A SELECTIVE PREVENTION STUDY: DECREASING BODY DISSATISFACTION AND EATING DISORDER SYMPTOMATOLOGY IN SORORITY WOMEN USING PSYCHOEDUCATION, SOCIAL NORMS, AND SOCIAL MARKETING STRATEGIES

Dissertation
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Female college students are at risk for developing a body image or eating disturbance and/or disorder. There, however, is a lack of effective prevention programs in the college population despite an increase in body image and eating disturbances. The main purpose of this study was to examine the effectiveness of three different intervention programs designed to decrease body dissatisfaction and eating disorder symptomatology in sorority women. The final sample consisted of 146 participants from four sororities. Each sorority was randomly assigned an intervention program and one group was assigned to be the control. The intervention groups included a psychoeducation, a social norms, and a combined (psychoeducation and social norms) group. The intervention groups included two 1-hour presentations and exposure to positive messages regarding body image and eating behavior. The difference between the groups was in how the information was presented. That is, by providing psychoeducation information, by providing normative data for each sorority, or by using the combined approach. Both intervention and control group members completed measures of body satisfaction, appearance evaluation, eating attitudes and behaviors,
internalization of the sociocultural ideal, pressure to obtain the sociocultural idea, self-esteem, and social norm questionnaires at pre and post-test.

Multilevel modeling was used to compare the effectiveness of the programs to the control group. The results indicated that the psychoeducational group significantly reduced eating disorder symptomatology and the combined group significantly increased positive body image attitudes and negative eating behaviors targeted in this study. The implications for these results are discussed, as are suggestions for future research in this area.
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CHAPTER 1

INTRODUCTION

1.1 Background

Body image is a complex, multifaceted construct that refers to “one’s attitudinal and perceptual dispositions toward the physical self including evaluative (affective), cognitive, and behavioral components” (Cash & Pruzinsky, 1990). It has been best conceptualized on a continuum ranging from no body image distress to the most severe body image distress (Thompson, Heinberg, Altabe, Tantleff-Dunn, 1999). The literature indicates that most females usually fall in the middle of these two extreme ends of the continuum (Thompson et al., 1999). This is often referred to as “normative discontent,” or the mild to moderate dissatisfaction most females have regarding their bodies (Thompson, et al.)

Body image has been demonstrated to be the most important factor in the development of eating disturbances and disorders (Hoyt & Kogan, 2001). More specifically, body image dissatisfaction, an evaluative measure of body image, has repeatedly been identified as the strongest and most consistent predictor of the development of an eating disorder or eating disorder symptomatology (Heinberg,
Thompson, & Matzon, 2001; Hoyt & Kogan, 2001; Stice, 2001; Stice, Mazotti, Krebs, & Martin, 1998; Thompson et al., 1999). Consequently, body dissatisfaction is considered a significant risk factor for the development of eating disorder symptomatology (starvation, bingeing, purging) and eating disorders (anorexia, bulimia; Stice, 2001; Thompson et al., 1999).

Since body dissatisfaction poses a risk for eating disorders, many studies have explored who might be most vulnerable to body dissatisfaction and the development of eating disorder symptoms. The literature has found that college women are one of the most vulnerable populations (Grogan, William, & Connor, 1996). Sorority women, in particular, seem to be at a high risk of developing severe body dissatisfaction and eating disorder symptomatology (Crandall, 1988; Meilman, von Hippel & Gaylor, 1991; Schulken, Pinciaro, Sawyer, Jensen, & Hoban, 1997). Schulken and colleagues (1997) found that sorority women presented with more body dissatisfaction, weight preoccupation, concern with dieting, and fear of fat than non-sorority women.

It has been proposed that the pressure to conform to established group norms within sororities may be contributing to the continued increase of body dissatisfaction and often disordered eating patterns such as bingeing (Crandall, 1988). Increased sociocultural pressures from consistent interaction with peers along with repeated exposure to the thin-ideal may contribute to college females increased body dissatisfaction (Levine & Smolak, 1996; Thompson et al., 1999).
Accordingly, many studies suggest that sociocultural influence (peers, family, school, media) is a significant predictor of body dissatisfaction (Groesz, Levine, & Murmen, 2002; Thompson et al., 1999). In fact, a sociocultural explanation (sociocultural theory) for eating disorder symptomatology seems to be the theory that has the most convincing empirical support (Heinberg, Wood, & Thompson, 1995). Sociocultural theory suggests that sociocultural pressures to be thin are ubiquitous although this goal is often unobtainable for an average woman (Thompson et al.). The theory states that this pressure to be thin is most harmful when individuals internalize or accept this thin-ideal (Groesz et al., 2002). Consequently, a heightened acceptance of the thin-ideal can lead to greater body dissatisfaction, negative affect, low self-esteem, and eating disorders (Groesz et al.; Thompson & Heinberg, 1999).

From this evidence, many individuals have suggested that there is a need for effective prevention programs addressing these sociocultural factors to reduce body image disturbances and eating disorder symptomatology. Optimally, primary or universal prevention would have begun early in an individual’s developmental maturation (Striegel-Moore & Smolak, 2001). For example, discussions, skill building, and advocacy regarding media literacy would have optimally been included in classroom work for all elementary students. This type of prevention is designed to increase resilience and protective factors for large groups of individuals before any occurrence of an eating disorder (Levine & Piran, 2001). Many college females, however, have not had exposure to this type of prevention.
Thus, selective prevention, which targets individuals who are at high risk, also needs to occur. This study evaluates interventions geared toward decreasing body dissatisfaction, internalization of the thin-ideal, perceived media and peer pressure to obtain this ideal, and eating disorder symptomatology in college sorority women, who are at a higher risk than the general population. The study, therefore, is considered a selective prevention effort. Selective prevention programs are critical because these programs have revealed to be more successful in reducing negative attitudes and behaviors than universal programs (Stice, Trost, & Chase, 2003).

Nevertheless, with both universal and selective prevention, the format of the prevention program is of utmost importance. Until recently, most eating disorder prevention programs focused on providing psychoeducation in classroom type settings (see review by National Institute of Mental Health [NIMH], 2000). These programs provided information regarding eating disorders and related topics and attempted to change only an individual’s attitudes and behaviors. The programs did not address the individual’s social environment (peers, family, professors, media, etc.). As a result, few of these prevention programs displayed any long-term reduction of negative body image attitudes and behaviors (Stice & Ragan, 2002).

More recently, prevention programs have begun to use different approaches and combined approaches that have included discussion, social marketing, active participation in body image related exercises, and advocacy (Levine & Piran, 2001; Stice et al., 2003; Taylor, Winzelberg, & Celio, 2001). Many of these programs addressed the individual and their environment in some manner. These approaches
have resulted in more effective reduction in negative body image attitudes and eating behaviors than the traditional psychoeducational programs (Levine & Piran, 2001).

Because of the effectiveness of these studies, eating disorder prevention experts recommend using approaches that target both the individual and the individual’s environment (Levine & Piran, 2001). This study responded to this finding and created three interventions for sorority women that targeted both individual and environmental components. This was accomplished by including small group discussion and social marketing strategies within each program.

Small-group discussion was utilized within each program to increase the likelihood of behavior change. By allowing sorority members to be more interactive with each other, it is likely that a new positive norm will develop (Springer, Winzelberg, Perkins, & Taylor, 1999). Additionally, there is evidence that brief prevention programs that involve opportunities for women to actively challenge the thin-ideal may decrease negative eating disorder-related attitudes and eating disorder symptomatology (Piran, Levine, & Steiner-Adair, 1999).

Social marketing strategies were also used to target each sorority’s environment. Social marketing strategies utilize messages and images that are used regularly in commercial advertising but for a different purpose. The purpose of social marketing strategies is to bolster the effectiveness of health education and prevention programs, encouraging positive changes in individuals and communities. Levine and colleagues (1999) created one of the few eating disorder related prevention programs that including social marketing techniques within their program. Upon completion of
their program, the participants of the program decreased in body and weight dissatisfaction. Though social marketing strategies were not the only component in this program, the results are encouraging that social marketing may be one effective element to help decrease body image distress.

Moreover, using the social norms theory in the application of social marketing strategies (Berkowitz, 2000; Levine & Piran, 2001) has been demonstrated to be successful in college substance abuse prevention (Berkowitz, 2000; Vicary & Karshin, 2002). Social norm marketing strategies have been used to try to positively change environmental norms. This theory recognizes that college students may attempt to gain peer acceptance by conforming their attitudes, beliefs, and behaviors to what they believe is normative (Thombs, 2000). Unfortunately, students’ perceived norms (what students think is the norm) and the actual norms (what statistics reveal) are often not the same (Linkenbach et al., 2002).

Exposure to the most unusual or extreme attitudes and behaviors may distort one’s perceptions of what is the actual norm. This may result in an overestimation of unhealthy attitudes and behaviors and an underestimation of healthy attitudes and behaviors (Linkenbach et al., 2002). Thus, individuals may change their own behavior to approximate the misperceived norm, which is often in an unhealthy direction (Prentice & Miller, 1993).

For example, in the alcohol literature, research has demonstrated that most college students overestimate the amount of alcohol their peers are consuming (Baer & Carney, 1993; Baer, Stacy, & Larimer, 1991; Clapp & McDonnell, 2000; Schroeder &
Prentice, 1998). Substance use prevention programs have responded to this overestimation by creating programs to publicly correct these misperceptions with the “actual norm.” Results from many studies using this approach have demonstrated decreased self-report binge drinking and alcohol consumption or both (Fabiano, McKinney, Rhoads, & Stark, 2000; Haines, 1996; Johannesen, Collins, Mills-Novoa, & Glider, 1999).

The promise of utilizing this theory in prevention has been heralded in one popular press source (Frauenfelder, 2001) as one of the most significant ideas of 2001. Its effectiveness in changing behavior in various health behavior areas also demonstrates the utility of using the social norms theory. Social marketing interventions based upon the social norms theory have been successful in decreasing self-reported binge drinking over 40% in two colleges, between 20-39% in four colleges, and over 10% in two colleges (Borsari & Carey, 2001; Linkenbach et al., 2002). Programs using this theory have also been successful in reducing self-reported tobacco use over 30% in 3 colleges and high schools (Fabiano, McKinney, Hyun, Mertz, & Rhoads, 1998; Linkenbach et al.).

Likewise, overestimation of negative attitudes and behaviors exist regarding body image and eating topics within the college population. Previous studies have indicated that college students significantly overestimate the occurrence of negative body image attitudes, eating disturbance behaviors, and the prevelance of eating disorders among their peers (Brennan, 2002; Mann et al., 1997). One example of this is women significantly underestimated how much others experienced body satisfaction
Brennan, 2002). Other examples include significantly overestimating the importance of appearance to their peers, the acceptance of societal standards of appearance, and eating disturbance behavior such as restricting calories, bingeing, and purging (Brennan, 2002). Women have also significantly overestimated their own body size and underrate what other men and women find attractive (Brennan, 2002; Fallon, 1987).

Although these misperceptions have been documented, only one study (Mutterperl & Sanderson, 2002) exists that demonstrates how these social norm misperceptions might be utilized within a prevention program for body image and eating disturbances and disorders. This one study used only one brief 10 minute reading of a norms brochure to try to reduce misperceptions and change attitudes and behaviors. Even with this short exposure, the results showed promise using the social norms theory to positively change attitudes and behaviors with some individuals. This study responds to the effectiveness of utilizing the social norm theory in other health prevention areas and further explores the promise of utilizing this theory to decrease body dissatisfaction, internalization and peer pressure to attain the thin-ideal, and eating disorder symptomatology.

The following three intervention programs were created and implemented in individual sororities: psychoeducational, combined (psychoeducational and social norms programs), and a social norms program. First, this research will compare the effectiveness of each intervention program with the control group in reducing body dissatisfaction, internalization and pressure to attain the thin-ideal, and eating disorder
symptomatology. Furthermore, this research will explore whether body mass index (BMI), weight discrepancy (actual-desired weight), perceived pressure to be thin, and internalization of the thin-ideal might predict body dissatisfaction and eating disorder symptomatology within this sample.

1.2 Objectives of the Study

The purpose of this present study is to compare the effectiveness of three types of prevention programs from a control group on decreasing sorority women’s body dissatisfaction, internalization and pressure of the thin-ideal, and eating disorder symptomatology. The following three intervention programs were created and implemented in individual sororities: psychoeducational, combined (psychoeducational and social norms approaches), and social norms program. Each of the three intervention types were similar because they all included two 1-hour presentations, and all individuals were given various marketing items (posters, stress balls, water bottles, pens, and journals). The three prevention programs were different regarding how much local normative data was included in the intervention. That is, information about actual social norms. The psychoeducational program included no social norms’ data, the combined program included social norms’ data in the marketing items only, and the social norms group included social norms’ data in both the presentations and marketing items. Each program addressed the topic of how to deal with pressure to be thin from family, media, and peers. Table 1.1 describes all the discussion topics of each type of program. Table 1.2 illustrates a description of the different intervention programs. Table 1.3 provides both the psychoeducational and
social norm social marketing messages on the promotional items. Table 1.4 provides the messages for the psychoeducational and social norms posters.

**Social Norms Program**
* What are Social Norms?
* What Influences Social Norms?
* What Misperceptions Exist in Your Sorority?
* What are Consequences of these Misperceptions?
* Actual Social Norm Data of Sorority and OSU females

**Psychoeducational Program**
* Media Literacy
* “Fat Talk”
* Size Acceptance
* Emotional Eating
* Stress Management
* Self-Esteem
* Promoting Healthy Body Image

Table 1.1: Outline of the discussion topics for intervention programs.

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Table 1.2: Descriptions of Intervention Groups.
### Social Norm Messages

1. Majority of OSU women…
   * like their physique
   * are involved in regular exercise others
   * never or rarely diet
   * try to eat balanced meals
   * are satisfied with their appearance
   * 97% rarely vomit after eating

2. Majority of your sorority sisters are involved in moderate exercise.

3. 90% of sorority sisters agree diverse body shapes and sizes are attractive.

4. 7 (or 8) out of 10 sorority sisters are not dieting.

5. 83% (90%) of your sorority sisters agree there is too much emphasis placed on appearance.

### Psychoeducational Messages

1. Treat your body with respect…
   * Love and accept your body
   * Don’t compare yourself with
   * Exercise moderately for fun
   * Eat healthy, don’t diet
   * Practice regular stress management
   * Recognize your positive qualities

2. The best methods for weight loss are moderate exercise and healthy eating.

3. Healthy, attractive people come in all shapes and sizes.

4. Diets do not work. Healthy eating = Balance, variety, and moderation.

5. Healthy esteem is giving equal weight to intellect, personality, and emotional, spiritual, and physical self.

Table 1.3: Social marketing messages used for promotional items.
Social Norm Messages on the Posters

1. 90% of your sorority sisters believe that the media presents images that are not realistic.

2. 90% of your sorority sisters believe that bodies of all shapes and sizes can be attractive.

3. 90% of your sorority sisters think that too much emphasis is put on appearance.

4. Majority of OSU females report rarely or never engaging in dieting behaviors; 70% of OSU women attempt to eat a balanced and nutritious diet.

5. 8 (or 7) out of 10 of your sorority sisters are not dieting.

Psychoeducational Messages on the Posters

1. The media often presents images that are not realistic. All model photos are retouched, airbrushed and/or computer regenerated to erase “unacceptable” physical traits.

2. Healthy, attractive people come in all sizes and shapes. Only 5% of the population has today’s model type figure.

3. Healthy self-esteem gives equal weight to intellect, personality, emotional, spiritual self and physical self.

4. Love your body. Treat your body with respect and kindness.

5. Diets do not work. The best methods for weight control are moderate exercise and healthy eating.

Table 1.4: Social norms and psychoeducational messages used on posters.
1.3 Hypothesis

It was hypothesized that the more social norms were included in the intervention, the more effective the intervention would be. Therefore, I hypothesized that the social norm intervention group would be the most effective group in decreasing body image dissatisfaction, internalization of the thin-ideal, perceived sociocultural pressure, and eating disorder symptomatology. Because this intervention type provided individual information about one’s sorority, it was proposed to engage the individuals in more active and personal involvement in the program. Thus, I thought this group would be more effective than the other interventions that had less emphasis on personal involvement. This hypothesis is supported by past research findings that demonstrate more personal and active involvement in interventions have evidence to be extremely effective in changing attitudes and behaviors (Barnett, Far, Maus, & Miller, 1996; Far & Miller, 2002; Larimer, Fader, Geisner, Palmer, & Cronce, 2001; Shavitt & Brock, 1986).

The combined group was speculated to decrease body image dissatisfaction, internalization, sociocultural pressure, and eating disorder symptomatology, but to a lesser extent than the social norm group. The proposed decreased effectiveness was thought to be a result of only presenting the social norms information in social marketing materials and not discussing these messages within the presentations. The presentations were strictly psychoeducational. Some change in attitudes and behaviors, however, is supported as past social norm marketing campaigns have demonstrated positive attitude and behavior change (Linkenbach et al., 2002).
The strictly psychoeducational group was hypothesized to result in small positive attitude changes (decreased body dissatisfaction, internalization, and sociocultural pressure) but little to no behavior change. This hypothesis is consistent with many past studies that have used a psychoeducational approach without including personal information (Mussell, Binford, & Fulkerson, 2000).

1.4 Implications for This Study

This study is the second known study to utilize the social norms theory in body image and eating disturbance prevention. Compared to the previous study, this study uses a more comprehensive and lengthy social norms intervention and also compares the social norms intervention with a typical psychoeducational intervention. It adds to body image and eating disturbance prevention research by studying the effectiveness of reducing body dissatisfaction, internalization and pressure for thinness, and eating disorder symptomatology using strategies related to the social norms theory, that have not been explored. Additionally, this study provides information about the effectiveness of different approaches (psychoeducational and social norms) and combinations of these approaches in improving body image related attitudes and decreasing eating disorder symptomatology. The outcome of this research has implications for the development and implementation of future prevention programming efforts. Furthermore, since the target population consists of future parents, teachers, artists, advertisers, and other influential individuals, their attitudes and behaviors are significant. They may have influence in sending messages to current and future children about one’s body image attitudes and behaviors.
CHAPTER 2

REVIEW OF THE LITERATURE

2.1 Introduction

Extensive research has been done on body image, how it is defined, and its connection with eating disturbances and disorders. Within the last decade, there has also been an increase in body image and eating disturbance prevention. For a particular review of prevention work see the review by Levine and Piran (2001). The following literature review includes an overview of this prevention research, but also includes topics regarding the general topics of body image and eating disorders, focusing particularly on college women. The following topics will be addressed: (1.) Body image (2.) Eating disorder symptomatology (3.) Self-esteem and body image (4.) Sociocultural influences on body image and eating disturbances (5.) Peer influences on body image and eating disturbances (6.) Social norms theory (7.) Body image and eating disturbance prevention programs.

2.2 Body Image

Body image is a complex, multifaceted construct that has been defined as the internal representation of one’s outer appearance, which is manifested in beliefs, feelings, thoughts, and behaviors (Cash, 2004; Thompson et al., 1999). The construct
body image encompasses components including one’s affective, cognitive, behavioral, perceptual, and subjective satisfaction (Thompson, 2004). Because of its many facets, there have been many problems defining, measuring, and creating theoretical models of body image (Thompson, 2004). For example, it has been defined by 14 different terms (Thompson et al.) and over 50 scales have been developed to measure various aspects of this construct (Thompson, 2004). Thus, for clarity of measurement, it is important to define the specific dimension of body image that one is discussing or assessing in any research study (Thompson, 2004). This literature review will focus on body dissatisfaction, the component of body image that was measured within this study and has been considered the most important global measure of body distress (Thompson, et al.).

Body dissatisfaction is often what is meant when you hear or see the words “body image” (Thompson, 2004). It refers to the subjective component of how satisfied or, more often, dissatisfied individuals are with their body (Thompson et al., 1999). Body dissatisfaction has been one of the most consistent predictors of eating and dieting problems in longitudinal studies of adolescent girls (Killen, Taylor, & Hayward, 1996; Leon, Fulkerson, Perry, & Early-Zald, 1995; Patton, Johnson-Sabine, Wood, Mann, & Wakeling, 1990; Thompson, Coover, Richards, Johnson, Cattarin, 1995 as cited in Cooley & Toray, 2001). Even within the construct body dissatisfaction, there are numerous scales that measure one’s dissatisfaction with overall appearance (e.g. Multidimensional Body Self-Relations-Appearance Evaluation; Brown, Cash, & Mikulka, 1990); yet, other scales that measure one’s
dissatisfaction with particular sites of one’s body (e.g. e.g. Multidimensional Body
Self-Relations-Body Areas Satisfaction; Brown et al., 1990).

The literature suggests that it is important to include measures of both overall
and site-specific body dissatisfaction within research to prevent from making
erroneous interpretations (Thompson, 2004). For example, if a study results in a
decreased overall body dissatisfaction (without measuring site-specific dissatisfaction),
one would likely assume that the participants decreased in overall body dissatisfaction.
This, however, may not be true if the participants only decreased their dissatisfaction
for one part of their body, which shrunk the overall dissatisfaction rating. By
including both measurements of overall and specific, the possibility of these types of
erroneous conclusion would decrease. Therefore, this study included both overall and
site-specific dissatisfaction measures.

Body image dissatisfaction is not considered abnormal in today’s society
(Tiggemann, 2004). Rather, it is pervasive and continues to increase (Cash & Henry,
1995). One important part of the development of increased body dissatisfaction is
related to sociocultural influences (Jarry, 1998). That is, the cultural ideal of thin and
beautiful has become more incompatible with realistic expectations for most women
(Thompson et al., 1999; Wilcox & Laird, 2000). The dissatisfaction most women feel
has become so common that it has been referred to as “normative discontent” (Rodin,
Silberstein, & Streigel-Moore, 1985).

This term “normative discontent”, however, should not be interpreted as
“benign” (Thompson, et al., 1999). Body dissatisfaction has shown to be one of the
strongest risk factors for dieting, eating pathology, and eating disturbances (Killen et al., 1996; Stice, 2001; Stice, Mazotti, et al., 1998; Thompson et al., 1999). Research has demonstrated that it is associated with low self-esteem and predicts the onset of major depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000).

On the other hand, some studies suggest that some degree of body dissatisfaction may be beneficial for those with average to high body mass indexes (BMIs) because it may motivate healthy eating and exercise behaviors (Heinberg et al., 2001). Rather than a linear relationship between greater body distress and greater eating disturbance, a U-shaped relationship is proposed (Heinberg et al.). The U-shape curve model suggests that individuals with low body distress may not engage in healthy eating and exercise, even when it would be advantageous to their health. It also proposes that individuals with too high of body distress are likely to engage in unhealthy eating and exercise behaviors or avoid healthy dieting and exercise practices because of their low self-efficacy (Heinberg, et al.). Therefore, for those individuals with an average to high BMI, moderate body image distress might be beneficial to motivate behaviors towards healthy eating and exercising.

An example of a study that supports the possible beneficial nature of body dissatisfaction found that there was a significant correlation between motivation to exercise and body dissatisfaction (McDonald & Thompson, 1992). This study also found that college-age women are more likely to exercise for toning and weight concerns than health reasons (McDonald & Thompson, 1992). Thus, from this study it
seems that college women with some body dissatisfaction are more likely to exercise, which could promote health.

This can be challenged by other research that suggests that the majority of individuals who do try to reduce weight or make dietary change do not succeed in the long run (Mattes, 2002; McCann, et al., 1996). Additionally, another study showed a positive association between being motivated to exercise by weight and appearance reasons and body image disturbance (Cash, Novy, & Grant, 1994). Because of the complex nature of eating pathology, more research needs to be completed to clarify what level of body dissatisfaction is beneficial, benign, or harmful.

Accordingly, body image experts suggest that it is too early to modify the design of eating disorder related prevention programs to address the possible benefit of body dissatisfaction for some individuals (Heinberg et al., 2001). Thus, prevention programs should continue to attempt to decrease body dissatisfaction in its participants. Specifically for this study reducing body dissatisfaction seems indicated as the majority of the participants (74%) were underweight or within the acceptable weight range. For these individuals, body dissatisfaction may motivate pathological eating behaviors including restricting, bingeing, and purging (Heinberg, et al.). Therefore, this study attempted to decrease body dissatisfaction in the individuals that participated in the intervention.

2.3 Eating Disorder Symptomatology

Eating disorder symptomatology can be defined as the attitudes and behaviors that are characteristic of disordered eating including pathological dislike of one’s
body, the desire to loss weight (even though underweight or healthy weight) and behavioral attempts to do so including bingeing, purging, and restricting (Garner & Garfinkel, 1979). The term is not synonymous with eating disorders. An individual may exhibit eating disorder symptoms but may not meet the full criteria for an eating disorder.

There continues to be a debate whether eating disorders are qualitatively and/or quantitatively different than eating disorder symptomatology (Tylka & Subich, 1999). From this debate, eating disorders have been hypothesized to be conceptualized from a continuum framework, a discontinuity framework, or a taxonic-continuity framework (Gleaves, Lowe, Snow, Green, Murphy-Eberenz, 2000; Mintz & Betz, 1988; Tylka & Subich, 1999; Tylka & Subich, 2003). The continuum framework conceptualizes eating disorders on a continuum that ranges from no eating disorder symptoms at one end of the continuum to severe eating disorder symptoms (eating disorders) at the other end of the continuum (Mintz & Betz, 1988; Tylka & Subich, 1999). The middle of this continuum represents individuals with some eating disorder symptomatology but not severe enough to meet the DSM-IV diagnosis (APA, 1994) for an eating disorder.

The discontinuity framework suggests that eating disorders are qualitatively different than eating disturbances and eating disorder symptomatology (Gleaves et al., 2000). The taxonic-continuity framework blends the discontinuity and continuity framework. It suggests that numerous indicators (e.g. body dissatisfaction,
internalization and pressure to attain the thin-ideal) of eating disorders appear to be continuous but there may be a taxon hidden among some of the indicators.

The most convincing evidence seems to come from a study that argued for the taxonic-continuity framework (Tylka & Subich, 2003). This study seemed to utilize the best methodological design, utilizing well-documented nonbehavioral indicators of eating disorder symptomatology rather than using possible confounding behavioral indicators with the criterion (Tylka & Subich, 2003). This study suggested that the question is not whether eating disorders are continuous or discontinuous, but rather are eating disorders continuous-only or taxonic-continuous? Within this study, psychological and sociocultural factors associated with eating disorders were found to be continuous (Tylka & Subich, 2003).

The researchers of this study suggested that it seems that many factors of eating disorders (psychological and sociocultural) vary on a continuum of degree. However, they also suggested that there is possibly a latent taxon as well, which may include bingeing and purging behaviors. Currently, there is not a complete understanding of the latent structure of eating disorders since many psychological, relational, sociocultural, and cognitive indicators of eating disorder symptomatology have not been examined (Tylka & Subich, 2003). Thus, more research needs to be completed to clarify its structure.

Nevertheless, since we are unsure if a latent taxon exists, there is support for the continuum view of eating disorders (especially for psychological and sociocultural factors), and this study focuses on many psychological and sociocultural factors, a
continuity framework will be used. In the college female population, eating disorder symptoms, but not eating disorders, have been found to be very prevalent (Klemchuck, Hutchinson, & Frank, 1990; Mintz & Betz, 1988; Schwitzer, Rodriguez, Thomas, & Salimi, 2001). For example, studies suggest that approximately 61-64% of college women have displayed some eating disordered behaviors (Alexander, 1998; Mintz & Betz, 1988). However, only an estimated 5-7% of the United States’ undergraduates meet the full criteria for an eating disorder (Hubbard, O’Neill, & Cheakalos, 1999; Mintz, O’Halloran, Mulholland, & Schneider, 1997). Therefore within this continuum view, there is a need to recognize those women who do not have an eating disorder but who are at risk or have some of the symptoms of eating disorders.

Specifically, in prevention research, it is important to identify those individuals who may be at risk for eating disorders or are exhibiting intermediate levels of eating disturbance and develop prevention programs accordingly (Levine & Piran, 2001; Thompson et al., 1999). In some prevention settings (e.g. curricular interventions) that have individuals with varying levels of eating disorder symptomatology, it can be difficult to design appropriate and effective intervention for all the levels of eating disorder symptomatology (Levine & Piran, 2004). Thus, in these environments, it is important to create a prevention program that will be beneficial, even benign, but not harmful to any individual within the eating disorder spectrum.

One prevention program that demonstrates the danger of not considering all levels of eating disturbances attempted to prevent eating disturbances for adolescent women (Carter, Stewart, Dunn & Fairburn, 1997). The prevention program provided
education materials about eating disorders and their manifestation. However, instead of preventing eating disturbances, results revealed an increase in dietary restraints for the women in the program. It is postulated that those women in the program who had moderate to high body image distress may have been indirectly taught how to become anorexic or bulimic. This may have been done by providing information on how to limit food intake and how to exhibit eating disorder behavior. Though this information was given to prevent eating disturbances, this information may have reinforced negative attitudes toward one’s body image and the use of dietary restraint to decrease this body dissatisfaction.

Another prevention study conducted with college women (Mann et al., 1997) resulted in an increase of eating disorder symptoms. This study had peers who had recovered from eating disorders provide information about eating disorder to those who were not diagnosed with an eating disorder. This increase is thought to be a result of suggesting that eating disorders are more normative than they are in actuality.

By recognizing that some of the individuals in these programs may have had intermediate levels of body and/or eating disturbance, this program could have acknowledged the presence of current eating disorder symptomatology and focused on how to cope with their body dissatisfaction and reinforce positive body image messages. The program, therefore, may have wanted to avoid the discussing of eating disorder behavior for those individuals already thinking about or exhibiting disorder eating. Misunderstandings, such as this, that do not attend to all levels of eating disturbance may be extremely harmful.
In summary, these two studies seem to reinforce the need to recognize all levels of eating disturbances in prevention work. Not doing so could actually result in “more harm than good”. One of the primary factors in producing positive outcomes in all prevention work is program relevance, that the program fits with the individual and group needs of its participants (Nation et al., 2003). Therefore, to fit with the needs of this study, eating disturbances were conceptualized as a spectrum, recognizing individuals would have varied amounts of eating disorder symptomatology. With this viewpoint, this study attempted to decrease eating disorder symptomatology in the individuals that participated in the intervention.

2.4 Self-esteem and Body Image

Self-esteem is “a global evaluation of one’s qualities and attributes” (Taylor, 1999). Many studies have demonstrated that women’s self-esteem is related to attitudes about physical bodily attractiveness and disordered eating. For example, Mintz and Betz (1988) found that lower levels of social self-esteem were related to greater body dissatisfaction among female university students. Likewise, high self-esteem was discovered to be associated with a more favorable body image in another college female sample (Blouin & Goldfield, 1995; Pope, Gruber, Choi, Olivardia, & Phillips, 1997). Other cross-sectional studies have found that self-esteem was significantly lower in females who reported disordered eating attitudes and behaviors (Fisher, Schneider, Pegler, & Napolitano, 1991; Joiner, Schmidt, & Wonderlich, 1997; Neumark-Sztainer, Butler, & Palti, 1997; as cited in Shisslak, Crago, Renger, & Clark-Wagner, 1998).
Though many of the previously mentioned studies demonstrate evidence for a relationship between body dissatisfaction, eating disorder symptomatology, and self-esteem, there are still some discrepancies about what type of relationship exists. All of the studies previously mentioned were cross-sectional so causality cannot be assumed. Additionally, there have been other studies that have not found a direct relationship between self-esteem and eating disorder symptomatology but have found that self-esteem interacts with other risk factors of eating disorders (e.g. psychological distress, perfectionism, perceived weight status) to predict pathological eating (Harned, & Fitzgerald, 2002; Vohs, Bardone, Joiner, & Abramson, 1999). For example, Vohs and colleagues (1999) found that self-esteem moderated the interaction between perfectionism and perceived weight status in predicting bulimic symptomatology. In this study, college women who were high in perfectionism and perceived themselves as overweight exhibited bulimic symptomatology only if they had low self-esteem.

In 1998, Shisslak and colleagues searched for longitudinal studies regarding eating disorder symptomatology and self-esteem to clarify the relationship. Five longitudinal studies were found that evaluated this relationship. Out of the five studies, one demonstrated that low self-esteem predicted disordered eating 4 years later among adolescent women (Button, Sonuga-Barke, Davies, & Thompson, 1996). Two studies demonstrated that scores on the Ineffectiveness subscale (measures feelings of inadequacy, insecurity, worthlessness, and not being able to control one's life) of the Eating Disorder Inventory (Garner, Olmsted, & Polivy, 1983) were significantly associated with eating problems at a 9 month follow-up. The other two
studies resulted in the Ineffectiveness scale not being predictive of eating problems 3-4 years later (Killen et al., 1994, 1996; Leon, Fulkerson, Perry, & Cudeck, 1993; Leon, Fulkerson, Perry, & Early-Zald, 1995 as cited in Shisslak et al., 1998).

Despite the inconsistencies of the research between self-esteem and eating disorder symptomatology, there is considerable research that suggests that self-esteem is related to eating disorder symptomatology. Thus, self-esteem was included in this study to analyze any differences in self-esteem between the groups and explore its possible relationships with the dependent variables.

2.5 Sociocultural Influences on Body Image and Eating Disturbances

At the same time the current Westernized American society continues to emphasize female appearance and an unattainable ideal, body image and eating disturbances are on the increase (Thompson et al., 1999; Wilcox & Laird, 2000). Though there are many theoretical explanations that may account for these increase in disturbances, societal factors (e.g. media, peers, and family) demonstrate to have a powerful influence on the development and maintenance of these disturbances in Western societies (Fallon, 1990; Heinberg, 1996). Evidence for sociocultural’s influence on body dissatisfaction and disordered eating includes survey, correlational, randomized control, and structural equation modeling (Matz, Foster, Faith, Wadden, 2002; Posavac, Posavac, & Weigel, 2001; Stice, Spangler, & Agras, 2001; Tylka & Subich, 2003). Furthermore, it has even been argued that societal factors have the strongest empirical support for influencing one’s need to try to conform to ideal body
standards (Fallon, 1990; Heinberg, Thompson, & Stormer, 1995; Stormer & Thompson, 1996).

One aspect of sociocultural influence that has been extensively studied is the media. Media influence has demonstrated to be associated with reinforcing an unobtainable ideal and has been linked to body dissatisfaction and eating disorder symptomatology (Thompson & Heinberg, 1999). Additionally, mass media exerts a dangerous influence with the use of airbrushing, soft-focus cameras, editing, and filters (Stormer & Thompson, 1996). The use of these technological advances reinforce an image that does not represent reality (Freedman, 1986). Furthermore, only 3-5% of the United States population could achieve the physical appearance of an average fashion model in the media (Thompson et al., 1999).

The impact of media on women’s attitudes and behaviors has been demonstrated extensively within the literature. Numerous studies have shown that the more women were exposed to thin media images, the more eating disorder related symptomatology they had (Heinberg & Thompson, 1995; Irving, 1990; Posavac, Posavac, & Posavac, 1998; Stice & Shaw, 1994) Another study found a direct pathway between media exposure and eating disorder symptomatology using structural equation modeling (Stice, Schupak-Neuberg, Shaw, & Stein, 1994).

It is important to recognize that though most females in the United States are exposed to these sociocultural pressures, only a small portion develop eating disorders (Stice et al., 1994). It has been found that other factors, including internalization of the thin-ideal and reinforcement to obtain this ideal, have been identified to be
particularly salient in the development of eating disturbances and disorders (Mussell et al., 2000). Thus, the more women accept the Westernized ideal and have pressure to obtain it, the higher one’s risk of developing disordered eating patterns may be (Federoff & McFarlance, 1998).

Internalization, acceptance of the thin-ideal, has been shown to mediate and moderate the relationship between media exposure and eating disorder symptomatology (Heinberg & Thompson, 1995; Stice, 1994). For example, Stice and colleagues (1994) found that internalization mediated the relationship between media exposure and eating pathology. In another study, internalization was found to be the most important correlate with eating disorder symptomatology ($r=.53$) and body dissatisfaction ($r=.52$) among the factors, exposure to media and recognition of societal ideals (Heinberg, Thompson, et al., 1995). Furthermore, Heinberg and Thompson (1995) found that women with high levels of internalization increased in both weight and overall appearance dissatisfaction after watching an appearance-related video, whereas, women with low-internalization decreased in dissatisfaction.

Thus, it seems that it is more than just exposure to media or to the thin-ideal that influences the increase in eating disorder symptomatology. Internalization or acceptance may be a key factor. Tylka and Subich’s study (in press) provides continuing evidence for this as internalization predicted body dissatisfaction in college women, which than predicted eating disorder symptomatology. Furthermore, Stice and colleagues developed an experiment which showed that a reduction in internalization resulted in decreased body dissatisfaction, dieting, negative affect, and
bulimic symptoms (Stice, Chase, Stormer, & Appel, 2001; Stice, Mazotti, Weibel, & Agras, 2000).

Along with internalization, perceived sociocultural pressure has demonstrated to be an important factor related to body dissatisfaction and eating disorder symptomatology. Studies have found that perceived pressure for thinness was predictive of body dissatisfaction in college women (Stice, Nemeroff, & Shaw, 1996; Tylka & Subich, in press). In adolescent girls, pressure for thinness has also been associated with increased depressive symptomatology and internalization (Stice & Bearman, 2001) and has predicted eating disorder symptomatology (Thompson, Coovert, Richards, Johnson, & Cattarin, 1995).

In summary, internalization and pressure for thinness has predicted body dissatisfaction (which then predicted eating disorder symptomatology) in college students. Because of this, many researchers have suggested that one effective way to prevent body image and eating disturbances may be to reduce internalization of the thin-ideal and pressure for thinness (Heinberg & Thompson, 1995; Tylka & Subich, in press). Thus, one goal for this prevention effort was to decrease both of these variables. Therefore, measures of internalization of the thin-ideal and pressure for thinness were included as dependent measures.

This study attempted to decrease internalization by including a component on media literacy. This study also attempted to decrease pressure for thinness by promoting size acceptance and discouraging weightism and teasing. All of the interventions included some discussion about peer, family, and media pressure to be
thin. In addition to being dependent variables, internalization of the thin-ideal and pressure for thinness were tested as predictors of body dissatisfaction and eating disorder symptomatology.

2.6 Peer Influence among College Women

College women are among the highest at risk for developing eating disorders and eating disorder symptomatology (Becker, Grinspoon, Klibanski, & Herzog, 1999; Douglas et al., 1997; Klemchuck, et al., 1990; Mintz & Betz, 1988). One of the proposed factors for this risk is the large emphasis that is typically put on women’s appearance (Smolak & Levine, 1996) and the pressure to conform to what seems normative and accepted within one’s social environment (Brennan, 2002).

For college students, peer influence is an extremely powerful factor and determinant of behavior (Berkowitz, 2000). Peer influences have been found to be more influential in shaping individual behavior than biological, personality, familial, religious, cultural, and other influences (Berkowitz, 2000). Additionally, college women reported that among six different influences, friends were the most important comparison/evaluation group for themselves in appearance attributes (Heinberg & Thompson, 1992). Classmates and other university students ranked second and third (Heinberg & Thompson, 1992). This suggests that friends and other students in college are the most importance influence in regards to one’s body image and eating behaviors.

Sororities are one subgroup of college females that seem to put a strong emphasis on appearance and shape. For example, Cashel and colleagues (2003) found
that sorority members had significantly higher levels of being aware of the pressure to be thin and acceptance of the thin-ideal for themselves than patients who were diagnosed with anorexia. The sorority members also had body dissatisfaction scores that were equivalent to the same sample of individuals with anorexia. Another study found that sorority women had greater fear of becoming fat, body dissatisfaction, and more weight preoccupation than college women from previous studies (Schulken et al., 1997).

One theory of why sorority members are at greater risk for acceptance of the thin-ideal and eating disorder symptomatology than nonsorority members is perceived pressure for thinness from peers and conforming to the perceived norm (Brennan, 2002; Crandall, 1988). If appearance and disordered eating are important to a group, then other members might conform to what seems valued and accepted. This may then result in an increase of disordered eating (Schulken et al, 1997). Crandall (1988) reinforces this premise with a study of sorority women.

Crandall (1988) found that the most accepted sorority women were those who engaged in bingeing activities. There seemed to be a recognized group norm of bingeing behavior within this sorority. Women, who were initiated into the sorority and did not binge before joining the sorority, began to binge. This can be explained by conforming to what seemed normative. In most instances, an individual assimilates to the groups’ norms (Linkenbach et al., 2002). Thus, it seems that those women in this sorority who did not binge, unlike those who were most accepted, began to binge to seek acceptance. They conformed to an unhealthy group norm.
This study provides evidence for the power of a peer influence, particularly with a perceived group norm. It has been recommended to integrate addressing the social environmental factors of college students (e.g. group norms) in future prevention programs to enhance their effectiveness (Pearson, Goldklang, & Striegel-Moore, 2002). This study will address these group norms in the prevention program through the use of the social norms theory.

2.7 Social Norms Theory

In 1986, the social norms theory (Berkowitz, 2000) was first utilized to promote healthy behavior within the college population. This theory recognizes that the attitudes and behaviors of one’s social group has been found to have a major influence on one’s own behavior (Berkowitz, 2000). This peer influence extends beyond biological, personality, familial, religious, and cultural influences. Therefore, individuals are likely to change their behavior to reflect the perceived accepted and normal attitudes and behaviors of a particular social group (Berkowitz, 2000).

The social norms theory depicts incidences where individuals are incorrectly perceiving these behaviors and/or attitudes of their social group to be different from their own (Linkenbach, et al., 2002). Many times these misperceptions reflect an overestimation of negative behavior and an underestimation of positive behaviors. Research has found evidence of these misperceptions in areas of alcohol, drug use, cigarette smoking, and eating disorders (Chassin, Presseon, Sherman, Corty, & Olshavsky, 1984; Mann et al., 1997; Perkins, 1994; Perkins, Meilman, Leichliter, Cashin, & Presley, 1999). In these cases, the “perceived norm” may actually be
detrimental to individual behavioral choices. For example, overemphasizing extreme negative attitudes and behaviors (recognizing only women with eating disorders or high eating symptomatology in college newspapers, on televisions, or in day-to-day conversations) rather than acknowledging the positives, will likely influence individuals to perceive these negative behaviors as being more frequent than are in reality (Brennan, 2002; Linkenbach et al., 2002). By publicly correcting these misperceptions with the “actual norm”, negative behaviors and attitudes that were once seen as the “normal” are hypothesized to decrease.

Another component of the social norms theory explains why individuals may not confront the problem behaviors of others. It is assumed that the problem behavior is accepted within the social group and speaking up against this behavior would result in being ridiculed or rejected. By exposing these individuals to the true discomfort that the problem behavior may bring others, they will more likely to express their own feeling (Linkenbach et al., 2002).

These two components of the social norms theory are built upon seven major assumptions that have been supported by empirical research (Baer et al., 1991) and are stated in Table 2.1. In summary, these assumptions state that an individual’s behavior is often based on the incorrect perception of others’ attitudes and behaviors. These misperceptions influence individuals to change their own behavior, attitudes, or discussion about the behavior to meet the norm, rather than expressing their own perceptions, feelings, and beliefs. The effects of these misperceptions are cyclical, as the misperceived norm is reinforced and non-conforming beliefs and behaviors are
discouraged. To prevent this from occurring, revealing information about the true norms will encourage individuals to express attitudes and behaviors that are similar to the real norm. The limitation of the social norms theory, based on these assumptions, is when the actual norm is a more negative attitude or behavior compared to the perceived norm. For example, if it were true that college women thought women were more satisfied than they actually were, revealing this misperception would not be beneficial.
1. Actions are often based on misinformation about or misperceptions of others’ attitudes and behaviors.

2. These misperceptions have real consequences.

3. Individuals passively accept misperceptions rather than actively intervene to change them, hiding from others their true perceptions, feelings, or beliefs.

4. The effects of misperceptions are self-perpetuating, because they discourage the expression of opinions and actions that are falsely believed to be non-conforming.

5. Appropriate information about the actual norm will encourage individuals to express those beliefs that are consistent with the true, healthier norm.

6. Individuals who do not personally engage in the problematic behavior may contribute to the problem by the way in which they talk about the behavior.

7. For a norm to be perpetuated it is not necessary for the majority to believe it but only for the majority to believe that the majority believes it.

Table 2.1: Social norms theory assumptions.
An example of the success of the social norms approach has been demonstrated with college binge drinking (Perkins and Berkowitz, 1986). Various studies have found that college students overestimate alcohol related behaviors among their peers (Baer & Carney, 1993; Baer et al., 1991; Clapp & McDonnell, 2000; Schroeder & Prentice, 1998). Following these findings, several campuses implemented a social norm media campaign that delivered accurate, healthy social norm behavior regarding drinking and non-use (Fabiano et al., 2000; Haines, 1996; Johannesen et al., 1999). Within a 2-year period, these interventions reduced binge-drinking rates by 20% or more.

Because of the effectiveness of using this theory in alcohol prevention, researchers have begun to investigate whether the social norms approach might be appropriate to use for other problem behaviors. To test its appropriateness, the original theorists created five questions that help determine if using the social norms theory would be indicated or not. These questions have helped guide research efforts in the implementation of the social norms approach with health behaviors. A brief review of each question and how a previous study (Brennan, 2002) answered each question follows in order to provide evidence that the social norms theory can be utilized in understanding and creating interventions for body image and eating disturbances.

Question 1: What perceptions exist with respect to the behavior/attitudes in question? Misperceptions were found in regards to appearance evaluation, importance of appearance, body areas satisfaction, acceptance and recognition of societal
appearance attitudes, and eating disturbance behaviors (Brennan, 2002). College men and women in this study overestimated their peers’ ratings for the importance of appearance, the acceptance of societal appearance standards, and eating disorder symptomatology. They also underestimated peers’ responses in regards to appearance evaluation, body satisfaction, and the recognition of societal appearance standards. In addition, this sample of college students tended to overestimate their own body size and underestimate what others find attractive (Fallon, 1987). Other studies also indicate that women overestimate the percentage of their peers with eating disorders (Mann et al., 1997).

Question 2: Do the majority of individuals in a group or community hold these misperceptions? As evidenced in the previous study, the majority of males and females in the sample held these misperceptions (Brennan, 2002). Sixty-four percent of the sample underestimated peers’ appearance evaluation, 66% overestimated their peers’ importance of appearance, and 87% overestimated peers’ eating disorder symptomatology (Brennan, 2002).

Question 3: Do the individuals in the group exert an influence on each other’s behaviors? College students reported peer influence to be the most important evaluation group in regards to appearance attributes (Berkowitz, 2000). The direct influence of peer discussion, encouragement, and behavior in areas of body image and eating have also been demonstrated (Crandall, 1988; Vincent & McCabe, 2000).
Questions 4 and 5, regarding the hypothesized effect of the misperceptions and correcting for the misperceptions, were answered by examining the above questions and the preceding literature review.

The specific hypotheses of this study are all directly stated in chapter 1. Overall, it is hypothesized that body image and eating misperceptions would increase negative body image attitudes and behaviors. By correcting these misperceptions with the actual and healthier norm, it is predicted that individuals will recognize that these unhealthy body image attitudes and behaviors are not as normative as they thought. This would encourage individuals to maintain or have more healthy attitudes and engage in more healthy behaviors to “fit in.”

Thus, upon answering the questions above, it appears that the social norms theory provides a way of conceptualizing some components of effective body image and eating disturbance prevention. Incorporating the social norms theory into a body image and eating disturbance prevention appears to be encouraging. One of the creators of the social norm theory, Dr. Berkowitz, has personally suggested its use with eating disorder related prevention (A. Berkowitz, personal communication, 2002).

This, however, does not suggest that a social norms approach will prevent body image and eating disturbances or be the only prevention technique needed. As body image and eating disturbances are multifaceted, the social norms approach may be effective when integrated with other psychoeducational and empowerment programs (Berkowitz, 2000).
2.8 Body Image and Eating Disturbance Prevention Programs

Prevention in this study refers to "policies and programs designed to evade or forestall the development of disordered eating by protecting current states of health and effective functioning" (Levine & Piran, 2004). There are three types of prevention efforts that are defined by what population or segment of the population is targeted. They include universal, selective, and targeted (Levine & Piran, 2004). Universal prevention, involves targeting a large population of individuals who are far from developing the disorder you are trying to prevent. Selective prevention targets individuals who do not yet have the target problem but who are at high risk because of certain psychological, biological, and/or sociocultural factors. Targeted prevention refers to prevention that focuses on individuals who are at risk because they have clear precursors that are known to predict the disorder (Levine & Piran, 2001).

The current study can be thought as a mixture of selective and targeted forms of prevention. Sorority women are known to be at risk because of sociocultural factors, which indicates that this is a selective prevention program. Additionally, many sorority women are at risk because of having negative body image (a precursor to eating disorders), which indicates that this is a targeted prevention program. Therefore, this study is considered a mixture of selective and targeted prevention.

Within the body image and eating disorder literature, there have been numerous studies from each of the three forms of prevention (Levine & Piran, 2001). There, however, is still a lack of high quality studies, defined by decreasing pathological eating and its mediators over a long-term follow-up (Levine & Piran,
Many past eating disorder prevention programs have educated and exposed females to eating disorder symptoms, prevalence rates, psychological characteristics, risk factors, health complications, and treatments (see reviews by Dorian & Garfinkel, 2002; Levine & Piran, 2001, 2004; Levine & Smolak, 2001). This information-based approach has had limited success in decreasing eating disorder symptomatology.

Instead of focusing on eating and weight behaviors, more recent prevention programs seem to be turning to a positive empowering approach. This approach centers upon challenging portrayed norms, building skills (e.g. coping, stress management, media literacy, assertiveness) and provides opportunities for activism. Additionally this approach increases active participation and addresses individual and environmental factors (e.g. peers, parents, and leaders). This new empowering approach has been utilized in creating body image prevention programs that have been effective in improving body image attitudes and behaviors (Bowling, Zimmerman, & Daniels, 2000; Phelps, Sapia, Nathanson, & Nelson, 2000; Piran et al., 1999).

For example, a prevention program was created for an at risk group, adolescent, female ballet dancers using a participatory approach. This approach was an experienced-based, context specific approach that allowed individuals to examine their own body experience with their own peers through focus groups. Results of this study showed decreased disorder eating and disturbed attitudes regarding body image and shape (Piran et al., 1999).

Along with encouraging active participation and addressing environmental influences mentioned above, there are many reasons to believe that incorporating the
social norms theory into prevention programs would be successful. Experts in this
field including the roundtable participants at the National Institute of Mental Health
Conference (Pearson et al., 2002) and the lead researchers in eating disorder
prevention (Levine & Piran, 2004; Levine, et al., 1999; Piran, et al., 1999) have
recommended the idea of utilizing the social norm theory or attempting to change
norms within prevention programs.

The social norms approach (Berkowitz, 2000) has many strengths that might
further enhance prevention programming in the college student population. Primarily,
the social norms approach addresses the immediate environment that college students
are interacting in everyday. Addressing the social environmental factors of college
students has been recommended to be integrated in future prevention programs in
attempt to enhance their effectiveness (Pearson et al., 2002). Additionally, this
approach can utilize social norm marketing campaigns to spread positive messages to
numerous individuals. Attending programs or incorporating prevention programs into
classes is not always achievable; therefore, there is a need for an intervention that can
reach a large college population.

Furthermore, evidence for the efficacy of a social marketing approach exists.
One component of a successful prevention project called “Go Girls-Giving Our Girls
Inspiration and Resources for Lasting Self-esteem” (Levine et al., 1999) taught
adolescent females social marketing techniques (e.g. to create posters that promote
positive body image messages). Other components included skill-building activities to
challenge societal messages of the thin-ideal. Females who participated in this
program had a reduction of body image and weight concerns as well as an increase in self-confidence. Though social marketing strategies were not the only component in this program, the results are encouraging that social marketing may be one effective element to help decrease body image distress.

Only one known program has incorporated or utilized the social norms approach (Mutterperl & Sanderson, 2002). This study investigated the effect of a 10 minute exposure of a norm-brochure (discussed body image and eating misperceptions) versus a healthy behaviors brochure on disordered eating, internalization, and ideal weight. The results showed a reduction in disordered eating for college women who compared themselves to other college women and who read the norm-brochure. Those women who read the norm-brochure and compared themselves to media images, however, had increased disordered eating.

This study demonstrates the importance of creating norm messages that are relevant to the targeted sample and demonstrates important individual differences in responsiveness to health education messages. This study’s strength is that it was the first of its kind by including social norms into disorder eating prevention. It, however, has many limitations, especially the extreme brevity of the intervention and the small sample size. Thus, more body image and eating disturbance prevention research needs to be conducted utilizing the social norms theory.

2.9 Implications of the Literature

These findings and those noted throughout this literature review have implications for developing effective college level prevention programs regarding
body dissatisfaction, acceptance and pressure to reach the thin-ideal, and eating
disorder symptomatology. This study attempted to add to this knowledge by exploring
another intervention possibility utilizing the social norms theory. The purpose of this
research is a.) To investigate if the proposed psychoeducational, social norm, and
combined interventions will result in any change of attitudes and behaviors compared
to the control group b.) To explore how pre-test factors such as BMI, internalization of
the thin-ideal, sociocultural pressure to obtain the thin-ideal, self-esteem, and weight
discrepancy (actual-desired weight) may predict body satisfaction, appearance
evaluation, and eating disorder symptomatology scores.
3.1 Participants

Since women are at high risk for disordered eating and eating disorders, females were targeted in this study (Ackard, Moe, & Kearney-Cooke, 2002; Brennan, 2002; Mintz & Betz, 1988; Thompson et al., 1999). Moreover, sorority women have been shown to have a particularly high risk of eating disorder symptomatology (Crandall, 1988; Schulken et al., 1997); therefore, sororities were targeted. Sororities were recruited through a Panhellenic Council Meeting. During this meeting, every sorority was invited to participate in a study to evaluate three different programs aimed at helping women improve the way they felt about themselves. This recruitment approach can help generalize the results of this study to future prevention programs of a voluntary nature for sororities (Stice, Chase, et al., 2001). Compensation for individuals in the sorority’s time was two hundred dollars for each sorority. Time requirements for participation included a pre-test battery, involvement in the appropriate intervention or control group, and a post-test battery.

Leaders and members of four sororities at a large Midwestern university agreed to participate in the study. All of the members within each sorority were encouraged but not
required to participate in the study. Recruitment of individuals within the sororities was
clear to indicate the time requirements, the compensation, and that the purpose of the
intervention was to improve how individuals feel about themselves. All participants in all
of the interventions and the control group were given this same information. Written
informed consent was required at the onset of the study for each participant. Each
sorority had approximately 45-60 members. Approximately 30-40 women from each
sorority agreed to participate, resulting in 146 total participants.

Participants’ demographic data, divided by intervention group, are displayed in
Table 3.1. The modal participant was a 20 year-old, white, heterosexual, sorority member
with a medium build and a desire to lose weight.

3.2 Procedure

This study evaluated the following three program types: Psychoeducation,
combined, and social norms. Each sorority participated in only one program. This design
was used to try to decrease the interaction of the participants in the different groups and to
decrease the probability of them sharing information about their particular intervention.
For example, posters were hung only in the corresponding sorority house (e.g. in the
bathrooms, on mirrors, on the walls, in the eating area) to decrease the chance that other
sorority women would see the posters. The program type for each sorority was
determined by putting all four program options (3 intervention programs and 1 control) in
a hat and choosing the program type for each sorority.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Social Norm (N=40)</th>
<th>Combined (N=30)</th>
<th>Psychoeducational (N=38)</th>
<th>Control (N=38)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>11%</td>
<td>3%</td>
<td>15%</td>
<td>9%</td>
</tr>
<tr>
<td>19</td>
<td>29%</td>
<td>43%</td>
<td>21%</td>
<td>12%</td>
</tr>
<tr>
<td>20</td>
<td>20%</td>
<td>37%</td>
<td>33%</td>
<td>36%</td>
</tr>
<tr>
<td>21</td>
<td>26%</td>
<td>17%</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>22</td>
<td>14%</td>
<td>0%</td>
<td>6%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>89%</td>
<td>91%</td>
<td>97%</td>
<td>100%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>0%</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Bi-racial</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>19%</td>
<td>33%</td>
<td>23%</td>
<td>9%</td>
</tr>
<tr>
<td>Second</td>
<td>33%</td>
<td>33%</td>
<td>37%</td>
<td>12%</td>
</tr>
<tr>
<td>Third</td>
<td>12%</td>
<td>23%</td>
<td>20%</td>
<td>46%</td>
</tr>
<tr>
<td>Fourth</td>
<td>36%</td>
<td>10%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Living Situation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In Sorority House</td>
<td>69%</td>
<td>63%</td>
<td>37%</td>
<td>33%</td>
</tr>
<tr>
<td>In dorm with others</td>
<td>23%</td>
<td>37%</td>
<td>63%</td>
<td>57%</td>
</tr>
<tr>
<td>Alone</td>
<td>8%</td>
<td>0%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Attended</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 sessions</td>
<td>10%</td>
<td>20%</td>
<td>42%</td>
<td>27%</td>
</tr>
<tr>
<td>1 session</td>
<td>23%</td>
<td>43%</td>
<td>26%</td>
<td>73%</td>
</tr>
<tr>
<td>2 sessions</td>
<td>67%</td>
<td>37%</td>
<td>32%</td>
<td>N/A</td>
</tr>
<tr>
<td>Pre-test</td>
<td>88%</td>
<td>100%</td>
<td>92%</td>
<td>82%</td>
</tr>
<tr>
<td>Post-test</td>
<td>70%</td>
<td>77%</td>
<td>42%</td>
<td>68%</td>
</tr>
</tbody>
</table>

**Note.** N= Individuals who were included in the data analysis. These individuals completed the pre and/or post-test and attended 0-2 sessions.

Table 3.1: Participants’ Characteristics Divided by Intervention Group
Pre-test data collection was collected approximately one month before the intervention programs began. The pre-test data was used to evaluate whether the four sororities were relatively equivalent on all demographic and dependent variables. The pre-test data also was used to construct the social norms messages for the social marketing campaigns and the social norm discussions.

The actual intervention program was completed within one quarter over six weeks. During the six weeks, each intervention group (not the control group) participated in two 1-hour didactic and discussion presentations (psychoeducational or social norms, depending on the intervention group). One presentation took place in the second week of the intervention and the other presentation took place in the fifth week of the intervention. Additionally, the intervention groups had social marketing posters (psychoeducational or social norms) displayed in the halls, on the mirrors, and in the bathroom stalls during the entire six weeks. In total, there were five different posters displayed in the appropriate sorority house. Eight copies of each poster were rotated within the house; each poster being displayed for four weeks. Table 3.2 displays the six-week schedule for the intervention programs and the control group.

Intervention groups consisted of all the participants in the sorority who agreed to participate in the study. Each sorority was coded with a number (1, 2, 3, or 4) to distinguish what participants were in each intervention or control group. Additionally, each participant was coded with a number.
<table>
<thead>
<tr>
<th>Program Type</th>
<th>~4 wks. before program</th>
<th>Wk 1</th>
<th>Wk 2</th>
<th>Wk 3</th>
<th>Wk 4</th>
<th>Wk 5</th>
<th>Wk 6</th>
<th>Wk 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Norms</td>
<td>Pre-test</td>
<td>Program #1</td>
<td>Poster #1 &amp; #2</td>
<td>Poster #3</td>
<td>Program #4 &amp; #5</td>
<td>Post-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined</td>
<td>Pre-test</td>
<td>Program #1</td>
<td>Poster #1 &amp; #2</td>
<td>Poster #3</td>
<td>Program #4 &amp; #5</td>
<td>Post-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoed</td>
<td>Pre-test</td>
<td>Program #1</td>
<td>Poster #1 &amp; #2</td>
<td>Poster #3</td>
<td>Program #4 &amp; #5</td>
<td>Post-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Pre-test</td>
<td>Healthy Eating Program &amp; Post-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2: Timeline for research throughout each intervention and the control group.

The intervention programs were facilitated by a counseling psychology doctoral student along with undergraduate research assistants. Each intervention group met as a large group two times. At times during the intervention program, however, the larger group was split into smaller size groups for brief (5 minute) discussions. This was to allow for more personal and active participation. For these small discussions, the large group was split into five groups of around four to six participants.
Small discussion groups were determined by giving each individual a number from one to five. All the ones were with the first group leader, all the twos were with the second group leader, etc. Each group was facilitated by one of five trained undergraduate assistants. The facilitators led the discussion and keep the discussion on the topic.

Each large group was audio-taped to ensure constancy across groups and was reviewed by an undergraduate research assistant. The research assistant ensured that the different intervention groups covered the same material as indicated by the standardized script and remarked on any unique or unusual occurrences.

In addition, at each intervention program, each sorority received marketing materials. The marketing materials consisted on pens, highlighters, stress balls, water bottles, and journals. During the first intervention program, the participants received the pens, highlighters, and stress balls. At the second intervention program, the participants received the water bottles and journals. These items had either educational messages or social norms messages (depending on the intervention group) displayed on the item.

Post-test data was conducted at the end of the six weeks. A qualitative evaluation form was included along with post-test assessments. This form was voluntary but gave the participants an opportunity to provide feedback about the intervention program, the social marketing materials, and general comments.

Pre and post-test data collection was gathered once in each sorority. Students were asked to fill out all the measures, which took around 30 minutes. The data collection sessions were facilitated by a trained undergraduate research assistant. Training entailed specifics of data collection procedures. The research assistant followed a script
and was blind to the intervention assigned to each dorm. A copy of the script for pre and post-test data collection, the consent form, and a resource list (given to participants after pre-test) can be found in Appendix G.

Following post-test data collection, participants received debriefing information including contact numbers for any questions about the research and contact numbers if one would like to seek counseling (see Appendix I). Within the debriefing, detailed information about the hypotheses and the intervention itself was nonspecific as follow-up data may be collected. The research assistant asked individuals if they would like to be considered to fill out follow up data. For individuals that were interested, they put their name and e-mail address on an index card and gave it to the research assistant. It was made clear that if they individuals did provide this information, they were not obligated to participate in any follow-up studies. Providing this information permitted the researchers to ask the individuals in the future whether they would like to participate in the follow up or not.

3.3 Intervention Groups

This study evaluated the effectiveness of three intervention programs in reducing eating disorder symptomatology, pressure and internalization of the sociocultural ideal, and body image dissatisfaction. The three intervention programs were psychoeducational, social norm, and combined. The psychoeducation program included two hours of psychoeducation presentations with educational marketing. The combined program included two hours of psychoeducational presentations along with social norms
marketing. The social norms program included two hours of social norm presentations along with social norm marketing.

The three intervention groups differed on two dimensions, presentation type and marketing type. The two types of presentations were either psychoeducational or social norm discussion. The psychoeducational group and the combined group both had the psychoeducational presentation. The social norm group had the social norm presentation.

The second variable within the programs was the type of social marketing. The two types of marketing were educational and social norm marketing. The only group that had the educational marketing was the psychoeducational group. Both the combined group and the social norm group had the social norm marketing. This study’s design omitted the social norm presentation and psychoeducation marketing program because only four sororities agreed to participate in this study. Since a control group is important in program evaluations, only three of the four possible intervention programs could be evaluated. Because there is more evidence to support the effectiveness of social norm marketing compared to social norm discussion (Linkenbach et al., 2002) the social norm presentation and psychoeducational marketing intervention was omitted. Table 3.3 helps explain the three intervention groups.
Marketing Type

<table>
<thead>
<tr>
<th>Presentation Type</th>
<th>Psychoeducational</th>
<th>Social Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychoeducational</td>
<td>Psychoeducational</td>
<td>Combined</td>
</tr>
<tr>
<td>Social Norms</td>
<td>Omitted from design</td>
<td>Social Norm</td>
</tr>
</tbody>
</table>

Table 3.3: Intervention programs explained by presentation and marketing type

3.31 Psychoeducational Group

This group was involved in two 1-hour didactic and discussion presentations that covered topics such as media literacy, “fat talk”, size acceptance, stress management, coping skills, self-esteem, and healthy body image practices. These two presentations included lecture, small group discussion, large group discussion, and skill building activities. The script for this program is displayed in Appendix A.

Participants in the group also received a folder of educational materials to coincide with the lectures. The folder consisted of handouts on ways to love your body, tips to be a critical viewer of the media, “fat facts”, stress management techniques, and self-esteem handouts. These handouts can be found in Appendix B.

Additionally, this group was presented with posters and social marketing materials that will be discussed further in section 3.3, procedure. Items including stress balls, journals, pens, highlighters, and water bottles all had educational messages on them, reinforcing the topics in lecture (see Appendix C). Five different posters were created,
each being presented for four weeks on the backs of bathroom stalls, on mirrors, and within the halls of the sorority (see Appendix D). An example of a psychoeducational message on the posters and promotional items is “Healthy attractive people come in all shapes and sizes.”

The specific topic area of each poster coincided with the topic area of the social norm posters (presented to the other two groups) as illustrated in Appendix C. This helped keep the message topic consistent over groups. Since the construction of the social norm posters occurred after pre-test data was collected, the education posters also were created after collecting pre-test data.

3.32 Combined Group

This intervention included the same two 1-hour psychoeducational presentation listed above. Participants in the group, like the psychoeducational group, also received the folder of educational materials presented in Appendix B. The message type on the social marketing items (stress balls, pens, journals, highlighters, and water bottles) and posters for this group was focused on social norms. The message type displayed on these items and posters, therefore, was the only difference between this group and the psychoeducational group described above.

The social norm messages displayed actual data about the sorority members’ attitudes and behaviors regarding body image related topics. In particular, a positive social norm was chosen and displayed positive attitudes and behaviors that are happening in the sorority but that are underestimated.
These positive social norm messages were created from the pre-test data that was collected from the participants in each sorority. The data was analyzed to determine what misperceptions exist within the sorority and what, if any, over-estimations of negative behavior exist. From this data, the messages were created based on what areas had the largest discrepancy between actual and perceived attitudes and behaviors (see data analysis for more information). In other words, which positive attitudes and behaviors did individuals underestimate and which negative attitudes and behaviors did individuals overestimate occurring within their sorority. For example, 90% of the members of this sorority agreed media images were unrealistic, but on average sorority members thought only 61-70% of their peers would think that these images were unrealistic. The messages that was created based on this discrepancy was “90% of your sorority sisters think that media images are unrealistic.”

Five messages were chosen to be displayed on the poster and ten messages were chosen to be displayed on the social marketing materials. The message design for each promotional item is included in Appendix C. The poster designs are included in Appendix D.

3.33 Social Norms Group

This intervention included two 1-hour presentations that addressed the social norm messages through didactic and discussion. This social norm presentations were guided by adapting a created small group norms model utilized for alcohol prevention in college students (Far & Miller, 2002). The script for this program is provided in Appendix E.
The small group norms model (Far & Miller, 2002) includes discussions regarding the following: What are social norms, why are there discrepancies between actual and perceived norms, how are social norms often misperceived, what are the consequences of these misperceptions, and what are the actual and perceived social norms for your particular peer group. This model demonstrated to be effective in reducing binge drinking among college students and won the Model Programs Award from the United States Department of Education (Far & Miller, 2002).

The social norm program that was used in this study covered the same areas as the alcohol program but used body image and eating related topics and data instead of alcohol related data. The specific topics covered included generic information and discussion about social norms and actual social norms’ data from their sorority and OSU students regarding media, appearance satisfaction, dieting, exercise, importance of appearance, stress management, and “fat talk”. Actual data was included from each sorority to increase one’s personal involvement in the program and address one’s social environment. Data was also included about OSU students, in general, to address a larger social environment and reinforce the positive norms of the entire campus.

Along with the two 1-hour presentations, this group received a folder of social norms handouts, consistent with the content covered in the programs. These handouts are displayed in Appendix F.

The message type on the social marketing items and posters for this group was focused on social norms. Data from the pre-test data was examined regarding the discrepancies between actual and perceived attitudes and behavior. The attitudes and
behaviors that had the largest discrepancy, either underestimating the positive or overestimating the negative, were chosen for message on the posters or social marketing items. For example, 90% reported that body shapes of all sizes and shapes can be attractive; whereas, on average the sorority thought only 61-70% of their peers would believe this. Therefore, the message that was created based on this discrepancy was “90% of your sorority sisters agree that body shapes of all sizes and shapes can be attractive. The messages used on the social marketing items are displayed in Appendix C. A copy of the posters used is included in Appendix D.

3.34 Control Group

The control group participated in a one-hour didactic presentation on wellness and healthy eating with no social marketing. The control group was offered two-hours of presentations but only agreed to one-hour. The control group consisted of both lecture and large group discussion including the following topics: introduction of the Student Wellness Center and the services that are offered there, what is wellness, different components of wellness, how healthy eating fits into wellness, basic nutrition facts, strategies for healthier eating on a college campus, and all foods can fit-in moderation. During this presentation, the large group was not split up into smaller groups, as were all the intervention groups.

3.4 Instruments

All instruments are displayed in Appendix I. Pre-test measures included the Multidimensional Body-Self Relations-Questionnaire-Appearance Evaluation subscale and Body Areas Satisfaction subscale, Eating Attitudes Test, Sociocultural Attitudes
Toward Appearance Questionnaire-Internalization subscale, Rosenberg Self-Esteem Scale, Perceived Sociocultural Pressures Scale, Social Norms Questionnaire: Part I and II, and the Demographic Questionnaire. Post-test measures included all the pre-test measures along with the post-test evaluations.

3.41 Multidimensional Body-Self Relations Questionnaire-Appearance Evaluation subscale and Body Areas Satisfaction Subscale (MBSRQ-AE/BAS; Brown et al., 1990)

The Multidimensional Body-Self Relations Questionnaire (MBSRQ) is a 69 item self-report inventory that was developed to assess self-attitudes of one’s body image. Cash and Pruzinsky (1990) define body image as "one’s attitudinal dispositions toward the physical, cognitive, and behavioral components." This inventory includes ten multi-item subscales, but only two subscales, Appearance Evaluation and Body Areas Satisfaction, were used in this study.

The Appearance Evaluation subscale (AE) is used to assess one’s feelings of physical attractiveness or unattractiveness. The subscale contains seven items. Respondents rated their agreement with each item based on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). Examples of items are “I like my looks just the way they are,” and “My body is sexually appealing.” Negatively worded items were reverse-scored. Scores were determined by adding all seven items and dividing by seven. High scores on this subscale indicate feelings of physical attractiveness or satisfaction with one’s look. Low scores indicate feelings of unattractiveness and dissatisfaction with one’s looks.
The Body Areas Satisfaction subscale (BAS) contains nine items used to assess one’s satisfaction with discrete aspects of one’s appearance. Respondents rated their satisfaction with nine particular body parts on a 5-point Likert scale, from 1(*very dissatisfied*) to 5(*satisfied*). Examples of the body parts include face, hair, lower torso, weight, and height. The score was obtained by summing the nine responses and dividing by nine. High scores indicate being generally content with most areas of their body. Low scores indicate being unhappy with the size or appearance of several areas of their body.

There is evidence of the MBSRQ’s convergent, discriminant, and construct validity (Cash, 2000). Factor analysis was used to evaluate the MBSRQ and seven separate factors were found (Brown et al., 1990). Another study providing more evidence of validity found that normal-weight women who perceived themselves to be overweight scored lower on the Appearance Evaluation subscale (AE) than did normal-weight women who perceived themselves to be normal weight (Cash & Hicks, 1990). The AE subscale has been significantly correlated with concern with body shape (\(r=-.64\)) and bulimic symptoms (\(r=-.49\)), and correlated less so with internalization of sociocultural values (\(r=-.25\)) and depression (\(r=-.29\)) giving evidence for its convergent and discriminant validity (Petrie, Rogers, Johnson, & Diehl, 1996).

The Body Areas Satisfaction Scale (BAS) also has evidence of convergent validity because it has been significantly correlated with eating disorder symptomatology, appearance evaluation, and weight preoccupation (Brennan, 2002). In this same study, the BAS was not significantly correlated with attitudes toward overweight individuals and the importance of appearance providing evidence for its discriminant validity (Brennan,
Internal consistency reliability alphas for the two subscales have been previously reported from .70 (Appearance Evaluation) to .84 (Body Areas Satisfaction) for college females (Brennan, 2002). Cash (2000) reported one-month test-retest reliability to range from .74 (Body Areas Satisfaction) to .91 (Appearance Evaluation) for college women.

3.42 Eating Attitudes Test. (EAT-26; Garner & Garfinkel, 1979)

This questionnaire was developed by Garner and Garfinkel (1979), originally consisting of 40-items. This scale has been revised to a 26-item scale to eliminate unnecessary items (Thompson, 1996). The Eating Attitudes Test (EAT-26) was used in this study to assess respondents’ attitudes and behaviors relating to disordered eating. Responses are usually made on a 6-point Likert scale that range from never to always. Participant’s total score are obtained by summing each question’s points. Based on this 6-point Likert scale, negatively-worded items are usually scored using the following coding: 3 points for always, 2 points for usually, 1 point for often, and 0 points for sometimes, rarely, and never. Positively-worded items are usually scored using the following code: 3 points for never, 2 points for rarely, 1 point for sometimes, and 0 points for often, usually, or often.

In this study, however, a 5-point Likert scale was used (never, rarely, sometimes, often, always), eliminating the choice of usually. Participant’s total score was obtained by summing the points on each item. Negatively-worded items were scored using the following code: 3 for always, 2 for often, 1 for sometimes, and 0 for rarely and never. Positively-worded items were scored using the following code: 3 for never, 2 for rarely, 1
for *sometimes*, and 0 for *often* and *always*. Higher scores represent increased eating symptomatology.

Factor analysis revealed three subscales for the Eating Attitudes Test (EAT-26) including Dieting, Bulimia, and Oral Control Subscales (Garner, Olmsted, Bohr, & Garfinkel, 1982). Convergent validity is supported as this inventory has been found to be positively correlated with other self-report measures of eating disorder symptoms (Gross, Rosen, Leitenberg, & Willmuth, 1986). The EAT-26 has also been shown to have evidence for discriminate validity because it has differentiated between eating-disordered, symptomatic, and asymptomatic participants (Mintz & O’Halloran, 2000) An internal consistency reliability of .94 was reported for the original scale (Garner and Garfinkel, 1979). For this shortened version of the scale, Mazzeo (1999) found an internal consistency reliability of .91 and three-week test-retest reliability of .86.

3.43 Sociocultural Attitudes Toward Appearance Questionnaire-Internalization subscale (SATAQ-I; Heinberg, Stormer, Thompson, 1995)

The Sociocultural Attitudes Toward Appearance Questionnaire-Internalization subscale (SATAQ-I) is an 11-item subscale that was designed to measure the acceptance of societal standards of thinness and attractiveness. The respondents rated to what extent they agreed with or disagreed with a statement about their appearance on a 5-point Likert scale. The scale ranges from *completely disagree* (1) to *completely agree* (5) with *neither agree nor disagree* falling in the middle (3). One example from the Internalization subscale is “I often find myself comparing my physique to that of athletes
pictured in magazine." Total score was obtained by averaging all of the items. Higher scores indicate a greater degree of internalization.

Evidence for construct validity was inferred from the convergence of this scale with other measures of body image and eating disturbance (Garner, Olmstead, and Polivy as cited in Bilukha & Utermohlen, 2002). Additionally, the internalization subscale was found to predict body image disturbance and eating disorder behavior in college women (Heinberg, Thompson, et al., 1995). There is evidence for discriminant validity as the Sociocultural Attitudes Toward Appearance Questionnaire-Internalization subscale (SATAQ-I) has been found to differentiate eating disorder women from controls (Griffiths et al., 1999). Cusumano & Thompson (1997) reported internal consistency reliability coefficients of .89 on the Internalization subscale.

3.44 Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965)

In 1965, Rosenberg developed this instrument, which is now the most widely used measure of global self-esteem (Torrey, Mueser, McHugo, & Drake, 2000). The 10-item scale requires a response to items on a 4-point Likert scale, from 0 (strongly disagree) to 3 (strongly agree). The higher number suggests higher self-esteem. Items are both positively and negatively worded. The negative worded items were reversed scored. An example of a positively worded item is, “On the whole, I am satisfied with myself,” and a negatively worded item is, “I feel I do not have much to be proud of.” The overall score was obtained by summing the responses.
Evidence for construct validity includes Rosenberg Self-Esteem Scale’s (RSE) significant correlations with the physical appearance scale, the scholastic competence scale, and a self-perception profile (Hagborg, 1993). There is evidence for convergent validity because the scale has shown significant correlations with other measures of global self worth (Crandal, 1973; Hagborg, 1993) and the Ineffectiveness subscale of the Eating Disorder Inventory-2 (Griffith et al., 1999). Another study showed no significant correlation between the importance of appearance, self-classified weight, and awareness of the thin-ideal, providing support for its divergent validity (Brennan, 2002). An internal consistency of .88 was reported with college students (Highlen, Thompson, Ashton, & Tom, 1997) and a test-retest reliability was reported as .88 (Blascovich & Tomaka, 1991).

3.45 Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, Margolis, & Flick, 1996)

This 8-item scale was developed to measure women’s reported pressure for thinness emanating from the media, family, friends, and partners (Stice, et al. 1996). The responses to each statement are based on a 5-point Likert scale, indicating how often one has felt pressure from a particular source. The Likert scale ranges from never (1) to always (5) with rarely (2), sometimes (3), and often (4) in the middle. An example item is “I’ve felt pressure from my friends to lose weight.” Total score was calculated by adding the numeric score from each item and dividing by six. The higher the total score, the more an individual feels pressure to be thin.
Construct and convergent validity was supported for this scale as it has been found to be highly correlated with internalization ($r=-.45$), weight-related teasing ($r=-.52$). The Perceived Sociocultural Pressures Scale (PSPS) also has shown to predict body dissatisfaction (Stice & Bearman, 2001). Divergent validity was supported as this scale was shown to have a smaller correlation with social support ($r=.25$) and depressive symptoms ($r=.32$; Blowers, Loxton, Grady-Flesser, Occhipinti, & Dawe, 2003; Stice & Whitenton, 2002). Stice and colleagues (1996) also reported internal consistency reliability coefficients of .87. Two-week test-retest coefficient has been reported as .93 (Stice et al., 1996).

3.46 Social Norms Questionnaire: Part I and II (SNQI & SNQII)

This questionnaire was designed by the investigators of this study to create the social norm messages and was used to assess values, attitudes, and behaviors regarding body image and eating. Part I of the Social Norms Questionnaire (SNQ) asked participants to respond to questions regarding body image, eating behaviors, and self-care. Response options were based on a 4-point Likert scale. Response options were based on a 4-point Likert scale and proceeded from 1 (strongly disagree) to 4 (strongly agree).

Part II of the Social Norms Questionnaire (SNQ) asked participants to respond to similar questions as in Part I regarding body image and eating. Questions, however, asked participants about what they think others’ behaviors and attitudes are. For example, one item asked individuals to estimate what percentage of their sorority would agree with “I am on a weight loss diet.” Responses were made on an 11-point Likert
scale, representing a percentage. The scale began with 0 (0%) and increased in nine point intervals (1-10%, 11-20%...) ending with 10 (91-100%). This questionnaire was used to find discrepancies between the “perceived norm” and “actual norm” within each individual sorority.

No previous studies have tested the Social Norm Questionnaire for evidence of construct, convergent, or divergent validity. Construct validity was supported for this scale in this study because it was found to be significantly correlated with other scales measuring cognitive and behavioral indicators of maladaptive body image attitudes and eating behaviors. The SNQ-I correlated with body dissatisfaction, disturbed eating, internalization of the cultural ideal, and perceived sociocultural pressure. Before using this instrument, the instrument was given to 12 undergraduate women in the Peer Advocated for Total Health Program to test its reliability. An internal consistency of .89 was reported for the SNQ-I with this sample and thus demonstrated evidence of reliability.

3.47 Demographic Questionnaire

A brief questionnaire was administered to each participant regarding age, race/ethnicity, year in school, height, weight, and desired weight. Due to the timing of the research, a question whether or not an individual went on spring break was added. As body dissatisfaction may increase with bathing suit season, this data was collected and considered in data analysis.

In addition, two questions were included to assess the stage of change an individual was in regarding modifying one’s eating habits (McCann et al., 1996) and
exercising (O’Conor, 1994). The stage of change question assesses with self-report where an individual is in the process of changing or maintaining eating and exercise behaviors. This question estimates five different stages of change including precontemplation (not thinking about changing), contemplation (thinking about changing but not doing anything about it), preparation (preparing to change), action (actually changing behavior), maintenance (continuing to maintain behavior; O’Conor, 1994; McCann et al., 1996). This data was included in order to ensure that the groups did not differ in the stage of mean stage of change, as this may affect the results of the program evaluation. The stage of change question for diet and exercise is included in the Demographic Questionnaire in Appendix J.

3.48 Post Test Evaluation

Along with the measures described above, during the post-test data collection, women will be asked to fill out a post-treatment evaluation. This evaluation included both quantitative and qualitative questions regarding the program, the credibility of the presenters, and the evaluation of the social marketing materials. Each poster was on the evaluation and students were asked to rate each poster for its effectiveness. Other comments regarding how to improve the program were welcome. This evaluation is displayed in Appendix K.

3.5 Creation of Social Norms Messages and Posters

Data analyses were completed for the combined and social norm groups on the Social Norms Questionnaire I and II (SNQ I & SNQ II). Frequencies were calculated in each individual sorority regarding what percent disagreed or agreed with
each statement in the SNQ I (regarding actual self-attitudes and behaviors). For example, 90% of individuals in one sorority agreed that body shapes of all shapes and sizes can be attractive. The mean of each item on the SNQ II (regarding perceived peer-attitudes and behaviors) was found, again for each individual sorority. Using the mean of the item, each item was given an average percentage range. For example, individuals in one sorority believed that on average 51-60% of their sorority sisters would agree that body shapes of all sizes and shapes can be attractive.

Based on this data, comparisons were made within each sorority regarding discrepancies between actual and perceived behavior. Each sorority had similar discrepancies on the majority of the same items. The attitudes and behaviors that had the largest discrepancies were chosen to be targeted in this study. Based on these discrepancies, messages were created to emphasize that the majority of individuals within their sorority or women at OSU have particular positive attitudes and behaviors.

The first draft of the messages is displayed in Appendix D. In order to test out the messages, I had a group of 12 undergraduate and graduate students in the Peer Advocated for Total Health (PATH) program at Student Wellness provide me feedback (Appendix L) regarding the messages. The PATH group met weekly regarding wellness issues on college campuses and agreed to help me with this project. The feedback I elicited about each message included how believable each message was, how eye-catching each message was, most-useful overall, and the worst message overall. After each student provided me feedback, we had a 30-minute discussion on how to make the messages more appealing and what graphics would best fit with each message.
Based on this group’s feedback, I created the final draft of messages that was displayed in Table 1.3 and 1.4. I then created the actual posters, displayed in Appendix D, and the designs for the social marketing materials, displayed in Appendix C, based on the feedback of the meeting. The psychoeducational messages followed the same message as the social norm poster, just eliminating the actual statistics. Since this group met regularly and they agreed, I used individuals in the group as consultants regarding the posters and their appeal to college students.

3.6 Analysis of Data

Unless otherwise indicated, all analyses used a significance level of $\alpha = .05$. Descriptive statistics, including means and standard deviations, were determined for each group on each measure for pre and post-tests. A one-way t-test was used to compare the means of the dependent variables with previously reported norms. Correlations between all of the measures for pre and post testing were also conducted to examine the relationships between body mass index (BMI), appearance evaluation, body dissatisfaction, eating attitudes, internalization, perceived sociocultural pressure, social norms data, and self-esteem.

Analyses tested whether the intervention groups were equivalent at baseline on demographic factors and dependent variables. This was done by using a MANOVA to determine any differences on demographic variables (age, year in college, grade, body frame, weight discrepancy, body mass index, stage of change), on dependent variables (EAT, AE, BAS, PSPS, SATAQ-I, and SNQ-I), and on the mean number of sessions each group participated.
A 4 X 2 (intervention group x time) MANOVA analysis was originally planned to be used to examine significant differences between the intervention groups on scales of appearance evaluation, body area satisfaction, eating behaviors, social norms, internalization of the thin-ideal, and perceived sociocultural pressure. However, because of the missing data on pre and post-test measures, only 60% of the participants would have been able to be used. This is because in MANOVA, the usual treatment of missing time points is to remove the case from the analysis (Quene & van den Bergh, 2003). The study needed at a minimum of 30 participants per group for adequate power (.80). Using MANOVA with only 60% of the data set (approximately 87 individuals) would not have provided adequate power to detect differences between groups.

Multi-level modeling (MLM) was explored as an alternative data analysis because it has been recommended to be used in repeated measures studies, especially in the presence of missing data (Hox, 2001; Kreft & De Leeuw, 1998; Quene & van den Bergh, 2003). Multilevel modeling has many advantages over conventional ANOVA analyses because it allows for missing data, it does not require sphericity, and it takes the sampling hierarchy into account (Quene & Van den Bergh, 2003). It is a regression-based analysis that can be conceptualized as a two-level regression (Hox, 2002). Within this study, level 1 refers to observations and level 2 refers to the individuals. That is, observations are nested within individuals.

The major advantage of multilevel analysis in this study is the ability to handle missing data (Bryk & Raudenbush, 1992). Multilevel analysis is especially useful for repeated measures’ data when there are missing observations, due to absence of
individuals at specific testing points. Multi-level modeling does not require equal numbers of observations from each participant, therefore, there is not a problem including participants in the analysis with missing observations (Hox, 2002).

All of the multilevel modeling analyses were conducted using the MLwiN Version 1.1 program. All models used the control group as the comparison group or reference group. The basic multilevel model used in this study was \( \hat{y}_{ij} = a_j + bx_{ij} + u_j + e_{ij} \). In this equation, subscript \( i \) is the number of occasions (level 1) and subscript \( j \) is the individual (level 2). \( \hat{Y}_i \) is the dependent variable for the \( i \)-th occasion of the \( j \)-th individual. \( X \) is the explanatory or predictor variable. The intercept \( a \) is constant, where the regression line meets the vertical axis and \( b \) is its slope. This part of the equation \( (a + bx_{ij}) \) is known as the fixed part of the model. In this equation, \( u_j \) and \( e_{ij} \) are the random part of the equation. The means of this random part are equal to zero, and it is a standard assumption that they follow a normal distribution (Kreft & De Leeuw, 1998). The variances of \( u_j \) and \( e_{ij} \), which are \( \sigma_u^2 \) and \( \sigma_e^2 \) are considered the random parameters of the model. \( \sigma_u^2 \) is the parameter that describes the between individual variance and \( \sigma_e^2 \) is the within individual variance.

Dependent variables (i.e. Eating Attitudes Test [EAT], Body Areas Satisfaction [BAS], Appearance Evaluation [AE], and Social Norm Questionnaire-Part I [SNQ-I]) began with a basic model, that controlled for group differences of self-esteem and weight difference, and included an intercept term and the predictors of time, group, time X group. Other predictors were then added to determine if the predictor contributed to a better fit model. Thereafter, predictors including body mass index, perceived
sociocultural pressure, internalization, body areas satisfaction (only for EAT), and appearance evaluation (only for EAT) were added separately to the time, group, and Time X Group model. Finally, all the significant predictors (that were added separately) were added together in one model in attempt to obtain the best fit model. Results were analyzed for significance by using the Wald and deviance statistic, the usual significance tests in maximum likelihood estimation.

The Wald test is a way of testing the significance of particular predictor variables in a statistical model. To obtain the Wald statistic, the parameter estimate for the explanatory variable is divided by its standard error. The result is a z-value, which is looked up in a table of the standard normal distribution for its significance. For this study, a z-value greater than 1.96 was statistically significant with an alpha of .05, a z-value greater than 2.58 was statistically significant with an alpha of .010, and a z-value greater than 3.09 was statistically significant with an alpha of .001. Since some research suggests that using the deviance statistic is more accurate than the Wald test, model fit was examined to verify or dispute the Wald results (Goldstein, 1995).

Model fit is assessed using the deviance statistic, which follows a chi-square distribution. A lower deviance corresponds to a better fit model. A chi-square difference test was performed to see if the full model was significantly different from the previous models. The difference between the deviance statistics for the two models is distributed as a chi-square statistic with degrees of freedom equal to the difference in the number of parameters estimated in the two models. Models were explored for the four dependent variable, including Eating Attitudes Test (EAT), Body Areas
Satisfaction (BAS), Appearance Evaluation (AE), and SNQ-I (Social Norm Questionnaire-I).

An example of the process of model fit for one dependent variable will be examined further for clarity. The dependent variable, Appearance Evaluation (AE), is the \( \hat{Y}_1 \) in the above equation. The goal for fitting the model is to (a.) determine if there are differences between AE over time among the groups (b.) explore what pre-test variables significantly predicted pre-test AE scores. To do this, the reference group for each model in this study was the control group. The first model (the most parsimonious model) was created, controlling for differences between groups (self-esteem and weight discrepancy), and had the following explanatory variables: time, group, and Time X Group. A Wald statistic was computed (parameter estimate/standard error) for each parameter, and a deviance statistic was obtained.

Other Appearance Evaluation (AE) models were then created from the previous model by adding single predictor variables one at a time including BMI, PSPS, and SATAQ. A Wald statistic was computed for each parameter within each model, and a deviance statistic was obtained for each model. In order to find the best fitting model, a final model was created that included only the individual predictors (body mass index [BMI], sociocultural attitudes toward appearance [SATAQ], perceived sociocultural pressure [PSPS] that were significant (based on the Wald test) and significantly lowered the deviance statistic compared to the more basic model. Therefore, the final model controlled for differences between groups, included the predictors of time, group, Time X
Group, and included BMI, SATAQ, and PSPS (all of these were significant predictors based on the Wald test and deviance statistic in the previous models).
CHAPTER 4

RESULTS

4.1 Participants

There were four sororities (including 146 sorority women) whose members participated in this research study. Of these participants, eighty-seven (60%) of the women participated in both pre and post test data collection. Forty-eight of the participants who filled out pre-test data did not attend the post-test data collection. Eleven of the participants did not fill out pre test data but did follow out post-test data. The following full participation (both pre and post test assessment) occurred within each group: 77% of the social norms group, 80% of the combined group, 42% of psychoeducational group, and 74% of the control group.

4.2 Total Sample Means and Standard Deviations

Means and standard deviations for the entire sample (N=146) for each variable at pre and post testing are presented in Table 4.1. A higher score on the Eating Attitudes Test, the Sociocultural Attitudes Toward Appearance Questionnaire-Internalization, and the Perceived Sociocultural Pressure Scale indicate more negative attitudes and behaviors regarding body image and eating. The higher the score on the Social Norm Questionnaire,
the Rosenberg Self-esteem Scale, Appearance Evaluation Scale, and Body Area Satisfaction Scale indicate more positive body image and eating attitudes and behaviors.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>EAT</td>
<td>17.01</td>
<td>10.28</td>
</tr>
<tr>
<td>SATAQ-I</td>
<td>3.61</td>
<td>.74</td>
</tr>
<tr>
<td>PSPS</td>
<td>2.49</td>
<td>.74</td>
</tr>
<tr>
<td>SNQ-I</td>
<td>59.25</td>
<td>8.41</td>
</tr>
<tr>
<td>RSE</td>
<td>32.76</td>
<td>5.51</td>
</tr>
<tr>
<td>AE</td>
<td>3.29</td>
<td>.84</td>
</tr>
<tr>
<td>BAS</td>
<td>3.25</td>
<td>.62</td>
</tr>
</tbody>
</table>

Note. Scores on all variables improved in a positive direction from pre to post. EAT=Eating Attitudes Test; AE=Appearance Evaluation; BAS=Body Areas Satisfaction; SATAQ-I=Internalization of the Thin-ideal; PSPS=Perceived Sociocultural Pressure Scale; RSE=Rosenberg Self-Esteem Scale; SNQ=Social Norm Questionnaire.

Table 4.1: Means and Standard Deviations for Total Sample on All Measures at Pre and Post-Test Periods.

For comparative purposes, the total sample mean at pre-testing was compared by t-tests to previously reported norms for college women. A summary of these results can be found in Table 4.2. The pre-test Appearance Evaluation (AE) mean for the total sample was 3.29, which was similar to AE scores previously reported for college females. Brennan (2002) reported an AE mean of
3.21 for college women and Cash (2000) reported an AE mean of 3.36 for women. The sample mean for Body Area Satisfaction (BAS), 3.25, was similar to previously reported means on the BAS with college females. Brennan (2002) reported a BAS mean of 3.25 for college females and Cash (2000) reported a mean of 3.23 for women. The Rosenberg Self-esteem (RSE) mean score was 32.76, which was statistically significant than 31.33 \( (t=3.04; \ p<.01) \), a previously reported norms of college women (Brennan, 2002).

The mean for the Sociocultural Attitudes Toward Appearance-Internalization Subscale (SATAQ-I) was compared to the previously reported norms for the SATAQ-I (Mutterperl & Sanderson, 2002). Higher scores indicate more internalization of societal messages within this sample. The Internalization subscale mean for this study was 3.61, which was significantly higher than 3.09 \( (t=8.06; \ p<.001) \), the mean score of internalization for college students in the Mutterperl and Sanderson study (2002). The mean of 3.61 was more similar to the internalization score of individuals diagnosed with an eating disorder (anorexia, bulimia, or eating disorder, not otherwise specified) in the Griffith and colleague’s study (1999).

Tylka and Subich (in press) reported means for the Perceived Sociocultural Pressure Scale (PSPS) in college women. Since the scale was divided into odd and even questions in this study, the mean of the entire scale was calculated by adding the two means of the odd and even questions and dividing by
two. The mean in this study was 2.49 and was significantly higher ($t=4.10$; $p<.001$), than Tylka and Subich’s (in press) mean of 2.23.

Since the Eating Attitudes Test used a different response scale than what is usually used, no direct comparisons could be made.

On three measures, the means of this sample were significantly different than previous studies of college students using the same measures. This sample had significantly higher measured self-esteem, internalization, and sociocultural pressure.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Self-Report</th>
<th>Previously Reported Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>MBSRQ-AS</td>
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<td></td>
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<tr>
<td>Appearance Evaluation</td>
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<td>Body Areas Satisfaction</td>
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</tr>
<tr>
<td>PSPS</td>
<td>2.49</td>
<td>.74</td>
</tr>
</tbody>
</table>

*Note.* MBSRQ-AS = Multidimensional Body Self Relations Questionnaire, Appearance-Appearance Scales; RSE = Rosenberg Self-esteem Scale SATAQ-I = Sociocultural Attitudes Toward Attractiveness Questionnaire-Internalization; EAT-26 = Eating Attitudes Test-26 Question Version; PSPS=Perceived Sociocultural Pressure Scale

$p<.05$; **$p<.01$; ***$p<.001$

Table 4.2: Results of One-Sample T-tests between Self-Reported Data in this Study and Previously Reported Norms
4.3 Reliability of Measures

The internal consistency (Cronbach's alphas) and test-retest reliability coefficients based on pre-test and post-test data for each measure used in this study are listed in Table 4.3. Each scale showed acceptable test-retest coefficients, which ranged from .73 (Perceived Sociocultural Pressure Scale) to .84 (Body Area Satisfaction). The internal consistency of the Social Norm Questionnaire-I (SNQ-I), a measure of body image and eating values, attitudes, and behaviors, increased from .66 at pre-testing to .78 at post-testing. Each of the remaining measures showed adequate internal consistency reliability (Cohen & Cohen, 1983). A test-retest correlation for the SNQ-II was not computed because each item on the SNQ-II was used separately, no total score was obtained on this measure.

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. of items</th>
<th>Total Sample (N=146)</th>
</tr>
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<tr>
<td></td>
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<td>Cronbach's Alpha</td>
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<tr>
<td></td>
<td></td>
<td>Pre-Test</td>
</tr>
<tr>
<td>EAT-26</td>
<td>26</td>
<td>.83</td>
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<tr>
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<tr>
<td>BAS</td>
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<tr>
<td>PSPS</td>
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<td>SATAQ</td>
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<td>.88</td>
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<td>SNQ-I</td>
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<tr>
<td>SNQ-II</td>
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<td>.80</td>
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</tbody>
</table>

Note. EAT=Eating Attitudes Test; AE=Appearance Evaluation; BAS=Body Areas Satisfaction; SATAQ-I=Internalization of the Thin-ideal; PSPS=Perceived Sociocultural Pressure Scale; RSE=Rosenberg Self-Esteem Scale; SNQ=Social Norm Questionnaire.

Table 4.3: Reliability Coefficients for Total Sample on All Measures at Pre and Post Testing.
4.4 Pearson’s Product-Moment Correlations

Initial analyses were conducted to understand the relationships the dependent variables had with one another and the relationship the dependent variables had with body mass index (BMI). BMI was added to this analysis because the literature has demonstrated a correlation of BMI with body image and eating measures (Cattarin & Thompson, 1994; Killen et al., 1994). These correlations have implications for how to interpret the other analyses as well as providing a rationale to do further analyses on particular variables.

A matrix showing Pearson product-moment correlation coefficients for each dependent measure is presented in Table 4.4 at pre-testing and post-testing. Examination of Table 4.4 reveals that 23 of the 28 correlations were significant at pre-testing, with all of the 23 significant correlations in the expected direction. Examination of Table 4.5 reveals that 26 of the 28 correlations were significant at post-testing, with all of the 26 correlations in the expected direction.

Examination of Table 4.4 and 4.5 reveals numerous significant correlations. Several correlations are particularly noteworthy. The correlation between Appearance Evaluation and Body Areas Satisfaction was represented by a coefficient of .83 ($p<.001$) at pre-test and .80 ($p<.001$) at post-test. This suggests that these two subscales may measure a similar construct of how satisfied one is with his/her bodily appearance. The correlation between Appearance Evaluation and the Rosenberg Self-Esteem was represented by .55 ($p<.01$) at pre and post-test, indicating a strong relationship between self-esteem and appearance evaluation. Like Appearance Evaluation, Body Areas
<table>
<thead>
<tr>
<th>Measure</th>
<th>EAT-26</th>
<th>AE</th>
<th>BAS</th>
<th>RSE</th>
<th>PSPS</th>
<th>SATAQ-I</th>
<th>SNQ-1</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAT-26</td>
<td>-</td>
<td>- .53**</td>
<td>- .47**</td>
<td>- .30**</td>
<td>.49**</td>
<td>.54**</td>
<td>- .55**</td>
<td>.16</td>
</tr>
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<td>AE</td>
<td>-</td>
<td>- .83**</td>
<td>.55**</td>
<td>- .37**</td>
<td>- .34**</td>
<td>.39**</td>
<td>- .45**</td>
<td></td>
</tr>
<tr>
<td>BAS</td>
<td>-</td>
<td>- .57**</td>
<td>- .38**</td>
<td>- .38**</td>
<td>- .38**</td>
<td>.40**</td>
<td>- .36**</td>
<td></td>
</tr>
<tr>
<td>RSE</td>
<td>-</td>
<td>- .55**</td>
<td>- .15</td>
<td>- .22*</td>
<td>.29**</td>
<td>- .15</td>
<td></td>
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</tr>
<tr>
<td>PSPS</td>
<td>-</td>
<td>- .40**</td>
<td>.40**</td>
<td>- .43**</td>
<td>.36**</td>
<td>- .50**</td>
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<td>SATAQ-I</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SNQ-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>BMI</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. EAT=Eating Attitudes Test; AE=Appearance Evaluation; BAS=Body Areas Satisfaction; RSE=Rosenberg Self-Esteem Scale; PSPS=Percieved Sociocultural Pressure Scale; SATAQ-I=Internalization of the Thin-ideal; SNQ=Social Norm Questionnaire; BMI=Body Mass Index
*p<.05; **p<.001.

Table 4.4: Pearson Product-Moment Correlation Matrix at Pre-Testing (N=132).

<table>
<thead>
<tr>
<th>Measure</th>
<th>EAT-26</th>
<th>AE</th>
<th>BAS</th>
<th>RSE</th>
<th>PSPS</th>
<th>SATAQ-I</th>
<th>SNQ-1</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAT-26</td>
<td>-</td>
<td>- .58**</td>
<td>- .40**</td>
<td>- .40**</td>
<td>.59**</td>
<td>.56**</td>
<td>- .53**</td>
<td>.25*</td>
</tr>
<tr>
<td>AE</td>
<td>-</td>
<td>- .80**</td>
<td>.55**</td>
<td>- .64**</td>
<td>- .49**</td>
<td>.68**</td>
<td>- .43**</td>
<td></td>
</tr>
<tr>
<td>BAS</td>
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<td>- .59**</td>
<td>- .54**</td>
<td>- .33**</td>
<td>.61**</td>
<td>- .39**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RSE</td>
<td>-</td>
<td>-</td>
<td>- .36</td>
<td>- .19*</td>
<td>.42**</td>
<td>- .25*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSPS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.45**</td>
<td>- .49**</td>
<td>.41**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ-I</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.04</td>
</tr>
<tr>
<td>SNQ-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>- .25*</td>
</tr>
<tr>
<td>BMI</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. EAT=Eating Attitudes Test; AE=Appearance Evaluation; BAS=Body Areas Satisfaction; RSE=Rosenberg Self-Esteem Scale; PSPS=Percieved Sociocultural Pressure Scale; SATAQ-I=Internalization of the Thin-ideal; SNQ=Social Norm Questionnaire; BMI=Body Mass Index
*p<.05; **p<.001.

Table 4.5: Pearson Product-Moment Correlation Matrix at Post-Testing (N=93).
Satisfaction was also highly correlated with the Rosenberg Self-Esteem Scale at pre and post-test, respectively ($r = .57, r = .59; p < .001$).

4.5 Differences on Pre-test Between Groups

Analyses tested whether the intervention groups were equivalent at baseline on demographic factors and outcome variables. This was done by using a MANOVA to determine any differences on demographic variables and outcome variables. A difference was evident for a group main effect (Wilks’ Lambda $F(17, 109) = 1.57$, $p < .001$; power = .99). Univariate Fs demonstrated group differences for the following: Body frame, body mass index, weight discrepancy (current weight-desired weight), internalization, and self-esteem. Results for the univariate and post-hoc tests are illustrated in Table 4.6.

The significant univariate Fs were further examined with a post-hoc Bonferroni test. Post-hoc tests did reveal that the social norms group had a significantly higher weight discrepancy (actual weight-desired weight) than the combined group. Furthermore, the post-hoc test revealed that individuals in the combined group had a significantly higher self-esteem than those individuals in the psychoeducational group. All other post-hoc tests revealed no significant differences. Thus, weight discrepancy and self-esteem were controlled for within the multilevel analyses.

Another important difference between groups was the level of attendance among the groups. The social norms group had the best attendance, with 67% of the participants attending both sessions, 23% of the participants attending one session, and
10% attending no sessions. The combined group, who was presented the psychoeducational presentation, resulted in only 37% of the participants attending both sessions, 43% attending one session, and 20% attended no sessions (only had exposure to the social norms marketing materials). The psychoeducational group, who was presented the same presentation as the combined group, resulted in 32% of the participants attending both sessions, 26% attending one session, and 42% attending zero sessions (only had exposure to psychoeducational marketing materials. The control group only had one possible session so cannot be compared to the other groups.

It is also important to mention that differences between groups were found on the final evaluation of the study related to the previous exposure to body image and eating disorders. Fifty-eight percent of the social norms group, 25% of the combined group, 0% of the psychoeducation, and 44% of the control had attended previous body image presentations.

Overall, these results suggest that there were some significant differences in the groups regarding weight discrepancy, self-esteem, attendance, and previous exposure to body image and eating disorder programming. Some differences in groups seem likely in any study that includes various sororities. This study attempts to maximize external validity, thus, these differences are regarded as an inevitable component of using different sororities for an intervention. The possible implications of these group differences on this study are discussed in chapter 5.
### Table 4.6: Results of Univariate and Post-hoc Analyses for Group Differences on Pre-test Data for MANOVA.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ANOVA</th>
<th>Bonferroni</th>
<th>Post-hoc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>Differing groups (I &amp; J)</td>
<td>Mean Difference (I-J)</td>
</tr>
<tr>
<td>Body Frame</td>
<td>3.92**</td>
<td>1 &amp; 3</td>
<td>.37</td>
</tr>
<tr>
<td>Weight discrepancy</td>
<td>4.01**</td>
<td>1 &amp; 2</td>
<td>.17</td>
</tr>
<tr>
<td>SATAQ</td>
<td>3.02*</td>
<td>1 &amp; 2</td>
<td>-.43</td>
</tr>
<tr>
<td>RSE</td>
<td>2.77*</td>
<td>2 &amp; 3</td>
<td>4.05</td>
</tr>
<tr>
<td>BMI</td>
<td>3.15*</td>
<td>1 &amp; 3</td>
<td>2.93</td>
</tr>
</tbody>
</table>

*Note.* BMI=Body Mass Index; MBSRQ = Multidimensional Body Self Relations Questionnaire; SATAQ-I = Sociocultural Attitudes Toward Attractiveness Questionnaire-Internalization; EAT-26 = Eating Attitudes Test-26 Question Version; RSE = Rosenberg Self-esteem Scale; PSPS=Perceived Sociocultural Pressure Scale; SNQ-I=Social Norms Questionnaire-I

* $p<.05$
** $p<.01$
*** $p<.001$

4.6 **Between Group Means**

The means for each group, pre and post-test, are displayed in Table 4.7. Additionally, Figure 4.1, 4.2, and 4.3 display bar graphs of the pre and post-test differences for each group. Both the data and the graphical representation were presented to obtain a more complete picture of the amount and overall pattern of the differences.

As a preliminary data analysis, the mean data were explored regarding the question, did the dependent variables change in the expected direction for the intervention groups. Thus, did the intervention groups increase body areas satisfaction, appearance evaluation, self-esteem, social norm positive attitudes and behaviors and decrease
negative eating attitudes, internalization, and pressure to reach the “ideal image”. It is important to note that significance testing will follow this discussion and is most important to examine. Nevertheless, this overall examination of the data seems noteworthy.

The social norms group changed in the expected direction on 57% of the dependent variables including decreasing internalization and eating attitudes and increasing body areas satisfaction and positive social norm attitude and behaviors. The combined group changed in the expected direction on 100% of the dependent variables. The psychoeducational group changed in the expected direction on 71% of the dependent variables including increasing body areas satisfaction, appearance evaluation, self-esteem, positive social norm attitudes and behaviors and decreased negative eating attitudes and behaviors. The control group changed in the direction of improvement on 43% of the dependent variables including decreasing internalization and increasing appearance evaluation and self-esteem. Thus, from this analysis, it appears that the combined intervention did have the desired effect on the dependent variables and was the most consistent in improving all measures of body image and eating attitudes and behaviors.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Social Norms</th>
<th>Combined</th>
<th>Psychoed.</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$M$</td>
<td>$M$</td>
<td>$M$</td>
</tr>
<tr>
<td>EAT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>16.64</td>
<td>17.13</td>
<td>20.40</td>
<td>14.71</td>
</tr>
<tr>
<td>Post</td>
<td>15.72</td>
<td>13.83</td>
<td>15.60</td>
<td>15.39</td>
</tr>
<tr>
<td>Difference</td>
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<td>-3.3</td>
<td>-3.8</td>
<td>+.78</td>
</tr>
<tr>
<td>AE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>3.32</td>
<td>3.48</td>
<td>3.11</td>
<td>3.26</td>
</tr>
<tr>
<td>Post</td>
<td>3.26</td>
<td>3.74</td>
<td>3.15</td>
<td>3.35</td>
</tr>
<tr>
<td>Difference</td>
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<td>+2.6</td>
<td>+.04</td>
<td>+.09</td>
</tr>
<tr>
<td>BAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>3.21</td>
<td>3.5</td>
<td>3.13</td>
<td>3.32</td>
</tr>
<tr>
<td>Post</td>
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<td>3.72</td>
<td>3.28</td>
<td>3.29</td>
</tr>
<tr>
<td>Difference</td>
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<td>+.22</td>
<td>+.15</td>
<td>-.03</td>
</tr>
<tr>
<td>RSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>33.63</td>
<td>34.86</td>
<td>30.66</td>
<td>32.21</td>
</tr>
<tr>
<td>Post</td>
<td>31.52</td>
<td>36.04</td>
<td>31.67</td>
<td>32.57</td>
</tr>
<tr>
<td>Difference</td>
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<td>+1.18</td>
<td>+.99</td>
<td>+.36</td>
</tr>
<tr>
<td>PSPS</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>2.48</td>
<td>2.42</td>
<td>2.63</td>
<td>2.44</td>
</tr>
<tr>
<td>Post</td>
<td>2.57</td>
<td>2.18</td>
<td>2.78</td>
<td>2.56</td>
</tr>
<tr>
<td>Difference</td>
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<td>-.24</td>
<td>+.15</td>
<td>+.12</td>
</tr>
<tr>
<td>SATAQ</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pre</td>
<td>3.38</td>
<td>3.79</td>
<td>3.76</td>
<td>3.43</td>
</tr>
<tr>
<td>Post</td>
<td>3.29</td>
<td>3.53</td>
<td>3.86</td>
<td>3.41</td>
</tr>
<tr>
<td>Difference</td>
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<td>-.26</td>
<td>+.10</td>
<td>-.02</td>
</tr>
<tr>
<td>SNQ-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>59.57</td>
<td>59.7</td>
<td>58.63</td>
<td>59.17</td>
</tr>
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<td>Post</td>
<td>59.85</td>
<td>63.5</td>
<td>59.29</td>
<td>58.64</td>
</tr>
<tr>
<td>Difference</td>
<td>+.28</td>
<td>+3.8</td>
<td>+.66</td>
<td>-5.3</td>
</tr>
</tbody>
</table>

*Note.* Boldface means that the variable changed in the desired direction. EAT=Eating Attitudes Test; AE=Appearance Evaluation; BAS=Body Areas Satisfaction; SATAQ-I=Internalization of the Thin-ideal; PSPS=Percieve Sociocultural Pressure Scale; RSE=Rosenberg Self-Esteem Scale; SNQ=Social Norm Questionnaire.

Table 4.7: Means for Each Group on All Measures at Pre and Post Test
Figure 4.1: Pre and Post-test Means for all Groups on Appearance Evaluation (Graph 1), Social Norm Questionnaire (Graph 2), and Eating Attitudes (Graph 3)
Figure 4.2: Pre and Post-test Mean for all Groups on Body Areas Satisfaction (Graph 4), Perceived Sociocultural Pressure (Graph 5), and Self-esteem (Graph 6)
4.7 Between Group Differences

As stated in the method section, multilevel modeling was used to explore the following research questions: (1.) Will the interventions groups significantly differ on the dependent variables compared to the control group? (2.) What explanatory variables will significantly predict the dependent variables at pre-test?

To test these questions, the multilevel modeling procedure, previously described in chapter three, was used. The deviance statistic was similar in certain tested models when using fixed slope effects compared to variable slope effects. In other words, using a variable effect (allowing the individuals to change at different
rates) was not found to improve the models. Therefore, we chose to report the results for the most parsimonious model using fixed effects.

For ease of reading the results, each dependent variable will be discussed separately. The process used, however, for each dependent variable will be similar, as described below.

Each dependent variable began with a model that controls for self-esteem and weight discrepancy and included time, group, Time X Group as predictors (Model 1). Next, single predictors were added to this model to determine if adding these predictors created a better-fit model (significant Wald test for the predictor and lower deviance score for the model). For the Eating Attitudes Test, the tested predictors were body mass index (BMI), internalization (SATAQ-I), perceived sociocultural pressure, appearance evaluation (AE), and body areas satisfaction (BAS). For the Appearance Evaluation, Body Areas Satisfaction Subscale, and the Social Norms Questionnaire-I, the tested predictors included body mass index, internalization, and perceived sociocultural pressure.

Once all the models were created using Model 1 plus only one predictor, a final model was created. This model was created by adding all the significant predictors from the previous tested models. All of the models were then analyzed to determine which was the best-fit model. Based on the best-fit model, the predictors were analyzed for their significance based on the Wald test (using a z-score).
For further clarity, the procedure for determining the best-fit model for the EAT will be discussed in detail. All other dependent variables will be described more briefly, as the process of model fit remains the same.

4.71 Eating Attitudes Test (EAT)

For the EAT scale, baseline scores were significantly higher for the psychoeducational group compared to the control group for models 1-6. However, once internalization and perceived sociocultural pressure were both entered as explanatory variables (models 7-9), no significant differences were found. Baseline scores also were higher for the combined group compared to the control group for Models 1, 2, 5, and 6. For the combined group, once either or both internalization and perceived sociocultural pressure were entered into the model as explanatory variables, there were no differences found between these groups.

All models are illustrated in Table 4.8 and 4.9 for the EAT dependent variable. Model 1 was the base model that models 2-6 were compared to since models 2-6 only had one added parameter. To find the best fit model, the Wald test and deviance statistic were both used. Using the Wald test, body mass index was a nonsignificant predictor and internalization, perceived sociocultural pressure, and body area satisfaction were found to be significant predictors. The deviance statistic (-2 log likelihood) was also used. Since only one parameter was added in models 2-6, the deviance statistic needed to decrease by 3.84 (distributed as a chi-square statistic with one degree of freedom). Model 2 (model 1 + BMI) was the only model that did not significantly reduce the deviance statistic, which was consistent with the Wald test.
Therefore, it can be concluded that body mass index was not a significant predictor of EAT pre-test scores.

Model 4 had the lowest deviance statistic out of models 2-6. Thus, this model was chosen to be the next base model when comparing it to a model with a combination of predictors. Models 7-9 added combinations of the significant predictors that were determined in previous models. All of these models resulted in a significant decrease in deviance and all but one of the predictors (body area satisfaction) remained significant after combining the predictors. Though model 9 had the lowest deviance statistic out of these models, it also included the non-significant predictor, body areas satisfaction. Therefore, to keep with the most parsimonious model, model 8 was determined to be the best fit model for this study.

Examination of Model 8 suggests that there were no significant differences within the groups on baseline EAT scores. Significant predictors of the EAT at pre-test were internalization, perceived sociocultural pressure to be thin, and appearance evaluation. This indicates that for this sample, as internalization of the thin-ideal or perceived pressure to be thin increase, eating disorder symptomatology increases. Also, as general appearance evaluation increases, eating disorder symptomatology decreases.

The only significant Group X Time Interaction was for the psychoeducational group. It is noteworthy to mention that group 2 also a significant Group X Time interaction for models 1-6 and group 3 had a significant interaction for
model 1. Contrary to the hypothesis, however, only the psychoeducational group significantly decreased in eating disorder symptomology based on the best-fit model.
<table>
<thead>
<tr>
<th>Fixed Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
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<td>19.58 (4.06)</td>
<td>16.20 (7.39)</td>
<td>8.91 (4.03)</td>
<td>1.22 (4.71)</td>
<td>29.79 (4.19)</td>
</tr>
<tr>
<td>RSE</td>
<td>-.33 (.15)*</td>
<td>-.33 (.15)*</td>
<td>-.32 (.14)*</td>
<td>-.24 (.13)</td>
<td>-.07 (.15)</td>
</tr>
<tr>
<td>Wt difference</td>
<td>.11 (.04)**</td>
<td>.09 (.07)</td>
<td>.04 (.04)</td>
<td>.08 (.04)*</td>
<td>.04 (.04)</td>
</tr>
<tr>
<td>Group 1</td>
<td>.75 (2.35)</td>
<td>.719 (2.35)</td>
<td>1.01 (2.12)</td>
<td>1.081 (2.10)</td>
<td>1.45 (2.15)</td>
</tr>
<tr>
<td>Group 2</td>
<td>4.90 (2.4)*</td>
<td>4.91 (2.40)*</td>
<td>4.20 (2.17)</td>
<td>2.48 (2.18)</td>
<td>4.63 (2.20)*</td>
</tr>
<tr>
<td>Group 3</td>
<td>5.38 (2.3)*</td>
<td>5.52 (2.32)*</td>
<td>4.29 (2.09)*</td>
<td>3.30 (2.09)</td>
<td>5.16 (2.12)*</td>
</tr>
<tr>
<td>Time</td>
<td>1.23 (1.19)</td>
<td>1.22 (1.19)</td>
<td>.68 (1.14)</td>
<td>1.34 (1.18)</td>
<td>1.17 (1.21)</td>
</tr>
<tr>
<td>Group 1* Time</td>
<td>-3.49 (1.62)*</td>
<td>-3.47 (1.62)*</td>
<td>-2.55 (1.56)</td>
<td>-2.96 (1.62)</td>
<td>-2.63 (1.65)</td>
</tr>
<tr>
<td>Group 2*Time</td>
<td>-4.54 (1.67)**</td>
<td>-4.53 (1.67)**</td>
<td>-3.61 (1.61)*</td>
<td>-3.32 (1.66)*</td>
<td>3.69 (1.70)*</td>
</tr>
<tr>
<td>Group 3*Time</td>
<td>-5.89 (1.83)**</td>
<td>-5.90 (1.83)**</td>
<td>-5.39 (1.76)**</td>
<td>5.13 (1.81)**</td>
<td>-5.30 (1.86)*</td>
</tr>
<tr>
<td>BMI</td>
<td>.17 (.30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ-I</td>
<td></td>
<td></td>
<td>4.95 (.82)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSPS</td>
<td></td>
<td></td>
<td>4.92 (.80)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AE</td>
<td></td>
<td></td>
<td></td>
<td>-4.48(.88)**</td>
<td></td>
</tr>
</tbody>
</table>

**Random**

<table>
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<tr>
<th>Level 2 ( \sigma^2 )</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>64.35 (960)</td>
<td>64.14 (9.57)</td>
<td>50.20 (7.67)</td>
<td>47.87 (7.5)</td>
<td>50.36 (7.88)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 1 ( \sigma^2 )</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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<tbody>
<tr>
<td>15.36 (2.38)</td>
<td>15.36 (2.38)</td>
<td>14.17 (2.21)</td>
<td>15.16 (2.36)</td>
<td>15.88 (2.47)</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>-2 (log likelihood)</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1398.99</td>
<td>1398.69</td>
<td>1364.75</td>
<td>1360.67</td>
<td>1369.80</td>
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</tbody>
</table>

*Note.* Estimate refers to each coefficient (\( \beta \)) in the model. Standard errors are in parentheses. 

\(-2 (\text{log likelihood})\) yields a \( \chi^2 \) statistic. EAT=Eating Attitudes Test; BMI=Body Mass Index; SATAQ-I/Internalization of the Thin-ideal; PSPS=Perceived Sociocultural Pressure Scale; AE=Appearance Evaluation.

* \( p<.05 ** p<.01 \)

Table 4.8: Variance component models for EAT data measured using control group as the reference group.
### Model # = Predictors

**Model 6**=time, group, time X group, BAS  
**Model 7**=time, group, time X group, PSPS, SATAQ  
**Model 8**=time, group, time X group, PSPS, SATAQ, MBSRQ  
**Model 9**=time, group, time X group, PSPS, SATAQ, MBSRQ, BAS

<table>
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<tr>
<th>Parameter</th>
<th>Model 6 Estimate (s.e.)</th>
<th>Model 7 Estimate (s.e.)</th>
<th>Model 8 Estimate (s.e.)</th>
<th>Model 9 Estimate (s.e.)</th>
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<tr>
<td>Constant</td>
<td>27.91 (4.75)</td>
<td>-3.46 (4.53)</td>
<td>5.52 (5.19)</td>
<td>5.43 (5.50)</td>
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<tr>
<td>RSE</td>
<td>.14 (.16)</td>
<td>-.25 (.16)</td>
<td>-.10 (.13)</td>
<td>-.10 (.13)</td>
</tr>
<tr>
<td>Wt difference</td>
<td>.08 (.04)*</td>
<td>.03 (.04)</td>
<td>-.02 (.04)</td>
<td>-.01 (.04)</td>
</tr>
<tr>
<td>Group 1</td>
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<td>1.23 (1.97)</td>
<td>1.63 (1.88)</td>
<td>1.24 (1.89)</td>
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<tr>
<td>Group 2</td>
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<td>2.43 (2.05)</td>
<td>2.54 (1.96)</td>
<td>2.58 (1.95)</td>
</tr>
<tr>
<td>Group 3</td>
<td>5.18 (2.22)**</td>
<td>2.87 (1.96)</td>
<td>3.17 (1.89)</td>
<td>3.23 (1.88)</td>
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<td>.86 (1.14)</td>
<td>.87 (1.11)</td>
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<tr>
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<td>-1.18 (1.56)</td>
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<td>Group 2*Time</td>
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<td>-2.43 (1.62)</td>
<td>-2.51 (1.59)</td>
</tr>
<tr>
<td>Group 3*Time</td>
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<td>-4.93 (1.74)**</td>
<td>-4.77 (1.75)**</td>
<td>-4.79 (1.72)**</td>
</tr>
<tr>
<td>BMI</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ-I</td>
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<td>3.47 (.81)**</td>
<td>3.41 (.81)**</td>
<td>3.41 (.81)**</td>
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<tr>
<td>PSPS</td>
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<td>3.57 (.80)**</td>
<td>3.49 (.79)**</td>
<td>3.49 (.79)**</td>
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<tr>
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<td>-2.82 (.84)**</td>
<td>-2.76 (1.01)**</td>
<td>.28 (1.30)</td>
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<tr>
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<td>41.63 (6.59)</td>
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<td>36.75 (5.99)</td>
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<td>Level 1</td>
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<tr>
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*Note.* Estimate refers to each coefficient ($\beta$) in the model. Standard errors are in parentheses.  
-2 (log likelihood) yields a $\chi^2$ statistic.  EAT=Eating Attitudes Test; BMI=Body Mass Index; SATAQ-I/Internalization of the Thin-Ideal; PSPS=Percieved Sociocultural Pressure Scale; AE=Appearance Evaluation.  
* $p<.05$ ** $p<.01$

Table 4.9: Variance component models for EAT data measured using control group as the reference group
4.72 Body Areas Satisfaction Scale (BAS)

For the BAS, there were no differences among baseline scores on any of the groups. All models are illustrated in Table 4.10 for the BAS dependent variable. Model 5 added all of the significant predictors that were determined in previous models. This model resulted in a significant reduction in deviance and was the best-fit model in this study for BAS.

Examination of Model 5 suggests that SATAQ and PSPS were significant predictors of the BAS baseline score. This indicates that as internalization of the thin-ideal or perceived pressure to be thin increase, body areas satisfaction decrease.

There were no significant Group X Time Interactions for model 5. It is noteworthy to mention that group 2 had a significant Group X Time interaction for models 1-4. Contrary to the hypothesis, however, none of the intervention groups significantly reduced the BAS compared to the control group on the best-fit model.
### Model # = Predictors

**Model 1** = time, group, time X group

**Model 2** = time, group, time X group, BMI

**Model 3** = time, group, time X group, PSPS

**Model 4** = time, group, time X group, SATAQ

**Model 5** = time, group, time X group, SATAQ, PSPS

<table>
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<tr>
<th>Parameter</th>
<th>Model 1 Estimate (s.e)</th>
<th>Model 2 Estimate (s.e)</th>
<th>Model 3 Estimate (s.e)</th>
<th>Model 4 Estimate (s.e)</th>
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<td>.05 (.01)**</td>
<td>.05 (.01)**</td>
<td>.05 (.01)**</td>
<td>.05 (.01)**</td>
</tr>
<tr>
<td>Wt difference</td>
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<td>-.006 (.004)</td>
<td>-.008 (.002)*</td>
<td>-.01 (.002)**</td>
<td>-.01 (.002)**</td>
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<tr>
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<td>.05 (.12)</td>
<td>.04 (.12)</td>
<td>.06 (.12)</td>
<td>.05 (.12)</td>
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<tr>
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<td>-.05 (.12)</td>
<td>.01 (.13)</td>
<td>.01 (.13)</td>
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<tr>
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<td>-.12 (.12)</td>
<td>-.05 (.12)</td>
<td>.02 (.12)</td>
<td>-.01 (.12)</td>
</tr>
<tr>
<td>Time</td>
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<td>-.03 (.07)</td>
<td>-.01 (.07)</td>
<td>-.02 (.07)</td>
<td>-.01 (.07)</td>
</tr>
<tr>
<td>Group 1* Time</td>
<td>.11 (.10)</td>
<td>.11 (.10)</td>
<td>.08 (.10)</td>
<td>.08 (.10)</td>
<td>.06 (.10)</td>
</tr>
<tr>
<td>Group 2* Time</td>
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<td>.25 (.10)*</td>
<td>.22 (.10)*</td>
<td>.21 (.10)*</td>
<td>.19 (.10)</td>
</tr>
<tr>
<td>Group 3* Time</td>
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<td>.19 (.11)</td>
<td>.17 (.11)</td>
<td>.15 (.11)</td>
<td>.14 (.11)</td>
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<tr>
<td>BMI</td>
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<td>.19 (.11)</td>
<td>.17 (.11)</td>
<td>.15 (.11)</td>
<td>.14 (.11)</td>
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<tr>
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<td>-.02 (.02)</td>
<td>-.02 (.02)</td>
<td>-.02 (.02)</td>
<td>-.02 (.02)</td>
</tr>
<tr>
<td>PSPS</td>
<td>-.14 (.05)**</td>
<td>-.14 (.05)**</td>
<td>-.14 (.05)**</td>
<td>-.14 (.05)**</td>
<td>-.14 (.05)**</td>
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<tr>
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</tr>
<tr>
<td>Level 2</td>
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<td>.17 (.03)</td>
<td>.16 (.03)</td>
<td>.16 (.03)</td>
<td>.15 (.03)</td>
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<tr>
<td>Level 1</td>
<td>.06 (.01)</td>
<td>.06 (.01)</td>
<td>.06 (.01)</td>
<td>.06 (.01)</td>
<td>.06 (.01)</td>
</tr>
<tr>
<td>-2 (log likelihood)</td>
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<td>223.78</td>
<td>216.90</td>
<td>217.85</td>
<td>212.61</td>
</tr>
</tbody>
</table>

**Note.** Estimate refers to each coefficient ($\beta$) in the model. Standard errors are in parentheses.

-2 (log likelihood) yields a $\chi^2$ statistic. EAT=Eating Attitudes Test; BMI=Body Mass Index; SATAQ-I=Internalization of the Thin-ideal; PSPS=Percieved Sociocultural Pressure Scale; AE=Appearance Evaluation.

* $p<.05$ ** $p<.01$

Table 4.10: Variance components model for BAS data measured using control group as the reference group
4.73 Appearance Evaluation (AE)

For the AE, there were no differences among baseline scores on any of the groups. All models are illustrated in Table 4.11 for the AE dependent variable. Model 5 added all of the significant predictors that were determined in previous models. This model resulted in a significant reduction in deviance, consistent with the Wald test. Thus, model 5 was the best-fit model in this study for AE. Examination of Model 5 suggests that BMI, SATAQ, and PSPS were significant predictors of the AE baseline score. This indicates that as BMI, internalization of the thin-ideal or perceived pressure to be thin increase, appearance evaluation decreases.

There were no significant Group X Time Interactions for model 5. The slope of the Group X Time interaction was higher in the social norms group (.15) and the combined group (.11) than the psychoeducational (.08). Contrary to the hypothesis, however, none of the intervention groups significantly reduced the AE compared to the control group on the best-fit model.
### Table 4.11: Variance components model for AE data measured using control group as the reference group

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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</tr>
<tr>
<td>Constant</td>
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<td>3.26 (.36)</td>
<td>4.46 (.54)</td>
</tr>
<tr>
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<td>.06 (.01)**</td>
<td>.06 (.01)**</td>
<td>.05 (.01)**</td>
<td>.05 (.01)**</td>
</tr>
<tr>
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<td>-.02 (.003)</td>
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<td>-.01 (.00)**</td>
<td>-.02 (.00)**</td>
<td>-.01 (.00)</td>
</tr>
<tr>
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<td>.12 (.16)</td>
<td>.07 (.16)</td>
<td>.09 (.16)</td>
<td>.08 (.15)</td>
</tr>
<tr>
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<td>-.09 (16)</td>
<td>-.09 (.16)</td>
<td>.01 (.16)</td>
<td>.01 (.16)</td>
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<tr>
<td>Group 3</td>
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<td>-.13 (.16)</td>
<td>-.08 (.15)</td>
<td>-.02 (16)</td>
<td>-.04 (.15)</td>
</tr>
<tr>
<td>Time</td>
<td>-.03 (.10)</td>
<td>-.03 (.10)</td>
<td>-.01 (.10)</td>
<td>-.03 (.10)</td>
<td>-.01 (.10)</td>
</tr>
<tr>
<td>Group 1* Time</td>
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<td>.18 (.13)</td>
<td>.18 (.13)</td>
<td>.15 (.13)</td>
</tr>
<tr>
<td>Group 2*Time</td>
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<td>.20 (.14)</td>
<td>.17 (.14)</td>
<td>.14 (.14)</td>
<td>.11 (.14)</td>
</tr>
<tr>
<td>Group 3*Time</td>
<td>.14 (.15)</td>
<td>.14 (.15)</td>
<td>.12 (.15)</td>
<td>.09 (.15)</td>
<td>.08 (.15)</td>
</tr>
<tr>
<td>BMI</td>
<td>-.04 (.02)*</td>
<td></td>
<td>-.24 (.06)**</td>
<td>-.24 (.06)**</td>
<td>-.22 (.07)**</td>
</tr>
<tr>
<td>SATAQ-I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSPS</td>
<td>-.24 (.06)**</td>
<td></td>
<td>-.24 (.06)**</td>
<td>-.24 (.06)**</td>
<td>-.22 (.07)**</td>
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<tr>
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<td>.26 (.04)</td>
<td>.26 (.04)</td>
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<td>.11 (.02)</td>
<td>.11 (.02)</td>
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<tr>
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<td>338.41</td>
<td>329.17</td>
<td>324.19</td>
<td>312.39</td>
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</table>

**Note.** Estimate refers to each coefficient (β) in the model. Standard errors are in parentheses. -2 (log likelihood) yields a χ² statistic. EAT=Eating Attitudes Test; BMI=Body Mass Index; SATAQ-I=Internalization of the Thin-ideal; PSPS=Percieved Sociocultural Pressure Scale; AE=Appearance Evaluation.

* p<.05** p<.01
4.74 Social Norm Questionnaire-I (SNQ-I)

For the SNQ-I, there were no differences among baseline scores on any of the groups. All models are illustrated in Table 4.12 for the SNQ-I dependent variable. Model 5 added all of the significant predictors that were determined in previous models. This model resulted in a significant reduction in deviance and was the best-fit model in this study for SNQ-I.

Examination of Model 5 suggests that SATAQ and PSPS were significant predictors of the SNQ-I baseline score. This indicates that as internalization of the thin-ideal and perceived pressure to be thin increase, positive body image attitudes and eating behaviors decrease.

There was a significant Group X Time Interactions for group 2 on model 5. It is noteworthy to mention that group 1 also had a significant Group X Time interaction for models 1-4. Contrary to the hypothesis, however, the combined group was the only group to significantly increase the SNQ-I, indicating an increase in positive attitudes and behaviors targeted in the intervention, compared to the control group on the best-fit model.
**Model # = Predictors**

**Model 1** = time, group, time X group

**Model 2** = time, group, time X group, BMI

**Model 3** = time, group, time X group, PSPS

**Model 4** = time, group, time X group, SATAQ

**Model 5** = time, group, time X group, SATAQ, PSPS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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<td>Estimate (s.e.)</td>
<td>Estimate (s.e.)</td>
<td>Estimate (s.e.)</td>
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<td>.34 (.13)**</td>
<td>.34 (.12)**</td>
<td>.25 (.11)*</td>
<td>.26 (.11)*</td>
</tr>
<tr>
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<td>-.03 (04)</td>
<td>-.04 (.03)</td>
<td>-.02 (.03)</td>
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<td>1.11 (1.79)</td>
<td>1.17 (1.73)</td>
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<tr>
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<td>-1.27 (.93)</td>
<td>-1.00 (.99)</td>
<td>-1.12 (.98)</td>
<td>-0.96 (1.02)</td>
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<td>3.54 (1.29)**</td>
<td>3.11 (1.38)*</td>
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<td>4.68 (1.32)**</td>
<td>4.26 (1.41)**</td>
<td>3.45 (1.39)*</td>
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<td>.29 (1.60)</td>
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<tr>
<td>BMI</td>
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<tr>
<td>SATAQ-I</td>
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<td>-3.93 (.70)**</td>
<td>-3.93 (.70)**</td>
<td>-1.58 (.69)*</td>
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</tbody>
</table>

*Note.* Estimate refers to each coefficient ($\beta$) in the model. Standard errors are in parentheses. 

$-2 \text{ (log likelihood)}$ yields a $\chi^2$ statistic. EAT=Eating Attitudes Test; BMI=Body Mass Index; SATAQ-I=Internalization of the Thin-ideal; PSPS=Percieved Sociocultural Pressure Scale; AE=Appearance Evaluation.

* $p<.05$ ** $p<.01$

Table 4.12: Variance components model for SNQ-I data measured using control group as the reference group
4.75 Perceived Sociocultural Pressure Scale of the Thin-Ideal (PSPS)

For the PSPS, there were no differences among baseline scores for any of the groups compared to the control group. Only one model was explored in regard to scores on the PSPS because the main goal of including PSPS was to explore it as a predictor in other analyses. However, because it is desirable to have a decrease in perceived sociocultural pressure, the effects of the interventions on PSPS were explored. The model controlled for self-esteem and weight discrepancy and included the predictors of time, group, and Time X Group. The reference group was the control group. No significant interactions were found for any of the groups. Weight discrepancy did result in a significant parameter that was controlled in this analysis.

4.76 Internalization of the Thin-Ideal (SATAQ-I)

For internalization, the combined and psychoeducational groups were significantly higher in internalization than the control group at pre-test. Only one model was explored in regard to scores on the SATAQ-I because the inclusion of other predictors (e.g. PSPS, AE, BAS) does not make sense theoretically. However, because it is desirable to have internalization decrease, the effects of the interventions on SATAQ-I were explored. The model controlled for self-esteem and weight discrepancies and included the predictors of time, group, and Time X Group. The reference group was the control group. No significant interactions were found for any of the groups.
4.8 Qualitative and Quantitative Evaluation Results

Along with post-test data collection, participants were asked to fill out an evaluation of the presentations and the messages on the posters and social marketing items. The control group only filled out evaluations for the presentation because they were not given any posters or social marketing items. A copy of the evaluation form for the presentations and the messages is displayed in Appendix K.

4.81 Social Norm Group

Fifty-eight percent of the participants had attended previous body image presentations, including one’s in which I had presented. Overall, the majority of participants attended two sessions. The majority rated the program as good, rated the credibility of both the small and large group presenters as good, and reported the effectiveness as good in all areas except improving eating habits and behaviors and coping with stress (majority gave these two areas a good-fair rating).

The majority of participants saw the posters once a day to a few times a day. The majority rated the posters as effective. Ten participants agreed that the statistics were the most helpful part of the program; however, three agreed that the statistics were the least helpful. Six participants agreed that the least helpful part of the program was the long group sessions. When asked what they would have liked to have been addressed, eleven participants reported that everything was covered adequately. Eleven other participants would have liked more information on the media and eleven other wanted general healthy diet/exercise/stress tips.
4.82 Combined Group

The evaluation results from the combined group follow. Twenty-five percent of the participants had attended previous body image presentations. Overall, 37% attended two sessions, 43% attended one session, and 20% attended no session (only had exposure to the posters). The majority rated the program as good, rated the credibility of the small group presenters as good and the large group presenter as good-very good, and reported effectiveness in all areas except with coping with stress (which was given a good-fair rating).

The majority of participants saw most of the posters once a day to a few times a day. The majority rated the posters as effective. Eleven participants agreed that the small group discussions were the most helpful part of the program. Many individuals elaborated that they liked that the small group discussions, which allowed them to listen to their sorority sisters and understand others’ perspective. Participants differed on what was least helpful; all having unique answers including surveys, stress portion, journaling, length, folders, media, and group talking.

When asked what they would have liked to have been addressed, three participants wanted discussion on eating disorders and other suggestions included wanting more information on nutrition, fad diets, and taking action. Other spontaneous feedback included that they liked the free stuff, found the posters informative, liked the activity of challenging fat jokes, and liked the activity of group-affirmation.
4.83 Psychoeducational Group

None of the participants had attended previous body image presentations. Overall, the 32% of the participants attended two sessions, 26% attended one session, and 42% attended zero sessions (only were exposed to the social marketing materials). The majority rated the program as good, rated the credibility of both the small and large group presenters as good, and reported effectiveness in all areas.

The participants ranged widely on how often they saw the posters including more than once a day to less than once a week. The majority rated the posters as effective. Seven participants agreed that the small group discussions were the most helpful part of the program. Three individuals agreed that about how media manipulates body shapes was the most helpful. Two individuals agree that the posters were most helpful. Two participants agreed that the least helpful part of the program was the small groups at times. Other unique answers to the least helpful question included the need for more structure, the surveys, the journal entries, the fat joke activity, and the posters.

When asked what they would have liked to have been addressed, seven participants wanted more information about healthy eating, stress management, and exercise.

4.84 Control Group

Forty-four percent of the participants had attended previous body image presentations. The majority rated the program as good and reported effectiveness in increasing knowledge about body image, improving attitudes towards one’s body, improving one’s eating habits, and improving how to understand fellow sorority sisters attitudes and behaviors. The majority felt the program did a good to fair job with
improving knowledge of stress management, coping skills, and media literacy and increasing skills in coping with stress and being media literate. Ten participants agreed that the healthy eating tips/habits were the most helpful part of the program. Three participants found the general discussion was most helpful and three others thought that discussing some healthy strategies for eating meals and snacks was most helpful. Two participants enjoyed the handouts.

Only two participants completed the question regarding what was least helpful. They responded with the questionnaire and the healthy strategies for each meal. When asked what they would have liked to have been addressed, three participants wanted something about media images, two wanted information regarding other sorority sister’s attitudes, and many unique responses revolved around the theme of eating disorders, fad diets, particular weight loss strategies, and more time for the program.

Overall, the evaluation data suggest that most individuals found all the programs to be effective in the appropriate topic area, reported the presenters as credible. The majority of the individuals within the intervention groups reported that the posters and social marketing materials effectively presented messages related to body image and eating behaviors. Additionally, a large portion of the individuals in the intervention groups indicated that the most helpful part of the program was the ability to discuss these topics with their sorority sisters. Furthermore, many individuals within the intervention groups indicated that they wanted more information on fad diets, nutrition, and stress.
CHAPTER 5

DISCUSSION

5.1 Review of Objectives

The main purpose of this study was to examine the effectiveness of three different intervention programs in reducing negative body image attitudes and eating behaviors. Each sorority was assigned to one of the three intervention programs or the control group. The intervention groups met for two 1-hour presentations and were exposed to social marketing materials. The intervention groups differed in the type of presentations and social marketing materials they received (psychoeducational or social norms). The three intervention groups were psychoeducational, social norms, and a combined group. The control group attended a one-hour presentation with no social marketing materials. Both the intervention and control group members completed measures of appearance evaluation, body area satisfaction, eating attitudes and behaviors, social norms, internalization of the thin-ideal, perceived sociocultural pressure to obtain the thin-ideal, and self-esteem at pre and post testing. Additionally, participants completed a program evaluation form at post-testing.

Means and standard deviations for each measure at pre and post testing were examined. In addition, correlations between measures at each test time provided
information about the relationships between appearance evaluation, body area satisfaction, eating disorder symptomatology, social norms questionnaire, internalization of the thin-ideal, perceived sociocultural pressure to obtain the thin-ideal, self-esteem, and BMI. A MANOVA was used to find any differences between groups on demographic and dependent variables at baseline. Significant differences were found for self-esteem and weight discrepancy.

Multilevel modeling was utilized to look for differences between the intervention groups compared to the control group on eating disorder symptomatology, body area satisfaction, appearance evaluation, internalization, perceived pressure, and social norms across test times. Both self-esteem and weight discrepancy were controlled for within the models.

5.2 Summary and Interpretation of Results

5.21 Representativeness of the Sample

The mean scores for appearance evaluation and body areas satisfaction in the total sample were similar to means that were previously reported in the literature for college women on those respective scales. The mean scores for self-esteem, internalization of the thin-ideal, and perceived sociocultural pressure to obtain the thin-ideal were all significantly higher in this sample than previously reported in the literature for college women. The mean score for the total sample for self-esteem was 32.76, which was slightly higher than 31.33, the mean reported by Brennan (2002). Even though this difference was significantly different, this sample scored only 1.43 points higher than the previous sample on the RSE. Given that this scale’s score is...
determined by 10 questions, an average individual from this sample answered only one of the questions a little more positively than the previous sample. Thus, the difference seems to be quite trivial and may be a result of a small sample size.

The mean score for the total sample for internalization was significantly higher than the previously reported mean by Mutterperl and Sanderson (2002). The mean difference of .52 from 3.09 (previously established mean) to 3.61 (this study’s mean) changed the mean result to be higher than the midpoint of the scale rather than lower than the midpoint. This suggests that the majority of women in this study lean more towards agreeing with statements accepting the thin-ideal; whereas, the other previously reported mean suggests that the majority of women were ambiguous (neither agree or disagree) with statements accepting the thin-ideal. Even more intriguing, this sample had more similar internalization scores with women who had eating disorders than college women who did not (Griffiths et al., 1999).

There are at least two potential explanations for this discrepancy. Perhaps the difference was found merely because of the time of the year the study took place. Pre-test questionnaires were distributed closely to spring break time and the beginning of bathing suit season. It may be possible that during this part of the year, women became more accepting of the thin-ideal because of the increased emphasis on appearance at this time and the increased exposure to media related to the thin-ideal. Past research has suggested that individuals that are exposed to thin-images report more body image disturbance (Heinberg & Thompson, 1995; Stice & Shaw, 1994).
This may be related to individuals becoming more accepting of the thin-ideal because of the increased exposure to the thin-ideal, yet not being able to obtain this thin-ideal. Another explanation is that sorority women, on average, accept the thin-ideal more than non-sorority college women. It may be that the culture of a sorority, living with numerous other girls and the emphasis of attractiveness, might influence one to accept the thin-ideal and think that it is normative to accept this ideal as realistic and desirable.

With either explanation or other explanations, it is important to note that the average woman involved in this study does somewhat accept the thin-ideal. This will be discussed when interpreting the results of the intervention groups.

The overall sample mean for PSPS at pre-testing was 2.49, which is significantly higher than the PSPS mean of 2.23 reported by Tylka and Subich (in press). This .26 difference suggests that this sample expressed somewhat higher pressure to obtain a thin-ideal from media, partners, family, and friends. The difference may be related to the above explanation that the majority of women in this study lived with numerous other women and were exposed to many advertisements around bathing suit season, reinforcing the thin-ideal. Despite these difference on the PSPS, both samples, on average, reported rarely feeling pressure to lose weight and have a thin body.

With these differences considered, it appears that this sample has some differences from the normed college women population. This might be explained by the culture of being a sorority woman and the time of year (beginning of bathing suit
season). Nonetheless, for the most part, this study resembles the normed patterns of college women’s attitudes and behaviors. Generalizability beyond college women is limited.

5.22 Differences on Baseline Measures Between Groups

Differences were examined on baseline measures between groups. Significant differences were found for weight discrepancy and self-esteem, and these were controlled for in the multilevel modeling analysis. Additionally, groups differed in the attendance of the presentations and the previous exposure they had to body image and eating disorder programs. Overall, these differences will be discussed in interpretation of the between group results. Indeed, these differences pose some limitations in interpretation of the results.

5.23 Differences Between Intervention and Control Groups

Preliminary analysis examined the absolute differences between the pre and post-test means on the dependent variables. From this analysis, the social norms group changed in the desired direction on 57% of the dependent variables. The combined group changed in the desired direction on 100% of the dependent variables. The psychoeducational group changed in the desired direction on 71% of the dependent variables. The control group changed in the expected direction on 43% of the dependent variables. Additionally, the scores for the combined program from pre to post-test on all dependent variables except the EAT improved more than any other group. The exception was that the scores for the psychoeducational program from pre to post-test on the EAT did improve more than the combined program. Preliminary
data analyses, therefore, suggest that the combined program had the most consistent and the largest positive effect on the dependent variables with the exception of eating disorder symptomatology.

Multilevel modeling analyses found that the best fit model for the EAT dependent variable included the following predictors while controlling for self-esteem and weight difference: time, group, Time X Group, PSPS, SATAQ, and MBSRQ. Based on the best-fit model, the only significant Group X Time interaction compared to the control group was the psychoeducational group. Overall, the psychoeducational had the largest slope, or rate of change, for the Group X Time interaction. The combined program had the next largest slope and the social norms group had the smallest slope. The Group X Time interaction was significant for the combined group using a more parsimonious model that used only one of the predictors (SATAQ, PSPS, and MBSRQ) but not a combination of predictors.

There are many possible explanations regarding the results of this model. The first possibility is simply that the psychoeducational program was most effective in reducing eating disorder symptomatology than using combined or social norm interventions. Another possibility is that since the psychoeducational group had the highest EAT score on baseline, in accordance with regression to the mean, this group was likely to have decreased more than the other groups. One other possibility is that since this group reported no past exposure to body image and eating disorder presentations, this group may have been influenced more by this program than the other groups who had been exposed to these types of presentations. Therefore, it may
not have been based on the type of intervention but because of the lack of exposure
this group had to body image and eating disorder presentations.

All these explanations seem reasonable, and it is probable that all of these
explanations can together explain the effectiveness of this group in reducing eating
disorder symptomatology. However, since the combined group and the
psychoeducational group both attended the psychoeducational presentation and had the
highest desired change, there is evidence that the components of the psychoeducational
presentation were effective in reducing eating disorder symptomatology.

Multilevel modeling analyses found that the best fit model for the BAS
dependent variable included the following predictors while controlling for self-esteem
and weight difference: time, group, Time X Group, PSPS, and SATAQ. Based on the
best-fit model, there were no significant Group X Time interactions compared to the
control group. However, the Group X Time interaction for the combined group
approached significance ($\gamma=1.90; p=.059$). Additionally, all of the more parsimonious
models were significant for the combined group. Furthermore, the combined program
had the largest Group X Time parameter estimate ($\gamma=.19; p=.059$) compared with the
psychoeducational program ($\gamma=.14; p=.21$) and the social norms group ($\gamma=.06; p=.55$).
These results together with the means data suggest that the combined program resulted
in the most relative improvement in body areas satisfaction over the three groups
though it was not significant for the best-fit model.

The most logical explanation for this effect was due to the combination of the
psychoeducational program and the combined social norm marketing materials. Since
the combined group had the highest BAS baseline score, the explanation of the regression to the mean does not make sense. The psychoeducational group and the social norms group both also had a relative improvement in BAS scores but not to the extent of the combined program. It may have been this combination that resulted in the increased body areas satisfaction to a greater extent than the other groups.

Multilevel modeling analyses found that the best fit model for the AE dependent variable included the following predictors while controlling for self-esteem and weight difference: time, group, Time X Group, BMI, PSPS, and SATAQ. Based on the best-fit model, there were no significant Group X Time interactions using the control group as the reference group. It is noteworthy, however, to look at the absolute differences on how AE changed. The social norms group decreased by .06 on the AE, the psychoeducational group increased by .04, the control group increased by .09, and the combined program increased by .26. Inferences from these absolute differences, however, are limited because there were no statistically significant results.

Multilevel modeling analyses found that the best fit model for the Social Norm Questionnaire (SNQ-I) dependent variable included the following predictors while controlling for self-esteem and weight difference: time, group, Time X Group, BMI, PSPS, and SATAQ. Based on the best-fit model, there was a significant Group X Time interaction for the combined group compared to the control group. It is noteworthy that the Group X Time parameter estimate for both the combined group ($\gamma=3.26; p<.05$) and the social norm group ($\gamma=2.43; p<.09$) were much higher than the psychoeducational group slope ($\gamma=.29; p=.86$). In addition, the social norms Group X
Time interaction was significant for model 1-4. By examining all these components, one can infer that the social norms marketing component (which was common to both the combined and social norms group) can be most likely attributed to the increased SNQ-I scores for the combined group. This decrease in dysfunctional attitudes and behaviors related to eating that were targeted in the social norms marketing component is consistent with social norm prevention and intervention studies that have decreased binge drinking and tobacco use (Borsari & Carey, 2001; Fabiano et al., 1998; Linkenbach et al., 2002)

Multilevel modeling analyses for both the PSPS and SATAQ resulted in no significant differences in the Time X Group interaction for any group compared to the control group. The SATAQ model did reveal that the combined group and the psychoeducational group both had higher internalization than the control group at baseline. Additionally, as mentioned earlier, the internalization score for this sample was much higher than in other samples using the same population. It is, however, difficult to determine if this difference affected the results or not.

5.24 Item Analysis

From the examination of the multilevel model analyses, results were somewhat difficult to interpret. For example, some of the Time X Group interactions were significant for all but the best-fit model, and the predictor approached significance for the best-fit model. In attempt to add some possible clarification of this, an item analysis was done post-hoc.
Item analysis was completed to explore the particular areas that changed within each scale that resulted in significant differences described in the multilevel modeling results section. This was done by using a paired samples t-test to compare items from pre-test to post-test for each group. This analysis, however, only involved those participants that filled out both pre and post-tests. See Appendix M for a more detailed description of the paired samples t-test of significant items for each group. This analysis has limits in reliability and the results should be interpreted with caution.

To begin with the EAT scale, the social norms group had three items that significantly changed, two items in the positive direction and one item changed in a negative direction. The combined group had seven items that changed significantly in the positive direction. The psychoeducational group had three items that changed in the positive direction. The control group had three items that significantly changed in the negative direction.

For the BAS, the only group that resulted in significant changes in items from pre to post was the combined group. The combined group had two items that improved significantly from pre to post-test. The paired samples t-test for the SNQ resulted in four items being significantly different from pre to post for the social norms group, one item for the combined group, and no items for both the psychoeducational group and the control group.

The item analysis suggested that the social norms group appeared to have the largest positive impact on the social norms targeted in this program. The combined group, to a lesser extent, also had a positive impact on increasing positive attitudes and
behaviors (based on the SNQ-I) that were targeted in the program and social marketing materials. The combined group was the only group that showed any increase in appearance satisfaction. Specifically, the combined group showed an increase in weight and overall appearance satisfaction. The combined group showed a decrease in weight and food preoccupation on five items and a decrease in bingeing; whereas, the psychoeducational group showed a decrease in feeling the urge to vomit after eating and being preoccupied with burning calories while exercising. All of these areas were discussed within the program or social marketing materials.

The psychoeducational group had a decrease on one item that was not addressed, “I take longer than others to eat my meal.” This is likely to have decreased not because of the intervention but because of chance or another intervening factor.

The control group had no significant positive changes but had three negative changes on items. The items they increased on make sense because of the discussion that was a part of this group. Within the discussion on healthy eating, it was recommended to eat slower to be able to give one’s body time to sense hunger and full signals. Additionally, portion control was covered. Thus, this discussion may have influenced the increase of this item.

Overall, it seems that on average, each intervention group resulted in at least one increased positive attitude or behavior. From the item content and the number of items that changed, it appears that the combined group had the most successful change from pre to post, resulting in a decrease of weight and food preoccupation and increase in appearance evaluation. This finding is consistent with a previous eating disorder
prevention program that demonstrated the efficacy of including social marketing strategies into a comprehensive program (Levine et al., 1999).

5.25 Qualitative Feedback

Qualitative feedback from the intervention groups and control group can add to the interpretation of the results and can provide insight into creating future prevention programs. Overall, most individuals in all groups reported being satisfied with the presenter(s), described the presenter(s) as credible, and thought that the social marketing materials were effective.

More specifically, many participants in the social norms group reported that the strength of the program was the inclusion of statistics and the weakness was its length (too long). However, other participants in this group thought that the statistics were the least helpful part of the program. Participants within this group also were split in their response to what they would have liked to have been covered. A third answered that everything was covered, another third wanted more information about the media, and another third wanted general health tips. This review suggest that the social norms program appealed to some individuals; whereas, other individuals may have been more satisfied with an intervention that addressed media literacy and general health promotion.

The majority of individuals within the combined group who provided comments on the final evaluation thought that the small group discussion was the strength of the intervention. They reported enjoying talking to their sorority sisters about body image issues. There was no theme in the feedback about what was least
helpful. For the combined group, most individuals were satisfied with what was covered, but six participants wanted more discussion of eating disorders, nutrition, or advocacy. Other comments on the evaluations for this group were very positive, regarding the posters and specific activities within the intervention.

The majority of individual within the psychoeducational group, who provided comments on the evaluation, reported that the small group discussions were the most helpful part of the program and two individuals reported that the posters were most helpful. A specific area that a few individuals enjoyed was the topic of media literacy. A theme for this group is that they would have liked to have been provided information about healthy eating, stress management, and exercise.

The majority of individuals with the control group thought that the discussions about healthy eating habits were the most helpful part of the program. More specifically, some individuals enjoyed the handouts and others enjoyed the healthy strategies for eating snacks and meals. The individuals did not provide any information about what was not addressed.

Some themes from these evaluations are the following 1.) Most women enjoyed each intervention and the control and found it to meet their expectations. 2.) The women in this study wanted a combination of discussion and lecture on varying topics including media literacy, healthy eating, stress management, exercise, and eating disorders. 3.) The programs received more positive feedback than the posters in the evaluation. 4.) The women in this study, for the most part, enjoyed talking with one another about topics related to body image. 5.) If the women commented on the
length of the program, it was always in the direction of wanting the programs to be shorter.

5.26 Exploration of Predictors for the Dependent Variables

Previous body image and eating disorder research has explored what predicts body dissatisfaction and eating disorder symptomatology. In order to tie this study to previous research, I also explored if BMI, internalization, and pressure to be thin may predict AE, BAS, and SNQ-I. I also explored if BMI, internalization, sociocultural pressure to be thin, appearance evaluation, and body areas satisfaction would predict eating disorder symptomatology.

Predictors, in addition to time, group, and Time X Group, were added to EAT, BAS, AE, and SNQ-I to explore if they would significantly predict each of these dependent variables at pre-test. The predictors were all entered into the model along with time, group, and Time X Group. Finally, all the predictors that were significant when entered alone, were entered into a full model. A review of the results of this analysis follows.

Body areas satisfaction was found to significantly predict EAT scores but only when it was not combined with AE, SATAQ-I, and PSPS. Appearance evaluation was found to significantly predict EAT scores when entered into a model with SATAQ-I and PSPS. Internalization of the thin-ideal was found to predict the EAT, BAS, AE, and SNQ-I. Perceived sociocultural pressure also was found to predict the EAT, BAS, AE, and SNQ-I. Body mass index was found to predict only appearance evaluation.
These results are consistent with past research that suggest that body dissatisfaction predicts eating disorder symptomatology (Stice, 2001), and internalization and perceived pressure predict body dissatisfaction (Heinberg & Thompson, 1995). There have been some inconsistencies within the literature about the role of body mass index in predicting body dissatisfaction and eating disorder symptomatology. In this study, BMI only predicted how one feels about their appearance but not internalization, pressure to be thin, or eating disorder symptomatology.

5.27 Summary Statement of the Results

From the analyses above of both qualitative and quantitative data, it seems that there is evidence from this study that supports the use of both psychoeducational and social norm approaches in body image and eating disturbance prevention. It was clear that the psychoeducational group decreased the most in eating disorder symptomatology, which warrants its use in future prevention work. This group, however, had not attended previous body image and eating disorder presentations; whereas, at least a fourth of the other groups had. It is unknown how much of an impact this may have had on these results.

The effectiveness of the psychoeducational program in reducing eating disorder symptomatology is inconsistent with many past psychoeducational prevention programs that showed no change in eating disorder symptomatology (see reviews by Dorian & Garfinkel, 2002; Levine & Piran, 2001, 2004; Levine & Smolak, 2001). This psychoeducational program, however, was unique in that it included small group
discussion which is usually not a component of a strictly psychoeducation prevention program. Thus, the importance of including small group discussion may be critical and therefore should be further studied.

The combined group was the most effective group in increasing positive body image attitudes and eating behaviors that were targeted in this study (based on the results of the SNQ-I). In addition, the combined group was the only group that approached significance in increasing one’s body satisfaction. This provides some evidence that adding social norm marketing strategies to the typical psychoeducational presentation might bring about additional positive changes (e.g. more body satisfaction) than just the psychoeducational program alone.

With both of the groups above, the psychoeducational presentation that was utilized was primarily small-group discussion oriented and not lecture-based. Because of the effectiveness of both of these groups, this provides some evidence that future prevention work may want to include more small-group discussion and less lecture.

Another consideration for future prevention work is in regard to attendance of offered programs. If individuals do not attend programs, they do not have the opportunity to benefit from them. Unique to the social norms group was the commitment of most women to attend both sessions. This suggests that the social norms group may have been more interesting to the sorority women as this program addressed things that one has not learned about in classes, books, and magazines.

However, the social norms group was not the most effective intervention contrary to the hypothesis stated in chapter 1. There are a few possible explanations
for this. One explanation could be that this prevention study was not long enough to influence individuals’ ideas of social norms that have been reinforced for more than six weeks (the length of the intervention). Another explanation could be related to the fact that the majority of the social norms group had previous presentations on body image and eating disorders. It is possible that the women in this sorority had already learned many of things that we went over (even though it was presented through social norms) and did not benefit from the program as much as the other groups.

Having attending other presentations on this topic could have also tainted their view of what this program was going to be like. They may have been surprised by how different this program was and disregarding the program because it was so different. They expressed some discontent about not addressing healthy eating, exercise, and stress management on the evaluation. Thus, they may have been disappointed because of what they were expecting. Finally, another explanation could be that the women in this sorority did not believe the social norm messages; however, no comment on the evaluation alluded to this.

Nevertheless, overall from this study, it seems that a well-scripted and small discussion–oriented psychoeducational programs can result in positive changes, but it may be possible to enhance these changes by including the right combination of other intervention strategies such as using the social norms theory and social marketing strategies.

Like the question so commonly asked regarding therapy, “what treatment by whom is most effective for this individual with that specific problem and under these
circumstances” (Paul, 1969). The question may be, “What combination of prevention strategies by whom is most effective for this particular sample with or without that specific problem and under these circumstances?” However, again, just like in therapy, maybe there just needs some more research to solidify the common elements of effective body image and eating disturbance prevention.

5.3 Directions for Further Research

Further research in body image and eating disturbances that examines the effectiveness of particular prevention strategies is very important. Recommendations for future prevention programs include targeting a specific population, finding a group of individuals within this population that commit to participating in the prevention program, and conducting a thorough assessment of information related to body image attitudes and eating behaviors within this population. Information that would be important to gather include but is not limited to the following: How does this culture define body image, how important is it, what influences it, what defines a healthy body image for this culture, what are acceptable eating patterns in this culture, are there expectations to how women or men should look within this culture, how satisfied are individuals within this culture with their body image, and how much disordered eating is prevalent within this population.

Based on this assessment, it is recommended to create a theory-driven comprehensive program that addresses the biological, psychological, sociocultural, and cultural influences that may affect this population’s body image attitudes and eating behaviors. Within this type of program, it would be important to have a variety of
teaching methods (e.g. lecture, experiential, social marketing, and discussion) that are socioculturally relevant and acceptable to the targeted population. This intervention program should be compared to a control group that has comparable demographic data and experiences using both qualitative and quantitative data collection methods within a longitudinal design.

Along with creating new prevention programs, prevention programs that have been shown to be effective in research need to be continually evaluated using diverse individuals and using longitudinal designs. The social norms and the combined programs conducted in the current study should be researched further with individuals of various ages and cultural background to identify how and to what extent the programs impact certain individuals body dissatisfaction, eating pathology, and future occurrence of eating disorders. Additionally, this study should be replicated and could include a larger sample of similar groups and a longer intervention time to increase power and internal validity.

Future research could expand on this study and examine an intervention that includes both psychoeducational and social norm interventions that occur along a longer span of time. Studies with more diverse individuals (i.e. gender, age, ethnicity, and socioeconomic status) would provide information about the extent to which the results from this study generalize to other populations.

Quantitative and qualitative studies should be done to examine the effectiveness of specific components of body image and eating disturbance prevention programs, such as this one. As most programs have been examined in total, there is a
dearth of research regarding the specific strategies that are most effective in decreasing pathological body image and eating attitudes and behaviors. Additionally, there is a lack of research that has compared the effectiveness of two or more prevention programs to a randomized control group.

Finally, it would be recommended to work with other disciplines in the prevention of body image and eating disturbance. For example, a team including a psychologist, a public health professional, a nurse, a teacher, and students might be an especially good research team in working to prevent body image and eating disturbances in a elementary or high school setting. By having numerous perspectives, it seems logically that a more comprehensive program would be created to fit the needs of the targeting population.

5.4 Limitations of the Study

A principal limitation of this study is generalizability. The study is limited by the nature of the sample. The participants in this study were predominantly White, sorority women. Thus, the results cannot be generalized to other groups of individuals.

This study was limited by several other methodological constraints including a small sample size, differences between groups, the use of self-report measures, not including follow-up data analyses, and the fact that the experimenter was not blind to the study's hypothesis. A small sample size restricted the type of analysis that could be used and restricting the analyses of comparing individuals with similar characteristics (e.g. those that attended only one session compared to two programs). The differences
found between the groups decreased the internal validity of this study and posed some limitations in interpretation of the results.

While self-report measures are easy to administer, they present validity problems if participants provide data that is socially desirable or that will support the researcher's hypothesis (Cone & Foster, 1999). The results could have also been affected by repeated testing, given that the participants filled out the same questionnaires two times.

The use of only one facilitator across the three treatment groups promotes the possibility of experimenter effects. It is possible that the results were not due to the treatment itself but rather to the facilitator. However, the experimenter facilitated only approximately a third of the program. All of the other time participants spent talking with one of the six small group leaders.

An additional limitation of this study was the lack of random assignment to groups. There is a need for field studies that use random assignment to evaluate the effectiveness of body image and eating disturbance prevention. This type of intervention, however, would not have worked as a pure random assignment for every individual because of the nature of the intervention. The posters that were hung in each of the sorority houses would not have been able to be used if individuals from each sorority were in different intervention programs.

5.5 Implications for Counseling

It is important to recognize the numerous misperceptions college women seem to have related to their peers’ body image and eating attitudes and behaviors. Though
it is still unclear in this study, these misperceptions may have an influence in maintaining or developing negative body image attitudes and pathological eating behaviors. Thus, college students may be ignoring positive attitudes and behaviors and may be focusing on the negative. This could be considered a cognitive distortion, which would be important to address in individual counseling.

Additionally, a theme of the qualitative feedback from the participants in this study was that they enjoyed talking to their peer about topics including media literacy, body image, and eating behaviors. From the quantitative analyses, it seems probable that this part of the program was beneficial to some of the individuals and may have been benign to other. There was no indication that openly discussing these topics was harmful to any of the individuals in the study. Therefore, facilitating and encouraging more honest discussion regarding these topics may be an upcoming role for counseling psychologists. Providing discussion groups regarding body image and eating attitudes and behaviors and encouraging activism may be an important component in decreasing body image and eating disturbances. This could be enacted in schools, university counseling centers, and through other groups such as Girl Scouts and athletic teams.
LIST OF REFERENCES


APPENDIX A

Psychoeducational Program Protocol
Session 1

* Introduction of speaker, topic, and purpose of study: Thanks for having me. My name is Julie Brennan. I am a Counseling Psychology Graduate Student and will be your group leader. I will be here today for about one hour and next month for about one hour to talk with you about issues relating to body image, media influences, self-esteem, size acceptance, and stress management. These programs will provide you some information, skills, and materials. The purpose of this project is to not only inform you but to also help me understand body image, eating behaviors, and related topics. As was discussed with you previously, this is a voluntary research study that you may choose to participate or not choose to participate. There will be no penalty for not participating. Are there any questions?

* Ground Rules: Before we begin the program, I would just like to go over a few ground rules for the program. First, I will be discussing topics within these next two programs that may fit with your experience at times, and may not fit with your experience at times. What I will ask all of you is to keep an open mind to what I or others may say in these programs. Keeping an open mind does not mean that you need to agree, but rather being open to hearing new ideas and hearing perspectives of others. Secondly, as we will be dividing into small groups at times, I would like to
have a confidentiality pledge that everyone will keep things that happen within one’s small group and within the large group confidential. This is to allow for a safe place for people to express their feelings and attitudes. Please raise your hand if you will make this pledge. Finally, I ask that you be respectful to others. For no reason should particular names be said out loud pertaining to others’ attitudes and behaviors. Letting everyone speak for themselves will allow everyone a voice if they decide to use it.

* Now that the ground rules of the program have been stated, let’s begin. To get us warmed up, I want each of you to think of what come to your mind when you hear body image. (After listening to other’s responses). Yes, body image is our personal view and interpretation of our body including mental, emotional, historical, and physical components. What influences one’s body image or how do you form your body image?

* Small group discussion: What/who influences your body image? Think about when you were younger and what things or people influenced your body image. Categorize the situation or the particular person as a positive influence or a negative influence. Discuss and list.

* Now think about now and what situations or people influence your body image and if these are positive or negative. Remind them not to use names of girls within the sorority but speak more generally. Categorize the situation or person as a positive or negative influence, if possible. Discuss and list.
* So, now that we see what influences their body image, now ask them to elicit a discussion on how they (the individual group members) might influence other’s body image along with their own. How do they feel about this?

(*If you get stuck, you can prompt them by using these examples below. For example, say “do you think the media (family, peers, etc.) influence your body image)

* So, peers, family, friends, media, etc…. all have influenced your body image. But… who has told them about what is attractive? This question may seem a bit strange but who does define attractiveness for us? A major component of the answer is our culture. The ideals of feminine beauty have varied and changed with the aesthetic standards of the time periods (show pictures of models from the 50’s). In ancient times, fat was royal, and being thin denoted poverty. Over the last century, types have shifted from the 1920’s flapper silhouette (show picture), the 1950’s curvy woman (show picture), to the 1980’s (show picture) broad shouldered and sexy woman, to the 1990’s waif look (show picture).

* Currently, the media defines attractiveness for women with thin, small-waisted, flat-hipped, tight bunned, and big-chested. The media defines attractiveness for us by displaying women who have features that usually do not coexist such as large breasts and a muscular physique. The images in fashion magazines have been increasingly separated from reality. Models get skinnier and skinnier; many that by their weight status would be anorexic. Additionally, more advanced technology has allowed images to be airbrushed and computer recreated.
* Women are presented with information about how everyone can have the body they desire if they just use a certain diet or exercise product. Models are thought to be flawless, have perfect bodies, yet; do we see the whole picture? Behind the scenes of the magazines, TV, and movie are the truths behind these models and their “flawless” appearances. One example of this is how often TV, magazines, and pictures will not actually use the model’s real body but will instead use a substitute. This may be done by using the model or actors face (e.g. Julia Roberts; Pretty Woman) but not their own body. This may be done by air brushing out acne and cellulite and reshaping one’s hips to resemble the “perfect woman”. This may be done by creating a completely computerized human that has been created, by what some might say, are all the most attractive features. (Show pictures, magazine articles of diverse images). Even when one is shopping, this unrealistic ideal is manifested in store mannequins. If these mannequins were humans, they would not be able to menstruate due to too low of body fat. Trying to obtain this “perfect body” thus can bring feelings of frustration, failure, and shame.

* What the media fails to show, is the diversity of body sizes and shapes that are both attractive and healthy. The media fails to celebrate the different body types influenced by things such as genetics and one’s ethnicity. But, why does media fail to show us realistic images? What do they gain from “fooling” us to thinking that we all can and should look like the constructed models they create?

* Small group discussion: Make a list of the advantages to the advertisers and the disadvantage to the consumer in having an unrealistic ideal. (5 min discussion)
Now, have half of the individuals in your group be the advertiser and half of the individuals be the consumer. Have the advertisers attempt to justify using this unrealistic ideal image in the media. Provide the consumers with facts to debate against the advertisers.

* Come back in large group and summarize small groups, focusing on the fact that the media uses the images to make money. Now, that we understand the media’s motivation for having us buy into this unrealistic ideal, let’s recognize that (Cash, 1997):

Societal messages cannot harm us unless we buy into them. You don’t have to adopt these ideals and pressure yourself to live up to them. You don’t have to allow your sense of self-worth to be determined by voices of the media. Plenty of research shows that if you think you should possess some trait that you believe you lack, you’ll experience distress in situations that remind you of your ‘inadequacy’. On the other hand, if you hold ideas that are more moderate and realistic, and stop beating yourself over the head with unreasonable yardsticks, your more favorable body image will promote self-acceptance.

* To help you do this, I would like to go over some media literacy skill building guidelines. We will also be focusing on this within the next program in a few weeks. Follow handout on “Tips for Becoming a Critical Viewer of the Media” (www.nationaleatingdisorders.org).

* We have now discussed the media and how we can empower ourselves and one another to not buy into the images they promote. The media, however, is not the
only thing that influences one’s body image. We have already discussed how other individuals and you, yourself, influence how you feel about you.

* I would like to focus on two ideas here. The first is that peers may be an especially influential group since many of you live together and spend a large amount of time together. From what was discussed here and opening yourselves up to other ideas, how might you as a group help influence positive or nonjudgmental body feelings? (Discussion)

* Small group discussion: Brainstorm ways that the sorority and its members can promote individual and the group’s healthy body image.

* Secondly, I am aware that there are jokes and/or comments that are made about an individual’s size or just the topic of size in general. Even if this disturbs individuals, many people do not know how to comeback or what to say. This can lead to others thinking that their joke or comment was acceptable. We will discuss how to deal with situations like this and empower oneself and one another to act on these occasions within the next session.

* I would like to conclude the program today by reviewing what we went over and what your own strategies were to help promote healthy attitudes and behaviors within your sorority. Review: We started talking about body image and what it is, basically how we see and feel about our body. We also discussed what influences body image, the media, family, and friends, and how we can promote our own and your sorority sister’s body image through media literacy, accepting of diverse body sizes and shapes and focusing on more than appearance. Take the last few minutes to write in
you r journal a few words about what you got out of today and any reactions you
have. I would also encourage you to write in your journal in the next few weeks
about more reactions of this program or other topics.

* Have a wonderful rest of the night. I look forward to seeing you in a few weeks for
the next program. If anyone has any questions, feel free to come up and ask me.

Session 2

* It is nice to be back with you today. I wanted to check in with you to see if anyone
had any thoughts or questions from our last program. Last session we discussed
sociocultural messages regarding body image and learned some skills to challenge
the unrealistic ideal that is portrayed. Today we are going to recognize our own role
in the continuation or discontinuation of this unrealistic ideal.

* The diet and fashion industries are not totally to blame for society’s obsession for
thinness. We are the ones keeping them in business. We may buy into the idea that
we can attain the ideal body image. We may allow ourselves to believe the lies being
thrown at us constantly. We may buy their magazines, diet books, and products. We
may throw away our hard earned money trying to live up to the standards that society
has set for us. Others have chosen to love and accept one another for more than
appearance, recognize the beauty of diversity of body size, and find self-esteem in
more than appearance.

* People in our culture, whether subconsciously or consciously, perpetuate the ideal of
thinness through conversations, judgments, and teasing of family and friends. The
obsession weight among families and friends (by saying “do I look fat?” or “you have lost/gained weight”) also emphasizes the idea that appearance is most important

* Weight prejudice is one of the few generally “acceptable discriminations” that occur in our society today. Have you explored your own weight prejudices?

* We will now join in small groups and have a discussion of weight prejudice and ways to conquer it.

* Small groups: Discussion of the “Fat Facts” handout. Role play of how to handle fat jokes and/or comments.

* As you have just discussed, many myths exist about larger individuals that perpetuate the cycle of discrimination. Being a good role model by not initiating comments or jokes as well as encouraging others to do so is a great first step. Another important element to not perpetuate this cycle is to respond to a fat joke or comment by letting others know it was unacceptable. What were some of your suggestions for combating fat jokes and comments? Finding something that fits with you and sends the message in an appropriate manner that the comment was unacceptable is most important.

* So, now we have discussed one way to promote our own and other’s positive body. We are going to continue to discuss how we ultimately have control how we view and treat our bodies.

* One of the times that some individuals may not treat their bodies in a healthy manner is when they are under a lot of stress. For college students, stress can be brought about by academics, by being on one’s own, meeting new people, and being away
from home. Have a discussion within your small groups on what some coping mechanisms are when stress arises.

* Small group discussion: Discuss with your group members both about positive and negative ways to deal with this stress. Also, think about and discuss what coping mechanisms come natural to you, which ones are easier than others (5 minutes). After this brief discussion, within the small groups discuss the short term and long term effects of these positive and negative coping mechanisms.

* Back to the large group: Let’s now write the positive and negative coping mechanisms and have a quick debate on why to choose either one. Two volunteers will do a two-minute debate. As was demonstrated, the positive coping mechanisms seem to be healthier overall. Are there things your sorority as a group could do to promote this type of self-care environment behaviors and attitudes (meditation times each day/week in the sorority, weekly trips to go to yoga, etc.)?

* Healthy coping is one way to continue behaviors and attitudes. There are many other ways to promote healthy behaviors and attitudes. In your small groups, you will discuss some of these strategies, ideas, and do a few exercises.

* Small group discussion: Brainstorm ideas to promote body image. Transition to self-esteem activity: Write down ten things that you like or value about yourself that have nothing to do with your appearance. Discuss whether this is easy or difficult and why? Small group leaders facilitate discussion on how we often feel are taught now to talk good about ourselves and the impact this may have on us.
* Final Activity of Small Group: Provide each other member of the group on the paper provided a small statement of something you appreciate about them.

* Rejoin in Large Group: Review of program and the topics discussed. Review challenges for the sorority and suggestions that have been made. Thank the group for their participation and remind them of data collection on (DATE).

• Conclusion of program.

*Parts of the script have been modified from the Eating Disorder Prevention Intervention Protocol, “Health Management Training” developed by Allison Chase in 1998.
APPENDIX B

Handouts for the Psychoeducational Group

Tips for Becoming a Critical Viewer of the Media

One of the ways we can protect our self-esteem and body image from the media's often narrow definitions of beauty and acceptability is to become a critical viewer of the media messages we are bombarded with each day. Media messages about body shape and size will affect the way we feel about ourselves and our bodies only if we let them. When we effectively recognize and analyze the media messages that influence us, we remember that the media's definitions of beauty and success do not have to define our self-image.

To be a Critical Viewer, remember:
1. All media images and messages are constructions. They are NOT reflections of reality.
2. Advertisements and other media messages have been carefully crafted with an intent to send a very specific message.
3. Advertisements are created to do one thing: convince you to buy or support a specific product or service.
   To convince you to buy a specific product or service, advertisers will often construct an emotional experience that looks like reality. Remember, you are only seeing what the advertisers want you to see.
4. Advertisers create their message based on what they think you will want to see and what they think will affect you and compel you to buy their product. Just because they think their approach will work with people like you doesn’t mean it has to work with you as an individual.
5. As individuals, we decide how to experience the media messages we encounter. We can choose to use a filter that helps us understand what the advertiser wants us to think or believe and then choose whether we want to think or believe that message. We can choose a filter that protects our self-esteem and body image.

To help promote healthier body image messages in the media, you can:
* Talk back to the TV when you see an ad or hear a message that makes you feel bad about yourself or your body by promoting only thin body ideals.
* Write a letter to an advertiser you think is sending positive, inspiring messages that recognize and celebrate the natural diversity of human body shapes and sizes. Compliment their courage to send positive, affirming messages (see below)
* Make a list of companies who consistently send negative body image messages and make a conscious effort to avoid buying their products. Write them a letter explaining why you are using your “buying power” to protest their messages (see below)
* Tear out the pages of your magazines that contain advertisements or articles that glorify thinness or degrade people of larger sizes. Enjoy your magazine without negative media messages about your body.

* Talk to your friends about media messages and the way they make you feel.

Use this web-site for addresses and sample letters to magazines:  http://about-face.org/


“Fat Facts”

1. **How much you eat and how much you exercise are the major factors that determine how much you weigh?**
   False: The amount you eat and exercise appears to have less influence than do genetics and physiological factors on body weight. Recent research shows that genetic and physiological determinants explain as much as 80% of why a person has a particular weight. There are individual differences in body build and body weight that are genetically determined. For example, the weight of your two parents (over or underweight) can greatly affect your body weight.

2. **Studies show that people who are fat due to heredity eat the same amount or less than non-obese people.**
   True: Research has established that many adults eat the same or even less than normal weight individuals, although it does appear that obese individuals exercise less. This has led researchers to propose the “set-point” theory, which states that we, as humans, have a specific body weight that we are “set” to defend. It is our “natural” weight range that the brain automatically establishes if a person eats when hungry, stops when full, and exercises moderately. This set-point or set range seems to be determined by genetics. When the body weight deviates from the set point, then we experience a physiological and psychological change that tends to push us back to our set point. For example, it is similar to homeostasis in your body. We always attempt to reach the “natural” point. When you get hot, you sweat and may remove clothing and when you are cold you shiver and huddle close. So, therefore, being obese or underweight is biologically set.

3. **Overweight or obese people tend to be more emotionally disturbed than non-obese people.**
   False. The research has shown that while some psychological factors attribute to one’s weight problems, most obese people are not more neurotic or emotionally disturbed than normal weight individuals.

4. **Gaining weight and fat is a natural part of development during puberty for females.**
   True. This is a natural and necessary function of female development. During puberty, normal growth spurts involve the deposition of fat on the buttocks, thighs, lower abdomen, and upper arms for girls. Which differs from boys, who tend to gain weight during puberty in the form of muscle and lean tissue. On average, the fat-to-body weight ration necessary for the onset of menstruation toward the end of puberty is 17%-often menstruation will not take place without sufficient body fat.
5. Other than keeping us warm, fat serves no useful purpose in the human body.
False. Fat is necessary for many purposes. It is a source of nourishment when time has
passed after a meal and your blood sugar levels drop. Fat helps keep our bodies warm. Fat
offers a padding to cushion us during a fall. Fat is necessary for females to become a
mature women. It gives women a rounded, mature shape; contributes to the development
and maintenance of menstruation, and can provide the energy and other resources necessary
for nursing a baby.

(Modified from the Eating Disorder Prevention Intervention Protocol, “Health
Management Training” developed by Allison Chase in 1998)

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<thead>
<tr>
<th>Source(s)</th>
<th>Symptoms</th>
<th>Usual Coping</th>
<th>Healthy Strategy</th>
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<td>#1 Most intense</td>
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<td>stressor</td>
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<td>#2 Intense stressor</td>
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<td>#3 Medium stressor</td>
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<td>#4 Light stressor</td>
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How can I make myself feel better if I'm having a bad body image day?

* Engage in physical activity: play tennis, go for a jog, dance around in my room to one of my favorite songs. I'm so lucky to have a healthy, strong functional body.

* Wear some of my favorite clothes that I feel comfortable in and that make me happy.

* Treat my body: paint my toenails, get a massage, or simply sit down and put my feet up. My body works so hard for me each day and sometimes I forget to appreciate it.

* Mentally list at least three qualities and talents about myself that I am proud of.

* Think of the reasons I like my friends. They probably don't have to do with appearance, and neither are the reasons that my friends like me.

* Make plans with a friend I have been meaning to catch up with, to go for a walk or a cup of coffee.

* Take the step to tackle a long-term project I have been putting off. Whether it's cleaning my room or signing up for pottery classes, there is no better time than right now.

* Think of my favorite body part and focus on why I like it.

* If I'm feeling stressed, try to take a few moments for deep breathing and relaxation. I can do this sitting waiting for class to start or on a bench outside. Inhale deeply through my nose for a count of five, filling my lungs with cool air and positive energy, and then exhale slowly through my mouth.

* When I exercise, think of my bones and muscles getting stronger and the blood circulating throughout my body [rather than focusing on calories and weight loss].

* At meals, eat healthy, colorful foods and think of the energy, vitamins, and nourishment I am fueling my body with.

Reference:  http://dolphin.upenn.edu/~guide/guidelines.html
Guidelines for Healthy Exercising: When Is It Too Much?

Exercise releases stress:
Obsessive exercise can be stressful.
Exercise is time well spent:
Obsessive exercise takes too much time.
Exercise will make you stronger:
Obsessive exercise can wear you out.
Exercise can be social and enjoyable:
Obsessive exercise may isolate you from others.
Exercise can enhance your studies:
Obsessive exercise may keep you from studying.
Exercise can help you feel great:
Obsessive exercise may block you from your feelings.
Exercise will enhance your life:
Obsessive exercise will keep you from really living

APPENDIX C

Promotional Item Messages

**Social Norm Messages**

Majority of OSU women…
*like their physique
*are involved in regular exercise
*never or rarely diet
*try to eat balanced meals
*are satisfied with their appearance
*97% rarely vomit after eating

Majority of your sorority sisters are involved in moderate exercise regularly.

90% of sorority sisters agree diverse body shapes and sizes are attractive.

7 (or 8) out of 10 sorority sisters are not dieting.

**Psychoeducational Messages**

**Pen**

Treat your body with respect…
*Love and accept your body
*Don’t compare yourself with others
*Exercise moderately for fun
*Eat healthy, don’t diet
*Practice regular stress management
*Recognize your positive qualities

**Waterbottle:**

The best methods for weight control are

moderate exercise
healthy eating.

**Stress ball:**

Healthy, attractive people come in all shapes and sizes.

**Highlighter:**

Diets do not work
Healthy eating=balance, variety, and moderation.
Journals:

83% (90%) of your sorority sisters agree there is too much emphasis is placed on appearance

Healthy esteem is giving equal weight to intellect, personality, emotional, spiritual, and physical
APPENDIX D

Poster Messages

**Social Norm Messages**

- **People are a lot like you**
- **90% of your sorority sisters agree that bodies of all shapes and sizes can be attractive.**
- **Most OSU females make healthy choices**
  - Majority rarely or never engage in dieting behavior.
  - 70% try to eat healthy and balanced meals.

**Psychoeducational Messages**

- **Healthy, attractive people come in all shapes and sizes.**
- **Love Your Body**
  - Treat your body with respect and kindness!
- **Moderate exercise**
  - Stress management
  - Healthy eating

**Did You Know?**

- **90% of your sorority sisters agree that the media presents images that are not realistic.**

*Research is supported by: Student Wellness Center, Student Affairs, and Coca-Cola Grants*
*Introduction of speaker, topic, and purpose of study: Thanks for having me. My name is Julie Brennan. I am a Counseling Psychology Graduate Student and will be your group leader. I will be here today for about one hour and next month for about one hour to talk with you about issues relating to body image, media influences, self-esteem, size acceptance, and stress management. These programs will provide you some information, skills, and materials. The purpose of this project is to not only inform you but to also help me understand body image, eating behaviors, and related topics. As was discussed with you previously, this is a voluntary research study that you may choose to participate or not choose to participate. There will be no penalty for not participating. Are there any questions?

* Ground Rules: Before we begin the program, I would just like to go over a few ground rules for the program. First, I will be discussing topics within these next two programs that may fit with your experience at times, and other times maybe do not fit with your experience. What I will ask all of you, is to keep an open mind to what I or others may say in these programs. Keeping an open mind does not mean that you need to agree, but rather being open to hearing new ideas and hearing perspectives of others. Secondly, as we will be dividing into small groups at times, I would like to have a confidentiality
pledge that everyone will keep things that happen within one’s small group and within the large group confidential. This is to allow for a safe place for people to express their feelings and attitudes. Please raise your hand if you will make this pledge. Finally, I ask that you be respectful to others. For no reason should particular names be said out loud about others attitudes and behaviors. Letting everyone speak for themselves will allow everyone a voice if they decide to use it.

*Now that the ground rules of the program have been stated, let’s begin.*

*Remember the survey forms you filled out a couple weeks ago. Today, we are going to go over some of the survey results so we can talk about it. I, along with other researchers, am finding that students are healthier than anyone realized, including the students themselves.

*Now we're going to talk about some interesting information about students and body image and eating disturbances on this campus. As researchers around the country look at students and body image and eating disturbance, we are finding that students have healthier behaviors and attitudes than people think. Across a wide range of behaviors, like appearance dissatisfaction, dieting behaviors, importance of appearance, and others, people overestimate how much college students do or believe these things, and how much people approve of doing these things.  

*The other part is that people underestimate how often people do healthy, positive, helpful things. An example is that actually most people are "cheerful, helpful, friendly" most of the time - but people underestimate that, and see the negative behaviors instead.*
And here on our campus, the same thing is true - students overestimate the negative, and underestimate the positive.

*Norms and Misperceptions: But first we're going to talk about how people are influenced by what they think about other people. Remember the questions on the survey that asked you ‘What do you think your sorority sister thinks or does?’ Those questions are about Perceived Norms and Actual Norms. Norms are the unspoken social rules that we all follow in our public behavior and often in our private beliefs. An example would be personal space. Nobody ever really talks much about it, but people from different cultures are comfortable with different distances between them. (show example by standing 2-3 feet from a student) In this culture, we stand about this far from one another. (get closer - about 1 foot) In other countries, people stand closer. No one ever told you how close to stand to another person, we all just figure it out by watching each other and trying to interpret what people's actions mean without being aware that we're doing it. Another example is public behavior. College students act like college students, they don't act like corporate management, and they don't act like school teachers. No one actually says these rules out loud, we all just kind of figure them out by watching and find ourselves acting like the people we want to be a part of and accepted by.” Ask the group for additional examples.

*Because they are unspoken, norms can often be misperceived. People try to figure out the norms of the groups they want to belong to, and then they act that way. If a person is misperceiving the norms of a certain group, they'll act that way anyway, because they want to be accepted as a part of that valued membership group.
*Media Literacy: How do things get this way? Part of it is the media - what is different from the average run of things is what gets noticed, and what gets written and talked about in the newspapers and on TV. Think of the example of serial killers. The FBI estimates there are anywhere from 60 - 90 serial killers at large at any given time, and there are over 3 hundred million Americans. That tiny number of killers is not even close to one hundredth of a percent of the population, and yet that is what gets written about and talked about.

*Another part of it is probably our biological heritage. We seem to be "hardwired" to notice differences from the pattern - not the pattern itself. Imagine that you are walking in a park and there are squirrels all over. You don’t take much notice of them but as you continue to walk you see an albino, all white squirrel. You notice this white squirrel because it is different not because it is alike the other squirrels.

*Another example is the OSU ‘riot’ or ‘campus disturbance’ this past football season. Maybe a hundred or so of OSU students took part in that disturbance. That means there were approximately 50,000 students who didn't ‘riot.’ But who got talked about in the news? The small minority who made trouble - who were the problem - instead of the 50,000 who didn't cause any problems and are the responsible, "cheerful, helpful, friendly" majority who don't get noticed and don't get any attention. That's backwards, isn't it - paying attention to the problem and ignoring the solution.”

*Misperceived Norms: Even if misperceived norms are incorrect, people think they are true and talk as if they are true. Students overestimate how much other students drink, and how much other students approve of drinking. That is true all over the country, for all
ages of students (and non-students), for a wide variety of behaviors, such as eating disorders, cigarette smoking, sexual activity, and so on. And it's true at OSU.

*So here we are, at OSU in 2003, and what we are noticing is the differences from the pattern, not the normal background or the pattern itself. Think about this - you're at a party with a hundred people. Of those hundred people, probably about 15 are not drinking at all. About 50 are drinking, but not a lot, they're just having a few beers. Another 25 or so are drinking a bit more than that, but still not a huge amount. Then there are the 10 or so people who are really throwing down the beer and maybe a few shots as well - they're really drunk. A couple of them are undressing each other over in the corner, one guy is passed out on the floor in the middle of the room and people are using him for a table, a couple more are getting in a fight and starting to punch on each other, one is throwing up on the front porch and another is urinating off the balcony.

What do you notice? What do you talk about the next day?

*You're not going to say ‘Boy, I was at this great party last night - people were having a great time, hardly anybody was smashed, everybody was polite and friendly, and we all really enjoyed ourselves without causing any problems for ourselves or for anybody else.’ No, what you're going to say is, ‘You should have been there - this one guy was passed out in the middle of the dance floor, these people were hooking up in the corner, there was a huge fight and people were throwing up all over the place!’ Right?

*Another example is when you might go to Larkins to work out. There are many men and women there of different sizes and shapes. You will not pay much attention to the
average body size but probably will pay attention to the thinnest (and most likely unhealthy woman) there.

*OK, that's how the misperceptions get going and how they keep going. People notice what's different, everybody talks about that, and pretty soon that's what looks common and normal.

*Comparing Perceptions to Reality: In this presentation we're going to be looking at misperceptions about body image and eating behaviors for women at OSU and in your sorority. We will be showing you what the actual beliefs and behaviors really are. All the questions from your own surveys have been analyzed and we're going to show you what our numbers look like. Also, in the spring quarter of 2001, we collected data from females with a campus-wide survey using similar questions your chapter just answered. We're going to show you that information also, along with the data from your own chapter. That way we can compare our own answers with those of other students on campus and see what your chapter looks like. Also, while we show you the data, try to remember your own personal answers to the questions, and see how you compare."

*Just to reassure you, the chapter-specific data is strictly CONFIDENTIAL. ONLY you are seeing data that comes from their own chapter - this data is not shared with any other groups and is used by the research team only as group data with number code identification.

*“When we looked at the OSU campus data, and your chapter's data, we found a very interesting fact: At OSU,
MOST INDIVIDUALS THINK EVERYBODY ELSE IS DOING MORE NEGATIVE BEHAVIORS AND HAVE MORE NEGATIVE ATTITUDES THAN THERE ACTUALLY ARE.”

*Now, please talk with your small groups about the following questions:

- What does this mean?
- Do you think you might misperceive others' body image and eating behaviors?
- Do you think your chapter might misperceive others' behavior?

*Before, we begin going into the actual data, I would like to first answer a few frequently asked questions that arise from the social norms theory. Go over Frequently Asked Question Handout).

*Now, we are going to show you data that talks about both beliefs (perceptions or estimates) and behaviors (what people report they actually do) from your sorority. The information starts with your own chapter, and then moves to the campus as a whole. We'll be talking about both of these in terms of both beliefs (attitudes) and behaviors. When you are discussing these within your group, assign one person to jot down some summary ideas at the end of the entire exercise to be shared with the larger group.

*Your Chapter Believes (Attitudes): OK, here's what you estimated your chapter's attitudes were like.

*The following script is for all of the statements that will be overviewed with perceived versus actual data. Each statement should be discussed for approximately 5 minutes.
“After revealing each of these statements and the perception, the small groups will discuss these questions:

- Do you think your guess was accurate?
- Did you guess too conservative? Too liberal?

After this discussion, the actual percentage will be revealed. Following this, the small groups will discuss these questions:

- What do you think about this? What does it mean that you overestimated?
- Did you think people were actually so conservative or moderate?”
- Why would people think others are so much more liberal than they actually are?
- Does this surprise you?
- Were the figures what you thought they would be?
- Looking at this, what conclusions might you draw?
- Knowing that (___% of your sorority sisters do or believe _________), what are some things your sorority can do to support these beliefs or actions. ***Spend at least 2 minutes on
- Does someone have a different opinion.

*Here are the individual statements

1. I am “on a restricted diet” to try to lose weight.

   * Perception: You estimated on average that 31-40% of your sorority sisters were on a diet.
* Actual: Only 20% of your sorority sisters are on a diet. 80% of your sorority sisters are not on a diet.

2. The best methods of weight control are moderated exercise coupled with eating three or more balanced meals and snacks a day.

* Perception: You estimated on average that 51-60% of your sorority sisters would agree with this statement.

* Actual: Actually, 92% of your sorority sisters agreed with this statement.

3. I think too much emphasis is placed on physical appearance today.

* Perception: You estimated on average that 61-70% of your sorority sisters would agree with this statement.

* Actual: Actually, 83% of your sorority sisters agree with this statement.

4. Overall, I am satisfied with my appearance.

* Perception: You estimated on average that 41-50% of your sorority sisters would agree with this statement.

* Actual: Actually, 69% of your sorority sisters agreed with this statement

*Conclusion of the Program: Now, each group will share a brief summary of their reactions or conclusions to the awareness of these misperceptions. (Each group shares.)

Briefly summarize what groups stated. We will continue our discussion about this within our next program. If you have any additional questions, please feel free to ask them to me now or speak to me after. I look forward to our next time together on (DATE).
Session II Social Norms:

*Introduction: It is nice to back with you today. I wanted to check in with you to see if anyone had any thoughts or questions from our last program. (Answer questions, or move on if nobody has questions.)

*Now we are going to pick up where we left out last time and continue exploring our misperceptions. After looking at a few more statements, we then will briefly examine how your data compares to results from a representative sample of all OSU women. Lastly, today we are going to review some things that we have learned and see how this chapter can continue to promote one’s own healthy body image attitudes and eating behaviors.

*The first statement we will discuss is body shapes of all sizes and shapes can be attractive. When you are discussing these within your group, assign one person to jot down some summary ideas at the end of the entire exercise to be shared with the larger group. Follow the following script for each statement (like session 1).

Script: “After revealing each of these statements and the perception, the small groups will discuss these questions (5 minutes each):

- Do you think your guess was accurate?
- Did you guess too conservative? Too liberal?

*After this discussion, the actual percentage will be revealed. Following this, the small groups will discuss these questions:

- What do you think about this? What does it mean that you overestimated?
- Did you think people were actually so conservative or moderate?”
• Why would people think others are so much more liberal than they actually are?
• Does this surprise you?
• Were the figures what you thought they would be?
• Knowing that (___% of your sorority sisters do or believe __________), what are some things your sorority can do to support these beliefs or actions.

***Spend at least 2 minutes on
• Does somebody have a different opinion?

1. Body shapes of all sizes and shapes can be attractive.
   * Perception: You estimated on average that 61-70% of your sorority sisters would agree with this statement.
   * Actual: Actually, 91% of your sorority sisters agreed with this statement.

2. I practice healthy stress management techniques regularly
   * Perception: You estimated on average that 31-40% of your sorority sisters would agree with this statement.
   * Actual: Actually, 54% of your sorority sisters agreed with this statement.

3. I can like my looks without changing them
   * Perception: You estimated on average that 51-60% of your sorority sisters would agree with this statement.
   * Actual: Actually, 72% of your sorority sisters agreed with this statement.

4. Eating too little can be harmful to your mental and physical health.
   * Perception: You estimated on average that 61-70% of your sorority sisters
would agree with this statement.

*Actual: Actually, 97% of your sorority sisters agreed with this statement.

*Now, again we will ask your group to summarize any significant thoughts or ideas that came about from learning these misperceptions. (Allow each group to briefly summarize).

*Let’s now look at some data that was gathered from a representative sample of all OSU women. (Facilitate this in a large group.)

1.) I make no special effort to eat a balanced and nutritious diet.

   How many women would you say disagree with this?

   * Actual: 70% disagree, 70% make a special effort to eat in a healthy manner.

2.) I am physically attractive.

   How many women would you say agree with this?

   *Actual: 70%, 70% report being physically attractive

3.) I am on a weight-loss diet.

   How many women would you say agreed?

   *Actual: 20%, Majority are not on a weight-loss diet

   How many women do you think vomit after eating?

   *Actual: 97% never or rarely vomit after eating.

   *What have we learned? Now that we've looked at what female students actually think and do, instead of our misperceptions of what they think and do, it appears that you all have a lot healthier attitudes and behaviors than you may have thought. Most students make responsible healthy choices, even if we don't realize that. What do you
think it might mean to you in the future to know that the majority of your sorority students and OSU females students make many healthy choices related to body image attitudes and eating behaviors? Please discuss in your small groups, final reactions and continued ways to promote your own and other’s healthy behaviors and attitudes.

*Bring group back together. Summarize what they learned from today and discuss ways to promote their own healthy behaviors and attitudes.

*Answer any remaining questions. Thank the group for their participation. Remind them of the second presentation and data collection on (DATE).
## APPENDIX F

### Social Norm Handouts

| Everybody thinks everybody else does more of everything than they actually do. |
| We tend to overestimate how much other people do unhealthy things and underestimate how often people do healthy things. |

### Norms and Misperceptions

| Norm: an unspoken social rule or code about how people are supposed to behave or what they are supposed to believe. |
| Norms influence our behavior. |
| People have to infer what norms are. Norms are not explicitly taught or explained. |
| As a result, people misperceive what the norms are. |
| Misperceived norms are as powerful as actual norms in influencing behavior. |

### Media Literacy

| What does ‘NEWS’ mean? |
| We notice the “difference” not the pattern. |
| “Out of the Ordinary” gets the attention. |
| Focusing on the unusual makes it appear usual. |
| Not-Normal behavior looks like the Norm. |

### Misperceived Norms

| A misperceived norm will be perpetuated if most people believe most other people think it is true. Ex: OSU is a party school. |
| Even if you don’t personally agree with the misperceived norm, if you think everyone else does that’s enough to perpetuate the misperception (for you and for others). |
| When most people think unhealthy behavior is the norm, that allows the unhealthy behavior to go unchallenged. |

### Comparing Perceptions to Reality

| The body image and eating behavior survey you completed provided us with what your estimated norms are for body image and eating related behaviors among your chapter. |
| This presentation will compare your chapter’s estimates (i.e. perceptions) with the actual behaviors and attitudes of your sorority sisters. |

### Collecting Data on Actual Behaviors of your chapter and OSU

| You reported how much you engage in certain behaviors and attitudes and so did other students. |
| This provided the data for the actual norms for your chapter. |
| A campus wide mailed random sample survey provided information about actual norms for the campus. |
I think too much emphasis is placed on physical appearance today.

The best methods of weight control are moderate exercise coupled with eating three or more balanced meals and snacks a day.

I am “on a restricted diet” to try to lose weight.

Your chapter’s perceived percentages:

<table>
<thead>
<tr>
<th>Your chapter’s actual behaviors and attitudes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am “on a restricted diet” to try to lose weight.</td>
</tr>
<tr>
<td>The best methods of weight control are moderate exercise coupled with eating three or more balanced meals and snacks a day.</td>
</tr>
<tr>
<td>I think too much emphasis is placed on physical appearance today.</td>
</tr>
</tbody>
</table>

I practice healthy stress management techniques regularly.

Body shapes of all sizes and shapes can be attractive.

Overall, I am satisfied with my appearance.

OSU females actually believe:

<table>
<thead>
<tr>
<th>OSU females actually believe:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I make a special effort to eat a balanced and nutritious diet.</td>
</tr>
<tr>
<td>I am physically attractive.</td>
</tr>
<tr>
<td>I am not on a weight loss diet.</td>
</tr>
<tr>
<td>I do not vomit after eating.</td>
</tr>
</tbody>
</table>

WHAT HAVE WE LEARNED?

Students are making healthier choices than we realize.

Jot down own notes and ideas from discussion:
Hello and thanks for allowing us to come today. We are here to tell you about a study in which you have the opportunity to participate. The study’s purpose is to not only provide you with knowledge and skills in areas regarding body image, but also to help us learn about body image, eating behaviors, and related topics.

The study will take approximately three hours of your time within the next twelve weeks. This 3-hours includes a total of four meetings. First, today would involve completing some body image related questionnaires, which will take approximately 30 minutes. Secondly, there will be two 1-hour programs that will provide you information, skills, and the opportunity for discussion related to body image. These will occur immediately before or after a chapter meeting. The dates and times for these programs are (insert date and time). Lastly, there will be an evaluation of the program and the completion of some body image related questionnaires following these programs. This will take approximately 30 minutes. The date for this will be (insert date and time). Overall, the study will take approximately three hours within the next three months.

If you agree to participate in the study, you will receive a folder with body image, self-esteem, media literacy, and stress management related handouts. You will also receive promotional items such as stress balls, journals, and pens. For compensation for you and your sorority’s time, we will be giving two hundred dollars to your sorority.

I want to assure you that your data will be kept confidential. At no time will any identifying data be linked to any of your answers on the questionnaires you fill out. The programs will be audiotaped in order to ensure consistent and uniform presentation. The audiotapes will be only reviewed by the research team and will not identify any individual. All of participants’ comments will be kept confidential. Lastly, the confidentiality of the sorority will also be ensured.

Remember that your participation today is entirely voluntary. If at any point you choose not to continue your participation you are free to leave, and there will be no penalty. Are there any questions about the study or your participation?

For those of you who would like to participate in the study, please fill out both of the consent forms that we are handing out. There are two copies. One copy is for you to
keep and the other copy you can turn in to us. As soon as you turn in your consent forms, we will continue with the study. If you choose not to participate in the study, you are excused to leave.

We will be passing out the questionnaires related to your attitudes and behaviors. To ensure privacy, please find a space that is at least three feet from another individual. (Questionnaires will not be passed out until participants are properly spaced.) Although you may choose not to respond to any particular question, please respond as honestly as possible to those you complete. You will not be asked to provide your name or any other identifying information, on the questionnaire so we cannot link your answers to you.

When you complete the questionnaires, please put them in the envelope provided and bring them to the front of the room. I will providing you an information sheet listing resources and names if you would like to further pursue matters related to this research or would like more general counseling assistance. I will also provide you a list of the other dates for the other parts of this study. Thank you in advance for your participation.

Post-test Data Script

Hello. I want to begin by thanking all of you for participating in this research for the past six weeks. Today will be the last day we will be asking of your time and today’s evaluation should take approximately 30 minutes. Before I pass out the evaluation and assessments, I want to remind you of a few things. First, I want to assure you that your data will be kept confidential. At no time will any identifying data be linked to any of your answers on the questionnaires and evaluations you fill out. Your name is coded with a number strictly for the purposes of putting your two evaluations together but at no time will your answers be linked with your name.

Also, I want to remind you that your participation today is voluntary. If at any point you choose not to continue your participation you are free to leave, and there will be no penalty. Lastly, to ensure privacy, please find a space that is at least three feet from another individual and put the folder up to protect your privacy. Although you may choose not to respond to any particular question, please respond as honestly as possible to those you complete. Additionally, some of you may not have attended all or any of the one-hour workshops (program). Just indicate on the evaluation, as requested, how many workshops you attended and fill out the evaluation from the perspective of what you attended.
When you complete the questionnaires, please put them in the envelope provided and bring them up to the front of the room. I will be providing you with a debriefing sheet listing resources and names if you would like to further pursue matters related to this research. Thanks for your cooperation.

Start handing out the assessments with number one’s name.
CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL RESEARCH

Protocol number: 2003B0050

Principal Investigator: Dr. Don Dell

I consent to my participation in research being conducted by Dr. Don Dell and Julie Brennan (co-investigator) of The Ohio State University and his/her assistants and associates.

The investigator(s) has explained orally the purpose of the study, the procedures that will be followed, and the amount of time it will take. I understand the possible benefits of my participation. No guarantees have been made regarding the effectiveness of this intervention.

I know that I can choose not to participate without penalty to me. If I agree to participate, I can withdraw from the study at any time, and there will be no penalty.

I consent to the use of audiotapes. I understand how the tapes will be used for this study.

I have had a chance to ask questions and to obtain answers to my questions. I can contact the investigators at 688-8287. If I have questions about my rights as a research participant, I can call the Office of Responsible Research Practices at (614) 688-4792.

I have read this form or I have had it read to me. I sign it freely and voluntarily. A copy has been given to me.
Print the name of the participant:

______________________________________________________

Date:_____________________________________________________

Signed:_____________________________________________________

(Participant)

Signed:_____________________________________________________

(Principal Investigator or his/her authorized representative)

Signed:_____________________________________________________

(Person authorized to consent for participant, if required)

Resource List
(this was printed on department letterhead)

Thanks for participating in the study. If during the course of this research, you develop concerns or uncertainties about your feelings or about yourself, or if you feel any type of distress related to your responses, you may wish to seek counseling. If you wish to do this, you might be able to find counseling in Townshend Hall at the Psychological Services Center (please call Dr. Pam Highlen at 292-5308). In addition, The Ohio State University Counseling and Consultation services offers counseling and is open eight hours a day for appointments, and, if needed, on an emergency basis. If you need these services please call 292-5766. If you have any other questions about this study or would like additional counseling referrals, please contact Dr. Don Dell at 688-8287 (dell.1@osu.edu) or co-investigator, Julie Brennan at 292-4527 (brennan.76@osu.edu).

Again, thank you for assisting us with this research.
APPENDIX I

Debriefing Sheet Given to Research Participants

(*Note: This form was printed on departmental letterhead)

Dear Students:

Thanks you for agreeing to participate in our study. If in the course of this study, you developed concerns or uncertainties about your feelings or about yourself, or if you feel any type of distress related to your responses, you may wish to seek counseling. If you wish to do this, you might be able to find counseling in Townshend Hall at the Psychological Services Center (please call Dr. Pam Highlen at 292-5308). In addition, The Ohio State University Counseling and Consultation services offers counseling and is open eight hours a day for appointments, and, if needed, on an emergency basis. If you need these services please call 292-5766. If you have any other questions about this study or would like additional counseling referrals, please contact Dr. Don Dell at 6898-8287 or dell.1@osu.edu.

Again, thank you for assisting us with this research.
APPENDIX J

EAT-26

Directions: Please respond to the following items regarding how often you engage in these behaviors or attitudes using this scale:

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Am terrified about being overweight
2. Avoid eating when I am hungry
3. Find myself preoccupied with food
4. Have gone on eating binges where I feel I may not be able to stop
5. Cut my food into small pieces
6. Aware of the caloric content of the foods I eat
7. Particularly avoid food with a high carbohydrate content (rice, potatoes, bread)
8. Feel that others would prefer if I ate more
9. Vomit after I have eaten
10. Feel extremely guilty after eating
11. Am preoccupied with a desire to be thinner
12. Think about burning up calories when I exercise
13. Other people think I am too thin
14. Am preoccupied with the thought of having fat on my body
15. Take longer than others to eat my meals
16. Avoid foods with sugar in them
17. Eat diet foods
18. Feel that food controls my life
19. Display self-control around food
20. Feel that others pressure me to eat
21. Give too much time and thought to food
22. Feel uncomfortable after eating sweets
23. Engage in dieting behavior
24. Like my stomach to be empty
25. Have the impulse to vomit after meals
**SNQI**

Directions: Please choose the best answer to the questions about your own attitudes and behaviors using the following scale:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

1. _______ I would like to be thinner.
2. _______ I am “on a restricted diet” to try to lose weight.
3. _______ I use laxatives, diet pills, vomiting, fasting, or excessive exercise to lose weight.
4. _______ I would like to talk more about weight, weight loss, and dieting with my friends.
5. _______ It is important to me that my friends are thin.
6. _______ The best methods of weight control are moderated exercise coupled with eating three or more balanced meals and snacks a day.
7. _______ I would diet, fast, or use other methods to be thinner and get attention from my peers.
8. _______ I think too much emphasis is placed on physical appearance today.
9. _______ Overall, I am satisfied with my appearance.
10. _______ Body shapes of all sizes and shapes can be attractive.
11. _______ Appearance guarantees happiness.
12. _______ I want to be liked for more than my appearance.
13. _______ I would change my appearance to fit in.
14. _______ “Fat jokes” offend me.
15. _______ I have spoken out against a fat joke.
16. _______ Diets do not work.
17. _______ Media images are not realistic.
18. _______ I practice healthy stress management techniques regularly (meditation, muscle relaxation, yoga, deep breathing, exercise, taking baths, etc…)
19. _______ I can like my looks without changing them.
20. _______ Eating too little can be harmful to your mental and physical health.
MBSRQ-AE/BAS

Directions: Use this 1 to 5 scale to indicate how dissatisfied or satisfied you are with your appearance.

1                        2                      3                     4                        5
Definitely    Mostly     Neither     Mostly     Definitely
Disagree      Disagree   Agree Nor   Agree     Agree

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

Directions: Use this 1 to 5 scale to indicate how dissatisfied or satisfied you are with your appearance.

1                        2                      3                     4                        5
Very        Mostly      Neither    Mostly       Very
Dissatisfied  Dissatisfied  Satisfied or  Satisfied     Satisfied

_____ 1. Face (facial features, complexion)
_____ 2. Hair (color, thickness, texture)
_____ 3. Lower torso (buttocks, hips, thighs, legs)
_____ 4. Mid torso (waist, stomach)
_____ 5. Upper torso (chest or breasts, shoulders, arms)
_____ 6. Muscle tone
_____ 7. Weight
_____ 8. Height
_____ 9. Overall appearance
Directions: Please read each of the following items and indicate the number that best reflects your agreement with the statement using this scale

<table>
<thead>
<tr>
<th>Completely disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Completely agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I would like my body to look like the women who appear in TV shows and movies.
2. I believe that clothes look better on women that are in good physical shape.
3. Music videos that show women who are in good physical shape make me wish that I were in better physical shape.
4. I do not wish to look like the female models who appear in magazines.
5. I tend to compare my body to TV and movie stars.
6. Photographs of physically fit women make me wish that I had a better muscle tone.
7. I wish I looked like the women pictured in magazines whom model underwear.
8. I often read magazines and compare my appearance to the female models.
9. How I think I look does not affect my mood in social situations.
10. I often find myself comparing my physique to that of athletes pictured in magazines.
11. I do not compare my appearance to people I consider very attractive.
**RSE**

Directions: Please indicate the extent to which you agree with the following statements as they pertain to you.

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

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

**PSPS**

Directions: Use the following scale, please indicate the response that best captures your own experience.

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. I’ve felt pressure from my friends to lose weight.  
2. I’ve noticed a strong message from my friends to have a thin body.  
3. I’ve felt pressure from my family to lose weight.  
4. I’ve noticed a strong message from my family to have a thin body.  
5. I’ve felt pressure from people I’ve dated to lose weight.  
6. I’ve noticed a strong message from the media to have a thin body.
Directions: Read each question carefully and choose the best percentage estimate of women in your sorority that would agree with these statements. Please use the numbers 0-10 to represent your best percentage estimate.

<table>
<thead>
<tr>
<th>Number</th>
<th>Percentage Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>1-10%</td>
</tr>
<tr>
<td>2</td>
<td>11-20%</td>
</tr>
<tr>
<td>3</td>
<td>21-30%</td>
</tr>
<tr>
<td>4</td>
<td>31-40%</td>
</tr>
<tr>
<td>5</td>
<td>41-50%</td>
</tr>
<tr>
<td>6</td>
<td>51-60%</td>
</tr>
<tr>
<td>7</td>
<td>61-70%</td>
</tr>
<tr>
<td>8</td>
<td>71-80%</td>
</tr>
<tr>
<td>9</td>
<td>81-90%</td>
</tr>
<tr>
<td>10</td>
<td>91-100</td>
</tr>
</tbody>
</table>

1. _______ I would like to be thinner.
2. _______ I am “on a restricted diet” to try to lose weight.
3. _______ I use laxatives, diet pills, vomiting, fasting, or excessive exercise to lose weight.
4. _______ I would like to talk more about weight, weight loss, and dieting with my friends.
5. _______ It is important to me that my friends are thin.
6. _______ The best methods of weight control are moderated exercise coupled with eating three or more balanced meals and snacks a day.
7. _______ I would diet, fast, or use other methods to be thinner and get attention from my peers.
8. _______ I think too much emphasis is placed on physical appearance today.
9. _______ Overall, I am satisfied with my appearance.
10. _______ Body shapes of all sizes and shapes can be attractive.
11. _______ Appearance guarantees happiness.
12. _______ I want to be liked for more than my appearance.
13. _______ I would change my appearance to fit in.
14. _______ “Fat jokes” offend me.
15. _______ I have spoken out against a fat joke.
16. _______ Diets do not work.
17. _______ Media images are not realistic.
18. _______ I practice healthy stress management techniques regularly.
    (meditation, muscle relaxation, yoga, deep breathing, exercise, taking baths, etc.)
19. _______ I can like my looks without changing them.
20. _______ Eating too little can be harmful to your mental and physical health.
Demographic Questionnaire

Age: _____________

Year in College: (Please circle according to your academic status)
Freshman    Sophomore    Junior    Senior    5th Year

Race/Ethnicity:  Caucasian/White
(Please circle)  African-American/Black
Hispanic/Latino/Mexican-American
American Indian
Asian American/Pacific Islander
Bi-racial
Other: ________________

Living Situation:
Sorority House   With roommate(s)   Alone

Sexual Orientation:  Heterosexual   Lesbian   Bisexual   Transsexual

Present height: ___________ feet ___________ inches

Present weight: ___________ pounds

My body frame is:  small   medium   large
(Please circle)

I consider myself to be:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>Moderately</td>
<td>Overweight</td>
<td>Normal</td>
<td>Under-Weight</td>
<td>Severely Underweight</td>
</tr>
</tbody>
</table>

Severely Obese   Moderately Obese   Overweight   Normal   Underweight   Severely Underweight

I would like to weigh ___________ pounds
Please circle the sentence that best describes you:
1. I am not currently modifying my eating habits and am not thinking of doing so in the next six months.
2. I am not currently modifying my eating habits but I have thought about dietary changes to do so.
3. I am not currently modifying my eating habits but I plan to do so within the next month.
4. I am currently modifying my eating habits but have only been doing so for the past six months.
5. I am currently maintaining a change in my eating habits and have been doing so for 7 or more months.

Please circle the sentence that best describes you.
1. I am currently not physically active, and do not intend to start being physically active in the next six months.
2. I am currently not physically active, but I am thinking about being physically active in the next six months.
3. I am currently not physically active, but not on a regular basis.
4. I am currently physically active regularly, but only have begun doing so within the last six months.
5. I am currently physically active regularly, and have done so for longer than six months.
APPENDIX K

Program Evaluation

1. Have you been to any similar workshops, programs, or presentations since you have been at The Ohio State University? Yes No
   If yes, please describe the topic, time length, and how long ago was the program(s)

2. How would you rate the overall evaluation of the program?
   Excellent Good Fair Poor

3. How would you rate the effectiveness of this program on…..
   a. Increasing your knowledge of body image 1 2 3 4
   b. Increasing your knowledge of media literacy 1 2 3 4
   c. Increasing your knowledge of stress management and coping strategies 1 2 3 4
   d. Improving your attitudes about your body 1 2 3 4
   e. Improving your eating habits and behaviors 1 2 3 4
   f. Improving your ability to be a critical viewer of the media 1 2 3 4
   g. Improving your ability to cope with stress 1 2 3 4

4. What was the most helpful or beneficial part of the program?

5. What was the least helpful or least beneficial part of the program?

6. What would you have liked to have been addressed in the program that was not addressed?
7. What other suggestions or feedback do you have about this program or other ideas for programs such as this one? ____________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Message Evaluation

How many of the programs did you attend?  None       One       Two

(Participants answered each of the following questions for each of the five posters.)

2. How often did you see this poster?
   A few times a day   Once a day   A few times a week   Once every week
   Less than once a week

3. What message do you think the poster was trying to convey?
   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________

4. How effective was the poster in conveying this message?
   Very Effective   Effective   Ineffective   Very Ineffective

5. What, if anything, would have made the poster or the message more effective?
   ____________________________________________________________________________
   ____________________________________________________________________________
APPENDIX L

Social Norm Messages-Feedback Form

All OSU females:
1. 70% of OSU females find themselves attractive.
2. Majority of OSU females report being satisfied with their overall appearance.
3. Majority of OSU women report rarely engaging in dieting behaviors.
4. 97% of OSU women rarely or never vomit after eating.
5. Majority of OSU females involved in regular exercise program.
6. Majority of OSU students engage in movement to keep fit.
7. 70% of OSU women attempt to eat a balanced and nutritious diet.

MESSAGE RATINGS:
Most eye-catching:___________________
Most believable:_____________________
Most useful:________________________
Best over-all:_______________________
Worst over-all:_____________________ 

Sorority Women:
1. 77% of sorority sisters agree happiness relies on more than appearance.
2. 83% of sorority sisters think too much emphasis is placed on physical appearance today.
3. 94% of sorority sisters state that friendship is not based on appearance (how to state positively?)
4. 69% of sorority sisters are satisfied with their appearance.
5. 91% of sorority sisters agree that bodies of all shapes and sizes can be attractive.
6. 97% of sorority sisters agree eating too little is harmful to your health.
8. 97% of sorority sisters would like to be liked for more than their appearance.
9. 92% of sorority sisters agree that the best methods of weight control are moderate exercise combined with at least 3 balanced meals.
10. 80% of sorority sisters not on a restricted diet to lose weight (how to say positively?)
11. 92% of sorority sisters rarely vomit after eating (how to say positively?)
12. 86% of sorority sisters agree that media images are not realistic.
MESSAGE RATINGS:
    Most eye-catching:___________________
    Most believable:_____________________
    Most useful:________________________
    Best over-all:_______________________
    Worst over-all:_______________________
## APPENDIX M

*Item analysis results from paired samples t-test*

### Social Norm Group

<table>
<thead>
<tr>
<th>EAT</th>
<th>BAS</th>
<th>SNQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Items that changed in the positive directions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* I am terrified about being overweight.</td>
<td></td>
<td>* Overall, I am satisfied with my appearance.</td>
</tr>
<tr>
<td>$(t=2.31, \ df=24, \ p=.03)$</td>
<td></td>
<td>$(t=2.28, \ df=24, \ p=.03)$</td>
</tr>
<tr>
<td>* I cut my food into smaller pieces.</td>
<td></td>
<td>* Media images are not realistic.</td>
</tr>
<tr>
<td>$(t=2.24, \ df=24, \ p=.034)$</td>
<td></td>
<td>$(t=2.59, \ df=24, \ p=.02)$</td>
</tr>
<tr>
<td><strong>Items that changed in the negative directions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*I feel that others would prefer that I ate more.</td>
<td></td>
<td>* I practice healthy stress management techniques regularly.</td>
</tr>
<tr>
<td>$(t=-2.32, \ df=24, \ p=.029)$</td>
<td></td>
<td>$(t=-3.09, \ df=24, \ p=.01)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* I can like my looks without changing them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$(t=-2.59, \ df=24, \ p=.02)$</td>
</tr>
</tbody>
</table>
### Combined Group

<table>
<thead>
<tr>
<th></th>
<th>EAT</th>
<th>BAS</th>
<th>SNQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>**Items that</td>
<td>* I am terrified about being overweight.</td>
<td>* Satisfaction with weight</td>
<td>* I can like my looks without changing them.</td>
</tr>
<tr>
<td>changed in the</td>
<td>(t=2.54, df=23, p=.02)</td>
<td>(t=-2.07, df=23, p=.05)</td>
<td>(t=-1.81, df=23, p=.01)</td>
</tr>
<tr>
<td>positive</td>
<td>* I find myself preoccupied with food.</td>
<td>* Satisfaction with overall appearance</td>
<td></td>
</tr>
<tr>
<td>directions</td>
<td>(r=3.16, df=23, p=.005)</td>
<td>(r=-2.30, df=23, p=.03)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* I have gone on eating binges.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(r=2.58, df=23, p=.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* I cut my food into small pieces.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(r=2.30, df=23, p=.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* I am preoccupied with a desire to become thinner.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(r=2.58, df=23, p=.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* I am preoccupied with having fat on my body.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(r=2.32, df=23, p=.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* I feel uncomfortable after eating sweets.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(t=2.10, df=23, p&lt;.05)</td>
<td></td>
<td></td>
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<tr>
<td>**Items that</td>
<td>No significant changes</td>
<td>No significant changes</td>
<td>No significant changes</td>
</tr>
<tr>
<td>changed in the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>negative</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>directions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Psychoeducational Group

<table>
<thead>
<tr>
<th>EAT</th>
<th>BAS</th>
<th>SNQ</th>
</tr>
</thead>
</table>
| **Items that changed in the positive directions** | * I think about burning calories when I exercise.  
  \( t=3.5, \text{df}=14, p=.004 \)  
* Take longer than others to eat my meals.  
  \( t=3.23, \text{df}=14, p=.006 \)  
* Have the impulse to vomit after meals  
  \( t=2.65, \text{df}=14, p=.02 \)  
No significant changes | No significant changes | No significant changes |
| **Items that changed in the negative directions** | No significant changes | No significant changes | No significant changes |

### Control Group

<table>
<thead>
<tr>
<th>EAT</th>
<th>BAS</th>
<th>SNQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Items that changed in the positive directions</strong></td>
<td>No significant changes</td>
<td>No significant changes</td>
</tr>
</tbody>
</table>
| **Items that changed in the negative directions** | * Cut my food into small pieces  
  \( t=-2.83, \text{df}=20, p=.01 \)  
* Take longer than others to eat my meals.  
  \( t=-2.26, \text{df}=20, p=.04 \)  
* Feel that others pressure me to eat  
  \( t=-2.23, \text{df}=20, p=.04 \)  
No significant changes. | No significant changes. | No significant changes |