group. This suggests that the women whose feelings are based on their own properties and actions and who presumably were more actively aware of their own real weight use the
information from the pictures as a context in which to compare themselves unfavorably (Wilcox & Laird, 2000).

Identification and Social Comparison

When a woman looks at these figures, there are two processes that are likely to occur: identification and social comparison (Wilcox & Laird, 2000). First, in viewing these super slender models, the woman is likely to, for a moment, imagine that she, too, could be as attractive and thin as the model on display (Wilcox & Laird, 2000). This woman is identifying with the model, if only for a brief amount of time. The second process, social comparison, is described as a naturally occurring process where people compare themselves to others and feel either content or deprived depending on how they fare in the comparison (Kassin, 2001). Furthermore, social comparison can be divided into two subgroups: downward comparison and upward comparison. Downward comparison is when a person compares him/herself to others whom they perceive to be worse off, which likely results in happiness. On the other hand, upward comparison is comparing oneself to others whom they perceive to be better off, which usually results in negative feelings (Kassin, 2001). The process of social comparison occurs when the woman looking at the model considers how she looks compared to the model, with the model being the standard by which to evaluate herself. First, when a woman looks at images in a magazine, she is likely to identify with the model, if only for a brief moment. Next, if the reader assumes the model to be “better off” than she because she (the model) meets the criteria for the “thin ideal,” than the reader is engaging in upward comparison. Typically, this results in negative feelings. So, it is expected that the woman would feel
unhappy with her own figure after viewing the model, which she perceives to be the standard of beauty.

Are certain women at greater risk?

"With media portrayals of ‘ideal’ beauty equated with thinness and marketing efforts toward women and girls centered around makeovers and products or changes to meet that ideal, it is not surprising that girls, especially girls with low body image, compare themselves to the images they see in the media” (Jaffee & Mahle, 1995, p.39). Moreover, it seems likely that for the majority of women, this would be an unattainable prospect and, thus, a disheartening experience. But, not all women are dissatisfied with their bodies or are turning to disordered eating to attain the “ideal” figure. Therefore, the question is: Which women are more affected than others by these images, and why?

Theoretically, it is argued that after one makes “external, social comparisons with others, we internalize these changing reflected appraisals and refine our self-schemas” (Sands, 2000, p.398). In other words, the beliefs that a person holds about him/herself are affected by the information that is relevant around that person. It has also been suggested that women who place more importance on body weight and body image issues interpret the weight-related information differently. For example, those individuals with negative body weight schemas may interpret weight-relevant stimuli in a biased fashion compared to those who do not emphasize body weight and body image (Sands, 2000). These women are more likely to modify their self-schemas according to this information.

In a study conducted by Pinhas et al. (1999), 118 female college students completed a series of questionnaires. These measures included: the Profile of Mood
Effects of Media Literacy

States (POMS; McNair, Lorr, & Droppleman, 1971), the Body Parts Satisfaction Scale (BPSS; Berscheid, Walster, & Bohrnstedt, 1973), and the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979). One week later, the experimental group viewed images of models from common magazines while the control group viewed images that contained no people. After viewing the images, they completed the questionnaires once again. The authors reported that women “particularly those who are dissatisfied with their bodies...are more vulnerable to these images than are others” (Pinhas et al., 1999, p. 225). This study only further supports the notion that women are affected by the media images that they view.

A study by King, Touyz, and Charles (2000) demonstrated this concept as well. In their study, 96 undergraduate women were divided into two groups based on their individual scores on the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987). Those who scored between 37 to 75 (M = 56.44, SE = 1.86) were placed in the low body shape concern group. Those with scores ranging from 93 to 139 (M = 113.36, SE = 2.32) were placed in the high body shape concern group. The participants were then presented with one accurate and six distorted photographs of thin and heavy female celebrities. They were then asked to select the photograph for each celebrity that represented her actual size. Then, the participants completed two questionnaires, the BSQ (to re-assess body concerns), as well as the Eating Disorders Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994)(to help exclude those with eating disorders).

The authors found that “women who differ with regards to how they feel about their own body tend to also differ with regards to how they perceive the media images...
with which they were presented” (King et al., 2000, p. 345). Interestingly, the women with high body image concerns “underestimated the size of the thin celebrities and overestimated the size of the heavy celebrities” (p. 345). The authors suggested that “women showing body dissatisfaction are more strongly effected by media exposure because of the actual way in which they see (interpret) the images with which they are presented” (King et al., 2000, p. 345). Again, it is clear that every woman interprets the same messages and images in a distinctly individual manner.

These results and many others like them suggest that “high levels of self-awareness or self-focus (regarding weight) may enhance feelings of unattractiveness” (Heatherton, 1993, p.229). In addition, those women who have more extreme standards of physical appearance may be more prone to the images that permeate society.

**College Women**

Although there are certain “types” of people at risk for body image disturbances and possibly eating disorders, there are certain populations in which the risk seems to be even greater (i.e. dancers, gymnasts). “That college-aged women are preoccupied with thinness and exhibit a high level of concern about weight and body image has been well documented” (Graham & Jones, 2002, p.171). In a study by Mintz and Betz (1988) that examined eating disordered behaviors among 682 undergraduate women, they found the disturbed eating patterns to be quite high: “Eighty-two percent of subjects reported one or more dieting behaviors at least daily and 33% reported more serious forms of weight control (i.e., use of laxatives or vomiting) at least once a month. Thirty-eight percent reported problems with binging” (p.469). Moreover, 75% of the women reported that they ate low-calorie foods and approximately half reported that they counted calories
daily. Thirty percent reported fasting and one-fifth took appetite control pills (Mintz & Betz, 1988).

Mintz, O'Halloran, Mulholland and Schneider (1997 as cited in Mazzeo, 1999) found that 6.6% of college-aged women met diagnostic criteria for eating disorders. Additionally, they found that subclinical levels of eating disorders are far more prevalent on campuses. This group of women does not satisfy the criteria set forth by the DSM-IV (American Psychiatric Association, 1994) but do exhibit similar characteristics to those with eating disorders. Like those with the disorders, the high incidence of diagnostically subclinical problems center around body image dissatisfaction and weight preoccupation (Schwitzer, Bergholz, Dore, & Salimi, 1998). When students do not meet the full criteria for anorexia or bulimia but “clearly exhibit disordered eating patterns and experience distress or impairment in their daily lives, the NOS (Not Otherwise Specified) category may be useful” (Schwitzer et al., 1998, p.199).

There are several examples of a typical situation where the NOS diagnosis may be applicable for the college student. For example, in order to be diagnosed with anorexia, one must refuse to maintain a minimally normal body weight and have the absence of three consecutive menstrual cycles (American Psychiatric Association, 1994). However, the NOS category can be suggested when neither of those criteria is met, but the woman does have other diagnostic features, such as intense fear of gaining weight, disturbance in body image, and/or severely restrictive dieting behaviors—all occurring with a dramatic weight loss, but still maintaining normally expected body weight or menstrual cycles (Schwitzer et al., 1998). Another example might be someone who does not meet the duration (present for at least three months) or frequency (at least twice weekly) criteria
for bulimia. However, the individual has related diagnostic features (i.e. self-evaluation unduly influenced by body shape and weight) but episodes of binging/purging (vomiting, laxative use, or overexercise) occur just below the stated criteria (Schwitzer et al., 1998). In both situations, although the individual does not meet diagnostic criteria for either anorexia or bulimia, the NOS diagnosis best describes the individual's difficulties.

Overall, data indicate that watching one's weight is the norm, or the standard, for college women (Mintz & Betz, 1988). For many women, this includes engaging in unhealthy eating behaviors in order to obtain or maintain a certain physical look. But, this problem should not be ignored simply because it is "normal." The eating disordered behaviors combined with a distorted body image place the college population at considerable risk for the development of full-blown eating disorders or other serious nutrition-related problems (Grigg, Bowman, & Redman, 1996). Luckily, results from a study conducted by Heatherton, Mahamedi, Striepe, Field, and Keel (1997) suggested that even though it is normative for college women to be engaging in disordered eating patterns, it is normative for these problems to diminish after graduation. However, body dissatisfaction does remain a problem for a large number of women throughout the rest of their lives (Heatherton et al., 1997).

*Why college women?*

Women do not just go to college and spontaneously increase their level of body dissatisfaction and disordered eating behaviors. Although body dissatisfaction and disordered eating behaviors flourish in the college community, most women enter college with preconceived ideas of the "perfect body" and behaviors that mimic eating disorders. In the United States, approximately one third to one half of adolescent girls are not
satisfied with their body size and image (Murray, Touyz, & Benmont, 1994 as cited in Brook & Temper, 1996). This would indicate that the women enter college at significant risk.

A study conducted by Champion and Furnham (1999) reinforced the notion that adolescent girls suffer from feeling fat as well as experience pressure to be thin. The participants in the study were from three different age groups: sixth grade (n = 66, mean age = 12), eighth grade (n = 80, mean age = 14), and tenth grade (n = 57, mean age = 16). They found that 54.1% of all girls wished to have a thinner body shape. In addition, 53.8% of all girls wished for a body shape that even they perceived to be thinner than the norm. The eldest group of girls expressed significantly more dissatisfaction with their weight as well as more dissatisfaction with their body parts, particularly buttocks, hips, and thighs. The older girls also demonstrated more body image dissatisfaction, as measured by the BSQ. These findings suggest that with an increase in age comes an increase in weight concerns.

Upon entrance to college, it has been found that those women with weight concerns experience worsening symptoms during their first year (Cooley & Toray, 2001). They are more likely to experience an increase in body dissatisfaction as well as begin to exhibit disordered eating behaviors. These seem to remain stable until they leave the college environment. In other words, it seems that college exacerbates pre-existing difficulties with body dissatisfaction and disordered eating patterns. Why? What is unique about the college experience that would encourage this type of increase? It is hypothesized to be the unique demands and stressors that adolescents must face in making the transition to college (Cooley & Toray, 2001).
College is an intensely emotional time for many individuals. Some students are excited about the chance to start their career training whereas others are scared of the freedom and independence that accompanies such a transition. Some students are happy to meet new people and experience new things. Others may be uncertain about how he/she will “fit-in.”

“It takes time for people to adjust to college life. They leave behind the things that are most familiar to them...families, friends, home, their own room and many other things that may have helped them feel secure” (Thompson, 1996, p.36). They leave the known and enter the unknown. The uncertainty can cause fear, confusion, and loneliness. Not only do college students engage in coursework, but they also have the added responsibilities of independence, such as cleaning, cooking, and laundry. Some have to hold part-time jobs in addition to that in order to pay for their education (Thompson, 1996). As if that were not enough, the college student may worry about being accepted by new peers. Together, this may cause an extreme amount of anxiety and frustration within the college student (Thompson, 1996).

Some students handle the transition well. Others may turn to habits such as alcohol or substance abuse or excessive studying to avoid the demands. Still others may turn to focusing on calories and what they weigh so as not to think about anything else. And, they may believe that the only way to fit in is to be thin (Thompson, 1996). Because body dissatisfaction and disordered eating behaviors are normative on campuses, students may not even be aware that they have an eating disorder (Thompson, 1996). In this case, doing what the crowd is doing may be normative for this population, but it has extremely dangerous implications for one’s physical and emotional health.
**Prevention Programs**

Interventions that are designed to halt the progression from sub-threshold eating disorders to full syndrome disorders are needed for the significant number of women at-risk (Franko & Omori, 1999). “Aware of the association between media and body image and eating practices, a number of investigators have discussed or developed programs to prevent body dissatisfaction and disordered eating by teaching girls and women to think more critically about the media” (Irving & Berel, 2001, p.103).

It has been suggested that prevention programs “be implemented which teach women reporting body dissatisfaction to have a more realistic view of the media and of the females presented” (King et al., 1998, p.345). Moreover, these programs rely heavily on providing information to increase the understanding of media and the techniques it uses to alter images, enhance attitudes toward body image, and promote a healthier behavior (Schwitzer et al., 1998). The idea is that by teaching women to evaluate the media critically, the credibility and persuasive influence of media messages is reduced (Irving & Berel, 2001). Therefore, she is less likely to embrace unhealthy attitudes or behaviors (to obtain an unrealistic figure) that are illustrated in the media (DeBenedittis, 2001). The term “media literacy” or “media education” refers to that described above. The goal of the media literacy program is to protect women from developing full-blown eating disorders and decrease body dissatisfaction by encouraging them to analyze critically the media messages that endorse or promote thinness and dieting to lose weight (Irving & Berel, 2001).

The first media literacy programs for prevention of eating disorders were initiated with young girls, usually elementary school age, in the hopes to combat the growing body...
image concerns of this population. Most of these health promotion programs began in the school environment, where implementation was easier due to the accessibility of the population. One such intervention was implemented to determine if body image and eating attitudes and behaviors could be improved by focusing on and improving self-esteem. A total of 470 students, 173 males and 297 females, from the seventh or eighth grade (ages ranged from 11.1 to 14.5 years) participated in this study. The students attended one of two schools. One was a government, coeducational secondary school and the other was a non-government, all-female school. Students were randomly assigned to a control or an intervention group.

The intervention program was entitled, “Everybody’s Different” (O’Dea, 1995 as cited in O’Dea & Abraham, 2000). The program consisted of nine weekly sessions of approximately 50 to 80 minutes duration and was taught by the students’ regular teacher. The emphasis of the program was on self-esteem with an educational approach based on theories of cooperative, interactive, and student-centered learning. Home-based activities, such as family discussion of lessons, were also encouraged. The nine-lessons included the following topics: dealing with stress, building a positive sense of self, stereotypes in society (lessons 3 – 5), positive self-evaluation, involving significant others, relationship skills, and communication skills.

All participants were assessed on three separate occasions: before the educational intervention, after the intervention, and one year later. On each occasion, they completed a series of questionnaires: the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983); the Self-Perception Profile for Adolescents (Harter, 1982); the Depression Inventory (Junior; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); the State-Trait
Anxiety Inventory (STAI Junior; Speilberger, Gorsuch, & Lushene, 1970); and demographic, food habits, and body image questionnaires (O’Dea, Abraham, & Heard, 1996). In addition, there were six Physical Appearance Ratings (O’Dea et al., 1996). The participants were asked to rate themselves on a scale of one to ten how they (self-score), their mother, father, best friend, other people of same sex, and other people of opposite sex would rate them.

The researchers’ findings indicated that the program did significantly improve the body satisfaction, physical appearance ratings, and current weight losing behaviors of the students. Mean body dissatisfaction for the intervention group decreased significantly during the intervention whereas those in the control group increased. However, this effect was not statistically significant at the 12-month follow-up assessment. The physical appearance ratings increased on all six subscales for both the girls and the boys in the intervention group while those in the control group did not change for the males and decreased for the female control group. In addition, the program also produced significant changes in the participants’ attitudes and perceptions involving self-concept. Fifty-percent of the seventh grade students reported a positive change in their feelings, attitudes, beliefs, and self-concept as a result of participating in the study. For the eighth grade students, 40% of the males and 95% of the females reported at least one positive change after participating in the program (O’Dea & Abraham, 2000).

This was one of the first educational programs for body image to include male participants. This seemed to be a strength of the program in that providing a male perspective in the interactions and discussions helped the participants learn from each other and develop different viewpoints. Another important strength of the study was the...
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program itself. Although this study was conducted on a particular population, the program can be easily replicated and manipulated for different populations of varying age, socioeconomic status, and ethnicity. Unfortunately, the immediate effects were not maintained at the 12-month follow-up. For this, the authors suggested an on-going educational program that may produce more sustainable effects.

In another study by Baranowski and Hetherington (2001), a similar psychoeducational program was investigated. Students from two schools of similar characteristics and demographics participated in the study. From the first school, 16 girls (ages 11 and 12 years) volunteered for the program and 13 girls of the same ages volunteered from the second school. Those from the first school were assigned to the experimental group whereas those from the second school were placed in the control group. The schools were not statistically different on any demographic factor.

Unlike the previous study, this program was only five weeks in duration, but was approximately an hour and a half in length each session. The intervention also included homework assignments that were to be completed outside of the sessions. The experimental group covered the following topics: causes and consequences of dieting, appraisal of weight and shape, stereotypes associated with thinness and obesity, self-esteem, body-esteem, eating disorders, and energy regulation. The control group participated in a fruit and vegetable awareness group, so as to equate the two groups for time and activities. The content of this group contained the following topics: attitudes towards fruits and vegetables, introduction to unfamiliar fruits and vegetables, vitamins and minerals, protective effects of fruit and vegetable consumption, and strategies to increase daily fruit and vegetable intake.
All participants were assessed on three separate occasions: before the intervention, directly after the intervention, and 6 months following the intervention. The participants completed two measures of self-esteem, the Index of Self-Esteem (ISE; Hudson, 1982) and the Rosenberg Self-Esteem Scale (RSES). Body image was measured by four different instruments, the Body Esteem questionnaire (Mendelson & White, 1982), a modified version of Stunkard, Sorenson, and Schulsinger’s (1983) body silhouettes for children—which measures perception of body image, the Children’s Eating Attitudes Test (chEAT; Maloney, McGuire, & Daniels, 1988)—which measures eating attitudes and behaviors, and the Dutch Eating Behavior Questionnaire (DEBQ; Van Strien, Frijters, Bergers, & Defares, 1986)—which measures eating restraint.

Investigators found that the five-week intervention was effective for restraint and self-esteem; however, there were no significant changes for the body image measures for body esteem, perception or attitudes and behaviors. Interestingly, both the experimental and the control groups scored significantly less on dietary restraint following the interventions. Improvement in self-esteem was marginally significant for the experimental group, but not significant for the control group.

There were several limitations to this study. First, the generalizability of the study to other populations is somewhat limited considering the program was designed for pre-adolescent girls only. Secondly, the sample size for the study was small. Thirdly, the content of the sessions for the control group (fruit and vegetable awareness) was closely related to the experimental group in that teaching girls to eat properly “carries an implicit message to improve eating rather than to restrict intake” (Baranowski & Hetherington, 2001, p. 123). The authors stated that the age of the girls was also a limitation for this
study. They suggested that the salience of the issues is not fully established at age 11 or 12. However, the authors did support the need for the development of programs for older girls as well as for those at-risk for eating disorders.

These prevention programs have also been implemented in high school settings. In 1999, Piran conducted a long-term study of a world-class, residential, co-educational ballet school. Three separate surveys were conducted in 1987, 1991, and 1996, with a total of 370 participants (120, 124, and 126, respectively) ranging from the seventh grade through the twelfth grade. Most of the students who participated were female (83%), Caucasian (96%), and living at the school (70%). There were no significant differences between the three cohorts on these variables. The data from all three cohorts were separated, for presentation purposes, into two groups: (1) grades 7-9 and (2) grades 10-12.

The program’s goal was to reduce body weight and shape preoccupation by fostering a school environment where students were comfortable with themselves and the maturational process (Piran, 1999). All students were participants of focus groups that were facilitated by staff. The small groups (ranging from 6 to 20) were composed of gender and age cohesive members, assigned by the staff. The groups met two to six times annually. There were some educational sessions conducted by staff members. The foci of these groups were: prejudices about body shape, adults’ responsibility to students’ self- and body-esteem, growth and puberty processes, and ways to protect students from the pressures of thinness in the dance world. In addition to educational sessions, the focus groups met to discuss other related topics. These included: experiences of body shape and weight at school, sexual harassment, feelings related to being teased about
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body shape or parts, and avoiding mutual evaluations of body shape. Students also examined the sociocultural contexts in which body dissatisfaction occurs.

At the end of the school year, all participants completed three measures related to body image. The first measure, the Diagnostic Survey for Eating Disorders (D.S.E.D.; Johnson, 1985) was used to gather demographic data as well as information regarding history of attitudes and behaviors related to body concerns. The second instrument, the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979), measures attitudes and behaviors related to body dissatisfaction. The final instrument, the EDI, is a battery of different scales that reflect the attitudes and behaviors of the participant.

The results of the study indicated that the program was effective in reductions over time on most measures of eating symptomatology, restrictive eating, and disturbed attitudes towards eating and weight, as measured by the EAT and the EDI. For those described as having extreme weight and shape preoccupation and disordered eating (EAT > 20), there was a consistent decline in their scores on the EAT among the three cohorts for both grades 7-9 and 10-12. The decline was not significant for grades 7-9, but was significant for grades 10-12. The older cohort decreased from 50% in 1987 to approximately 15% in 1991 and 1996 (Piran, 1999).

Changes between those in grades 7-9 differed from those in grades 10-12 in unique areas. For the younger cohort, the significant changes occurred in their restrained eating and disturbed attitudes about eating and weight (Piran, 1999). For the older cohort, the significant reductions were the disturbed eating symptomatology (i.e. binge-eating, vomiting, or use of laxatives) as well as less disturbed attitudes and behaviors towards eating. “They also tended to have a more realistic assessment of their body
This prevention program was different than other programs on several levels. First, the program was conducted with an “at-risk” population (i.e. elite ballet dancers). Secondly, the program was aimed at making systemic changes. As previously mentioned, the entire school participated in the program, not just a select few. Systemically, the program encouraged changes not just in the individuals, but in the school environment as well. Also, the program was conducted throughout the school year and over several years. This is important to remember considering other interventions were only implemented a few times or several weeks in a row, without maintenance after the intervention.

There were several limitations to this study. There was no group near the school with equivalent training principles or a comparable population; therefore, there was no control group. In addition, the cohort groups may have changed over time. The results are from three different groups of students over time, not three assessments of the same students over time. Consequently, the results could be representative of the change in the student body themselves. In other words, there is the possibility that those students who participated in 1987 were different than those who participated in 1991 or 1996. Perhaps the environment of the late 1980s was different than that of the mid-1990s concerning body image or emphasis on thinness. This is always a concern with longitudinal studies. Another limitation is the generalizability of the findings, in that the findings may be inappropriate for other settings.
In moving beyond primary and secondary education prevention programs, a study by Irving and Berel (2001) examined two distinct media literacy interventions with female college students. The goal of the study was to compare the efficacy of the two programs at decreasing body dissatisfaction and increasing media awareness (Irving & Berel, 2000). One hundred and ten students (mean age = 18.93) were randomly assigned to one of four conditions: (1) an externally oriented media-literacy intervention, (2) an internally oriented media-literacy intervention, (3) a video-only intervention, and (4) no-intervention (control group).

The externally oriented media-literacy intervention focused on “teaching women to think critically about beauty-related advertisements and addressed means of challenging media via social activism” (Irving & Berel, 2000, p. 106). The facilitator briefly discussed the impact of sociocultural influences on body image as an introduction to the intervention. Then, the participants viewed segments of the video, “Slim Hopes” by Jean Kilbourne, after which they discussed their thoughts and feelings related to the video. After the discussion, the participants were taught to critically analyze media with three questions (“3 R’s”; Austin & Johnson, 1997 as cited in Irving & Berel, 2000): (1) Is it real? (2) Is it right? and (3) How do I reinforce these messages in my own life? Participants then learned strategies for challenging media on personal, interpersonal, and societal levels.

The participants in the internally oriented intervention “focused on identifying and challenging faulty cognitions that may arise in response to beauty-related advertisements and lead to negative body image” (Irving & Berel, 2000, p. 106). As with the externally oriented group, the facilitator who discussed the sociocultural influences on
negative body image made an introduction to the intervention. Then, the students watched and discussed the video, "Slim Hopes." Next, the facilitator provided some psychoeducation about the different components of body image. In addition, aspects of cognitive behavioral therapy (Rosen, 1995 as cited in Irving & Berel, 2000) for body image disorder were presented by the facilitator. Specifically, participants learned how to self-monitor negative body image thoughts that are prompted by media images. Also, five cognitive errors (Rosen, 1995 as cited in Irving & Berel, 2000) were presented in order to teach the participants how to identify types of negative body image thoughts. Finally, the participants briefly practiced how to challenge the distorted cognitions that arise when media images are presented.

Participants in the video-only intervention simply watched and discussed the video "Slim Hopes." Following the discussion, the participants filled out questionnaires and then were debriefed. Postcards for media activism were then distributed to the participants for the purpose of combating media influences on negative body image. The participants in the control group received no intervention. They completed the questionnaires, were debriefed, and postcards were distributed.

The participants were measured on four separate constructs: body image, media skepticism, intentions to engage in media activism, and affect. The instruments used to measure body image included the Body Dissatisfaction Scale of the Eating Disorders Inventory (EDI-BD; Garner, 1991), the Physical Appearance State and Trait Anxiety Scale-Weight Scale (PASTAS-W; Reed, Thompson, Brannick, & Sacco, 1991), and the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995). Media skepticism was measured by the Media Attitudes...
Questionnaire (MAQ; Irving, DuPen, & Berel, 1998). Intention to engage in media activism was evaluated by the mailing of postcards that the participants received at the end of each intervention to a media activism organization. Affect was measured by the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1998). The participants completed the MAQ before and after the intervention, but all other questionnaires were completed only after the intervention.

Contrary to expectations, no significant group differences were found for body image, as measured by the EDI-BD, PASTAS-W, and SATAQ or for affect, as measured by the PANAS. However, significant differences were found between groups on the MAQ. Relative to those in the control group, participants in the video-only and internally oriented groups reported less perceived realism of media images. As compared to the control group, all three intervention groups reported less perceived similarity to media images. Those in the externally oriented group reported less desirability to look like a fashion model. As for the intention to engage in media activism, almost half of those in the video-only intervention mailed their postcards compared to only 29% of the internally oriented intervention group, 19% of the externally oriented intervention group, and 5% of the control group.

Although the present study was equally effective across interventions at increasing media skepticism, there are limitations of the study to consider. First, the participants in the study were all college women; therefore the findings may not generalize to those who differ from the population studied in this experiment. Also, the body image and internalization variables were only measured after the intervention. It would be a stronger study had the questionnaires been completed both before and after
the interventions. In addition, the interventions differed in length. The externally oriented and internally oriented interventions were approximately 45 minutes in length, whereas, the video-only intervention was 15 minutes and the control was even shorter than that. Therefore, the duration variability may have confounded the study.

In another study that focused on college women only, Springer, Winzelberg, Perkins, and Taylor (1999) created an actual course aimed at improving body image. Twenty-four undergraduate women (mean age = 19.5) volunteered to take the course for two academic units. Sixty-three percent (n = 15) of the students identified themselves as Caucasian, 17% (n = 4) as Hispanic/Latina, 17% (n = 4) as Biracial, and 4% (n = 1) as Asian-American. All subjects participated in the intervention.

The course (intervention) was titled, "Body Traps: Perspectives on Body Image." It met for two hours a week for ten weeks. Instead of employing psychodynamic or cognitive-behavioral techniques, the goal of the course was to provide educational information, in the traditional manner, with the focus on body image and eating disorders. Classes included both structured information presentation (e.g., guest lectures, student panels, multimedia programs) as well as group discussions on each of the following topics related to body image: media, history of beauty, biological/evolutionary aspects of attractiveness, adolescent development, disability, aging, body building, cosmetic surgery, anorexia and bulimia: risk factors and consequences, obesity, and cultural difference (Springer et al., 1999). In addition, each week the students were required to write a two to three page reaction paper that expressed their thoughts, feelings, and criticisms on the readings.
The participants were assessed on measures of body image and self-esteem. The instruments used to assess body image were the EDI Drive for Thinness and Bulimia Scales (Garner & Olmstead, 1984), the EDE-Q Weight and Shape subscales, and the BSQ. To assess self-esteem, the RSE was utilized. Participants completed these four instruments on the first day of class, before the intervention began, as well as the last day of class, after the course was completed.

The results indicated that the “intervention had a significant effect on improving body image as well as disordered eating behaviors and attitudes” (Springer et al., 1999, p. 17). Oddly enough, this occurred without any emphasis by the intervention on changes in eating patterns/behaviors or change in weight. There were significant improvements in all the body image questionnaires: BSQ, EDE-Q weight subscale, EDE-Q shape subscale, EDI drive for thinness, and the EDI Bulimia scale. However, there were no significant changes in the self-esteem measure (RSE).

This particular intervention was quite different than other prevention programs in several ways. First, the program took an academic, non-personal perspective. “By impersonally and critically evaluating the issues, students may have discovered plausible connections between environmental influences and disordered cognitions/behaviors” (Springer et al., 1999, p. 18). By reducing the stigma associated with personal change, the authors suggested that defensiveness of the individual was avoided and, thus, resistance to discussing these issues declined (Springer et al., 1999). Secondly, there was no discussion of nutrition and healthy weight regulations as in other programs. By discussing these topics, it was thought that some programs could unintentionally condone weight preoccupation and dieting behavior (Piran, 1995 as cited in Springer et al., 1999).
Finally, the instructors of the course were older, but still similar in age to the participants. All of these factors could have contributed to the efficacy of the course.

The study did contain limitations that are important to discuss. First of all, the study did not contain a randomized control group. Also, there was no follow-up after the course was completed. Therefore, it is not known whether or not the changes remained consistent over time. Additionally, the results may not generalize to other populations since the sample size was small and the study was only conducted at one university.

In a third study on college students, Rabak-Wagener, Eickhoff-Shemek, and Kelly-Vance (1998) focused on the effect of body image with a media analysis program for college women and men. The goal of the intervention was to challenge the fashion advertisement credibility among the college-aged population. One hundred and five students, between the ages of 18 and 23 years of age, participated. The majority of the participants were of European American descent. Students were randomly selected from class sections of healthful living courses, some that were offered in the fall and some offered in the spring. Students were divided by class section into two groups: intervention (n = 60) and control (n = 45).

The intervention was a total of six and a half hours broken down into four classes of an hour and thirty-five minutes each. In the first meeting, the students watched the Kilbourne video, "Slim Hopes," then norms and data regarding the fashion industry were discussed. For the second meeting, students critically analyzed slides of male and female advertisements. While looking at the slides, students were asked to respond to the following discussion questions: (1) Why did the producers of the ad choose the particular poses, designs, and texts? (2) What "norms" does the ad perpetuate about young men and
women? and (3) What does the ad assume about what it means to be healthy and attractive? After this activity, the students were divided into small groups and were asked to create counter ads. For the third meeting, the students were asked to create two advertisements for any product. One was to be as inclusive as possible while the other was to satirize the fashion industry’s emphasis on the thin ideal. Through reframing of the images, the students were disregarding the norms and assumptions of the fashion industry. Finally, in the fourth meeting, students completed their ads and presented them to the larger group with a rationale for their choices.

In order to measure the participants’ beliefs and behaviors regarding the fashion industry, the authors of the study developed an 11-item survey that had been reviewed and piloted on another group of students. Participants were asked to respond to 11 statements using a 7-point Likert-type scale, ranging from (1) strongly disagree to (7) strongly agree. For example, one of the 11 items was “I would feel more satisfied with myself if my body looked more like female (male) fashion models’ bodies.” Before the intervention began, both experimental groups completed the instrument. The instrument was administered again after the intervention was completed. In order to analyze the data, the 11 items were placed in one of three categories: (1) total score, (2) belief score, or (3) behavior score.

Significant changes were reported by the intervention group as compared to the control group on several levels. Participants in the intervention group reported significant changes in their overall perceptions of body image after the intervention whereas the control group reported no changes. Moreover, when beliefs and behaviors were separated, the intervention group again reported significant changes in their beliefs.
about body image as compared to the control group. However, there were no significant differences between the intervention and control groups on behavior scores. When analyzed by gender, women in the intervention group reported a significant change in both beliefs and behaviors after the intervention, but those in the control group did not.

Although the significant changes are hopeful, there are limitations to consider regarding this study. The sample size was rather small in comparison to other studies. In addition, the instrument (with only 11 items) used to assess body image is not a particularly strong instrument with solid psychometric properties. Although the groups were randomly selected from the healthful living course, they were not randomly selected out of the university population. This brings up concerns that perhaps those taking a healthful living course may be more interested in their own health and fitness.
Chapter II
Rationale and Hypotheses

Currently, body image dissatisfaction is being reported in significant numbers among women. In particular, college women seem to be an “at-risk” population with “an average of 60% of college women (who) diet continuously” (Nicolino, Martz & Curtin, 2001, p.354). This behavior seems to be a result, at least in part, of the dissatisfaction that many women may feel with their bodies. “When asked what they would ideally like to weigh, 94% of (college) women chose a weight that was less than their current weight” (Cooley & Toray, 2001, p.234). The excessive dieting habits and distorted body image have proven to be the beginning of what could be partial or full-blown eating disorders. And with the value that our society places on being thin, it is not surprising that the rate of eating disorders in this country continues to increase (Thompson, 1996). Because of the pervasive and often subliminal nature of media’s focus on thinness in our cultural marketplace, it is no surprise that many women develop a pathological dissatisfaction with their own bodies.

One way to help prevent body dissatisfaction and, therefore, eating disorders, is to provide programs that aim to discredit the images that are represented in the media. Media literacy promotes adaptive behavior by enabling women to analyze critically the images of super-slender women in the media (Irving & Berel, 2001). By encouraging women to analyze the images, women empower themselves to be “protected” from developing a negative body image and, perhaps, eating disorders. With body image concerns and eating problems rampant on college campuses, “college women are an appropriate population for media literacy interventions focusing on media that promote
thinness and dieting to lose weight” (Irving & Berel, 2001, p.103). In addition, college women report comparing themselves to the models in the advertisements and media (Richins, 1991) as well as feeling considerable pressure to be thin stemming from the media (Irving, 1990, as cited in Irving & Berel, 2001). Thus, college women are an ideal population for media literacy interventions.

There are two studies of media literacy interventions already conducted with college populations that are of particular importance for the rationale of the proposed study. First, a study by Rabak-Wagener et al. (1998) found that beliefs regarding body image could be changed with the implementation of a media literacy training program, particularly for women. Participants were taught to challenge the fashion industry’s standards and assumptions about beauty. Perhaps one of the reasons for this outcome was due to a finding of another study by Springer et al. (1999). The authors of this study found that the prevention program was most effective when it was taught from a non-personal perspective. This type of exploration of media and its effects on women avoided the personal defensiveness or resistance that occurs when discussing personal information or change (Springer et al., 1999). Therefore, the results of these studies suggested that a media literacy program that aims at only teaching socio-cultural aspects, rather than focusing on personal change, may allow for the participant to engage in critical analysis of the media images without personal resistance.

In addition, it was suggested by H. Posavac, S. Posavac, and E. Posavac (1998) that “providing females with information on the effects of cosmetics, lighting, and photographic retouching in producing media images would lead females to perceive models as inappropriate targets for social comparison” (p.199-200). Obviously, the
images that one sees in magazines and advertisements are enhanced or embellished. First, supermodels are much thinner than almost all the women one might meet in reality (Posavac et al., 1998). Secondly, the photos have gone through many touch ups and have been airbrushed to make the models look perfect (Thompson, 1996). Plastic surgery, 'molding' of one's body with tape, and airbrushing are all techniques used to create this ideal image. Therefore, "the extreme thinness of the models combined with professional photographic techniques and retouching interact to produce a "superimage" with which most women simply cannot compete" (Posavac et al., 1998, p.199). Although the constant force of these images serve as a reminder that one should be this 'superimage', these body types and images are not the norm and are unobtainable to the average woman ("The Media", 2002). By teaching women the techniques that advertisers use to create these images, perhaps feelings of inadequacy with respect to one's own body may be attenuated (Posavac et al., 1998). This has not been a component in any media literacy programs to date.

The purpose of this study is to investigate the effects of media literacy programs on the body image of undergraduate women. The independent variable will be the type of psycho-educational intervention: (1) Combination Intervention [CI], (2) a Video only Intervention [VI], (3) an Image altering only Intervention [II], and (4) No-Intervention, or control group [C]. The dependent measures will be three components of body image: perception of body image, attitudes/behaviors associated with body image, and body image preoccupation. The first component, perception of body image, will be measured by the Contour Drawing Rating Scale (CDRS). The attitudes and behaviors associated with body dissatisfaction will be measured by the Eating Attitudes Test (EAT-26). The
third component, body image preoccupation will be measured by the Body Shape Questionnaire (BSQ-34).

**Hypothesis**

It is hypothesized that whereas the EAT, CDRS, and the BSQ of the C group do not differ significantly after one month, the scores of the II and VI are moderately improved (i.e., lowered) and those of the CI group are improved the most.
Chapter III

Method

Participants

Participants will include approximately 120 non-eating disordered women who are between the ages of 17 and 24. The participants will be current undergraduate students at a private, Mid-western university. Participation will be completely voluntary and all subjects will be asked to give informed consent. Those with a history of eating disorders, physical deformities, and/or those who are recently/currently pregnant will be excluded from the study due to potential of confounding factors related to body image. The Eating Disorders Diagnostic Form (Dacey et al., 2000) will be used as the instrument to determine the exclusion of a participant.

Measures

Demographic Questionnaire (Dacey, LaVelle, Van Keuren, Dryer, & Grin, 2000). This is a brief questionnaire that requests basic demographic information as well as personal information (i.e. height, weight, relevant history). This will be administered to all participants (see Appendix A).

Contour Drawing Rating Scale (Thompson, M.A., & Gray, J.J., 1995). The CDRS is a measure of body-size perception. It consists of nine male drawings and nine female drawings of body shapes. The drawings are designed with detailed features, are of graduated sizes, and are accurately proportioned for upper and lower body comparisons. Participants are asked to rate their ideal figure and the figure which best represents their current body size. The difference between the ideal and current is considered to be the “index” or score for that individual’s perception of body shape. The
silhouettes appear in order from smallest to largest. For the purpose of this study, only the female figures will be used (see Appendix B). This scale has acceptable reliability and concurrent validity of .78 and .71, respectively, as well as test-retest validity (rank-ordering the drawings) of .98 for the female drawings (Thompson & Gray, 1995). The range of scores can range from zero (the person selected the same silhouette as being her current body size and her ideal body size) to eight (the person selected the smallest silhouette as either her current or ideal body size and the largest silhouette for the opposite).

*Eating Attitudes Test* (Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT is the most widely used standardized self-report measure of symptoms (behaviors) and concerns (attitudes) characteristic of eating disorders. It is used as measure of abnormal attitudes towards food and eating rather than as a diagnostic tool for eating disorders. The original version of the EAT consisted of 40 items. However, a factor analysis of the original yielded a 26-item version, which highly correlated with the 40-item test ($r = .98$) (Garner et al., 1982). Each item is answered on a 6-point Likert scale, ranging from always (6) to never (1) for all 26 items, with the exception of the 25th question where the scoring is reversed. Possible scores on the EAT range from 0 to 78; scores 20 or higher are generally considered characteristic of subclinical eating disorder pathology. However, this measure is only a screening measure and will not be used as a determinant to exclude someone from the study. The 26-item EAT has good reliability, ranging from .83 for comparison groups to .90 for those with anorexia nervosa as well as good validity ($r = .84$). The 26-item version will be used to assess attitudes and behaviors related to eating disorders (see Appendix C.)
Body Shape Questionnaire (Cooper, Taylor, Cooper, & Fairburn, 1986). This 34-item questionnaire is the only self-report measure of body image preoccupation currently available (Rosen, Jones, Ramirez, & Waxman, 1996). The instrument is designed to measure desire to lose weight, body dissatisfaction, and feelings of low self-esteem as related to weight and shape (Cooper et al., 1986). It uses a 1-6 point Likert-type scale, ranging from (1) never to (6) always. Possible scores on the BSQ range from 34 to 204. A valid cut-off value to identify probable cases of those with eating disorder pathology is 129 or higher, as identified by Cooper, Charnock, and Taylor (1987) and Rosen et al. (1996). However, this instrument is only a screening measure and will not be used as a determinant to exclude someone from the study. The co-efficients of test-retest reliability (r = .88), internal consistency (r = .97), and concurrent validity are adequate (Cooper et al., 1986). The 34-item BSQ (see Appendix D) will be administered to assess preoccupation with body shape.

Eating Disorders Diagnostic Form (Dacey et al., 2000). This is a brief, self-report questionnaire that was developed according to the criteria for anorexia nervosa and bulimia nervosa from the Diagnostic and Statistical Manual of Mental Disorders-IV (American Psychiatric Association, 1994). This instrument will be used to exclude those with a history of eating disorders, physical deformities, and/or those who are recently/currently pregnant (see Appendix E).

Design

This study will utilize a split-plot Multiple Analysis of Variances (MANOVA) in order to compare the Intervention groups and Control group on the three dependent variables. The independent variable will be type of intervention. There are four levels:
(1) Combination Intervention [CI], (2) Video-Only Intervention [VI], (3) Image altering only Intervention [II], and (4) No Intervention, or Control group, [C]. The dependent variables will be three components of body image: (1) perception of body shape, (2) attitudes and behaviors related to body image, and (3) body shape preoccupation.

An estimated size effect of .50 will be used to determine the amount of power. This effect size was based on a recent study completed by Irving and Berel (2001). Based on completion of a power analysis, it was determined that 30 participants per cell (or intervention) will be needed to obtain a power level of .80. This power level will allow for an actual statistical significance to be detected 80 percent of the time. The possibility of making a Type II error, failing to detect significance between the groups, will be possible 20 percent of the time.

Procedure

The dissertation proposal will be submitted to the Xavier University Institutional Review Board for review of the study.

The participants will be recruited from undergraduate psychology classes, according to the department’s recruitment procedures. The script that will be read to students in the psychology courses is included in Appendix F. This script includes important information regarding the nature of the study, the assignment to experimental groups, time commitment, and incentive to participate. A sample sign-up sheet is located in Appendix G. In addition, all students who fully participate (i.e. they complete the assigned intervention as well as the questionnaires) will be eligible for a $200 gift certificate to the Kenwood Mall. The participant’s name will be placed in a raffle at the end of the assigned intervention. Upon completion of all interventions, a name will be
drawn from the raffle. That participant will be contacted by phone or e-mail and may receive her prize at that time.

For those who are interested, they will be asked to sign up for a time on the sign-up sheets. Students will be referred to the bulletin board across from Elet 213 for information regarding where and when their session one will take place. Any students who do not originally sign up, but decide to sign-up at a later date will be allowed to participate in the study. Additional time slots will be posted on the bulletin board across from Elet 213. Students will be contacted via e-mail or phone two days in advance to remind them of the time and location of session one.

*Interventions (Session One)*

There will be a facilitator for the interventions who will be doctoral students in the Clinical Psychology Program of Xavier University. The researcher will be one of these facilitators. All other facilitators will be trained in the procedures by the researcher. Also, the script to be used in the sessions will be followed closely and accurately by each facilitator. The script to be used in session one of the study is presented in Appendix I.

Students will be randomly assigned to intervention groups according to the time slot for which they sign up. The time slots being offered will be pre-assigned to an intervention condition before they are distributed. However, the participants will not be made aware of these assignments and will, hence, sign-up with no knowledge of which intervention they will receive. For example, a sign-up sheet for Monday at 3pm will be pre-assigned to be the CI group. Those participants who sign up for that time and day will receive the Combination Intervention when they attend the first session, but will be unaware of this at the time of sign up.
At the beginning of all intervention sessions, the students will be asked to sign an informed consent sheet (see Appendix H). This form will contain information regarding the study as well as the fact that it is voluntary. The student will sign two forms. One will be placed in a sealed envelope and given to the facilitator. The second form (the copy) will be kept by the participant for her record of agreement to participate in the study. Once this has been completed, the student will be asked to fill out the pretreatment measures in the following order: (1) demographic questionnaire, (2) CDRS, (3) EAT, (4) BSQ, and (5) Eating Disorders Diagnostic Form. The facilitator will pass out pre-numbered envelopes. The completed questionnaires will be placed in these envelopes, sealed, and returned to the facilitator. These questionnaires must be completed in order to continue with the intervention.

The number on the envelope will be the participant’s identification number, to be used for the entire experiment. A master list will link the participant’s name to her participation number. This list will be kept in a locked file cabinet that is separate from the actual data. Only the facilitator will have access to this file cabinet, for administrative purposes (i.e. participant forgets her assigned number). This is to protect confidentiality.

All interventions (session one) will be approximately an hour and a half in length. Those participants not receiving the Combination Intervention will be asked to view portions of the movie “A Beautiful Mind” and write down the psychological themes that are presented during the film. The investigator selected this film because it focuses on a psychological theme (i.e. schizophrenia) but contains little emphasis on body image. The amount of time that they will view the film will be equal to the time of the intervention that they are not receiving. This is to equate the groups on time so that it does not
Effects of Media Literacy 45

confound the study. After the completion of the designated intervention, all groups will be asked to fill out three questionnaires, in the following order: (1) CDRS, (2) EAT, and (3) BSQ.

Combination Intervention (CI). The Combination Intervention group will be given a brief introduction related to the influence that the media has on body image, read from the script. Then, participants will be asked to view the video, “Slim Hopes.” This video is approximately 30 minutes in length. It discusses the sociocultural pressures related to the ideal body, with an emphasis on the media’s contribution. The facilitator will then read from the script again, with a statement about the video and an introduction for the image alteration training. Next, the facilitator will demonstrate the alterations that are made to photographs to enhance the media images. After being scanned into the computer (done prior to the intervention), the photograph will be distorted using the Adobe Photoshop 6.0 computer program. The demonstration will include alterations of hair color, eye color, and removal of imperfections. In addition, the image will be manipulated so that the image is 10%, 20%, and 30% thinner as well as 10%, 20%, and 30% heavier. The computer program keeps all proportions in tact. The image and its alterations will be projected on a screen at the front of the room so that each participant can view it. Questions and conversations regarding the program will be kept to a minimum; however, participants will be given information on how to obtain the program for further investigation.

Video-only Intervention (VI). The participants in the Video-only Intervention group will begin with the brief introduction. Then, they will view the “Slim Hopes” video. Next, the facilitator will make a brief statement about the video, read from the
script. For the following half-hour, the participants will view a portion of the movie “A Beautiful Mind” and take notes since they are not receiving the image alteration component.

*Image-alteration Intervention (II).* The Image altering Intervention group will begin with the identical introduction done with the previous groups. Then, the facilitator will demonstrate the image alterations, as done with the CI group. For a half-hour following the computer training, the participants will view a portion of the movie “A Beautiful Mind” and take notes since they are not viewing the “Slim Hopes” video.

*Control (C).* Those in the No Intervention, or the control, group will view an hour portion of the movie “A Beautiful Mind” and take notes on the psychological themes, since they are not receiving any interventions.

At the end of all interventions, the participants will be given sign-up sheets and asked to select a day (approximately one month after session one) that they can return for the second session. All participants will be asked to refrain from discussing the study between the two sessions in order to avoid participant biases. Additional time slots will be posted on the bulletin board across from Elet 213. Students will be contacted via e-mail or phone two days in advance to remind them of the time and location of session two.

*Session Two (Questionnaires and Debriefing)*

The script to be used in session two of the study is presented in Appendix J. The participants will receive three questionnaires, the CDRS, the EAT, and the BSQ, and be asked to complete all three. After all participants have completed the questionnaires, each participant will receive a debriefing form (see Appendix K) as well as be given the
opportunity to ask questions regarding the study or to make comments. Attached to the debriefing form will be a list of local and national eating disorder contact information, as references on how and where to get help for someone with eating difficulties. In addition, the participants will also be asked to remain quiet so that other participants are not influenced by their comments regarding the study. Finally, the participants will be thanked for their participation. This session should take approximately 30 minutes to complete.

**PostIntervention**

Following the completion of all interventions, the CI, VI, and II will be re-run for those participants who did not receive a particular intervention. For example, those in the II group who did not get to watch the "Slim Hopes" video will be given the opportunity to do so. No questionnaires will be given at this time, nor will anyone take notes on the movie "A Beautiful Mind." This is to ensure that all participants have an equal opportunity to partake in the intervention of their choice.

In addition, for those students whose score places them in a range that is characteristic of individuals with eating disorder pathology (EAT ≥ 20 and/or BSQ ≥ 129), the facilitator will contact the participant by phone. The concerning scores will be discussed and information will be given to the participant detailing where to go for further investigation and discussion for her possible difficulty.
Chapter IV

Proposed Analyses

The purpose of the present study is to investigate the effects of media literacy programs on the perception of body shape, attitudes/behaviors related to body image, and body image preoccupation of undergraduate women. An alpha level of .05 will be used to test the hypotheses.

It is hypothesized that whereas the EAT, CDRS, and the BSQ of the C group do not differ significantly after one month, the scores of the II and VI are moderately improved (i.e. lowered) and those of the Cl group are improved the most. A split-plot ANOVA will be computed to examine the hypothesis concerning pre-post differences (i.e. a within-subjects variable) on the multiple dependent variables among the four intervention groups (i.e. a between-subjects variable). If the multivariate $F$ is statistically significant for the interaction of the within-subject variable and the between-subject variable, multivariate contrasts will be computed to specify the exact nature of the effect.

It is expected that the post test scores of the Cl group will be significantly improved (i.e. lower) compared with those of the VI and II group. On the other hand, the pre-post scores of the control group will not change. The interaction effect points to such differing effects among the groups. The hypothesized interaction is plotted in Figure 1 (see Appendix L). If results are statistically significant, Bonferroni post hoc analyses will be conducted in order to identify the significantly different comparisons.

Previous research has demonstrated that media literacy programs can be effective tools in helping women to analyze critically the images that are presented in the media (e.g., Rabak-Wagener et al., 1998; Piran, 1999; Springer et al., 1999; Irving & Berel,
In particular, programs (Rabak-Wagener et al., 1998; Springer et al., 1999) that are taught from a non-personal perspective were successful at changing body image beliefs and attitudes. It has been suggested that the reason for the success of these programs be attributed to the avoidance of personal defensiveness or resistance that occurs when discussing personal change and information (Springer et al., 1999). Due to the success of these programs, the current study focused only on psychoeducational intervention techniques, without emphasis on personal change.

This study contributes to the literature in three ways: (1) it is the first study to include the demonstration of alterations to images through a computer program as a component of the media literacy training interventions, (2) it targets a particularly “at-risk” population, and (3) it includes the measurement of an additional component of body image not commonly found in other studies, body image preoccupation. First, Posevac et al. (1998) suggested that by providing women with information on how images are altered, women would come to realize that the images that are presented to them are not real. Therefore, the women would perceive models as inappropriate targets for comparison. In turn, feelings of inadequacy related to upward social comparison of body image would be eased. Secondly, college women are an ideal population to target for media literacy programming. With eating-related difficulties becoming increasingly salient on the college campus (Klemchuck, Hutchinson, & Frank, 1990), it is important to focus on undergraduates and tailor intervention programs to fit the needs of this population. Lastly, many studies comparing multiple measures of body image have reported conflicting results with regard to effectiveness (Baranowski & Hetherington, 2001; Irving & Berel, 2001; O’Dea & Abraham, 2000). However, “these studies have
not included a measure of body image preoccupation” (Mazzeo, 1999, p.44). Therefore, in addition to well-established measures of body image, this study investigates a third component of body image (preoccupation) as well.
References


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Tiggemann, M., Gardiner, M., & Slater, A. (2000). “I would rather be size 10 than have straight A’s”: A focus group study of adolescent girls’ wish to be thinner. *Journal of Adolescence, 23,* 645-659.


Appendix A

Demographic Questionnaire

ID #: _______________________

1. Age: _____

2. Please indicate which of the terms best describes you:
   Single_____ Married_____ Divorced_____ Widowed_____

3. What is your highest level of education?
   Freshman_____
   Sophomore_____
   Junior_____
   Senior_____

4. Height ______ ft. ______ in.

5. Weight ______ lbs.

6. Estimated size of body frame small____ medium____ large____

7. Are you currently pregnant? Yes_____
   No_____
   If no, have you been pregnant in the last year? Yes_____
   No_____

8. Do you have a severe physical deformity? Yes_____
   No_____
   If so, please describe the deformity and any feelings you have regarding it.
   ____________________________________________________________
   ____________________________________________________________
9. Have you ever been treated for an eating disorder (e.g. anorexia nervosa, bulimia, binge eating?)

Yes______ What type?________________ Approximate Age(s)______

No______

Thank you.

Dacey et al. (2000)
Appendix B

Contour Drawing Rating Scale (CDRS)

ID #: __________________________

First, please mark the figure that is closest to your current body shape by placing a “C” above the shape.

Second, please mark the figure that is closest to your ideal body shape by placing an “T” above the shape.

Thompson, M.A., & Gray, J.J. (1995)
Appendix C

Eating Attitudes Test (EAT-26)

ID #: ______________________

Please check a response for each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Always</th>
<th>Usually</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Am terrified about being overweight</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Avoid eating when I am hungry</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Find myself preoccupied with food</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Have gone on eating binges where I feel that I may not be able to stop</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. Cut my food into small pieces</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6. Aware of the calorie content of foods that I eat</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7. Particularly avoid food with a high carbohydrate content (i.e. bread,</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>rice, potatoes, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Feel that others would prefer if I ate more</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9. Vomit after I have eaten</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. Feel extremely guilty after eating</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. Am preoccupied with a desire to be thinner</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. Think about burning up calories when I exercise</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13. Other people think that I am too thin</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14. Am preoccupied with the thought of having fat on my body</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>15. Take longer than others to eat my meals</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>16. Avoid foods with sugar in them</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17. Eat diet foods</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18. Feel that food controls my life</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>19. Display self-control around food</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20. Feel that others pressure me to eat</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21. Give too much time and thought to food</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22. Feel uncomfortable after eating sweets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23. Engage in dieting behavior</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>24. Like my stomach to be empty</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25. Enjoy trying new rich foods</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>26. Have the impulse to vomit after meals</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix D

Body Shape Questionnaire (BSQ)

ID#: ____________________________

Please read each question and circle the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:

<table>
<thead>
<tr>
<th>Question</th>
<th>Always</th>
<th>Usually</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has feeling bored made you brood about your shape?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Have you been so worried about your shape that you have been feeling you ought to diet?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3. Have you thought that your thighs, hips or bottom are too large for the rest of you?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. Have you been afraid that you might become fat (or fatter)?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. Have you worried about your flesh being not firm enough?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6. Has feeling full (e.g. after eating a large meal) made you feel fat?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7. Have you felt so bad about your shape that you have cried?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8. Have you avoided running because your flesh might wobble?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Question</td>
<td>Always</td>
<td>Usually</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------</td>
<td>---------</td>
<td>-------</td>
<td>-----------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>9. Has being with thin women made you feel self-conscious about your shape?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. Have you worried about your thighs spreading out when sitting down?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11. Has eating even a small amount of food made you feel fat?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12. Have you noticed the shape of other women and felt that your own shape compared unfavorably?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching TV, reading, listening to conversations)?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14. Has being naked, such as when taking a bath, made you feel fat?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>16. Have you imagined cutting off fleshy areas of your body?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>17. Has eating sweets, cakes, or other high calorie food made you feel fat?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>18. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Question</td>
<td>Always</td>
<td>Usually</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------</td>
<td>---------</td>
<td>-------</td>
<td>-----------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>19. Have you felt excessively large and rounded?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>20. Have you felt ashamed of your body?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>21. Has worry about your shape made you diet?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>22. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>23. Have you thought that you are in the shape you are because you lack self-control?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>24. Have you worried about other people seeing rolls of fat around your waist or stomach?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>25. Have you felt that it is not fair that other women are thinner than you?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>26. Have you vomited in order to feel thinner?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>27. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>28. Have you worried about your flesh being dimply?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>29. Has seeing your reflection (e.g. in the mirror or shop window) made you feel bad about your shape?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Question</td>
<td>Always</td>
<td>Usually</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------</td>
<td>---------</td>
<td>-------</td>
<td>-----------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>30. Have you pinched areas of your body to see how much fat there is?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>31. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>32. Have you taken laxatives in order to feel thinner?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>33. Have you been particularly self-conscious about your shape when in the company of other people?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>34. Has worry about your shape made you feel you ought to exercise?</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Cooper, P.J., Taylor, M.J., Cooper, Z., & Fairburn, C.G. (1987)
Appendix E

Eating Disorders Diagnostic Form

ID#: _______________________

1. Have you ever experienced a significant loss of weight such that you would be considered underweight?
   
   Yes______  No_______
   
   If yes: Lowest weight? _________  Height at the time? _________
   
   How old were you? _________

2. As you were growing up, were you unable to gain the expected weight for your height?
   
   Yes______  No_______
   
   If yes: Lowest weight? _________  Height at the time? _________
   
   How old were you? _________

3. Do you feel preoccupied with thoughts of losing weight and being thinner?
   
   Yes______  No_______

4. Do you worry a great deal about gaining weight?
   
   Yes______  No_______

5. Do you often feel fat?
   
   Yes______  No_______
6. Does your body weight and/or shape overly influence how you feel about yourself?

   Yes ______   No ______

7. Have you ever missed at least three consecutive menstrual cycles for reasons other than pregnancy?

   If yes, how did you understand the reasons for this?

   a. hormone imbalance
   b. low body fat
   c. stress related
   d. other: specify________________________________________

8. Do you regularly eat an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances?

   If yes, how often do you binge?

   a. seldom
   b. once or twice a month
   c. once a week
   d. twice a week
   e. almost every day

   If yes, have you been bingeing for three months or more? Yes _________
9. Which best describes your feelings during a binge?
   a. I feel that I can control the eating if I choose.
   b. I feel that I have at least some control.
   c. I feel completely out of control.

10. Do you find yourself doing things to control or change your body weight or shape?
   a. self-induced vomiting
   b. laxatives
   c. diuretics
   d. enemas
   e. diet pills or other medications
   f. fasting
   g. excessive exercise
   h. other: please specify____________________

   If yes:
   How often do you use these methods?
   _____________________ per week

   How long have you been using these methods?
   _____________________ months
Do you use them after eating small amounts of food? Yes______
No______

Do you use them after eating large amounts of food? Yes______
No______

Dacey et al. (2000)
Appendix F

Recruitment Script

Hello, my name is Jennifer Lynch. I am a fourth year doctoral student in the clinical psychology program. I am looking for women who would like to take part in a study related to media and body image. The study is set up to be an experimental design; therefore, there will be intervention groups and a control group. If you choose to participate, you will be assigned to one of these groups. Women who have past histories of treatment for an eating disorder, who have a physical deformity, and/or who are currently or recently pregnant will not be included in this study.

All participants will be asked to attend two sessions. The first session will be approximately an hour and a half. The second session will be approximately a half hour. You will be asked to complete several measures and a demographic questionnaire. If you would like to participate or are interested to find out more, please sign up for a time on the sheets that I am circulating. There will also be a sign-up sheet across from Elet 213 for those of you who cannot commit at this time.

If you participate in this study by attending all sessions and completing all questionnaires, you may receive extra course credit in this psychology course for your time. This will be determined by your instructor. In addition, your name will be entered in a raffle to win a $200 gift certificate to Kenwood Mall. The locations, times, and dates of the sessions are on the sign-up sheets. Again, this information will also be posted on the bulletin board across from Room 213 in Elet Hall. Thank you for your time.
Appendix G

Recruitment Sign-Up Sheet (Sample)

Title of Study: ____________________________________________

Investigator: ____________________

Phone Number of Investigator: ____________________

If you need to cancel, please notify the investigator at the number listed above at least 24 hours in advance.

Date: __________

Time: __________

Room: __________

Name ________________  Instructor ___________________  Phone # ________________

1. __________________________________________________________________________
2. __________________________________________________________________________
3. __________________________________________________________________________
4. __________________________________________________________________________
5. __________________________________________________________________________
6. __________________________________________________________________________
7. __________________________________________________________________________
8. __________________________________________________________________________
9. __________________________________________________________________________
10. __________________________________________________________________________

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Appendix H

Informed Consent

You are being asked to participate in a study conducted through Xavier University. The University requires that you give your signed agreement to participate in this project. This is a research project designed to examine body image and media. This study will involve intervention groups and a control group. If you choose to participate, you will be randomly assigned to one of these groups. Your participation in this experiment will involve two sessions, requiring a total of approximately two hours of your time.

After you have read this consent form thoroughly, you may ask the investigator any questions that you may have.

1. **Nature and purpose of the study:** The purpose of this study is to examine components of media literacy programs as related to body image for undergraduate women.

2. **Explanation of Procedures:** You will be asked to complete five questionnaires during the first session. The surveys contain questions regarding demographic information and thoughts and feelings related to body image. After you complete the questionnaires, you will participate in one of four interventions that have been randomly pre-assigned. This first session will take approximately an hour and a half. At the end of the session, you will be asked to select a half and hour time slot to return to fill out three questionnaires and to receive debriefing regarding the study. It is only at this time that you will learn in which of the four interventions you participated. Also, at this time, you may ask any questions or make any comments regarding the study.
Furthermore, the sessions will be re-run so that you may have the opportunity to partake in the intervention that you did not receive.

3. **Discomfort and Risks:** There are no foreseeable risks or discomforts related to this study. However, some of the questions asked on the survey are personal and may be uncomfortable to answer.

4. **Benefits:** Some students may receive extra credit for their participation, as determined by their professor. All participants who complete the study (i.e., attend both sessions and complete all questionnaires) will be entered into a raffle to win a $200 gift certificate to Kenwood Towne Center.

5. **Confidentiality:** Your name and results are strictly confidential. Reports of results will only be given in the form of average group scores, and no individual names or scores will be published. You will be asked for your email address and phone number for communication purposes. This information will be kept separate from all questionnaires to enhance confidentiality. Names and email addresses will be destroyed when the study is complete.

6. **Refusal/Withdrawal:** You are under no obligation to participate in this study, and you are free to withdraw at any time. If at any point in time during the sessions, you decide that you would no longer like to participate, you may discontinue immediately. Refusal to participate or withdraw from the study will have no effect on any services to which you may be entitled from this University. There will be no penalty for withdrawal from this study.
A summary of the results will be made available to you, if desired. Please check the appropriate line below:

_____ Yes, I would like to have a summary of the results of the study. Please send a copy of the summary to the permanent address listed below.


_____ No, I do not wish to have a summary sent to me.

If you decide to participate in this study, please sign below in the presence of the person who explained the project to you. If you do not want to participate, you may decline to sign this form and be excused. Please place one copy in the envelope provided and give to investigator. Please keep a copy for your records. Thank you.

Name (Print)                                  Signature (Please sign)                                  Date

Jennifer M. Lynch, M.A.                                 Cynthia Crown, Ph.D.
Investigator, Dept. of Psychology                               Social Psychologist and Prof. of Psychology
Phone: 513-522-4141                                      Phone: 513-522-4141
Email: jennifermlynch@hotmail.com                          Email: jennifermlynch@hotmail.com
Appendix I

SESSION ONE: Intervention Script

COMBINATION INTERVENTION:

I. Introduction

FACILITATOR: I would like to welcome everyone and thank you for your participation. Introduce self.

I would like to ask all of you to please keep any conversation to a minimum during the intervention. Also, I would like to ask that you refrain from sharing anything that we do here today until the completion of this study. Again, thank you for your time and participation. Let's get started!

II. Video

FACILITATOR: The first piece of the intervention involves a video called, "Slim Hopes." In this video, the creator, Jean Kilbourne offers an in-depth analysis of how female bodies are depicted in advertising imagery and the devastating effects of that imagery on women's health. Addressing the relationship between these images and the obsession of girls and women with dieting and thinness, "Slim Hopes" offers a new perspective on life-threatening eating disorders such as anorexia and bulimia, and it provides a well-documented critical perspective on the social impact of advertising. Again, please remain quiet while viewing the video and hold any comments until the end of this session.

When the video is over, FACILITATOR: Now that you all have a background on media and its impact on women, I'd like to demonstrate some techniques that the advertising industry uses to manipulate the images.
III. Photoshop Demonstration

FACILITATOR: The computer program that I will use to demonstrate the alteration of images is Adobe Photoshop 6.0. Photoshop is the image manipulation program used by designers and artists in the advertising and publishing industries. This program offers almost limitless capabilities to edit images; however, we will only be looking at a few today. These will include: manipulation of hair and eye color, removal of blemishes, and decreasing and increasing the weight of the person in the image. Again, I would like to ask all of you to please keep any conversation to a minimum during the demonstration.

IV. Completion

FACILITATOR: Thank you all for your participation today. I will now pass around a sign-up sheet for the second session. The next session will be approximately one half hour. In order to be entered in the raffle for the $200 gift certificate to Kenwood Towne Center and/or receive extra credit, you must complete the second session. I will be contacting you to remind you of the date, time, and place of the second session approximately one week before the session. Again, I would like to remind you to not share this program with others. Thank you for your time and participation and I will see you at the next session!

VIDEO-ONLY INTERVENTION:

I. Introduction

FACILITATOR: I would like to welcome everyone and thank you for your participation. Introduce self.
I would like to ask all of you to please keep any conversation to a minimum during the intervention. Also, I would like to ask that you refrain from sharing anything that we do here today until the completion of this study. Again, thank you for your time and participation. Let's get started!

II. Video

FACILITATOR: The first piece of the intervention involves a video called, “Slim Hopes.” In this video, the creator, Jean Kilbourne offers an in-depth analysis of how female bodies are depicted in advertising imagery and the devastating effects of that imagery on women's health. Addressing the relationship between these images and the obsession of girls and women with dieting and thinness, “Slim Hopes” offers a new perspective on life-threatening eating disorders such as anorexia and bulimia, and it provides a well-documented critical perspective on the social impact of advertising. Again, please remain quiet while viewing the video and hold any comments until the end of this session.

III. Viewing of movie

FACILITATOR: Now, please watch a portion of the following movie, “A Beautiful Mind.” When a psychological theme, such as hallucinations or medications, is presented, please make a note of it on your paper. I will collect these at the end of the segment. Make sure you put your participant number at the top of the sheet. Again, please remain quiet during this time.

IV. Completion

FACILITATOR: Thank you all for your participation today. I will now pass around a sign-up sheet for the second session. The next session will be
approximately one half hour. In order to be entered in the raffle for the $200 gift
certificate to Kenwood Towne Center and/or receive extra credit, you must
complete the second session. I will be contacting you to remind you of the date,
time, and place of the second session approximately one week before the session.
Again, I would like to remind you to not share this program with others. Thank
you for your time and participation and I will see you at the next session!

IMAGE ALTERATION-ONLY INTERVENTION:

I. Introduction

FACILITATOR: I would like to welcome everyone and thank you for your
participation. Introduce self.

I would like to ask all of you to please keep any conversation to a minimum
during the intervention. Also, I would like to ask that you refrain from sharing
anything that we do here today until the completion of this study. Again, thank
you for your time and participation. Let's get started!

II. Photoshop Demonstration

FACILITATOR: I'd like to demonstrate some techniques that the advertising
industry uses to manipulate the images that you view in the media. The computer
program that I will use to demonstrate the alteration of images is Adobe
Photoshop 6.0. Photoshop is the image manipulation program used by designers
and artists in the advertising and publishing industries. This program offers
almost limitless capabilities to edit images; however, we will only be looking at a
few today. These will include: manipulation of hair and eye color, removal of
blemishes, and decreasing and increasing the weight of the person in the image.

Again, I would like to ask all of you to please remain quiet during the demonstration.

III. Viewing of movie

FACILITATOR: Now, please watch a portion of the following movie, "A Beautiful Mind." When a psychological theme, such as hallucinations or medications, is presented, please make a note of it on your paper. I will collect these at the end of the segment. Make sure you put your participant number at the top of the sheet. Again, please remain quiet during this time.

IV. Completion

FACILITATOR: Thank you all for your participation today. I will now pass around a sign-up sheet for the second session. The next session will be approximately one half hour. In order to be entered in the raffle for the $200 gift certificate to Kenwood Towne Center and/or receive extra credit, you must complete the second session. I will be contacting you to remind you of the date, time, and place of the second session approximately one week before the session. Again, I would like to remind you to not share this program with others. Thank you for your time and participation and I will see you at the next session!

NO-INTERVENTION (CONTROL):

I. Introduction

FACILITATOR: I would like to welcome everyone and thank you for your participation. Introduce self.
I would like to ask all of you to please keep any conversation to a minimum during the intervention. Also, I would like to ask that you refrain from sharing anything that we do here today until the completion of this study. Again, thank you for your time and participation. Let's get started!

II. Viewing of movie

FACILITATOR: Please watch a portion of the following movie, “A Beautiful Mind.” When a psychological theme, such as hallucinations or medications, is presented, please make a note of it on your scrap paper. I will collect these at the end of the segment. Make sure you put your participant number at the top of the sheet. Again, please remain quiet during this time.

V. Completion

FACILITATOR: Thank you all for your participation today. I will now pass around a sign-up sheet for the second session. The next session will be approximately one half hour. In order to be entered in the raffle for the $200 gift certificate to Kenwood Towne Center and/or receive extra credit, you must complete the second session. I will be contacting you to remind you of the date, time, and place of the second session approximately one week before the session. Again, I would like to remind you to not share this program with others. Thank you for your time and participation and I will see you at the next session!
Appendix J

SESSION TWO: Questionnaires Only Script

I. Introduction

FACILITATOR: Welcome back, everyone. Thank you for returning to complete the remainder of your portion of the study. I would like to ask you to refrain from any conversation during this time. There will be time afterwards for questions or discussion. Thank you.

II. Questionnaires

FACILITATOR: I am handing you an envelope with a series of questionnaires. First, please make sure that the participant number that you were assigned during session one matches that on the envelope that you are given. If it does not match, please let me know immediately and I will get you the correct envelope. If the number on the envelope is your participant number, please fill out the questionnaires in the order that they are stapled. When you are finished, place them in the envelope and give them to me. Then, remain seated until everyone has completed the questionnaires. When everyone is finished, you will be given a sheet to read that explains the experiment. Any questions, comments, or discussion may take place after everyone has read this sheet. Thank you.

III. Completion

FACILITATOR: Once again, thank you all for your participation. As mentioned in the form, there will be additional sessions for those participants who did not receive the combination intervention or received only part of the intervention. Your name will be placed in the raffle to win the gift certificate. Upon completion...
of all interventions, a name will be drawn at random. You will be notified via e-mail or phone if you are the recipient of the gift certificate. Again, thank you for your time and participation!
Appendix K

Participant Debriefing Form

The purpose of the study you just completed was to investigate the effects of different media literacy programs on how you perceive your shape, the thoughts and feelings that you have related to body image, and your preoccupation with body image. Some participants were involved in an intervention that included two elements, a video and a demonstration of image alteration techniques. Other participants only received one of those components, while other participants were involved in the control group and received no intervention. Previous research on media literacy programs reported effectiveness in helping women to analyze critically the images that they see in the media with the aim of discrediting those images. As a result, the studies reported that the participants became less dissatisfied with their bodies.

The results of this study are meant to provide researchers with additional information about the effectiveness of media literacy programs with undergraduate women and their body image. In addition, this study provided a new component, the computer manipulation program, to assist in the discrediting of the media images.

For those of you who were assigned to a group that received either no intervention or only one intervention, the following is a list of the dates and times that the interventions will be “re-run” so that you have the opportunity to partake in the intervention you did not receive:

_________________________________________________________________________

_________________________________________________________________________

Please let the researcher know if you are planning on attending one of these sessions.
If you have any questions about your participation in this study, please feel free to contact either Dr. Cindy Crown, Ph.D. (Dissertation Advisor) at 745-1094 or the researcher, Jennifer Lynch, M.A. at 518-4477. If you would like to discuss any personal concerns or experiences that you may have had about yourself or your body image in response to this program, please contact Xavier University’s Psychological Services Center at 745-3531 or the Health and Counseling Center at 745-3022. Thank you very much for your time and participation.

Resources and Contacts

Xavier University’s Psychological Services Center: 745-3531

Xavier University’s Health and Counseling Center: 745-3022

Acoria Wellness and Eating Disorders Treatment Center: 321-7202
3414 Edwards Road
Cincinnati, OH 45208

Ann Kearney-Cooke, Ph.D.: 791-1470
9200 Montgomery Road
Cincinnati, OH 45242

www.something-fishy.org

www.eating-disorder.org

www.edreferral.com
Appendix L

- SIMPLE VS. COMPLEX DESIGNS

**Simple:**

**Goal:** to investigate the differences between two groups/variables by evaluating the differences in the means for statistical significance

- Is X₁ different from X₂?

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>X₁</td>
<td>X₂</td>
</tr>
</tbody>
</table>

**Goal:** to investigate the differences among the three groups/variables by evaluating the differences in the means for statistical significance

- Is X₁ diff. from X₂ diff. from X₃?

<table>
<thead>
<tr>
<th>Treatment (1)</th>
<th>Treatment (2)</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>X₁</td>
<td>X₂</td>
<td>X₃</td>
</tr>
</tbody>
</table>

**Complex:**

**Goal:** to investigate the group differences across multiple dependent variables simultaneously, based on a set of multiple independent variables

- Main Effect:
  - Treatment vs. Placebo (Is X₅ diff. from X₆?)
  - Stress vs. No-stress (Is X₇ diff. from X₈?)

- Interaction Effect:
  - 2 x 2 F (Is X₁ diff. from X₂ diff. from X₃ diff. from X₄?)
    - Where are the statistically significant differences among the combinations of dependent measures?

<table>
<thead>
<tr>
<th>Stress</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>X₁</td>
<td>X₂</td>
</tr>
<tr>
<td>X₃</td>
<td>X₄</td>
</tr>
<tr>
<td>X₅</td>
<td>X₆</td>
</tr>
</tbody>
</table>
• **WITHIN VS. BETWEEN SUBJECT VARIABLE:**
  - Within—same subjects
  - Between—different subjects

• **MULTIPLE OR SINGLE DEPENDENT VARIABLE:**
  - Multiple—multivariate analysis (e.g. MANOVA)
  - Single—univariate analysis (e.g. ANOVA)

• Design with both Within and Between Variables: **SPLIT PLOT DESIGN** that Fisher (as cited in Keppel) labeled the statistic
  - WS = pre, post
  - BS = treatment condition
  - Plus—*multiple* dependent variables (three different assessment tools—CDRS, EAT, BSQ)

<table>
<thead>
<tr>
<th></th>
<th>CI</th>
<th>II</th>
<th>VI</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>X1 * Includes subjects 1 - 10</td>
<td>X2 * Includes subjects 11 - 20</td>
<td>X3 * Includes subjects 21 - 30</td>
<td>X4 * Includes subjects 31 - 40</td>
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<td>X5 * Includes subjects 1 - 10</td>
<td>X6 * Includes subjects 11 - 20</td>
<td>X7 * Includes subjects 21 - 30</td>
<td>X8 * Includes subjects 31 - 40</td>
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</tbody>
</table>

- **Split 2 x 4 ANOVA**
  - Main Effects:
    - Condition (Is X9 diff. from X10 diff. from X11 diff. from X12?)
      - Will the overall means of the independent variables be statistically significantly different?
    - PrePost (Is X13 diff. from X14?)
      - Will the overall means of the dependent variables be statistically significantly different?
  - Interaction Effects:
    - Condition by Prepost (2 x 4 F)
    - Is X1 diff. from X2 diff. from X3 diff. from X4 diff. from X5 diff. from X6 diff. from X7 diff. from X8?
    - Where are the statistically significant differences among the combinations of dependent measures?
Effects of Media Literacy

Hypothesis:
- It is hypothesized that whereas the scores on the CDRS, EAT, and the BSQ of the control group does not differ significantly after one month, the scores of the IV and VI are moderately improved and those of the CI group are improved the most.
Chapter V

Dissertation

Abstract

This study examined the effectiveness of media literacy programs in changing components of body image for undergraduate women. One hundred and twenty-two women between the ages of 18 and 21 participated in one of four psycho-educational intervention groups (Combination Intervention, Video-only Intervention, Image-Alteration only Intervention, and Control). Participants completed pre- and post-intervention assessments that measured body image perception, attitudes and behaviors, and preoccupation. This is the first study to include the demonstration of alterations to images through a computer program as a component of a media literacy intervention. In general, results demonstrated that participants exposed to an image-alteration intervention exhibit improved body image attitudes and behaviors as well as lower body image preoccupation than those who were exposed to no intervention, video-only intervention, or a combination intervention. Evidence from this study implies that including an image-alteration component in a media literacy programs is beneficial for undergraduate women relative to their body image.
Effects of Media Literacy Programs on the Body Image of Undergraduate Women

"Three years ago in the United States, high schools and universities around the country confronted a strange and pitiful problem: the women's toilets were constantly clogged by the vomit of young women who would regurgitate after they ate in order to control their weight" (Women and Body Image, 2000, p.35). Excessive weight concerns, problematic eating behaviors, and body dissatisfaction plague the lives of women today. Statistics such as "90% of women over the age of 14 have gone on a diet at least once" (Women and Body Image, 2000, p. 36) prove that women are experiencing dissatisfaction with their bodies in substantial numbers. The statistics warrant attention because body dissatisfaction is one of the most consistent predictors of problematic eating in longitudinal studies of women (Cooley & Toray, 2001). Mazzeo (1999) found a disturbance in body image to be a significant factor in "both the development and outcome of clinical and subclinical eating disorders" (p. 42). Thus, as women continue to express concern and discontent with their appearance, the repercussions of their unhappiness have been a focus of the literature that encompasses body image and eating disturbances.

Although a number of theories have been implicated in the advancement and maintenance of body image disturbance, "perhaps the most empirically supported approach is a sociocultural model, which identifies social pressure as the impetus behind an individual's need to conform to body shape standards" (Cusumano & Thompson, 1997, p.701). The sociocultural model designates family members, peers, schools, businesses, and athletics as possible creators and enforcers of the standards. However,
mass media is the loudest and most aggressive of these social influences (Groesz, Levine, & Murnen, 2001). From the flashy images of female “perfection” promoted in television, magazines, and films, both women and men deduce that a woman’s body is her most important feature and, thus, a lifelong project (Blumberg, 1997). The ideal body image for women that is presented in the media has rather rigid and strict requirements, with a particular emphasis on thinness (Posavac, Posavac, & Posavac, 1998). The social endorsement of these ideals has been linked to body image disturbance (Champion & Furnham, 1999; Pinhas, Toner, Garfinkel, & Stuckless, 1998; Turner, Hamilton, Jacobs, Angood & Dwyer, 1997), as well as implicated in the development and maintenance of eating disorders (Stice, Schupak-Neuberg, Shaw, & Stein, 1994). Unfortunately, research strongly indicates that the thin ideal is sanctioned by print media, particularly magazines designed to attract teenage girls and adult women (Cusumano & Thompson 1997; Nemeroff, Stein, Diehl, & Smilack, 1994).

From the sociocultural model described above comes the theory of social comparison. When applied to eating disturbances, social comparison is considered a central contributor to body image development (Jones, 2001). The process of social comparison refers to the “cognitive judgments that people make about their own attributes compared to others” (Jones, 2001, p. 646). With the repetition of thin images of women by the media, a standard of attractiveness is constructed—albeit unrealistic. Too often, these images portrayed in magazines are used as a social comparison standard (Shaw & Waller, 1995; Martin & Kennedy, 1993). Harrison and Cantor (1997) found that women who subscribed to and read magazines were more likely to report eating disorder symptomatology as compared to those who did not. However, this did not hold
true for television exposure. Regardless, social comparison to these idealized versions of physical attractiveness seems to promote a discrepancy between what one 'should' look like in order to be considered attractive and what one appears to be in reality, leading to a negative evaluation of the self (Jones, 2001).

Although it has not been found that exposure to thin media images leads directly to disordered eating, there is evidence that images of their (women) own bodies are influenced by mass media's depiction of ideal body types (Harrison & Cantor, 1997). In "Women are Losing" (1998), three out of ten women reported feeling insecure about their weight as well as wanting to lose weight after viewing images of thin models. In a meta-analysis study conducted by Groesz et al. (2000), data from 25 different studies (N = 2,292) were evaluated in order to examine the overall effect of mass media's slender images on the female audience. Body image was significantly more negative after viewing thin media images than viewing images of average size models, plus size models, or neutral items (i.e., cars or houses). This effect appeared to be even stronger when participants were not exposed to both the experimental and control images. It is overwhelmingly clear that the images of perfection emphasized in the media influence how women feel about their own bodies.

There are groups (e.g., dancers and gymnasts) of people who seem to be more vulnerable to the development of eating disorders. Many researchers (e.g., Graham & Jones, 2002; Heatherton, Mahamedi, Striepe, Field, & Keel, 1997; Grigg, Bowman, & Redman, 1996) have found the college population particularly in need of interventions to combat body disturbances. Although exact prevalence rates for this population vary, one study (Striegel-Moore, Silberstein, Grunberg, and Rodin, 1990) reported that 80% of
women diet during their first year of college. Of the 225 college women surveyed about body image in Cooley and Toray's (2001) study, "94% of the women chose a (body) weight that was less than their current weight" (p.234). Overall, data indicate that watching one's weight is the norm, or the standard, for college women (Mintz & Betz, 1988). With eating-related problems representing a significant health concern for university campuses, appropriate intervention plans that focus on prevention of eating disorders are a necessity for these students.

Improving body image has been advocated as a crucial component to be included in eating disorder prevention programs (Springer, Winzelberg, Perkins, & Taylor, 1999). The literature provides a number of prevention programs aimed at reducing body image dissatisfaction with a wide array of components, ranging from strictly educational to psychotherapeutic interventions. In particular, previous research has demonstrated that media literacy programs can be effective tools in helping women to critically analyze the images that are presented in the media (Rabak-Wagener, Eickhoff-Shemek, & Kelly-Vance, 1998; Piran, 1999; Springer et al., 1999; Irving & Berel, 2001). Photographic techniques such as airbrushing, editing, and filters blur the line between fictionalized ideals and reality. Thus, by teaching women to evaluate the media critically, the credibility and persuasive influence of media messages is reduced (Irving & Berel, 2001). The end result is to lessen body image dissatisfaction and to protect women from developing full-blown eating disorders.

This study sought to examine the impact of literacy programs on the body image of undergraduate women. The first independent variable (IV) had four levels (i.e., the type of psycho-educational intervention): (1) Combination Intervention [CI], (2) a Video-
only Intervention [VI], (3) an Image-alteration Intervention [II], and (4) No-Intervention, or control group [C]. The second IV was time of administration (i.e., pretest vs. posttest). There were three dependent variables. Each variable measured a different component of body image: perception of body image, attitudes/behaviors associated with body image, and body image preoccupation. The first component, perception of body image, was measured by the Contour Drawing Rating Scale (CDRS). The attitudes and behaviors associated with negative body image were measured by the Eating Attitudes Test (EAT). The third component, body image preoccupation was measured by the Body Shape Questionnaire (BSQ). It was hypothesized that whereas the EAT, CDRS, and the BSQ of the C group do not differ significantly after one month, the scores of the II and VI are moderately improved (i.e., lowered) and those of the CI group are improved the most.

Method

Participants

The participants were 124 undergraduate women, ages 18 – 21 years ($M = 18.95, SD = .95$), who were currently enrolled in psychology courses at a private, Midwestern university. The participants were ethnically homogenous: 88% Caucasian, 9% African American, 1% Asian American, and 2% Other (see Figure 1). Participants’ Body Mass Index ranged from 18.2 to 37.1 ($M = 23.11, SD = 3.26$). BMI scores are represented by group in Figure 2. See Table 8 for average age and BMI scores by group as well as significance level between groups. Seven participants were excluded due to a history of an eating disorder and one participant was excluded due to a physical deformity (i.e., born with one arm), as reported in the Eating Disorders Diagnostic Form (Dacey et al., 2000).
Measures

Demographic Questionnaire (Dacey, LaVelle, Van Keuren, Dryer, & Grin, 2000). This is a brief questionnaire that requests basic demographic information as well as personal information (i.e., height, weight, relevant history). This was administered to all participants (see Appendix A) during Session 1.

Contour Drawing Rating Scale (Thompson & Gray, 1995). The CDRS is a measure of body-size perception. It consists of nine male drawings and nine female drawings of body shapes. The drawings are designed with detailed features, are of graduated sizes, and are accurately proportioned for upper and lower body comparisons. Participants are asked to rate their ideal figure and the figure which best represents their current body size. The difference between the ideal and current is considered to be the “index” or score for that individual’s perception of body shape. The silhouettes appear in order from smallest to largest. For the purpose of this study, only the female figures were used (see Appendix B). This scale has acceptable reliability and concurrent validity of .78 and .71, respectively, as well as test-retest validity (rank-ordering the drawings) of .98 for the female drawings (Thompson & Gray, 1995). The scores can range from 0 (the person selected the same silhouette as being her current body size and her ideal body size) to 8 (the person selected the smallest silhouette as either her current or ideal body size and the largest silhouette for the opposite).

Eating Attitudes Test (Garner & Garfinkel, 1979; Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT is the most widely used standardized self-report measure of symptoms (behaviors) and concerns (attitudes) characteristic of eating disorders. It is used as a measure of abnormal attitudes towards food and eating rather than as a
diagnostic tool for eating disorders. The original version of the EAT consisted of 40 items. However, a factor analysis of the original yielded a 26-item version, which highly correlated with the 40-item test ($r = .98$) (Garner et al., 1982). Each item is answered on a Likert-type scale, ranging from always (3), usually (2), and often (1) to sometimes, rarely, and never (0) for all 26 items, with the exception of the 25th question where the scoring is reversed. Possible scores on the EAT range from 0 to 78; scores 20 or higher are generally considered characteristic of subclinical eating disorder pathology.

However, this measure is only a screening measure and was not used as a determinant to exclude someone from the study. The 26-item EAT has good reliability, ranging from .83 for comparison groups to .90 for those with anorexia nervosa as well as good validity ($r = .84$). The 26-item version was used to assess attitudes and behaviors related to eating disorders (see Appendix C.)

**Body Shape Questionnaire** (Cooper, Taylor, Cooper, & Fairburn, 1986). This 34-item questionnaire is the only self-report measure of body image preoccupation currently available (Rosen, Jones, Ramirez, & Waxman, 1996). The instrument is designed to measure desire to lose weight, body dissatisfaction, and feelings of low self-esteem as related to weight and shape (Cooper et al., 1986). It uses a 6-point Likert-type scale, ranging from one (never) to six (always). Possible scores on the BSQ range from 34 to 204. A valid cut-off value to identify probable cases of those with eating disorder pathology is 129 or higher, as identified by Cooper, Charnock, and Taylor (1987) and Rosen et al. (1996). However, this instrument is only a screening measure and was not used as a determinant to exclude someone from the study. The co-efficients of test-retest reliability ($r = .88$), internal consistency ($r = .97$), and concurrent validity are adequate.
effects of media literacy (cooper et al., 1986). the 34-item bsq (see appendix d) was administered to assess preoccupation with body shape.

_ eating disorders diagnostic form_ (dacey et al., 2000). this is a brief, self-report questionnaire that was developed according to the criteria for anorexia nervosa and bulimia nervosa from the diagnostic and statistical manual of mental disorders-iv (american psychiatric association, 1994). this instrument was used to exclude the scores of participants with a history of eating disorders, physical deformities, and/or those who were recently/currently pregnant (see appendix e).

procedure

participants were recruited from undergraduate psychology classes, according to the department’s recruitment procedures. a script (appendix f) was read to students in the psychology courses that included important information regarding the nature of the study, the assignment to experimental groups, time commitment, and incentive to participate. a sample sign-up sheet is located in appendix g. volunteers were offered extra credit by their professor, were entered into a raffle for a $200 gift certificate to a local shopping mall for completion of the study, or both.

those who were interested were asked to sign up for a time on the sign-up sheets. students were assigned to intervention groups according to the time slot for which they signed up. the time slots offered were pre-assigned to an intervention condition before they were distributed. however, the participants were not aware of these assignments and, hence, signed up with no knowledge of which intervention they would receive. for example, a sign-up sheet for monday at 3pm was pre-assigned to the combination intervention group. those participants who signed up for that time and day received the
Effects of Media Literacy

CI when they attended the first session, but were unaware of this at the time of volunteering. Students were contacted via e-mail and/or phone at least two days in advance to remind them of the time and location of session one.

The facilitators for the interventions were doctoral students in the psychology program at Xavier University. The researcher was one of the facilitators. The three other facilitators were trained in the procedures by the researcher. The researcher strongly urged the facilitators to closely and accurately follow the script (see Appendix I) used in the sessions.

*Interventions (Session One)*

At the beginning of all intervention sessions, the students were asked to sign an informed consent sheet (see Appendix H). This form contained information regarding the study as well as the fact that it was voluntary. The student signed two forms. One was placed in a sealed envelope and given to the facilitator. The second form (the copy) was kept by the participant for her record of agreement to participate in the study. Once this was completed, the student was asked to fill out the pre-intervention measures in the following order: (1) demographic questionnaire, (2) CDRS, (3) EAT, (4) BSQ, and (5) Eating Disorders Diagnostic Form. The facilitator passed out pre-numbered envelopes containing the measures. The participants were given 30 minutes to complete the questionnaires. When completed, they placed the measures back in the envelope, sealed it, and returned it to the facilitator.

The number on the envelope was the participant’s identification number and was used for the entire experiment. The master list linked the participant’s name to her participation number. The list was kept in a locked file cabinet that was separate from
the actual data. Only the facilitator had access to this file cabinet for administrative purposes (i.e. participant forgets her assigned number). This was to enhance confidentiality.

The Combination Intervention Group. Following the completion of the questionnaires, the Combination Intervention [CI] group was given a brief introduction related to the influence that the media has on body image, read from the script. Then, participants were asked to view the video, “Slim Hopes.” This video was approximately 30 minutes in length. It presented the sociocultural pressures related to the ideal body, with an emphasis on the media’s contribution. The facilitator then read from the script again, with a statement about the video and an introduction to the image alteration training (see Appendix L). Next, the facilitator demonstrated the alterations that are made to photographs to enhance the media images. After being scanned into the computer (done prior to the intervention), the photograph was distorted using the Adobe Photoshop 6.0 computer program. The demonstration included alterations of hair color, eye color, and removal of imperfections. In addition, the image was manipulated so that the image was 10%, 20%, and 30% thinner as well as 10%, 20%, and 30% heavier. The computer program kept all proportions in tact. The image and its alterations were projected on a screen at the front of the room so that each participant was able to view it. Questions and conversations regarding the program were kept to a minimum; however, participants were given information on how to obtain the program for further investigation.

Video-only Intervention Group. After completing the questionnaires, the participants in the Video-only Intervention group [VI] began with a brief introduction
from the facilitator via the script. Then, they viewed the “Slim Hopes” video. Next, the facilitator made a brief statement about the video from the script. For the remaining half-hour, the participants viewed a portion of the movie “A Beautiful Mind” and were asked to take notes on the psychological themes presented in the movie.

**Image-alteration Intervention.** The Image altering Intervention [II] group began with the identical introduction done with the previous groups. Then, the facilitator demonstrated the image alterations as done with the CI group. For the remaining half-hour following the computer training, the participants viewed a portion of the movie “A Beautiful Mind” and were asked to take notes on the psychological themes presented in the movie.

**No-intervention/Control Group.** Those in the Control [C] group received the identical introduction as all other interventions. Then, they viewed an hour portion of the movie “A Beautiful Mind” and were asked to take notes on the psychological themes of the movie.

At the end of all interventions, the participants were given sign-up sheets and asked to select a day (approximately one month after session one) that they could return for the second session. All participants were asked to refrain from discussing the study between the two sessions in order to avoid participant biases. Students were contacted via e-mail and/or phone at least two days in advance to remind them of the time and location of session two.

**Session Two (Questionnaires and Debriefing)**

The script used in session two of the study is presented in Appendix J. The participants received three questionnaires, the CDRS, the EAT, and the BSQ, and were
asked to complete all three. After all participants completed the questionnaires, each participant received a debriefing form (see Appendix K) and was given the opportunity to ask questions regarding the study or to make comments. Attached to the debriefing form was a list of local and national eating disorder referrals with contact information, as references on how and where to get help for someone with eating difficulties. In addition, the participants were asked to remain quiet so that other participants were not influenced by their comments regarding the study. Finally, the participants were thanked for their participation and excused from the session. This session was approximately 30 minutes in length.

Results

The means and standard deviations for the dependent measures for each intervention are presented in Tables 1, 2, and 3. A split-plot ANOVA revealed a main effect for time (i.e., pre compared with posttest) was statistically significant (Wilks' Lambda = .92; p = .002), such that pretest BSQ was higher (M = 102.61) than the posttest (M = 100.31). The main effect for group (i.e., intervention) was statistically significant (F (3, 120) = 3.09, p = .03). Bonferroni procedures were computed to determine the nature of the differences among groups. Findings indicated that none of the individual contrasts was significant (see Table 4). The interaction of group by time was statistically significant (Wilks' Lambda = .80; p = .01). Bonferroni procedures were computed to determine the nature of the time by group interaction. The contrasts indicated that the posttest BSQ scores of the III group (M = 88.17) were lower (i.e., more improved) than both the C group (M = 109.94) and the VI group (M = 109.87) (see Table 5). Bonferroni
tests revealed that the pretest BSQ scores were not significantly different among the groups (see Table 6). This finding provides partial confirmation of the hypothesis.

In examining the EAT, a split-plot ANOVA revealed a main effect for time (i.e., pre compared with posttest) was statistically significant \((\text{Wilks' Lambda} = .97; p = .04)\), such that the pretest EAT was higher \((M = 10.17)\) than the posttest \((M = 9.47)\). The main effect for group (i.e., intervention) was statistically significant \((F (3, 120) = 3.95, p = .01)\). Bonferroni procedures were computed to determine the nature of the differences among groups. Findings indicated that the EAT scores of the II group \((M = 5.87)\) were lower than both the C group \((M = 11.67)\) and the VI group \((M = 11.15)\) (see Table 7). The interaction of group by time was not statistically significant \((\text{Wilks' Lambda} = .99; p > .05)\) for the EAT.

For the dependent variable CDRS, a split-plot ANOVA revealed no statistically significant main effect for time \((\text{Wilks' Lambda} = 1.00; p > .05)\) or group \((F (3, 120) = 1.17, p > .05)\). In addition, the interaction of group by time was not statistically significant \((\text{Wilks' Lambda} = .97; p > .05)\).

Discussion

The present study sought to explore the impact of media literacy programs on the perception of body shape, attitudes and behaviors related to body image, and body image preoccupation of undergraduate women. Overall, the findings indicate that the Image-alteration Intervention affected the body image preoccupation of undergraduate women as well as the attitudes and behaviors related to body image. However, the results indicate that none of the interventions affected the perception of body shape for the participants.
Present research found that there was a statistically significant difference between the posttest BSQ and EAT scores from the pretest scores. This suggests that, overall, body image preoccupation as well as attitudes and behaviors related to body image were lowered for the participants. This finding is consistent with the results of a study conducted by Springer et al. (1999) who found significant improvements in the body image preoccupation of the participants as a result of a prevention program modeled on an educational format. They argued that, despite no emphasis on changes in eating behaviors or change in weight, educational efforts may help reduce an important risk factor for eating disorders.

The results also revealed that none of the interventions lowered CDRS scores for the participants. In other words, the psychoeducational interventions had no impact on the perception of body shape for these women. This indicates that exposure to media literacy alone does not necessarily result in a healthier perception of body shape.

In addition to a significant difference between pre- and posttest scores, there were statistically significant differences among groups. In particular, the posttest BSQ and EAT scores of the II group were statistically significantly lower than both the C group and the VI group. This finding indicates that the II group had the most impact on lowering the body image preoccupation as well as the attitudes and behaviors of the participants. Although this partially supports the hypothesis of the current study, past research has considered behaviors much more difficult to change than beliefs. In a study conducted by Rabak-Wagener et al. (1998), findings indicated a significant change in the participants’ beliefs about body image after a 6.5 hour intervention program but no significant impact on behaviors. Thus, the results of the current study are even more
encouraging than originally considered. It suggests that an educational prevention
program that includes an image alteration component successfully improves attitudes and
behaviors related to body image—a phenomenon that has not readily occurred in the past.

Unexpectedly, the II group had more of an impact by itself than when paired with
the "Slim Hopes" video for the CI group. It is unclear why this occurred. It might be
conjectured that, although brief, the 30-minute image-alteration demonstration got the
participants attention quickly. Those who were in the CI group viewed the "Slim Hopes"
video first then watched the image-alteration demonstration; thus, the participants could
have lost interest or concentration or both by the time the image-alteration component
was presented. Another possibility concerns the video "Slim Hopes" produced in 1995.
It is possible that, although the information in the film is still relevant, perhaps the images
and photos were outdated for the participants. Therefore, the participants could have
considered "Slim Hopes" as irrelevant for today's beauty standards and discounted the
film—and possibly the intervention as a whole. It is also possible that perhaps the video
was interpreted as "preachy" and, thus, was not effective (Stinson, 2004). One could also
speculate that the video was so powerful by itself that it negated the effect of the image
alteration component. However, if this were the case, the ANOVA would have revealed
a significant difference in the VI group compared with other groups, but that did not
occur.

This finding was further explored through additional post-hoc tests where the II
group was contrasted to the other groups (combined). Caution should be exercised in the
interpretation of the results given the unequal number of participants in the two groups
(i.e., 30 in the II group vs. 94 in the comparison group). Nevertheless, the means for the
EAT (pre) as well as for the BSQ (pre) were significantly different. In examining the pretest for the EAT, there was a statistically significant difference ($F(1, 122) = 9.98, p = .002$) such that the mean of the II group ($M = 6.23$) was lower than the comparison group ($M = 11.43$). In exploring the pretest for the BSQ, there was a statistically significant difference ($F(1, 122) = 5.45, p = .021$) such that the mean of the II group ($M = 91.20$) was lower than the comparison group ($M = 106.25$). These findings suggest that the groups were different at the beginning of the study and may explain the difference at the end of the study.

The study had some shortcomings including the fact that all three dependent measures are self-report questionnaires. Thus, participants may have filtered their true responses or may have responded in a way that they believed to be more socially acceptable as related to body image and eating behaviors. The addition of an objective measure may have strengthened the study, produced different results, or both.

Another factor that may have contributed to the results was the absence of a counterbalancing of the presentation of the measures. All participants were presented with the measures in an identical order. Perhaps this is an additional explanation for the ineffectiveness of the interventions on the CDRS component. Future research may consider counterbalancing the order of the measures.

Also, the assignment of participants was not traditionally random, in that students signed-up for a time that was available for them. Thus, it is possible that “like” students could have signed-up for the same time (e.g., roommates, classmates). This could have affected the results in that similar students could have reported similar responses.
The participant pool was also a limitation for this study. All participants were female and students at a private, Jesuit university. Furthermore, they were all members of psychology courses. Perhaps the students who volunteered for the study were more interested in the topic or had other motivations to participate (e.g., interest in body image, needing extra credit). Also, perhaps those with current or past non-clinical eating disturbances felt uncomfortable volunteering for the study; thus, a segment of the population for whom the intervention was targeted was absent. In examining the data on an individual level, there were eight participants with scores on the EAT and the BSQ that were above the cut-off scores. This would suggest that these participants exhibit characteristics similar to that of women with eating disturbances. It is important to note that two of those eight women had BMI scores (i.e., 29.6 and 37.1) that are considered overweight and clinically obese, respectively. Thus, it is likely that these women have very different eating concerns than the women who did not report unhealthy BMI scores.

It is also important to note that the interventions in the study are brief. Considering the amount of media exposure that one receives over a lifetime, it is dubious that a brief intervention can counter those effects. Moreover, this study only assessed the individual before the intervention and one month following the intervention. Due to the nature of the academic calendar, the same participants would be difficult to locate for a long-term follow-up. Without the follow-up assessment, it is difficult to establish if the effects of the interventions were maintained over time.

There are many considerations for future research that stem from this study. Perhaps assessment of the participants at a four to six month follow-up, or even longer, would provide information as to the duration of the effect from the intervention. Another
aspect that could be of interest would be dividing the participants into different groups based on pretest scores. This type of study could investigate whether those with a higher risk for eating disturbances respond differently to the interventions compared to those with a milder risk, as reported via scores on the CDRS, EAT, BSQ, or all three. Also, research that focuses on certain ethnic populations, different ages of women, or groups of men could examine differences in responses to the interventions.

It is also suggested that in addition to the subjective measures used in this study, that future research includes objective measures, as well. Perhaps an outside observer (e.g., parent, professor, roommate, researcher) could rate the picture of the participant’s body type using the CDRS. This could be compared to the participant’s self-rating to determine realistic perception of body image.

Additionally, a study that allowed participants to alter their own image is a possibility for future research. If students could have their picture taken with a digital camera before the intervention, the picture could be opened in Photoshop and altered immediately. Instead of viewing neutral images being altered, the participants could experience altering one’s own image. Perhaps, unlike this study, the body image perception of the participants would be influenced.
References


Table 1

*Means and Standard Deviations for the CDRS Pretest and Posttest by Intervention*

<table>
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<td>-1.13</td>
<td>1.21</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>-1.27</td>
<td>.96</td>
<td>124</td>
</tr>
</tbody>
</table>
Table 2

*Means and Standard Deviations for the EAT Pretest and Posttest by Intervention*

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pretest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11.94</td>
<td>8.21</td>
<td>32</td>
</tr>
<tr>
<td>Image-alteration</td>
<td>6.23</td>
<td>5.10</td>
<td>30</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video-only</td>
<td>11.27</td>
<td>5.90</td>
<td>30</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>11.06</td>
<td>10.83</td>
<td>32</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10.17</td>
<td>8.12</td>
<td>124</td>
</tr>
<tr>
<td><strong>Posttest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11.40</td>
<td>7.46</td>
<td>32</td>
</tr>
<tr>
<td>Image-alteration</td>
<td>5.50</td>
<td>4.55</td>
<td>30</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video-only</td>
<td>11.03</td>
<td>5.86</td>
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<td>Intervention</td>
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<td></td>
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</tr>
<tr>
<td>Combination</td>
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<td>9.99</td>
<td>32</td>
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<tr>
<td>Intervention</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.47</td>
<td>7.59</td>
<td>124</td>
</tr>
</tbody>
</table>

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Table 3

*Means and Standard Deviations for the BSQ Pretest and Posttest by Intervention*

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pretest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>108.22</td>
<td>31.85</td>
<td>32</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>91.20</td>
<td>26.88</td>
<td>30</td>
</tr>
<tr>
<td>Video-only Intervention</td>
<td>109.33</td>
<td>31.03</td>
<td>30</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>101.41</td>
<td>32.80</td>
<td>32</td>
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<tr>
<td>Total</td>
<td>102.61</td>
<td>31.23</td>
<td>124</td>
</tr>
<tr>
<td><strong>Posttest</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>109.94</td>
<td>31.59</td>
<td>32</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>88.17</td>
<td>26.99</td>
<td>30</td>
</tr>
<tr>
<td>Video-only Intervention</td>
<td>109.87</td>
<td>30.30</td>
<td>30</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>93.13</td>
<td>32.82</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>100.31</td>
<td>31.73</td>
<td>124</td>
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Table 4

Results of post-hoc comparisons (Bonferroni) for intervention and BSQ scores over group

<table>
<thead>
<tr>
<th>(I) Intervention Type</th>
<th>(J) Intervention Type</th>
<th>(I - J) Mean Difference</th>
<th>Std. Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Image-alteration Intervention</td>
<td>19.39</td>
<td>7.73</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Video-only Intervention</td>
<td>-.52</td>
<td>7.73</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Combination Intervention</td>
<td>11.81</td>
<td>7.60</td>
<td>.74</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>Control</td>
<td>-19.39</td>
<td>7.73</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Video-only Intervention</td>
<td>-19.92</td>
<td>7.85</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Combination Intervention</td>
<td>-7.58</td>
<td>7.73</td>
<td>1.00</td>
</tr>
<tr>
<td>Video-Only Intervention</td>
<td>Control</td>
<td>.52</td>
<td>7.73</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Image-alteration Intervention</td>
<td>19.92</td>
<td>7.85</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Combination Intervention</td>
<td>12.33</td>
<td>7.73</td>
<td>.68</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>Control</td>
<td>-11.81</td>
<td>7.60</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Image-alteration Intervention</td>
<td>7.58</td>
<td>7.73</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Video-only Intervention</td>
<td>-12.33</td>
<td>7.73</td>
<td>.68</td>
</tr>
</tbody>
</table>
Table 5

*BSQ posttest scores by intervention type*

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>109.94</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>88.17</td>
</tr>
<tr>
<td>Video-only Intervention</td>
<td>109.87</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>93.13</td>
</tr>
<tr>
<td>Total</td>
<td>100.31</td>
</tr>
</tbody>
</table>
Table 6

Results of post-hoc comparisons (Bonferroni) for BSQ pretest scores by intervention

<table>
<thead>
<tr>
<th>(I) Intervention Type</th>
<th>(J) Intervention Type</th>
<th>(I - J) Mean Difference</th>
<th>Std. Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Image-alteration Intervention</td>
<td>17.02</td>
<td>7.82</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Video-only Intervention</td>
<td>-1.11</td>
<td>7.82</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Combination Intervention</td>
<td>6.81</td>
<td>7.69</td>
<td>.74</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>Control</td>
<td>-17.02</td>
<td>7.82</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Video-only Intervention</td>
<td>-18.13</td>
<td>7.95</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Combination Intervention</td>
<td>-10.21</td>
<td>7.82</td>
<td>1.00</td>
</tr>
<tr>
<td>Video-Only Intervention</td>
<td>Control</td>
<td>1.11</td>
<td>7.82</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Image-alteration Intervention</td>
<td>18.13</td>
<td>7.95</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Combination Intervention</td>
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<td>7.82</td>
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<td>Control</td>
<td>-6.81</td>
<td>7.69</td>
<td>.74</td>
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<tr>
<td></td>
<td>Image-alteration Intervention</td>
<td>10.21</td>
<td>7.82</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Video-only Intervention</td>
<td>-7.93</td>
<td>7.82</td>
<td>.68</td>
</tr>
</tbody>
</table>
Table 7

*Main Effect for Group—EAT scores*

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>11.67</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>5.87</td>
</tr>
<tr>
<td>Video-only Intervention</td>
<td>11.15</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>10.42</td>
</tr>
<tr>
<td>Total</td>
<td>9.82</td>
</tr>
</tbody>
</table>
Table 8

*Means and Standard Deviations for the Participants as a function of BMI scores and Age as reported in the Demographic Questionnaire (Dacey et. Al, 2000) by Intervention*

<table>
<thead>
<tr>
<th>Intervention Type</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMI</strong></td>
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<td></td>
</tr>
<tr>
<td>Control</td>
<td>23.58</td>
<td>3.00</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>22.95</td>
<td>3.06</td>
</tr>
<tr>
<td>Video-only Intervention</td>
<td>22.57</td>
<td>3.51</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>23.31</td>
<td>3.53</td>
</tr>
<tr>
<td>$F = .55, p = .65$</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>19.03</td>
<td>.90</td>
</tr>
<tr>
<td>Image-alteration Intervention</td>
<td>18.93</td>
<td>.94</td>
</tr>
<tr>
<td>Video-only Intervention</td>
<td>19.00</td>
<td>1.02</td>
</tr>
<tr>
<td>Combination Intervention</td>
<td>18.84</td>
<td>.95</td>
</tr>
<tr>
<td>$F = .24, p = .87$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure Caption

*Figure 1.* Ethnic composition of participants as a function of percentage reported in the Demographic Questionnaire (Dacey et al., 2000). 

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Figure Caption

Figure 2. Average BMI scores of participants, overall and by group, as reported in the Demographic Questionnaire (Dacey et al, 2000).