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Implementation and evaluation of group-based prevention of eating concerns using self-efficacy and knowledge enhancement

Lindsey Erin LaPlant

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Implementation and evaluation of group-based prevention of eating concerns using self-efficacy and knowledge enhancement

Abstract
The project implemented and evaluated a prevention program for eating concerns with first year college women. Two prevention conditions were examined. One condition provided information about eating concerns, from definitions to biopsychosocial risks and consequences. The second condition built self-efficacy and skills in the participants along with presenting information. The evaluation component was unique compared to other evaluations in the eating concerns prevention literature. It used pre and post intervention assessments, a control group, and had a larger sample of participants compared to other similar published programs. Both quantitative and qualitative assessment techniques were used to evaluate participants' experience in the program and their outcomes. It appeared that using self-efficacy as a means for prevention of eating concerns was effective, though results were mixed. Methodological and sampling issues limited the internal and external validity of the results from the evaluation of the new prevention program. Future research should address these limitations, as well as extend the program to samples beyond the college population, modify the components and structure of the program, and explore how self-efficacy may fit into a larger theoretical framework to explain and prevent eating concerns at both ends of the weight continuum.

Keywords
Psychology, Social

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IMPLEMENTATION AND EVALUATION OF GROUP-BASED PREVENTION OF EATING CONCERNS USING SELF-EFFICACY AND KNOWLEDGE ENHANCEMENT

BY

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DISSERTATION

Submitted to the University of New Hampshire in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
In
Psychology

May, 2002
This dissertation has been examined and approved.

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5-5-02

date
DEDICATION

**Lucas:** Thank you is not enough. Your support as a partner has meant the world to me, from your steadfast love, your honest criticism and your skill at being a sounding board for ideas, and your willingness to share in all of our daily tasks, including parenting. Te amo.

**Logan:** You can’t even say my name yet, but your presence as I worked on this project has been a saving grace. Learning to be a mother to you has been difficult, but your smile has made even the most trying days of data collection and analysis better.

**Mom & Dad:** I would have never made it to graduate school without your support, which has come in so many forms. Even beyond this life you have continued to support me, Mom. I only wish that you could be here to share in my success, for it surely would not have come without you. Dad, I know you aren’t always a man of many words, but you have done so much to help me reach my educational goals. I can still remember you teaching me trigonometry as a small girl. Thank you for your faith in my abilities.

**Meg:** Thank you for always listening to my ideas, offering your sound advice and criticisms, and your love and acceptance. Your fresh and unique perspective has helped me as I crafted this and my master’s project.
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ABSTRACT

IMPLEMENTATION AND EVALUATION OF GROUP-BASED PREVENTION OF EATING CONCERNS USING SELF-EFFICACY AND KNOWLEDGE ENHANCEMENT

By

Lindsey E. LaPlant

University of New Hampshire, May, 2002

The project implemented and evaluated a prevention program for eating concerns with first year college women. Two prevention conditions were examined. One condition provided information about eating concerns, from definitions to biopsychosocial risks and consequences. The second condition built self-efficacy and skills in the participants along with presenting information. The evaluation component was unique compared to other evaluations in the eating concerns prevention literature. It used pre and post intervention assessments, a control group, and had a larger sample of participants compared to other similar published programs. Both quantitative and qualitative assessment techniques were used to evaluate participants' experience in the program and their outcomes. It appeared that using self-efficacy as a means for prevention of eating concerns was effective, though results were mixed. Methodological and sampling issues limited the internal and external validity of the results from the evaluation of the new prevention program. Future research should address these limitations, as well as extend the program to samples beyond the college population, modify the components and structure of the program, and explore how self-efficacy may fit into a larger theoretical framework to explain and prevent eating concerns at both ends of the weight continuum.
CHAPTER I

INTRODUCTION

Eating Concerns: What Are They and Why Are They Important?

Eating concerns include eating disorders meeting DSM-IV criteria, such as anorexia or bulimia nervosa, as well as body dissatisfaction, chronic dieting, excessive exercise, or other body and food related problems. Examinations of the prevalence and nature of eating concerns have unearthed a great deal of disturbing information. Research has documented that preadolescent girls experiment with dieting (Franko & Orosan-Weine, 1998; Sands, Tricker, Sherman, Armatas, and Maschette, 1997). In fact, Smolak and Levine (1994a) found that 40% of preadolescent White girls had dieted.

Mable, Balance, and Galgan (1986) found that a sample of women who were 3 to 4 percent below the midpoint weight for their height and build reported themselves as being, on average, 10% overweight. Similar results have been found at the University of New Hampshire. In a survey conducted in 1999 by UNH Health Services, 86% of the women reported a desire to lose weight, while only 15.8% of those women actually needed to lose weight to be in a healthy weight range for their height. Males do not typically display this type of distortion. Lerner, Orlos, and Knapp (1976) measured attitudes about bodily physical attractiveness, physical effectiveness, and self-concept in females and males. They found that females' sense of self was more strongly related to their physical attractiveness rather than their physical effectiveness. The opposite result was found for males, where their sense of self was more strongly related to their physical...
effectiveness rather than attractiveness. Since the 1960s, there has been a documented increase in the prevalence of eating disorders such as anorexia nervosa (Brumberg, 1992), and for every ten to twenty females diagnosed with anorexia nervosa, only one male is diagnosed (Bryant and Bates, 1985). In North America, anorexia nervosa occurs in 5-10/1000 females ages 16-25 and bulimia nervosa occurs in 20-50/1000 females ages 16-25 (Piran, Levine, & Steiner-Adair, 1999, p XVII).

Rodin, Silverstein, and Striegel-Moore (1984) and others (Scarano & Kalodner-Martin, 1994) suggest that body image problems related to eating disorders should not be dichotomized as "clinical" versus "normal", but that these issues should be thought of as a continuum. The use of a continuum indicates that it is degree of seriousness rather than an absolute cutoff that distinguishes women experiencing body dissatisfaction or engaging in chronic dieting from those with DSM-IV diagnosable eating disorders. Cash and Henry (1995) conducted a national survey that buttresses Rodin et al.'s (1984) theory. They surveyed 803 females ranging in age from 18 to 70 about body image. They found that 47.9% of those surveyed reported a negative body image. Cash and Henry’s results demonstrate the high prevalence of body dissatisfaction, one of the markers for anorexia and bulimia, in a nonclinical population. Much of the work that has studied symptoms of eating disorders has been conducted with nonclinical populations, particularly with traditionally-aged college females. This is why the use of the term "eating concerns" becomes more accurate and inclusive in discussing the range of problems that people experience in relation to body and food. The current study will use the broader notion of eating concerns in its investigation with college women, a sample that is typically at risk.
Not only do we have to consider the extent to which eating concerns affect girls and women, but also the physiological, psychological, and social consequences of having eating concerns. Physiological effects of engaging in unhealthy behaviors related to eating concerns range from mild to severe. Some of the mild consequences are dry skin, dehydration, lanugo, and amenorrhea, which can all be reversed (Mitchell, Pomery, & Adson, 1997). More severe consequences include erosion of tooth enamel, osteoporosis, problems with fertility, and death (Vandereycken, & Meermann, 1984; Winokur & Clayton, 1994). One deleterious psychological consequence of eating concerns is an increased likelihood for depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000). Other psychological consequences of eating concerns include sense of ineffectiveness and inability to distinguish one’s internal states, such as satiety (Silverman, 1997). A possible social ramification of eating concerns includes withdrawal from friends and family (Brumberg, 1992). The seriousness of the consequences of eating concerns and their prevalence make it apparent that prevention and intervention are needed. The current study’s evaluation of an educational prevention program will help meet this need.

**Theories about Eating Concerns**

Researchers have proposed many factors that may influence the formation and persistence of eating concerns. Explanations range from genetic and biochemical approaches to sociocultural factors to personality factors and behaviors. There have been proposals of cultural influences on eating concerns as well as a variety of intrapersonal facets, such as issues of control, body image dissatisfaction and distortion, self-esteem, and issues of effectiveness versus ineffectiveness.
Physiological Factors

Genetic explanations have been studied for a number of psychological disorders, including anorexia and bulimia nervosa. Evidence shows that it is common for multiple people in one family to have eating concerns (Lilenfeld & Kaye, 1998). Twin studies have been the main way in which the genetics of eating disorders have been examined. There have been two major twin studies conducted in relation to anorexia and bulimia, the Virginia Studies (Hettema et al., 1995; Kendler et al., 1991; Walters & Kendler, 1995) and the Holland and Treasure Study (Treasure & Holland, 1989).

The results of the twin research are mixed. While there does seem to be evidence of some heritability of anorexia and bulimia, the question of just how much of these disorders are due to genetic factors and how much to environmental factors is mixed (Fairburn, Cowen, & Harrison, 1999). One issue is that the proportion of variance due to genetics changes across studies using the same sample, partially because they use different inclusion criteria each time in order to increase their sample size. Because different heritability estimates were reported for the same samples, it becomes difficult to interpret their accuracy.

Another issue is the equal environments assumption in twin research. The idea is that twins will share relatively equal environments, whether they are monozygotic or dizygotic, so any environmental influences will be the same. The equal-environments assumption has been violated in some of the twin studies research, where they have found that increased concordance was related to similarity of social groups of twins and physical similarity (Fairburn et al., 1999). Fairburn et al. (1999) suggested that we
should not rule out genetic explanations, but should also consider the possibility of gene-environment interactions, which have yet to be examined.

Biochemical explanations of eating disorders have also been proposed. An irregular 5-HT receptor has been found in those with anorexia (Ziegler & Gorg, 1999). Some research has also found that those with anorexia have symptoms of obsessive-compulsive disorder (OCD), with the obsessions and compulsions centering on food and exercise, and that the same neurotransmitter that affects OCD, m-chlorophenylpiperazine, also seems to affect the display of obsessions and compulsions in those with anorexia (Winokur & Clayton, 1994). One problem with some biochemical explanations is that the actual acts of restrictive eating and excessive exercise affect the neurotransmitters in one's body, so that a causal inference is difficult to draw at this point.

Sociocultural Factors

In 1972, Dion, Berscheid, and Walster wrote an article entitled, "What is beautiful is good". In this paper they described an experimental study that gave credence to the idea that people prefer those that are physically attractive to those that are not, and that people associate more positive attribute and life outcomes with those that are physically attractive. If "what is beautiful is good" is part of the American culture, then everyday men and women are being taught that being physically attractive is important, and that physical attractiveness is generally equated with being thin. In this respect, culture may indeed be a component that puts people at risk for eating concerns, particularly females who are generally the targets of advertisements (Kilbourne, 1999; Rodin et al., 1984).

In a theoretical and empirical review, Nagel and Jones (1992) reported that being a "good" woman has become associated with being physically beautiful as history has
progressed. In turn, they said, beauty has become associated with thinness in many societies around the world. They also asserted that these factors are related to the onset of eating disorders.

The more one adheres to social standards, the more susceptible to eating disorders one becomes. Stormer and Thompson (1996) looked at the relationship between symptoms of eating disorders, comparing the self with others, and awareness and internalization of sociocultural attitudes toward appearance. They found that the internalization of sociocultural attitudes contributed significantly to the variance in body image distortions. It was not only awareness of cultural attitudes, but acceptance of them for one's self that related to eating concerns.

Another way in which the thin ideal is transmitted and acquired by individuals within a group setting is through comparison of self with others. Those with eating disorders tend to compare themselves with others (Brumberg, 1992). A sense of feeling fat, one of the indicators of an eating disorder, was found to be significantly influenced by comparing one's self to others (Striegel-Moore, McAvay, & Rodin, 1986). Also, Striegel-Moore et al. (1986) found that women reported more external pressure to be thin when they felt fat. Feeling fat, however, did not necessarily mean the women were overweight, as many who reported this feeling were of normal weight or even underweight. Stormer and Thompson (1996) found that social comparison of one's body size and shape to that of others was also an important predictor of eating disordered symptoms. The size and weight of the person to whom one compared oneself was more relevant than the importance of the comparison figure in the person's life.
The media has also been implicated as a possible causal factor in the development of eating concerns. Stice, Schupak-Neuber, Shaw, and Stein (1994) created a structural equation model that demonstrated a direct relation of media exposure with symptoms of eating concerns. In relation to this, research has found that viewing commercials can influence a number of things, including self-esteem and desire to be thinner (Strahan & Spencer, 2002). Participants viewed either neutral commercials or those with thin comparison figures. Results indicated that those watching “thin” commercials were more self-critical, had a lower self-esteem about appearance, displayed more shame, reported a greater desire to be thinner and to look like a supermodel.

Demographic characteristics have also been implicated as factors that put people at risk for eating concerns. Nagel and Jones (1992) reported that besides gender, race and socioeconomic status were also important risk factors. They found that women of higher socioeconomic status have had a higher prevalence of symptoms than those of lower socioeconomic status. Because of the likelihood of those with a lower socioeconomic status also being in a minority group, Nagel and Jones say that this could be the reason why those in minority groups do not exhibit as many eating concerns. They describe a theory of people climbing the social ladder as a means to explain the differentiation of eating concerns among classes. The higher one's socioeconomic status, the more likely that person is to follow social rules more closely, where one societal standard is that beauty for women is equated with thinness. More recent research on this issue is less clear. Story, French, Resnick, and Blum (1995) found differences in body dissatisfaction between African American girls and White girls in grades 7-12. Though African American girls reported more body satisfaction than their White counterparts, overall
levels of satisfaction were smaller than 50% in both groups, meaning that the majority of all the girls studied displayed body dissatisfaction. James, Phelps, & Bross (2001) found that African American college women were very similar to White college women in terms of body dissatisfaction and drive for thinness when they were either middle or upper class.

Psychological Factors

One important psychological concept that has been studied in relation to eating concerns is control, ranging from the examination of locus of control (LOC) to issues of perceived control. Rezek and Leary (1991) used the concept of perceived control in a study of the behavior of those with one of the main symptoms of anorexia nervosa, the drive to be thin. In a controlled experiment, they manipulated the participants' perception of control over a conversation, hypothesizing that those with high drive for thinness tendencies would later restrict food intake and report that they would eat less later that day if they perceived that they had low control over the situation. Rezek and Leary modeled their study after work by Rothbaum, Weisz, and Snyder (1982) in which they had theorized about a 2-process model of perceived control. The authors suggested that the displaced control, or acting in response to threat to freedom that those with anorexia are hypothesized to exhibit is like Rothbaum et al.'s idea of "secondary control". If a person cannot control the environment, called primary control, then the person will resort to secondary control, which is controlling the self in some way instead. Rezek and Leary (1991) found that those with a high drive for thinness and low perceived control (manipulated through experimental condition) were most likely to take subsequent compensatory actions for their perceived lack of control. They would eat less
immediately, and also reported that they planned to eat less for dinner on the evening of the experiment. The problem with this research was that there was no assessment of the participants’ feeling of control outside of the laboratory experience.

Furnham and Greaves (1994) looked at LOC and gender as correlates of body dissatisfaction in university students. They found that women were more dissatisfied with their bodies than men, and that those with a higher external LOC, in particular with a sense of powerful others, had lower body image satisfaction, decreased self-esteem, and decreased belief in their ability to control the shape of their bodies. Those with an external LOC related to fate or luck had similar results.

Other risk factors for eating concerns included negative emotionality and personal habits. Leon, Fulkerson, Perry, and Cudek (1993) looked at personality and behavioral vulnerabilities related to increased risk of eating disorders in adolescent girls. They found that negative emotionality was highly associated with risk increases. This meant that whoever did not react well to stress would be more likely to be at risk. In other words, they had inadequate or unhealthy coping mechanisms in place to deal with stress. They also found that these girls were at increased risk if they smoked or drank alcohol on a regular basis. In another study, women, not adolescent girls, reported using cigarette smoking to control their weight (Mortenson, Hoerr, & Garner, 1993).

Perhaps the greatest focus has been on self-esteem as a risk factor for eating concerns. A strong relation between self-esteem and eating concerns, particularly that of body satisfaction, has been found. Sands et al. (1997) looked at disordered eating patterns in preadolescent children. They found that body image issues were present before adolescence, especially in females. They also found that a larger ideal body shape
was positively correlated with self-esteem. There was no way to tell the direction of causality because the data collection was correlational, not experimental.

Frederick and Grow (1996) studied self-esteem with a college-aged sample. They examined the relation between autonomy, self-esteem, and eating concerns. A mediational model emerged, where self-esteem mediated the relation between autonomy and eating concerns. They found that increased autonomy was related to increased self-esteem, and that decreased self-esteem was related to increases in eating concerns. Decreased autonomy was related to increases in eating concerns as well, though this relation became nonsignificant in a regression equation with self-esteem. The authors suggested that autonomy might be a building block for self-esteem. Their definition for autonomy, "the ability to act in a self-determined manner with an internal perceived locus of control...a feeling of choicefulness and freedom," is closer to the concept of self-efficacy than to self-esteem (p. 218). Though researchers have found significant correlations and regression equation between esteem and eating concerns, there still remained a large portion of unexplained variance.

Unfortunately, this and other research regarding self-esteem as a risk factor for eating concerns does not elucidate a direction of effect. Also lacking in the self-esteem research is an explanation as to why decreases in self-esteem would be such a great risk for eating concerns. Self-esteem is a general concept, and its relation to eating concerns is not clear. Why should self-esteem, such a general concept, should be related to eating concerns, which are specific? It is possible that self-esteem is a mediator for a number of other variables that are also related to self-esteem, as Frederick and Grow (1996) suggested. Marsh (1986) argued that general esteem is too narrow in describing self-
concepts. In order to alleviate this problem in research, the author suggested using specific measures of self, which he had found to account for more variance than had general esteem. In other words, instead of only measuring a person’s general self-worth, measuring concepts such as domain-specific self-efficacy would be a better way to explain a person’s self-concept.

The concepts previously studied either account for a very specific area in a person's life or are global and therefore account for many domains. One concept that has not been addressed as much within the literature is self-efficacy. Efficacy theory explains how deficits in certain life domains can lead to over-compensation in other areas. Those with eating concerns might feel a lower sense of efficacy for many behaviors because of a perceived lack of ability to perform tasks in many life domains. A girl or women might feel less efficacious in a domain such as academics because of the focus on the body imposed by culture.

The research and theory on eating concerns demonstrates the complexity of the issue, in that there are multiple paths related to eating concerns. Because of the complexity of the issue, it is imperative that prevention efforts take the physiological, psychological and social factors into account for program design and content. Self-efficacy has the potential to bring together both psychological and social components of eating concerns and should be included as a key component in the prevention of eating concerns.

What is self-efficacy?

In our everyday lives we have to make judgments about whether or not to behave in a particular way. Also intimately intertwined with the judgments about actually
performing behavior are judgments about our perceived ability to engage in behavior. This is a widely studied concept within psychology, known as self-efficacy. David Myers explains self-efficacy as, "a scholarly version of the wisdom behind the 'power of positive thinking'" (1993, p 103).

Albert Bandura created the concept of self-efficacy as part of his social cognitive theory of psychology. According to him, self-efficacy is one's perception of capability to perform a particular task or action. This is a judgment that is not solely dependent upon skills the person may or may not have, but rather a perception of what one is capable of doing with those skills (Bandura, 1986).

Self-efficacy is often confused with other psychological concepts. It is related to, but not the same as locus of control (LOC), self-esteem, and outcome expectancies, to name a few. LOC is a person's belief that she or he has control over good or bad things happening to her or himself versus something outside of the self having control, such as a powerful other or chance. Although LOC is a belief about where control resides, in the self or not, self-efficacy is the perception that one is or is not capable of carrying out certain actions (Carver & Scheier, 1995). For example, people may believe they have the ability to study well (self-efficacy), but those same people may believe they still will not do well because of the types of tests given in a course, or the way that they are graded (external LOC). Self-esteem is also another variable often confused with self-efficacy. Self-esteem is an attitude about self-worth, not a belief in ability (Sherer, et al., 1982). Finally, Bandura (1977; 1986) asserted that outcome expectancies were judgments about the likelihood of certain consequences occurring due to certain behaviors performed and not a belief about the behaviors themselves.
There are three defining characteristics of self-efficacy: generalizability, level of complexity, and strength (Bandura, 1977). Self-efficacy is situation specific, not a generalizable concept. While a person can have high self-efficacy for several different domains, from social situations, to academics, to exercise, it is not necessary for a person to be high in all simply because the person is high in one. Researchers have begun recently to examine this characteristic of self-efficacy beyond just one domain, instead looking at interdomain correlations, as well as how self-efficacy for behavior in the present might relate to self-efficacy for behavior in the future (Maibach & Murphy, 1995). Level of complexity refers to how simple or complex the behaviors are for which an individual has efficacious thoughts. In other words, perceived efficacy could differ depending on the level of difficulty of a particular task. Strength of self-efficacy is the extent to which one holds a conviction about a task or behavior.

Beyond what Bandura (1977) calls the "dimensions of self-efficacy" are the "sources of efficacy expectations" (pp 194-195). There are four main factors that influence self-efficacy. They are enactive attainment, vicarious experience, social and/or verbal persuasion, and the interpretation of physiological arousal. When a person performs a task, and the person's performance matches her expectations about the task, enactive attainment is achieved. In other words, when one actually performs a task, this influences one's belief in ability to do the task in the future. Generally, enactive attainment influences the formation and perpetuation of self-efficacy the most, "I have done this, therefore I should be able to do this again."

A second factor, vicarious experience, occurs when a person watches similar others performing the task about which the person is thinking. The result, whether it be
success or failure of completing the task, influences efficacy. If these similar others are able to perform the task, the person is able to recognize that he or she, too, should be able to perform it. If this is the case, efficacy for the task increases. Bandura (1982) states that vicarious experience improves self-efficacy because it can demonstrate a number of useful actions about which an individual might not have previously thought. Observing others also gives a person a sense of the outcome to expect. Even if they have a sense of efficacy, they may or may not perform the task because of its consequences.

A third component that may affect a sense of efficacy is verbal persuasion. This consists of a person receiving encouragement from others about particular actions or behavior. The encouragement can be either words of support about the task itself, such as its ease, or about the person and her or his capabilities for completing the task. Another form of this type of persuasion is social, and may include pressure from groups of people to complete a task or act in a certain way. Bandura (1982) thought that this factor would work best if one already has a belief in some aspect of the task or reason to believe the persuader.

A final element influencing self-efficacy is one's physiological state. A person will often make judgments about personal abilities from arousal levels they are experiencing, as they are about to perform a particular behavior. If arousal levels are to such a point that the person judges the arousal as anxiety, she or he may feel that the task cannot be done. Alternatively, if one feels calm and relaxed, the task may be deemed easy to perform.

The measurement of self-efficacy is generally conducted via self-report measures. Lee and Bobko (1995) reviewed the various ways in which self-efficacy had been measured.
measured with self-report. They discussed five different alternatives for measuring self-efficacy via self-report: 1) the total number of possible responses for a specific task area, which is self-efficacy for magnitude of a task (related to self-efficacy’s complexity characteristic), 2) strength, or one’s amount of conviction about performing a task, 3) a combination of strength and magnitude, 4) the use of sums of raw scores, and 5) single-item confidence levels. They concluded after studying all five measures that the use of a composite measure of strength and magnitude was the best measure of self-efficacy. Lust, Celuch, & Showers (1993) also discussed how the use of strength and magnitude was a better measure of self-efficacy because of the fit with Bandura’s original concept.

**How does self-efficacy relate to behavior in general?**

Bandura (1982, 1989) described the relation between self-efficacy and action as a continual feedback loop, a reiterative process that is not necessarily linear. He also argued that self-efficacy could be a better predictor of future performance than actual past performances because it is how people have perceived what they have done that is more important than their actions.

Why does Bandura consider the relation as a continual feedback loop? What is the relation? Part of the answer to that question can be found by examining enactive attainment. When a person completes a task, that can increase one’s self-efficacy for that task. How does efficacy then influence action? Self-efficacy has been related to goal setting and motivation, perseverance, and choosing environments in which to act, to name a few connections found in the literature (Bandura, 1989; Maibach & Murphy, 1995).
People's self-efficacy for tasks relates to the type of goals that they set for themselves. If they have a high self-efficacy for a task, they are more likely to set high goals for themselves, while those with a low self-efficacy will set lower goals (Maibach & Murphy, 1995). If someone has a weak sense of efficacy for a simple task, the person is less likely to set goals for more difficult or complex tasks. Also, with more efficacy for a task, there tends to be increased motivation for the task (Bandura, 1989). Finally, people's goals can change in relation to their enactive attainment. If someone is not able to meet a goal, then that person might set the goal more modestly. However, if someone is doing well at a goal-related task, that person might increase the goal to a higher level (Bandura, 1989, p. 1180).

Another area in which a relation has been found between perceived efficacy and action is perseverance at tasks. If faced with a situation in which challenges or barriers to completing the task arise, those with a stronger sense of efficacy are more likely to persevere at the task than those with a lower sense of self-efficacy. Bandura (1989) agreed with Taylor and Brown's (1988) idea of positive illusions. He thought that if people's self-efficacy were equivalent to their actual performances rather than more inflated appraisals, he suggested that people would rarely improve their skills because they would not, "mount the extra effort needed to surpass their ordinary performance" (p. 1177).

Bandura (1989) suggested that self-efficacy will also relate to the type of environment one chooses. For example, if a person feels a high self-efficacy for academics, then that person would most likely choose to attend a college known for its
challenging curriculum. On the other hand, someone with a low self-efficacy for academics would avoid an institution with that reputation.

**How does self-efficacy relate to health behavior?**

Self-efficacy not only relates to behavior in general, it has been found to be a very useful concept in conjunction with health behavior. A wide range of health behaviors are related to self-efficacy, including contraceptive use (Levinson, 1984), drug use, smoking, weight loss and diet (Rimal, 2000), exercise (Rodgers & Brawley, 1993) and stress reactions (Bandura, 1982). Self-efficacy has been examined in relation to treatment and outcome, behavior change outside of the realms of treatment, and maintenance of health behavior, whether positive or negative.

For treatment, some health behavior researchers have examined self-efficacy in relation to smoking cessation, abstinence from alcohol, and phobias. Self-efficacy related to smoking recidivism in people after they had completed a smoking cessation program. Those who had a higher self-efficacy for being able to regulate smoking behavior at the end of the program smoked less at follow-up periods compared to those with a low self-efficacy for regulating smoking behavior (Bandura, 1982). Research looking at alcohol treatment programs demonstrates how self-efficacy relates to treatment outcomes. The researchers suggested that it is not cravings for the alcohol that lead to relapse, but a lack of cognitive self-regulation (Monti et al., 1993, as cited in Bandura, 1999). Treatment consisted of training in cognitive self-regulation and exposure to alcohol. At its termination, participants' self-efficacy for regulating their cognitions, and not their actual cravings for alcohol, predicted their long-term drinking behavior. Bandura (1999) explains these findings as a result of the influence of high versus low self-efficacy,
where, "individuals of high perceived efficacy regard a slip as a temporary setback and redouble their efforts to reinstate control. Those of low efficacy view their problem as beyond personal control and abandon further efforts at self-control" (p 216). Finally, research in treating those with phobias has demonstrated that it is not the number of anxious thoughts a person has, but one's efficacy for controlling bad thoughts that is highly related to anxiety (Bandura, 1989). Modeling of successful coping strategies for those with phobias also increases self-efficacy, and subsequent performance when they are placed in anxiety provoking situations (Bandura, 1982).

In terms of behavior change outside of the realm of treatment, Oldenburg, Glantz, and Ffrench (1999) suggest that, "self-efficacy is a very important pre-requisite for change" (p 509). Psychological readiness for change can be defined as, “a felt need, that is, an individual's sense of dissatisfaction or perceived discrepancy between expectations (what should be) and reality (what is)” (Oetting et al., 1995, p 661). In order to progress through the stages of change, (Prochaska, Di Clemente, & Norcross, 1992), people need to believe that they can engage in the necessary behavior. If they do not have this belief then they will be stuck in the stage of precontemplation, which is basically denial of a problem, or contemplation, where people think about their problem, but do not make any plans to change.

Self-efficacy has also been documented as important in the maintenance of health behavior, such as exercise, sexual activity, and cardiovascular disease prevention (Rimal, 2000). When people have high levels of efficacy, they are more likely to sustain those behaviors. For instance, with exercise behavior, for those beginning weight training self-efficacy was a better predictor of continuing to weight train over time than were outcome
expectancies (Desharnais, Bouillon, & Godin, 1986, as cited in Maddux, Brawley, & Boykin, 1995). People are also more likely to maintain exercise behavior if they have a high self-efficacy for fitting exercise into their schedules (Poag-Ducharme & Brawley, 1993, as cited in Maddux, Brawley, & Boykin, 1995). Ozer and Bandura (1990) note that skills are not enough to produce effective coping over time, but that people need self-efficacy beliefs about those skills in order to be effective.

Self-efficacy and Eating Concerns

One health issue that has seen little attention in relation to self-efficacy is eating concerns. One of the characteristics of self-efficacy is that it is situation specific. A person may have a heightened efficacy in one area of behavior, but have a lowered sense of efficacy in all others. Though it is situation specific, self-efficacy is not limited to one area of behavior, but can be applied to many life domains and not just one area.

Self-efficacy is also influenced by personal and interpersonal factors. Efficacy in relation to eating concerns might be reinforced through enactive attainment, vicarious experiences, and verbal and social persuasion. Personal experiences might include people observing self weight-loss, either through exercise or restricted eating or both. Vicarious experiences might include seeing friends or similar others maintain a thin body size or lose weight through various efforts.

Social persuasion might involve viewing media that reinforces the thin ideal and people’s ability to attain that ideal, through diets, fitness clubs, and commercial drugs. Verbal persuasion might include pressure from coaches, dance instructors, or family members and friends that suggest “losing a few pounds” and how easy it would be to accomplish, or reinforcing the idea of an already thin body. In fact, research
demonstrates that there is significant pressure from peers (Crandall, 1988) and parents (Costanzo & Woody, 1985) toward being thin through methods of restrictive eating. The mechanisms for reinforcing self-efficacy for eating versus other life domains, such as academics, can be seen as particularly relevant for girls and women in American culture where, “what is beautiful is good” (Dion et al., 1972), and what is beautiful is being thin (Nagel & Jones, 1992, Stormer & Thompson, 1996). Thus, efficacy is a useful construct for understanding more about the etiology of eating concerns, as well as what might be done to increase resiliency against eating concerns.

Some research has examined relations between self-efficacy and eating concerns. Wagner, Halmi, and Maguire (1987) studied self-efficacy as it related to patients with eating disorders and controls. They found that eating disordered patients scored lower on social self-efficacy than controls. Other research that has been conducted using self-efficacy has been related to symptoms of bulimia (Bennett, Spoth, Borgen, 1991; Love, Ollendick, Johnson, & Schlesigner, 1985). Bennet et al. (1991) found that when participants were asked about their self-efficacy for behavior specifically related to symptoms of bulimia, the lower the self-efficacy, the more symptoms reported. Love et al. (1985) found that a decreased self-efficacy to resist bingeing was predictive of bingeing episodes. LaPlant (under review) studied symptoms of anorexia and bulimia in a college-aged sample and an older sample and found that those with eating concerns, compared to those without concerns, have a lower self-efficacy in many life domains, from academics and social relationships to issues with eating. These results are particularly important because they present a picture contrary to the work of Hilda Bruch (1982). She proposed that those with symptoms of anorexia nervosa feel a high sense of
effectiveness for controlling their eating habits in order to compensate for lack of control in other life domains. Instead it appeared that their sense of ineffectiveness was related to many life domains, including eating habits, overall. However, within-group analyses revealed that participants felt more efficacious for eating tasks than they did for social situations and academics, which supported Bruch's argument. Overall, women with eating concerns felt less efficacious across domains than their non-concerned counterparts, but that within the group, these women reported being the most efficacious for eating issues compared to other life domains.

Self-efficacy is another important piece in the puzzle about eating concerns because it addresses the limitations of and bridges the gap between some of the other theoretical approaches discussed previously. First of all, unlike global self-esteem, self-efficacy is situation specific, yet can also be applied to many different areas. Someone could be efficacious or ineffectacious specifically about eating and exercise issues. People could also be ineffectacious across many domains. Unlike self-esteem, self-efficacy allows us to examine people's difference feelings of competence across many domains. Psychological factors, such as one's own behavior, and social factors, such as modeling and persuasion through others and the media, influence self-efficacy. This ties together the psychological and sociocultural theories previously discussed. If one sees and feels a lack of control in specific areas of life, then one's self-efficacy would in turn be affected. Also, if someone is viewing advertisement, movies, and television programs that all provide the message of "thin = good" and then demonstrate how to attain this, one's self-efficacy could be affected. Unfortunately, self-efficacy has been neglected in the prevention of eating concerns.
Overview of Prevention Programming

The literature on prevention in relation to health behaviors provides a number of suggestions for the creation of successful prevention programming. Bracht (1990) discussed the necessity of fit between a program and the community in which it is to be implemented. Specifically, he called for an analysis of the community which would involve profiling the community, including health risks, researching current health promotion programs, and studying target groups, asking them about their awareness of health problems in the community, and what they see as needs of the community in relation to that health issue. Fawcett et al. (1995) also make a point that adaptation of a program is essential because it ensures that the programs are flexible and are tailored for particular communities.

One key message from the health promotion literature is around involving community participants. Zimmerman defines empowerment as, "a process by which people, organizations, and communities gain mastery over issues of concern to them," (p. 581). Azzarto (1997) quotes Friedman (1989) from the World Health Organization about the importance of empowerment, saying, "our current understanding of what works best is to involve young people themselves in the promotion of health behaviors, and in the planning and implementation of programs" (p 301). Nichols (2002) also argued that gaining information about the perception of needs from the actual participants is essential in designing a program that will meet a community’s specific needs.

Another design issue is that of creating clear goals and objectives for the program (Carlson, 1995). The goals of the program allow the stakeholders and implementers to have a sense of the plan for the program, and possible future directions. Objectives
provide specific ways in which the objectives will be fulfilled. Content matching the goals and objectives becomes important so that the program's effectiveness can be assessed. The current study used these general guidelines from the prevention literature in the design of new prevention program for eating concerns.

Pilot Study

The World Health Organization (WHO) has stated that, “health promotion is the process of enabling people to increase control over and improve their health” (Bracht, 1990, p. 36). Julian Rappaport (1981) said that prevention and advocacy are not enough. In a way, he said, they take power away from those that we are attempting to help because it is someone else that decides what needs to be prevented, or someone else’s voice that is raised in advocacy, not the people for whom these actions are being taken.

The specific aims of the pilot study were to explore students’ perceptions of eating concerns on the UNH campus, to ascertain what types of information/prevention students would find useful and relevant to them, and to find out what could be done to increase student participation in prevention programming. UNH students were given open-ended questions. The questions asked about previous experiences in health education programming, and what information they thought would be useful in future prevention programming for eating concerns. Participants were also asked their opinion about eating concerns on the UNH campus and if they had ever known someone with an eating concern. Over half of surveyed students reported that the issue of eating concerns is a problem for the UNH campus and more than 80% of surveyed students reported knowing someone who had an eating concern. One student wrote, “As a woman, I feel tremendous pressure from everywhere. It is so difficult living on campus with the fear
and concerns I have regarding food. And seeing how prevalent [sic] it is on my floor alone saddens me more. I personally am searching for a program that can help me in any way.”

Students discussed a number of different services that they would find useful in relation to eating concerns. Access to a nutritionist or nutrition information was the top response (~23%), with educational information following as the second most popular service desired (~22%). For educational information, students wanted information about signs of problems, and short and long-term side effects.

When asked for reasons why they would use services for prevention, about 53% of students said that they would if a friend or they themselves had a problem. Fourteen percent said they would access services to be able to participate in prevention programs to help others, and ~13% said they would do so to improve their lifestyle. When queried about why they would not access services, the top reason reported was because of time or schedules (~22%). The other top responses included embarrassment or being ashamed (~17%) or because they were scared (~14%).

Students were also asked if they had ever participated in a prevention program for eating concerns or if they had any education about eating concerns, to which about 52% of them responded with an affirmative. The top five best things they described about programs were: a demonstration of good diet/nutrition (~18%), lots of information presented (~13%), they were told how to detect problems (~12%), what eating concerns do to the body (~11%), and how to help others (~10%). The top five worst things they described about programs were: the program led to rumination (~13%), it did not explain
why people have problems (~10%), it was superficial or too short (~10%), the information was repetitive (~10%), and it was boring (~10%).

The information provided by the students was taken into consideration when creating the content of the prevention program. There was a section on nutrition included, as well information on how to detect problems, what the effects of eating concerns are, and some different theories as to why people develop eating concerns.

The pilot study was conducted to follow the general guidelines from the prevention programming literature. The stakeholders in the community were asked to provide information to help design the prevention program. The study addressed the prevention of eating concerns on the UNH campus, through the eyes of the students themselves (LaPlant, 2000), and through the eyes of those in charge of such services. For instance, one issue related to prevention on the UNH campus is access to the students. According to the director of Health Education and Promotion, recruiting students for programming is difficult because of the students' investment and energy (K. Grace-Bishop, personal communication, June 2000). The study empowered students by asking them about issues related to prevention on campus, empowering them, or providing them with the opportunity to, "gain mastery over issues of concern to them," (Zimmerman, 1995, p. 581).

**Prevention of eating concerns: Review and Limitations**

Prevention is an important piece in the eating concerns literature that is only recently being addressed as we see the prevalence of symptoms and DSM-IV diagnosable disorders increase (Brumberg, 1992). Also, as addressed in the previous section on eating concerns, many people do not meet DSM-IV criteria, but are still experiencing
significant problems related to body and eating. The physical, mental, and social ramifications of this increase are all debilitating and potentially life-threatening.

What does programming for eating concerns involve?

There are two general formats for eating concerns prevention programs. One method is to present information to a large group of people (Martz & Bazzini, 1999), or to present information in small groups for discussion (Friedman, 1998; Huon, 1994). In both program formats the norm is to present information specifically related to eating concerns. For instance, some information presented describes what eating concerns are, and their treatment (Mann et al., 1997; Martz & Bazzini, 1999). Other programs include information about body image, cultural ideals, and the media (Phelps, Hohnston, Augustyniak, 1999). Still others include information not only about these topics, but also about nutrition and healthy eating (Franko, 1998). In sum, the prevention programming tends to be only educational, and rarely experiential.

Review of Programming: Does Prevention Work?

The literature on prevention programs for eating concerns demonstrates that programming can be effective, though there are limitations in that effectiveness. For example, Franko (1998) found that participants reported more positive attitudes toward their bodies. She also found that appearance became less important for program participants. However, she did not find any differences in behavioral measures related to eating and body image. Huon (1994) also found that participants reported less concern about their body image, though the discrepancy between their ideal weight and what they thought they weighed remained unchanged. Friedman (1998) found that participants wrote about feeling more comfortable and assertive after discussing issues related to body
image, and that they felt less isolated because they knew that other girls had the same ideas and emotions about their bodies as did they.

The literature then, shows us that the effectiveness of prevention is mixed. It seems that we might be able to change attitudes, but not behaviors. We also know, however, that sometimes the programming can produce results that are contrary to what was expected. For instance, Mann et al. (1997) found that people in their program actually reported worse symptoms after experiencing the intervention.

**Programming: What is missing?**

There has been little systematic research conducted on the prevention of eating concerns in general, and particularly with the college campus population (Franko & Orosan-Weine, 1998; Piran, 1998). In contrast to the lack of systematic research that has been conducted on prevention, there has been an abundance of suggestions for what to include in prevention programs. One of the most important aspects eating concerns researchers have discussed is that of empowering the participants in some way. Huon (1996) emphasizes the importance of empowering girls and women to help prevent dieting-induced disorders. Piran (1998) suggests that programs with favorable outcomes have several features. They have a participatory format, or a dialogue between program facilitators and participants and a goal of the program is to empower participants.

Other suggestions for programs relate to content. Shisslak, Crago, Renger, and Clark-Wagner (1998) suggest that self-esteem programs have failed because they do not attend to the "self-esteem building process to guide their implementation and evaluation" (p 109). In other words, they do not give their participants a chance to use the skills they have been taught. Rosen and Neumark-Sztainer (1998) also emphasize the importance of
skill development as necessary in prevention programs. Shaw and Waller (1995) suggest that psychoeducation is probably one of the most likely means for achieving prevention, such as teaching about social comparison and encouraging questioning of the ideal.

Focusing on self-efficacy in prevention will move the emphasis from being about the body to being about the person. Bennett et al. (1991) suggested that self-efficacy in teens can be viewed as a resiliency variable to protect against external pressure toward being thin. Fulkerson, Keel, Leon, & Dorr (1999) suggested that self-efficacy may be what helps non-elite adolescent athletes have more health attitudes about their bodies than their nonathletic peers. Current prevention measures reinforce the importance of body image indirectly by only discussing issues and dangers related to eating concerns instead of providing other outlets on which to focus. The addition of self-efficacy training will make programs more holistic in nature, helping to achieve wellness for the whole person instead of one part. Self-efficacy in prevention programming also meets the call for empowerment in prevention. Through the use of self-efficacy as a basis for programming, participants would be gaining skills that could empower them, and which they could in turn bring to their communities.

Limitations of Past Prevention Efforts

A particular limitation to research that has been done on prevention in the past has been in terms of evaluation, which has been lacking in a number of ways. Some studies have not included a pre-test of participants' attitudes and beliefs before experiencing the program (McNamara, 1989), or have not done any follow-up evaluation with the participants (Franko, 1998; Griffiths & Farnill, 1996). When these data have been collected, little or no change has been apparent in participants (Franko & Orosan-Weine,
1998), and sometimes things have changed for the worse (Mann et al., 1997), indicating a need for process evaluation as well as summative evaluation. Process evaluation assesses the implementation of a program while it is on-going, while summative assesses the effects of the program after it is over (Patton, 1987).

Other problems with programs that have been done with college-aged participants include small sample size and the structure of the program. For example, Franko (1998) conducted a secondary prevention program for those with symptoms of bulimia. The intervention group had 10 participants in it, and the control group, 8. The small sample size limited Franko's ability to detect changes.

Phelps, Hohnston, and Augustyniak (1999) conducted a prevention program to test the hypothesis, "that assisting adolescent females in the recognition of positive attributes of their physical appearance could significantly increase their feelings of self-efficacy, reduce their internalization or acceptance of current sociocultural mores, and facilitate a rejection of the utopian skeletal body" (p 106). Two problems with this research were that they had no measure to determine internalization of sociocultural attitudes toward appearance and that the emphasis was still on the body. Without a measure of internalization they could not test their hypothesis about increased awareness of positive body appearance helping cultivate a more healthy body standard. Since the emphasis was still on the body, even if trying to demonstrate positive attributes, the program was still reinforcing what they were trying to eliminate, the importance of cultural norms for females, where a female's body is an extremely important part of who she is.
Still other prevention programs have fallen short in that they try to do a great deal in a very brief period of time. For example, Martz and Bazzini (1999) created a peer education presentation in which they discussed the differences between what heterosexual males tend to find attractive for female figure size and what females think they find attractive and how females tend to overestimate their own body size. They also supplied information about the symptoms of eating disorders and what causes them, what to do to help someone who has an eating disorder, information about campus resources, healthy eating and exercise, and a question and answer period. They did all of this in a one-hour session. While the information that was presented was commendable, presenting that much information in one hour and doing it well seems nearly impossible. Mann et al. (1997) also presented a great deal of information to participants in about 90 minutes. What becomes particularly problematic for their presentation was that at post-test, they found increases in symptoms of eating concerns for many of their participants.

Research on health behavior change has suggested that sometimes programs are not successful because people are not ready to change (Prochaska, DiClemente, & Norcross, 1992). Prochaska and colleagues (1992) created a theoretical model for stages of readiness to change health-related behavior, such as smoking and alcohol use. This model has been used to explain the progression that people experience as they attempt to change behaviors. This progression is not considered linear, and people can "recycle" through the various stages, of which there are six (Prochaska, Norcross, & DiClemente, 1994). To date this model has not been applied to the prevention of eating concerns, only to treatment (P. Jordan, personal communication, August 22, 2000).
One possible reason that other programs have failed to make much difference in the past is that the researchers did not assess if the participants were ready to change their behavior, and that they did not provide participants with the opportunity to work on skills necessary for behavior change. If there is a mismatch between stage of change and activities provided to assist change, then change is unlikely to occur (Prochaska et al., 1992). Because of this possible explanation for null results in past research, including a measure of readiness to change behaviors related to risk for eating concerns would be an important component of evaluating prevention efforts.

**Current Study**

The current study follows the model of other successful programs, but also builds on the suggestions and limitations in the literature on the prevention of eating concerns. First, this program provided information about what eating concerns are, the risk factors and consequences of eating concerns, a discussion of nutritional issues and also of the greater social issues that may be driving the perpetuation of eating concerns. The group-based primary prevention and research program for eating concerns was unique in its focus on skills building rather than only the provision of knowledge, and also in its careful study of the outcomes of the participants from pre-program assessment through follow-up assessments. This research program used the concept of self-efficacy derived from the applied social psychological and prevention literature because it has been related to positive outcomes for health-related behavior such as smoking cessation, and applied it to eating concerns.

There were two important additions in this program. First of all, the information in this program was not only related to eating and body image issues, but to general
issues of wellness for college students. Specifically, strategies related to doing well academically were discussed, as well as information related to expressing oneself to others and listening to others as well. This piece is necessary because other programs tend to only discuss issues related to body, inadvertently reinforcing its importance. The second program component of specific interest was the addition of opportunities to work with the information presented in the program. The prevention literature suggests that the opportunity to work with material is important for an effective prevention program, and the eating concerns literature suggests that self-efficacy is not only related to eating concerns, but may also be a protective factor against developing eating concerns. The opportunity to work with the material in the program is one way to increase a person’s efficacy for those skills, and in turn, influence their behaviors.

Two different program groups were included in the current study. One was exposed to the traditional eating concerns prevention paradigm in which information about risks and consequences of eating concerns was presented to participants. The other group was given information related to eating concerns, academics, and social situations, and was then given opportunities for enactive attainment, vicarious experience, and verbal persuasion, the components that influence self-efficacy. This was accomplished through activities and discussions related to the content. A third group, the control condition was also included; these women did not receive any programming.

Study Aims

The aim of the research program was to implement and evaluate a prevention program for eating concerns. In order to test for the effects of those who received the intervention versus those who did not, the following hypotheses were made:
**Hypothesis 1:** It was hypothesized that the control group would have an increase for scores on measures of dysfunctional attitudes and behaviors related to eating concerns.

**Hypothesis 2:** It was expected that those in the control group would have little or no change in knowledge about information presented in the program.

**Hypothesis 3:** For the control group it was hypothesized that those participants would exhibit no significant change in efficacy scores, except perhaps to have lower scores at post-test.

**Hypothesis 4:** Because this was prevention research, at a minimum, there should be no change in scores for the experimental groups on measures of dysfunctional attitudes and behaviors related to eating concerns. At best, an improvement in scores would occur. In particular, a better outcome was expected for the efficacy group as compared to the information-only group.

**Hypothesis 5:** Those in the prevention groups should exhibit increases in knowledge. Specifically, those in the information-only group would experience an increase in the knowledge related to the content of that group, and those in the efficacy-group would experience an increase in the knowledge related to the content of that group. For knowledge that was not related to participants’ specific group, they were expected to look like the control group, exhibiting no significant knowledge change.

**Hypothesis 6:** It was hypothesized that the program group focusing on skills building and self-efficacy would demonstrate an increase in self-efficacy scores over time.
CHAPTER II

METHOD

Participants

Participants were 99 first-year undergraduate women, ages 17-23 ($M = 18.48$, $SD = .48$), all recruited from the Introductory Psychology subject pool. Fifty-four of these participants were in the experimental groups, with 27 in the information group and 27 in the efficacy group. The other 45 participants were in the comparison group. All participants received course credit for their participation. There were no significant differences between the groups in height or weight. The population from which the sample was taken was almost completely Caucasian, making the data of any minority-group participants easy to identify if ethnicity had been asked.

Materials

Each participant filled out a variety of measures, including the Eating Disorder Inventory (Garner, Olmstead, & Polivy, 1983), several measures of self-efficacy in various domains, a readiness for change in relation to eating behaviors, the Sociocultural Attitudes Toward Appearance Questionnaire (Heinburg, Thompson, & Stormer, 1995), the Rosenberg Self-Esteem scale (Rosenberg, 1965) and a knowledge test. Finally, demographic information was obtained from participants. Information on age, height, weight, and any prior experience with mood disorders, substance abuse, and eating disorders was asked. The entire packet took about half an hour to complete. Summative evaluation, in the form of responses to open-ended questions, was gathered from the
experimental participants at the post-test. Table 1 provides a summary of when measures were given (all measures can be found in Appendix A).

Table 1
Summary of Evaluation Measures and Time Given

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<td>Summative Evaluation Questions</td>
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</table>

*Eating Disorders Inventory (EDI)* In order to assess any symptoms of eating concerns that participants might have, several subscales of the Eating Disorders Inventory, or EDI, were used (Garner et al., 1983). Those subscales were Body Dissatisfaction (BD), Bulimia (BUL), Drive for Thinness (DT), Ineffectiveness (INEFF) and Interoceptive Awareness (IA). All scales are measured on a 6-point scale, with 1 = “always” and 6 = “never”. The scales are scored by first transforming all answers with a 4, 5, or 6 to a 0, a 3 to a 1, and a 1 to a 3, then summing the scales. The scale was
originally created using both patients with eating disorders and non-symptomatic control participants. Transformation of scores was done to find any participants that had clinical symptoms. For the purposes of looking for change, however, the 6-point scale was retained so that a more sensitive measure of change, if it occurred, was available. Schoemaker, van Strien, and van der Staak (1994) argued that the transformation of the 6-point scale to the 4-point scale was inappropriate with non-clinical samples because of a loss of information and decreased reliability of the scales.

The Body Dissatisfaction subscale measures the extent to which people are or are not satisfied with their bodies, doing so by asking about satisfaction with various areas of the body, such as stomach or thighs. An example item from this scale is, “I think that my stomach is too big.” The published mean for this scale is 10.20, and its published $\alpha = .91$. For BD the clinical cut-off score for anorexia-like symptoms is 14.2 and 17.4 for bulimia. The obtained mean was 9.03 ($SD = 7.79$), and $\alpha = .92$ and the range of scores was 0-27 for the transformed scores. There were 23% of participants in the clinical range. For the untransformed scores, $M = 23.32$ ($SD = 8.53$), and 7-42 was the range.

The Bulimia subscale tests for people’s agreement with symptoms representative of bulimia nervosa, such as, “I have gone on eating binges where I have felt that I could not stop.” The published mean for this scale is 2.00, and its published $\alpha = .83$. For BUL, 2.7 was the clinical cut-off for those with symptoms of anorexia, and 10.8 for those with symptoms of bulimia. The obtained mean was 1.40 ($SD = 2.68$), and $\alpha = .74$, and 0-14 was the range for the transformed scores in this sample. There were 16.1% of participants in the clinical range. The obtained mean for untransformed scores was 34.65 ($SD = 5.81$), and 14-42 was the range.
Drive for Thinness measures people’s tendencies for restrictive eating and preoccupation with being thinner. An example item for this scale is, “If gain a pound, I worry that I will keep gaining.” The published mean for this scale is 5.00, and its published $\alpha = .85$. For the DT subscale, 15.4 is the clinical cut-off. The obtained mean for transformed scores was 6.42 ($SD = 6.47$), and $\alpha = .93$, with a range of 0-21. There were 13.1% of the participants were in the clinical range for this subscale. The obtained mean for the untransformed scores was 24.52 ($SD = 9.21$), with a range of 7-42.

The INEFF subscale measures general feelings of effectiveness with items such as, “I feel ineffective as a person.” The published mean for this scale is 2.00, and its published $\alpha = .86$. The clinical cut-off is 14.4 for this subscale. For the transformed scores, the obtained mean was 2.18 ($SD = 3.14$), and $\alpha = .81$ with a range of 0-22. There were 1% of participants in the clinical range. For the untransformed scores, $M = 47.11$ ($SD = 8.27$), and the range of scores was 19-60.

Finally, the IA subscale measures a person’s ability or knowledge of their internal states, such as hunger (“I get confused about what emotion I am feeling.”). The published mean for this scale is 2.90, and its published $\alpha = .66$. For IA, the clinical cut-off is 12.5. The obtained mean was 2.73 ($SD = 4.02$), and $\alpha = .84$, with a range of 0-24 for the transformed scores. There were 35.2% of participants in the clinical range. The mean for the untransformed scores was 45.48 ($SD = 8.24$), with a range of 16-60.

Eating Self-efficacy (ESE) The ESE is a 16-item scale that measures efficacy for eating habits in a variety of situations (created for this study by LaPlant, 2001; see Appendix B for factor analysis results). Participants were first asked to indicate if they believed they could do a particular task, after which they were to rate their confidence in
their ability to perform the task. The scale was scored for amount of ineffectiveness.

First, an average of the confidence ratings given was computed. Then this average was subtracted from 100 to provide the percent of ineffectiveness a person feels for the domain being assessed. When factor analyzed, three subscales emerged. One subscale measures people’s confidence in their ability to make healthy food choices in a variety of situations (“Able to eat in a healthy manner at restaurants”). The mean for the scale (ESE-C) was 30.96 (SD = 20.23) and the obtained \( \alpha = .87 \). Another subscale measures people’s confidence in their ability to avoid eating because of mood (“Able to avoid eating because of boredom”). The obtained \( M = 47.98 \) (SD = 33.88) and the obtained \( \alpha = .94 \) for this subscale, named ESE-M. The third subscale measured people’s confidence in their knowledge about food (“Know appropriate serving sizes for food groups”). The mean for the scale (ESE-K) was 20.69 (SD = 24.76) and the obtained \( \alpha = .83 \). As this measure was created for this study, no published descriptive statistics are available.

**Academic Self-efficacy (ASE)** The ASE is a 5-item scale that measures efficacy for excelling in academics (LaPlant, 1999). The scale assesses people’s confidence not only in their ability to complete the necessary requirements for courses, but to go beyond and do well (“Explain assigned material to someone else”). After rating whether or not they felt they could perform the task, participants rated their confidence. Like the ESE, the ASE is scored as percent of ineffectiveness, which can range from 0-100. The published \( M = 25.70 \) (SD = 16.89), and \( \alpha = .91 \). The obtained \( M = 24.29 \) (SD = 19.25), and \( \alpha = .90 \).

**Social Self-efficacy (SSE)** The SSE is a 6-item measure of perceived efficacy for social situations (Wagner et al., 1987). An example items is,” Sit with a group of
classmates at school who ask you to join them.” Participants reported if they could do a task or not, and their confidence in their ability to perform the task. The SSE is scored as percent of ineffectiveness, just as the ESE and the ASE, which means that first an average of the confidence ratings given is computed. Then this average is subtracted from 100 to provide the percent of ineffectiveness a percent feels for the domain being assessed. The published $M = 9.5$, with $SD = 14.70$, and $\alpha = .81$. For this study, $M = 16.78$ with a $SD = 18.25$, and an $\alpha = .88$.

Readiness for Change (SOCE) Readiness for change in relation to healthy eating habits was assessed as this might be a possible explanatory factor for the outcomes of participants in both the experimental and control groups. The 4-item measure assessed what stage of change participants were in, Precontemplation, Contemplation, Preparation, Action, and Maintenance, based upon the theoretical stages of change model created by Prochaska and colleagues (1994) (created for this study by LaPlant, 2001). An example item from this scale was, “I am intending to take action to improve my eating habits in the next month.” In order to place someone in a particular stage, the number of “no” responses is counted. If a person responds with, “no” to all 4 questions, then she is categorized as being in the Precontemplation stage. If 3 “no” responses are provided, the person is in the Contemplation stage. When someone responds with “no” to 2 of the items, she is considered to be in the Preparation stage. A response of “no” to only 1 item places someone in the Action stage, and when all responses are “yes” then a person is considered to be in the Maintenance stage. This is modeled after Prochaska and colleagues’ (1994) method to measure Stages of Change. There was 1 person (1%) in the Precontemplation stage, 2 people (2%) in the Contemplation stage, 19 (19.2%) in the
Preparation stage, 17 (17.2%) in the Action stage, and 47 (47.5%) people in the Maintenance stage. This is different from past research, which indicates that for a health behavior such as smoking, between 10-15% of people are prepared for action, between 30-40% are in the contemplation stage, and the rest are in the stage of precontemplation (Oldenburg et al., 1999, p 506). This difference might be due to the college sample.

*Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ)* The SATAQ is a measurement of awareness and internalization of sociocultural attitudes about appearance (Heinburg, et al., 1995). There are 2 separate subscales for the SATAQ, a 6-item Awareness subscale (“Attractiveness is very important if you want to get ahead in our culture.”) and an 8-item Internalization subscale (“Women who appear in TV shows and movies project the type of appearance that I see as my goal.”). Stormer and Thompson (1996) found that internalization of cultural attitudes was related to symptoms of eating concerns. Both scales are measured on a 5-point scale, with 1 = “completely disagree” and 5 = “completely agree”. In order to score this scale, the items are simply summed. Scores can range from 6-30 on the Awareness subscale, and 8-40 on the Internalization subscale. The published $\alpha = .71$ for the Awareness subscale, and for the Internalization subscale, $\alpha = .88$ (no other descriptive statistics available). The obtained mean was 20.19 ($SD = 4.00$), and $\alpha = .69$ for the SATAQ-A, and for the SATAQ-I, $M = 26.18$, $SD = 7.96$, and $\alpha = .89$.

*Rosenberg Self-esteem Scale (RSE)* The RSE is a popular 10-item self-report measure of self-esteem (Rosenberg, 1965). A typical item from this scale is, “I am able to do things as well as most other people.” A lower self-esteem has been implicated in many studies as being related to increased symptomology (Frederick & Grow, 1996;
Sands et al., 1997). The RSE is measured on a scale of 1-4, with 1 = "strongly agree" and 4 = "strongly disagree". To compute a score for the RSE, all items are summed, thus scores can range from 10-40. The published $\alpha = .88$ for this scale, with no other published descriptive statistics available. The obtained $M = 18.98$ ($SD = 6.13$), and the obtained $\alpha = .90$.

Knowledge Test (KTI & KTE) Another factor that could influence outcomes is prior knowledge of the topics in the prevention program. For this reason, pretest of participants' knowledge about the various topics under discussion was also obtained. Participants were given the KTI and KTE again at post-test to see if they learned anything from the program, and as a manipulation check, where those in the information group should have done better on the KTI, and those in the efficacy group should have had more items correct on the KTE. There were multiple-choice questions that assessed the components addressed in the experimental conditions, the information and the efficacy condition. There were 12 information questions, and 15 efficacy questions. For instance, one question for the information only condition was, "Which of the following is a social risk factor leading to eating concerns?" An example of a question assessing knowledge for the components of the efficacy condition was, "What is 'reflecting' in active listening?" The scales were scored in terms of the number of correct items. For the test of information, scores ranged from 3-11, and for the efficacy test, from 3-14.

Summative Evaluation Questions (SEQ) The SEQs were open-ended questions that were asked with the intention of giving the participants the opportunity to evaluate the content of the program and their experience in the program. Participants were asked what were the most helpful components, which components should be changed or taken
out of the program, and about their experience in the group in general. Responses were coded using a grounded theory approach (Strauss & Corbin, 1998). This approach involves beginning with the words of the participants rather than having a priori ideas about how participants should respond. A researcher will randomly select a sample of the responses from participants, reading through the responses for themes. Categories are created based upon what was experienced rather than trying to force participants into categories into which they might not fit. After the coding scheme is created, the researcher analyzes the rest of the responses using the coding scheme, modifying it if other themes emerge or seem more appropriate.

Procedure

Participants were not randomly assigned to groups, though there were not any specific criteria that made a person eligible for a particular group. Instead, sign-ups were posted, and conditions were filled on a first-come, first-serve basis. The control condition was filled first, followed by the information group condition, and lastly the efficacy group condition was filled. All participants were given a series of pre-test assessments of their attitudes and behaviors associated with eating concerns and other risk factors addressed in the program, self-efficacy, readiness for change, and a pre-test of knowledge of information in the program. The pre-test took approximately one half an hour to complete.

There were two experimental groups, an information group and an efficacy group. Most prevention programs for eating concerns primarily provide information directly related to eating concerns in the program. Generally, this has been successful in changing people’s attitudes, but not their behaviors. Therefore, this study also added a
group in which people not only received information directly and indirectly related to eating concerns, but participants also had the opportunity to work with the information. The rationale for this approach was that if they had the opportunity to work with the material, they would be more likely to have attitude change and behavioral intention change, evidenced through their reported self-efficacy for the domains discussed in the program. Using the both types of programming would allow for comparisons to be made between the two.

After the participants in the experimental groups completed the packet of pre-test measures, the experimenter introduced herself more thoroughly to the participants and the purpose of the study was once again explained. After this, the participants were invited to share their names and anything about themselves that they wished to share with the rest of the group. Next, as a way to introduce the material that would be discussed in the group, the experimenter asked how many people in the group had ever known anyone with an eating concern. Following this, the experience of the participants diverged dependent upon their experimental condition, information or efficacy. The program component took approximately 2 hours to complete. Group sizes ranged from 2-8 people at a time.

The Information group was called such because the material provided in this group focused on information about eating concerns, ranging from symptoms, to risk factors and consequences. All of the material related directly to eating concerns. The Information group was first given an explanation of the clinical disorders anorexia and bulimia nervosa. Following this, a rationale for the use of the term “eating concerns” rather than “eating disorders” was provided, as well as statistics about the prevalence of...
females versus males with eating concerns. Next, participants were given a brief
introduction to the biopsychosocial approach to behavior, and then an overview of what
would be covered for the remainder of the group's time. The experimenter then
discussed physiological risks and consequences with participants, followed by a question
and answer discussion session. Next, the experimenter presented information about the
psychological risks and consequences of eating concerns, again with a question and
answer discussion session. Finally, a discussion of the social risks and consequences of
eating concerns was had, along with a discussion relating all three of the areas together.

The Efficacy group was provided material on topics related directly and indirectly
to eating concerns and also had structured activities for the participants to practice the
material in order to build skills with the material before leaving the group. First the
Efficacy group was given an explanation of why the material they would be working with
in the group that day was important, not only for themselves, but as information that
could disseminate to friends and family members. The explanation was framed in such a
way as to explain how many times eating concerns arise from unhealthy coping skills,
and that the information in the group was a way to gain more healthy coping skills. After
this, a brief overview of the material to be discussed was given. Then a dialogue about
how people diet, the consequences of such dieting, and why people diet was conducted.
In relation to this, participants and the experimenter discussed what "normal" eating was,
and also what was necessary to consume to fulfill the nutritional requirements and
serving sizes. Finally, all of this information was then used to assess where participants
might be lacking in terms of their own nutrition, what they could do to change this, and
what the barriers to change might be. Participants were given the opportunity to plan out
potential meals for themselves. Next, the experimenter presented information and some activities surrounding studying habits and memory. A discussion was held about how people currently studied, what they might do to improve their studying habits, and what potential barriers there might be to changing their habits. The last section that the experimenter discussed with participants had to do with social interactions. This included a discussion about assertiveness versus aggressiveness and being passive, a discussion about listening skills, and information about being involved on campus. The section ended with a structured activity that gave participants the opportunity to practice the information they had just learned about in relation to being active listeners, and to being assertive. Campus resources were provided for all sections of the Efficacy group (see Appendix C for details of program).

Post-program assessment for the experimental groups was conducted 1 week after the educational component. As part of the post-test assessment, participants answered open-ended questions about their experience in the group that could be used to evaluate the group in a qualitative manner in addition to the quantitative questions asked. Post-test assessment for the comparison group was conducted 9 weeks after the pre-test. Nine-week follow-up information will be gathered from the experimental participants, but will not be part of this study.
CHAPTER III

RESULTS

Data Analysis

In order to evaluate the program, pre and post-program data were collected from the experimental and control groups. Between and within-group comparisons were made between pre/post-program data from questionnaires measuring symptoms of eating concerns, self-efficacy for the relevant domains, and a pre/post-program information test. Other factors related to eating concerns, such as self-esteem and internalization of cultural values, were also examined for changes across time.

A Repeated Measures Mixed Model Analysis of Variance (ANOVA) was used to determine if there were differences between pre and post-test assessments within groups, as well as if there were any between-groups differences. Experimental groups were combined if there were no significant differences between them on a measure, but there were significant pre-post differences.

The qualitative data were analyzed using a grounded theory approach (Strauss & Corbin, 1998). This approach involved beginning with the words of the participants. The responses from participants were read through for themes. Categories were created based upon what was experienced rather than trying to force participants' responses into a priori categories. This was done so that coding of individual responses would be more accurate than if responses were coded into a priori categories. After the coding scheme
was created, the researcher analyzed the rest of the responses using the coding scheme, modifying it if other themes emerged or seemed more appropriate. This approach allowed for a more detailed picture of participant outcomes than the quantitative data alone could supply. For instance, even if a change in scores on a scale was not detected, the qualitative data might provide information about other kinds of change, as well as the experience for the participant. The information gathered from the qualitative data also was used to assess what components were the most helpful for participants.

**Data Screening**

Histograms were examined in order to assess normality of distribution and if any outliers needed to be removed. Overall, distributions were normally distributed, though some outliers were removed from several of the variables, including BD (5 removed), BMI (2 removed), INEF (9 removed), IA (6 removed), ASE (1 removed), ESE-C (3 removed), ESE-K (2 removed), RSE (3 removed), and SSE (3 removed). Cases were removed if the score appeared to be unattached to the rest of the values on the histogram, with a z-score of about 3 (Tabachnick & Fidell, 2001, p. 68).

**Quantitative Results**

**Pre-test Between-Group Analyses**

In order to see if the 3 groups were equivalent prior to intervention, one-way ANOVAs were examined. No significant pre-test differences emerged between groups for any of the EDI subscales. For the efficacy subscales, differences emerged for the ASE scale \( (F (2, 95) = 3.71, p < .03) \). The control group was significantly less efficacious than the experimental groups. No significant differences emerged between
the groups for any of the other measures. Thus, prior to intervention, the 3 groups were roughly equivalent on nearly all the measures.

**Control Group Pre-post Analyses**

It was predicted for the first hypothesis that those in the control group would experience an increase in symptoms as measured by the Eating Disorders Inventory (EDI) at post-test. Again, paired-group t-test analyses were performed. No significant differences in pre-post scores emerged (see Table 2). The control group did not have more eating concerns at post-test.

The second hypothesis predicted no change in scores for those in the control group on the knowledge tests. There were significant pre-post differences for both knowledge tests with paired-group t-test analyses. Those in the control group experienced an increase on both tests (see Table 3). These results did not support the hypothesis; control group participants did become more knowledgeable.

In order to assess whether the control group did not improve on any of the efficacy measures, paired-group t-test analyses were performed. For 2 of the 3 eating efficacy scales, as well as the social self-efficacy scale, this was the case; no significant differences were found. However, for the Academic Self-efficacy scale, the control group became more efficacious at post-test, as well as for the Eating Self-efficacy for Mood scale (See Table 4 for analyses). These mostly nonsignificant results were consistent with the expectation that there would not be improvements for the control group.
Do eating concerns change for the experimental groups after the intervention?

Hypothesis 4 stated that the experimental groups would either experience no change in EDI scores, or that they would perhaps improve over time. For Body Dissatisfaction, Bulimia, Ineffectiveness, and Interoceptive Awareness, there were no significant changes in time for scores. For the Drive for Thinness scale, however, a significant difference emerged \( (F(1, 95) = 7.51, p < .007, \eta^2 = .07) \). Within-group analyses revealed that the information group had a significant change in DT scores over time; those in the information group exhibited less drive for thinness after the intervention (See Table 2).

Do those in the experimental group have more knowledge at post-test?

The fifth prediction was that those in the experimental groups would demonstrate an increase in knowledge after the intervention, and that the increase would be only for the content of their intervention. Significant differences did emerge for this hypothesis. When examining the pre-post difference for Knowledge Test for Information (KTI) \( (F(2, 96) = 4.16, p < .02, \eta^2 = .08) \), it appeared that all groups experienced a significant increase in knowledge over time. The pre-post difference for Knowledge Test for Efficacy (KTE) was also significant \( (F(2, 96) = 10.22, p < .001, \eta^2 = .18) \), with a significant increase in knowledge for the efficacy group, and the control group, but not the information group (see Table 3).

Does the efficacy intervention group have higher self-efficacy at post-test than the other groups?

Hypothesis 6 stated that those in the efficacy intervention group would be more efficacious at post-test than those in the other 2 groups. There was no difference for
Academic Self-efficacy between the experimental groups at pre or post-test, so the groups were combined in order to examine change scores. There was a nonsignificant trend for the experimental groups to be more efficacious at post-test (higher scores mean lower efficacy on all efficacy measures; see Table 4). For the Social Self-efficacy (SSE) scale there were no significant differences for either of the experimental groups between pre and post-test. The same was the case for the Eating Self-efficacy for Mood (ESE-M) scale for the efficacy group (trend toward significance), but not for the information group. The information group became more efficacious at post-test (see Table 4).

Significant pre-post differences emerged for the Eating Self-efficacy for Choice (ESE-C) scale ($F(1, 93) = 9.26, p < .003, \eta^2 = .09$). There was no significant difference between the experimental groups at pre or post-test ($t(52) = -.16, ns,$ and $t(52) = .22, ns,$ respectively). However, when the two intervention groups were combined, there was a significant change over time. Participants reported more self-efficacy for making healthy eating choices at post-test as compared to pre-test efficacy.

Significant pre-post differences also emerged for the Eating Self-efficacy for Knowledge (ESE-K) scales ($F(2, 96) = 3.61, p < .03, \eta^2 = .07$). The only group to have a significant change in scores at post-test was the efficacy group, meaning that this group’s efficacy for knowledge about healthy eating increased over time. (See Table 4)

Do the interventions affect participants’ scores on other measures related to eating concerns?

Mixed model repeated measure ANOVAs were also preformed on the Rosenberg Self-esteem (RSE), Sociocultural Attitudes Toward Appearance Questionnaire-Awareness (SATAQ-A), and Sociocultural Attitudes Toward Appearance Questionnaire-
Internalization (SATAQ-I) in order to determine if the group intervention influenced these variables, which have been related to eating concerns in the past. No significant differences were found for the SATAQ-A or the SATAQ-I. The RSE had a nonsignificant trend toward significance, $F(2, 87) = 2.53, p < .09$. Within-group analyses revealed a significant difference for the efficacy group, meaning that self-esteem increased for this group between pre and post-test (see Table 5).

**Exploratory Analyses**

Exploratory analyses were conducted to assess if people were affected by the intervention differentially depending upon their body mass index (BMI). BMI was computed by dividing participants’ weight (in kg) by height, squared (in meters). First, the experimental groups’ BMI was split into 3 categories, high, medium, and low, based upon the distribution of scores, with about 33% of participants in each category. Those with BMI scores of 20.97 and below were placed in the “low” category ($n = 18$), those with BMI scores between 20.98 and 22.60 were placed in the “medium” category ($n = 18$), and those with BMI scores above 22.61 were placed in the high category ($n = 17$).

Second, Mixed Model Repeated Measures ANOVAs were computed for the experimental groups separately for the EDI subscales and for the efficacy scales to see if any patterns emerged based upon BMI category membership. For the EDI, the only analysis that was significant was for the information group on the Drive for Thinness subscale (DT), $F(1, 24) = 5.31, p < .03, \eta^2 = .18$, for the within-subjects effect, and for the between-subjects effect, $F(2, 24) = 6.78, p < .005, \eta^2 = .36$. This meant that there was a significant difference across time for DT scores (the same as seen for the

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information group as a whole), and also between BMI groups for DT scores, but there was no interaction between the two.

Post-hoc analyses using Tukey revealed that there was a significant difference between people in the low and the high BMI group on DT (mean difference = 11.94, \( p < .003 \)). Those in the high BMI group had more Drive for Thinness than did those in the low BMI group (see Table 6). This meant that those who body size was larger (based upon the height/weight ratio) had more drive for thinness than did those with a smaller body size. No other significant differences emerged for the EDI or the efficacy scales for either the information group or the efficacy group.
Table 2
Pre-post t-test analyses for Eating Disorder Inventory Subscales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Control Group</th>
<th>Information Group</th>
<th>Efficacy Group</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>t-test</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>BD</td>
<td>t(38) = .78, p &lt; .44</td>
<td>21.93</td>
<td>21.77</td>
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<tr>
<td></td>
<td>(9.78)</td>
<td>(9.53)</td>
<td>(6.71)</td>
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<tr>
<td>BUL</td>
<td>t(44) = -1.01, p &lt; .32</td>
<td>33.87</td>
<td>34.40</td>
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<td></td>
<td>(6.80)</td>
<td>(6.15)</td>
<td>(4.02)</td>
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<tr>
<td>DT</td>
<td>t(44) = -1.85, p &lt; .07</td>
<td>23.73</td>
<td>24.87</td>
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<tr>
<td></td>
<td>(9.68)</td>
<td>(8.90)</td>
<td>(8.06)</td>
</tr>
<tr>
<td>IA</td>
<td>t(39) = .69, p &lt; .50</td>
<td>46.90</td>
<td>46.03</td>
</tr>
<tr>
<td></td>
<td>(7.06)</td>
<td>(6.93)</td>
<td>(8.05)</td>
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<tr>
<td>INEF</td>
<td>t(37) = -.10, p &lt; .92</td>
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Note: BD = Body Dissatisfaction, BUL = Bulimia, DT = Drive for Thinness, IA = Lack of Interoceptive Awareness, INEF = Sense of Ineffectiveness; Numbers in parentheses indicate standard deviation and sample size.

*a* = indicates that a significant post-test difference between groups emerged
<table>
<thead>
<tr>
<th>Scale</th>
<th>t-test</th>
<th>Control Group</th>
<th>Information Group</th>
<th>Efficacy Group</th>
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<td>Post</td>
<td>Pre</td>
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<tr>
<td>Scale</td>
<td>t-test</td>
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<td>Post</td>
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<tr>
<td>KTE</td>
<td>( t(44) = -1.85, p &lt; .04 )</td>
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<td>9.00&lt;sup&gt;a&lt;/sup&gt;</td>
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<td></td>
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<td>(45)</td>
<td>(27)</td>
</tr>
<tr>
<td>KTI</td>
<td>( t(44) = -3.06, p &lt; .004 )</td>
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<td>7.69&lt;sup&gt;a&lt;/sup&gt;</td>
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</table>

*Note:* KTE = Knowledge Test for Efficacy, KTI = Knowledge Test for Information; Numbers in parentheses indicate standard deviation and sample size.

<sup>a, b</sup> = indicates that a significant post-test difference between groups emerged.
Table 4
Pre-post t-test analyses for Self-efficacy Measures

<table>
<thead>
<tr>
<th>Scale</th>
<th>t-test</th>
<th>Control Group</th>
<th>Information Group</th>
<th>Efficacy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>ASE</td>
<td>$t(44) = 2.67, p &lt; .01$</td>
<td>28.64</td>
<td>23.32</td>
<td>17.90</td>
</tr>
<tr>
<td>ESE-C</td>
<td>$t(41) = 1.18, p &lt; .244$</td>
<td>28.33</td>
<td>25.00</td>
<td>29.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(20.02) (15.31)</td>
<td>(27) (27)</td>
<td>(27) (27)</td>
</tr>
<tr>
<td>ESE-K</td>
<td>$t(44) = 1.29, p &lt; .20$</td>
<td>18.00</td>
<td>15.11</td>
<td>16.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(19.01) (16.22)</td>
<td>(27) (27)</td>
<td>(27) (27)</td>
</tr>
<tr>
<td>ESE-M</td>
<td>$t(44) = 3.77, p &lt; .001$</td>
<td>40.66</td>
<td>31.67</td>
<td>29.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(27.62) (25.91)</td>
<td>(24) (24)</td>
<td>(22) (22)</td>
</tr>
<tr>
<td>SSE</td>
<td>$t(42) = 1.81, p &lt; .08$</td>
<td>15.50</td>
<td>12.87</td>
<td>15.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(12.59) (11.70)</td>
<td>(27) (27)</td>
<td>(27) (27)</td>
</tr>
</tbody>
</table>

Note: ASE = Academic Self-efficacy, ESE-C = Eating Self-efficacy for health choices, ESE-K = Eating Self-efficacy for knowledge about food, ESE-M = Eating Self-efficacy for mood, SSE = Social Self-efficacy; Numbers in parentheses indicate standard deviation and sample size.

*Experimental groups combined for these analyses.
Table 5
Pre-post t-test analyses for RSE and SATAQ

<table>
<thead>
<tr>
<th>Scale</th>
<th>t-test</th>
<th>Control Group</th>
<th>Information Group</th>
<th>Efficacy Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>RSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$t(41) = 1.03, p &lt; .31$</td>
<td>$t(25) = .73, p &lt; .47$, $t(26) = 3.81, p &lt; .001$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18.82</td>
<td>18.17</td>
<td>18.08</td>
<td>17.54</td>
</tr>
<tr>
<td></td>
<td>(5.49)</td>
<td>(5.70)</td>
<td>(6.01)</td>
<td>(5.99)</td>
</tr>
<tr>
<td></td>
<td>(44)</td>
<td>(42)</td>
<td>(26)</td>
<td>(26)</td>
</tr>
<tr>
<td>SATAQ-A</td>
<td>$t(44) = .43, p &lt; .67$</td>
<td>$t(26) = .76, p &lt; .46$, $t(26) = .59, p &lt; .56$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19.76</td>
<td>19.49</td>
<td>20.15</td>
<td>19.78</td>
</tr>
<tr>
<td></td>
<td>(4.04)</td>
<td>(4.32)</td>
<td>(2.84)</td>
<td>(3.06)</td>
</tr>
<tr>
<td></td>
<td>(45)</td>
<td>(45)</td>
<td>(27)</td>
<td>(27)</td>
</tr>
<tr>
<td>SATAQ-I</td>
<td>$t(44) = -1.30, p &lt; .20$</td>
<td>$t(26) = 1.45, p &lt; .16$, $t(26) = .43, p &lt; .67$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25.73</td>
<td>26.73</td>
<td>25.48</td>
<td>25.59</td>
</tr>
<tr>
<td></td>
<td>(8.35)</td>
<td>(8.41)</td>
<td>(7.26)</td>
<td>(7.74)</td>
</tr>
<tr>
<td></td>
<td>(45)</td>
<td>(45)</td>
<td>(27)</td>
<td>(27)</td>
</tr>
</tbody>
</table>

Note: RSE = Rosenberg Self-esteem Scale, SATAQ-A = Sociocultural Attitudes Toward Appearance-Awareness subscale, SATAQ-I = Sociocultural Attitudes Toward Appearance-Internalization subscale; Numbers in parentheses indicate standard deviation and sample size.
Table 6
Pre-post scores for DT by BMI for the Information Group

<table>
<thead>
<tr>
<th>Pre BMI</th>
<th>Post BMI</th>
<th>Pre BMI</th>
<th>Post BMI</th>
<th>Pre BMI</th>
<th>Post BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>33.20</td>
<td>34.90</td>
<td>28.75</td>
<td>30.25</td>
<td>21.33</td>
<td>22.89</td>
</tr>
<tr>
<td>(4.42)</td>
<td>(6.06)</td>
<td>(8.45)</td>
<td>(9.98)</td>
<td>(6.48)</td>
<td>(8.12)</td>
</tr>
<tr>
<td>(10)</td>
<td>(10)</td>
<td>(8)</td>
<td>(8)</td>
<td>(9)</td>
<td>(9)</td>
</tr>
</tbody>
</table>

Note: DT = Drive for Thinness, BMI = Body Mass Index; Numbers in parentheses indicate standard deviation and sample size.
Qualitative Results

**Question 1:** *What were the three most helpful things in the group for you? Please explain why those were helpful.* For the information intervention group, the most popular response was learning the extent of the problem/raising awareness (n = 12). An example of the raising awareness category was, “Learning about the consequences and how dangerous the disorders really are.” The second most popular response was learning the physiological, psychological, and social risks and consequences (n = 8). “3 most helpful things were knowing the social, psychological consequences/risk factors of eating concerns and ways to prevent these. This is the most important thing to consider when dealing with eating disorders,” was an example of the risk/consequences code. Two different codes were third most popular, discussion style/group setting (n = 7), and hearing peers’ views (n = 7). An example of the discussion style code was, “. . . the group was informative yet in a discussion style which was great because it allowed everyone to talk”, while, “Hearing my peers opinions on the matter because it put into perspective what we were learning on a human level,” was an example of the hearing peers’ views code. (See Table 7 for a complete list of codes for this group.)

For the efficacy intervention group, the top 3 most helpful things listed by participants were: 1) food guides/food pyramids/serving (n = 10), 2) learning about healthy eating (n = 8), and learning about unhealthy eating/what it does to the body (n = 8), 3) study habits (n = 6). An example of the most popular code for this question was, “food groups/pyramid-thought I knew it but was off in some areas.” For the healthy eating code, “The most helpful were the eating tips. Especially talking about flexible eating and how you did not have to eat specific things at specific times just to feel like you are
eating healthy," was an example. The unhealthy eating code had the following for an example: “What was really helpful was the effects of dieting. I didn’t know certain diets could be so bad for you.” Finally, an example of the study habits code was, “Most helpful—study tips! Often study at night, w/ music, which isn’t good!” (See Table 8 for a complete list of codes for this group.)

The two intervention groups’ responses were similar to each other in that they both liked the information presented in the groups. While those in the efficacy group discussed the structure of the group as being helpful, this was not one of the most popular responses for this question as it was with those in the information group. Another interesting results of the coding was that half of the information that those in the efficacy group reported as being helpful (food guides/study habits) was directly related to the activities that they did in the group (see Appendix B for details of the activities).

**Question 2:** What were three things that you think should be taken out of the group experience or changed? Please explain why you would take them out or how you would change them. The most popular response to this question for the information group was to change nothing (n = 7). The second most popular response was to have more visuals (n = 6). Finally, having more real life examples/personal stories (n = 4), and change the survey (n = 4) were both the third most popular responses. An example item for the most popular code was, “I don’t think I’d take anything out. I think that since so many girls do have eating disorders, it is important to hear all of the information about eating disorders/concerns that they can.” For the second most popular code, more visual, “More visuals would be helpful. These would help in remembering the info more,” was an example. For the real life examples, the following was an example, “I would have
liked to hear more personal stories on the matter of the subject.” Finally, “I don’t really understand why there are questions on the survey about studying and listening. Maybe that should be explained more,” was an example of the change survey code. (See Table 7 for a complete list of codes for this group.)

For the efficacy group, the top 3 responses for this question were: change nothing (n = 7), change/take out memory/studying (n = 6), and change the survey (n = 5). The change nothing code consisted of responses such as, “I really don’t think I would take anything out. All topics touched upon were very important topics to discuss & think about. These topics should be talked about more.” The memory/studying code consisted of statements resembling this one, “The part about learning and study skills because although those are affected in anorexic and bullemites [sic] as well as people with other disorders, I did not think it was as interesting as the first part of the presentation.” For the change the survey code, one woman wrote, “Some of the questions about physiological [sic] factors or physiological factors kind of threw me off track, they were difficult to answer. Maybe make them a little more generalized.” (See Table 8 for a complete list of codes for this group.)

The two groups were similar in their responses for this question. Both groups’ most popular reply was to change nothing about the group experience. Both groups also thought the survey should be changed. Specifically, responses related to this code discussed questions that weren’t related to the information presented in the group, from the knowledge tests. Participants wrote that they did not understand why there were being asked questions about information that was not part of the group. Though both groups mentioned changing the visuals in the presentation in some way, this was not as
popular of a response for those in the efficacy group compared to those in the information group.

**Question 3:** Please comment on your experience in the group. For instance, you might write about if the group has changed things for you personally, or your experiences with others. For the information group, the following responses were seen the most: raised awareness (n = 18), enjoyed/good experience (n = 10), feel more healthy with eating and body (n = 5). Women wrote responses such as, “I have become more aware of the contradictory info in the media regarding physical appearance making it easier to avoid such things. . .” for the raised awareness code. An example of the enjoyed/good experience code was, “This was a great experience for me, I have never had an eating disorder, but my weight is a concern of mine, and being able to talk and discuss something that is effecting [sic] many women was helpful.” Women wrote statements for the feel more healthy code like the following: “It made me remember that being healthy is more important than being thin. I feel that its [sic] not worth it to starve your body because it really doesn’t make you happy in the end.” (See Table 7 for a complete list of codes for this group.)

Those in the efficacy group gave the following responses most often for this question: 1) raised awareness (n = 10), as well as have been changing eating habits (n = 10), 2) made me look/reevaluate my eating habits (n = 6), 3) good to hear others (n = 4). For the raised awareness code, women provided responses similar to this, “It also made me realize how much alike girls are, no matter what type of music they listen to, the type of clothes they wear, if they play sports. Because we generally agreed on the issues w/ eating concerns, which shows that although the media has a large influence, it doesn’t
single out. Everyone is affected.” An example of the other most popular code was,
“Instead of mentality ‘I want to change my body’ it is now ‘I want to take care of my
body’ big difference.” The second most popular code for this question has responses
similar to the following: “I must say, in this past week I have thought about what I am
doing right with my eating habits and it has made me feel even better about myself.”
Finally, an example of the third most popular code, good to hear others, was, “I found it
great that a small group of us could all get together and talk about eating habits, and what
it meant to others, which made me feel good b/c everyone felt strongly about not caring
how others felt which I liked b/c I sometimes do care how others think.” (See Table 8 for
a complete list of codes for this group.)

Again, similarities emerge between the two groups, with the majority of their
responses about the experience being positive. Both groups indicated that their
awareness of issues related to eating concerns was raised, that something about the group
itself was helpful, and that they were feeling more healthy about themselves in relation to
eating concerns. The latter category was more apparent in the efficacy group (~63% of
responses) than in the information group (~22% of the responses). This makes sense as
those in the efficacy group were given more tools to help themselves be more healthy
than were those in the intervention group.
### Table 7
Coding categories for information group for summative evaluation

#### Combined Categories

<table>
<thead>
<tr>
<th>Individual Codes</th>
<th>N</th>
<th>%/total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1: What was helpful? (n = 54)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Something about structure of/or group experience</td>
<td>18</td>
<td>33.33</td>
</tr>
<tr>
<td>Discussion style/group setting</td>
<td>7</td>
<td>38.89</td>
</tr>
<tr>
<td>Hearing peers/not alone in thoughts &amp; feelings</td>
<td>7</td>
<td>38.89</td>
</tr>
<tr>
<td>Size of group</td>
<td>2</td>
<td>11.11</td>
</tr>
<tr>
<td>Question/answers in presentation</td>
<td>2</td>
<td>11.11</td>
</tr>
<tr>
<td>Raised awareness-general</td>
<td>13</td>
<td>24.07</td>
</tr>
<tr>
<td>Knew about issues, this made them real</td>
<td>1</td>
<td>7.69</td>
</tr>
<tr>
<td>Learning extent of problem/raising awareness</td>
<td>12</td>
<td>92.31</td>
</tr>
<tr>
<td>Raised awareness-specific</td>
<td>12</td>
<td>22.22</td>
</tr>
<tr>
<td>Learning biopsychosocial risks &amp; consequences</td>
<td>8</td>
<td>66.67</td>
</tr>
<tr>
<td>Learning about resources/support</td>
<td>1</td>
<td>8.33</td>
</tr>
<tr>
<td>Discussion of media</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td><strong>Self-enrichment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned something about self</td>
<td>3</td>
<td>42.86</td>
</tr>
<tr>
<td>Information made me want to be more healthy</td>
<td>2</td>
<td>28.57</td>
</tr>
<tr>
<td>Reassured about self</td>
<td>2</td>
<td>28.57</td>
</tr>
<tr>
<td><strong>Able to help someone else</strong></td>
<td>4</td>
<td>7.41</td>
</tr>
<tr>
<td><strong>Question 2: Change/take out what? (n = 36)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure of/or group experience</td>
<td>18</td>
<td>50</td>
</tr>
<tr>
<td>More visuals</td>
<td>6</td>
<td>33.33</td>
</tr>
<tr>
<td>More discussion</td>
<td>3</td>
<td>16.67</td>
</tr>
<tr>
<td>More people</td>
<td>2</td>
<td>11.11</td>
</tr>
<tr>
<td>Food</td>
<td>2</td>
<td>11.11</td>
</tr>
<tr>
<td>Repetitive</td>
<td>2</td>
<td>11.11</td>
</tr>
<tr>
<td>Time</td>
<td>3</td>
<td>16.67</td>
</tr>
<tr>
<td>Information in group</td>
<td>7</td>
<td>19.44</td>
</tr>
<tr>
<td>More real life examples/personal stories</td>
<td>4</td>
<td>57.14</td>
</tr>
<tr>
<td>How we could help</td>
<td>1</td>
<td>14.29</td>
</tr>
<tr>
<td>More on media</td>
<td>2</td>
<td>28.57</td>
</tr>
<tr>
<td><strong>Change survey</strong></td>
<td>4</td>
<td>11.11</td>
</tr>
<tr>
<td><strong>Change nothing</strong></td>
<td>7</td>
<td>19.44</td>
</tr>
</tbody>
</table>

(table continues)

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### Combined Categories

<table>
<thead>
<tr>
<th>Individual Codes</th>
<th>N</th>
<th>%/total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helpful in relation to someone else</td>
<td>10</td>
<td>19.61</td>
</tr>
<tr>
<td>Helped me identify problem in someone else</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Educated others</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Insight of person I know with an eating concern</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Prepared to handle someone with an eating concern</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Self-enrichment</td>
<td>11</td>
<td>21.57</td>
</tr>
<tr>
<td>Think more about own eating habits</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>Feel more healthy with eating and body</td>
<td>5</td>
<td>45.45</td>
</tr>
<tr>
<td>Reassuring</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>Raised awareness</td>
<td>18</td>
<td>35.29</td>
</tr>
<tr>
<td>Enjoy/good experience</td>
<td>10</td>
<td>19.61</td>
</tr>
<tr>
<td>Didn’t change</td>
<td>2</td>
<td>3.92</td>
</tr>
</tbody>
</table>

*Note:* Bolded percentages indicated the percent of the total responses for that question. Percentages that are not bolded indicated percent of the category.
### Table 8

**Coding categories for efficacy group for summative evaluation**

<table>
<thead>
<tr>
<th>Combined Categories</th>
<th>Individual Codes</th>
<th>N</th>
<th>%/total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question 1: What was helpful? (n = 69)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned information related to nutrition/eating concerns</td>
<td>33</td>
<td>47.83</td>
<td></td>
</tr>
<tr>
<td>Food guides/food pyramids/serving size</td>
<td>10</td>
<td>30.30</td>
<td></td>
</tr>
<tr>
<td>Healthy eating</td>
<td>8</td>
<td>24.24</td>
<td></td>
</tr>
<tr>
<td>Characteristics of eating concerns</td>
<td>5</td>
<td>15.15</td>
<td></td>
</tr>
<tr>
<td>Unhealthy eating/what does to body</td>
<td>8</td>
<td>24.24</td>
<td></td>
</tr>
<tr>
<td>Learned to think more about my eating habits</td>
<td>2</td>
<td>6.06</td>
<td></td>
</tr>
<tr>
<td>Something about structure of/or group experience</td>
<td>9</td>
<td>13.04</td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td>4</td>
<td>44.44</td>
<td></td>
</tr>
<tr>
<td>Hearing peers</td>
<td>3</td>
<td>33.33</td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>2</td>
<td>22.22</td>
<td></td>
</tr>
<tr>
<td>Learning information-general</td>
<td>13</td>
<td>18.84</td>
<td></td>
</tr>
<tr>
<td>Help in everyday life</td>
<td>3</td>
<td>23.08</td>
<td></td>
</tr>
<tr>
<td>Campus resources</td>
<td>5</td>
<td>38.46</td>
<td></td>
</tr>
<tr>
<td>Reinforced what I already knew</td>
<td>3</td>
<td>23.08</td>
<td></td>
</tr>
<tr>
<td>Raised awareness</td>
<td>2</td>
<td>15.38</td>
<td></td>
</tr>
<tr>
<td>Learning information-other</td>
<td>11</td>
<td>15.94</td>
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<tr>
<td>Study habits</td>
<td>6</td>
<td>54.55</td>
<td></td>
</tr>
<tr>
<td>Learning how to listen</td>
<td>5</td>
<td>45.45</td>
<td></td>
</tr>
<tr>
<td>Wasn’t helpful</td>
<td>3</td>
<td>4.35</td>
<td></td>
</tr>
<tr>
<td><strong>Question 2: Change/take out what? (n = 31)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure of group</td>
<td>12</td>
<td>38.71</td>
<td></td>
</tr>
<tr>
<td>Not have all topics at once</td>
<td>3</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Visuals</td>
<td>3</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>2</td>
<td>16.67</td>
<td></td>
</tr>
<tr>
<td>More discussion</td>
<td>4</td>
<td>33.33</td>
<td></td>
</tr>
<tr>
<td>Information in group</td>
<td>7</td>
<td>22.58</td>
<td></td>
</tr>
<tr>
<td>Memory/studying</td>
<td>6</td>
<td>85.71</td>
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<tr>
<td>More on media</td>
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<td>14.29</td>
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<tr>
<td>Change survey</td>
<td>5</td>
<td>16.13</td>
<td></td>
</tr>
<tr>
<td>Change nothing</td>
<td>7</td>
<td>22.58</td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
### Question 3: Experience in group? (n = 46)

<table>
<thead>
<tr>
<th>Change in relation to thoughts and behaviors</th>
<th>29</th>
<th>63.04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made me look at/reevaluate my eating habits</td>
<td>6</td>
<td>20.69</td>
</tr>
<tr>
<td>Made me want to make a change in my habits</td>
<td>2</td>
<td>6.90</td>
</tr>
<tr>
<td>Trying to be a better listener</td>
<td>1</td>
<td>3.45</td>
</tr>
<tr>
<td>Have been changing my habits</td>
<td>10</td>
<td>34.48</td>
</tr>
<tr>
<td>Raised awareness</td>
<td>10</td>
<td>34.48</td>
</tr>
<tr>
<td>Experience in relation to others</td>
<td>5</td>
<td>10.87</td>
</tr>
<tr>
<td>Spread information to others</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Good to hear others’ views</td>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>Good experience</td>
<td>9</td>
<td>19.57</td>
</tr>
<tr>
<td>Nothing changed</td>
<td>3</td>
<td>6.52</td>
</tr>
</tbody>
</table>

*Note: Bolded percentages indicated the percent of the total responses for that question. Percentages that are not bolded indicated percent of the category.*
CHAPTER IV

DISCUSSION

Summary and Implications of Results

The present study was conducted to answer three major questions. First of all, was a new prevention program for eating concerns effective against participants developing eating concerns? Second, was the program effective at increasing participants' knowledge for the content in the program? Finally, was the program effective at increasing participants' self-efficacy?

Was the program effective for preventing eating concerns?

It was predicted that those in the control group would have increased eating concerns at post-test, and that those in the experimental groups would display no change in eating concerns, or that their eating concerns would improve. There were no significant changes for control group participants for eating concerns, though there was a trend for them to exhibit more drive for thinness at the post-test. Participants in the efficacy group did not show any changes in eating concerns on any of the scales.

Those in the information group, however, exhibited less drive for thinness after the intervention, and they had significantly lower drive for thinness than the efficacy group at post-test. Shaw and Waller (1995) and Piran (1998) suggested that successful programs include components that were in the information intervention group, psychoeducation and a discussion-style format. Participants reported in the qualitative data that the format of the group and the information presented in the group were both
some of the most helpful things about the experience, confirming the assertions made by researchers about what would make a successful program.

Other researchers have proposed that successful groups are those that have a format that empowers the participants and provides them with opportunities to build skills before leaving the program (Rosen and Neumark-Sztainer 1998; Shisslak et al., 1998). The information intervention group did not have any systematic component directed toward empowerment and skills building; instead the efficacy intervention group focused on this. Though those participants did not have any increases in eating concerns, which was good, they also did not demonstrate improvements. Interestingly, those in the efficacy group reported that the components related to the skills building were most helpful to them, not necessarily the discussion-style format. It might be the case that there will be improvements for those in the efficacy group at the nine-week follow-up period, after they had more opportunity to work with the new skills they had gained in the group. The information group simply received information, which was something that may have been easier for participants to incorporate into their lives rather than trying to change their eating, study, or communication habits. Therefore, change in the information group may have been easier to detect at a quantitative level after such a short period of time.

Was the program effective at increasing participants’ knowledge?

It was predicted that the experimental groups would have an increase in knowledge after the intervention, but the increase would be only for the content of the intervention, and that the control group would show no change in knowledge. For the knowledge test for information group content, all groups had significantly higher post-
test scores compared to pre-test scores. The only group for which this change was predicted was the information group. There may have been a significant amount of people in the control group who had taken the general education nutrition class, which many first year students take, and would have received some of the content from the information group in that class. Unfortunately, this was not assessed. Another confound may have been the fact that those the control group participants may have learned some of this information in their Introductory Psychology classes. For those in the efficacy group, they may have been able to make educated guesses about the material on the information group content based upon what they learned in their own group.

Anecdotally, there were participants who had taken the general education nutrition class in the efficacy group, and so they may have also learned the information group content in that class.

The knowledge test for the efficacy group content had results that resembled the prediction made. The efficacy group demonstrated increased knowledge for its content, but the control group did as well. The control group’s post-test information score is very close to the efficacy group’s pre-test score. Also, the efficacy group’s post-test score is significantly higher than the post-test scores of both the control group and the information group. Though the control group did demonstrate some increase in knowledge (which might again be attributable to coursework), the change was not as great as that experienced by the efficacy group. Therefore, it appears that those in the efficacy group did gain more knowledge for that content area, both compared to their pre-test scores and as compared to the other groups.
When the qualitative data were examined, worthy of note were the responses from both groups in relation to the question asking about what to change or take out of the group experience. One of the most popular responses to this question was to change the survey. When individual responses for this code were examined, most of them had a theme about how some of the questions did not relate to the group, and were difficult to answer. It appears, then, that participants recognized what information was and was not presented in the group. As college students many of them were accustomed to taking multiple-choice exams, and therefore were probably quite good at making educated guesses about responses to questions. This could be another explanation as to why there were some unexpected increases in knowledge for participants.

Was the program effective at increasing the participants' self-efficacy?

Finally, it was expected that those in the efficacy group would exhibit increases in self-efficacy after the intervention, but that the information group would not, nor would the control group. Again, mixed results were obtained from these analyses. For the Social Self-efficacy scale (SSE) there were no significant changes for any of the groups at post-test. For the Academic Self-efficacy scale, the only group to have any significant change was the control group, whose participants reported an increase in efficacy (see below for further discussion of this issue).

Both the control group and the information group exhibited an increase in efficacy for eating and mood, but the efficacy group did not (though there was a nonsignificant trend for an increase in efficacy here). This result is interesting because the efficacy group discussed emotions in relation to food in terms of flexibility. The result of the discussion was that it was acceptable sometimes to eat when one was bored or depressed.
or anxious, to keep one’s relationship with food flexible, not rigid. This may be why the participants in the efficacy group did not experience a significant increase in efficacy for eating and mood. In other words, the discussion they had around food and mood came to the conclusion that it wasn’t always necessary to avoid eating when one was bored or anxious, and this was not the case in the information group.

The information group and the efficacy group, when combined, reported a significant increase in efficacy for healthy eating choices from pre to post-test. The experience codes created from participants’ responses to question 3 of the summative evaluation indicated that both groups felt healthier about their eating habits and their bodies because of their experiences in the program. This was unexpected, as the information group did not focus explicitly on healthy eating habits as the efficacy group did. Instead this group discussed risks for eating concerns, part of which was a discussion of unhealthy relations with food. A closer examination of the individual responses about being more healthy with eating and body indicated that participants talked about being more healthy through not wanting to “starve” themselves because of what it would do to their bodies, and that they felt more respect for their bodies after discussing eating concerns more thoroughly. Those in the efficacy group had responses more specifically related to nutrition/food choice, as well having more physically connected rather than externally-directed eating habits. Though participants in both groups did experience an increase in efficacy for healthy eating choices, it appears that what each group meant by this was different.

Finally, the efficacy group was the only group to experience an increase in self-efficacy for knowledge about food. This result was exactly as predicted, and makes sense
because this was the only group to get specific information about the food pyramid, what foods are part of each of the food groups, and what a serving size is for various types of food. The qualitative responses provided by participants in this group also reinforced this result. Some of the most popular responses to question 1 (what was most helpful?) related to the food guide, serving sizes, and the food pyramid.

In summary, although support for the predictions was mixed, the results were still interesting. Past research has found that providing information to participants can help to decrease their eating concerns, particularly around issues of body appearance (Franko, 1998; Huon, 1994). The current study reinforces past results about providing information to participants as a means of prevention because those in the information group reported less drive for thinness at post-test.

It appeared that the efficacy intervention was effective in relation to very specific nutrition issues. Both intervention groups, however, appeared to influence participants in terms of healthy food choice, and their reported behavior change. This adds to the prevention literature because in the past researchers have been able to find attitudinal change, but have been less likely to find behavioral change, or change in measures that correlate highly with behavioral change, such as self-efficacy (Franko, 1998). Those in the efficacy group also reported change for study habits and listening skills, which were specifically related to their group’s content, and reports of this were appropriately absent from the other intervention group’s responses. This type of intervention was missing from the prevention literature to date (Rosen and Neumark-Sztainer, 1998). It is still unclear, however, if this will make a difference in relation to eating concerns. Those in
the efficacy did not report any increases in symptoms, but they also did not exhibit any decreases, either.

Results also indicated that the efficacy group content had the potential to increase self-esteem, as indicated by the nonsignificant trend for a post-test increase in RSE scores for the efficacy group. This result was interesting as Shisslak et al. (1998) had suggested that if programs wanted to increase self-esteem it would be necessary to work on skills-building. The current results supported their assertion with data.

Finally, the qualitative data demonstrated that participants in both groups felt the experience was positive for them and that they learned something from it. Specifically, many participants reported how they learned something about themselves and other young women their age, realizing that they were not alone in their ideas and feelings about eating concerns. These results are similar to the anecdotal evidence collected by Friedman (1998) in which she found that the participants reported an increase in comfort and a decrease in feelings of isolation about ideas related to eating concerns.

The results from this research could be applied to the institutionalization of a program utilizing self-efficacy to prevent eating concerns at the University of New Hampshire. The results could also be beneficial to other colleges and universities to prevent eating concerns in their populations. In both cases, the results of this research can inform those who already conduct programs about potential pitfalls as well as to the most advantageous components, in terms of participant outcome and self-report (i.e. learning about flexible eating and nutrition).

Another application of the results from this research could be to the treatment of DSM-IV diagnosable eating disorders. This research demonstrated that only providing...
information about eating issues can be dangerous in that it may increase people’s symptoms. The focus of many treatment plans for eating disorders is on weight gain and showing patients the deleterious outcomes that eating disordered behaviors can have on the body (Garner & Garfinkel, 1997). In the March 2002 edition of the APA monitor, an article discussing some of the most recent and promising treatment plans for anorexia and bulimia says this about the treatment program, “They emphasize the severity of the illness, coaching parents to assume the role of a nurse in an inpatient unit whose aim is to restore the girl’s weight to normal.” (DeAngelis, 2002, p. 39). The focus on these issues may be why eating disorders are so resistant to treatment; patients are constantly being reminded of their disorder.

**Limitations**

**Methodological Limitations**

Though the results of the current study were interesting, and might be applied to future research, there were some limitations to them that need to be discussed.

**Threats to Internal Validity:** Although presumably a control group helps control for threats of history and maturation (Campbell & Stanley, 1963), there were some methodology problems with the control group in the current study which did not lend it to helping rule out these threats to internal validity. The difference in pre-test and post-test time was confounded when trying to control for the threat of maturation. While all of the participants were in their first year of school, the control group participants filled out the measures in the fall semester, while the majority of the experimental participants completed the measures in the spring semester. The likely influence of this methodological difference is probably most profound in the assessment of Academic
Self-efficacy. First of all, the control group reported being less efficacious for academics at pre-test compared to the experimental groups, and then the control group exhibited significant increases in self-efficacy for academics at post-test, while the experimental groups merely demonstrated a trend in the same direction. It could be argued that a maturation process occurred for the control subjects, and that this process had already occurred for the experimental participants by the time they completed the measures for the study.

Another possible threat to internal validity that was unforeseen was that of differential history between the groups. It is possible that those in the control group received some of the information that those in the experimental groups did through their course work, particularly through general education nutrition courses. This confound of history may have been why the control group exhibited changes in knowledge scores from pre to post-test when this was not expected.

Other Methodological Limitations: The measures used could be considered limitations. First, because the measures were all self-report in nature, participants might have responded in a socially desirable manner, creating a biased response set. This effect, however, might have been washed out between control and experimental groups, at least for pre-test measures, because participants would have the same expectations for socially desirable responses at the onset of the study. The social self-efficacy measure, specifically, might have had limited power because its items did not match the program content as well as the other self-efficacy scales did.

Another potential limitation in regard to methodology was the post-test lag differences. The control group completed post-test measures nine weeks after pre-test,
while both experimental groups completed post-test measures only 1 week later. The short post-test time period for experimental group participants may have limited an ability to see more substantial change. Currently data is being collected for the nine-week follow-up period with experimental participants.

**Sampling Limitations**

Because of the homogenous population at the University of New Hampshire, the results obtained do not necessarily generalize to a more diverse college sample. Though previous research (LaPlant, under review) has suggested that it is not just college women that are susceptible to lower efficacy in relation to eating concerns, the current program was designed for traditionally aged college women, and thus may not be effective for older women, particularly outside of the college context.

Another limitation could be participants' readiness to change. Research with non-college samples finds that the majority of people are in the Precontemplation stage, with only 10-15% of people in the Action stage (Oldenburg et al., 1999, p 506). In the current study, however, over half of the participants were either in the Action or Maintenance stage. It seems that participants in this sample already felt that they were doing things to eat in a healthy way, and so the programming might not have been as effective for them as it would have been for someone in the earlier stages of change.

**Future Directions**

Possible future directions for this research would be to modify the program using the suggestions of the participants. Some of the suggestions were related to the group format, such as increasing discussion or having a more effective visual presentation of the material. Some participants suggested that changing the visuals in the presentation would
help to retain the knowledge gained in the program. This could affect the knowledge scores, so that even more of an increase in knowledge might be apparent after the group. Also, increasing the discussion in the group might address the suggestion to have more personal stories. Another possible way to address the desire for more personal stories would be to include reading about people’s personal stories, and then giving participants a chance to discuss them. A systematic change like that in the group could also influence people’s likelihood to remember the information later. It might also make the information feel more relevant to participants, possibly increasing the likelihood that they would want to make changes in their own lives, as the Health Belief Model would predict (Sarafino, 1998). People are more likely to engage in preventive behaviors when they see themselves as susceptible to the health issue at hand.

Other suggestions related to the group structure had to do with the time in the group. Some suggested that a shorter time period would help the group be more effective. Other participants suggested that discussing the various topics over several sessions would have been helpful. They said that it was difficult to change focus from one topic to the next. In the future, then, it would be beneficial to have shorter, multiple sessions for the program to cover the topics. Doing so would follow the suggestions of the prevention literature that suggests that 1-shot programs are not very beneficial to participants (Martz & Bazzini, 1999)

Another future development of the program might be to combine the content from the two groups. Information from both groups was found to be helpful according to the participants. Increases in efficacy were found to occur in both groups, and so it could be beneficial to combine the material. It may help offset the negative impact the
information group seemed to have on symptoms of eating concerns by offering the
efficacy components with the information components.

The components of the prevention program currently under investigation may also
prove to be useful for preventing eating concerns related to being overweight and obese.
For instance, the study of eating concerns on the UNH campus found that binge eating
was one of the largest problems among the students (Thye et al., 1999). Though most of
the participants in the current study had a BMI of less than 23, other research has found
the average American weight has been increasing and that a significant proportion of the
American population is overweight or obese (Flegal, 1996). As some of the program
focuses on healthy, flexible eating and nutrition, the desired outcome is that participants
would stay in a healthy weight range for their body structure. The program’s focus could
be considered health promotion rather than prevention, in which a healthy lifestyle is
promoted, with a discussion of eating concerns being minimized so that a greater
discussion of wellness could occur. Obviously, telling people about the negative
consequences of eating concerns is not enough, as eating concerns for both ends of the
weight continuum continue to happen.

Another way to consider the issue of weight in relation to prevention is that
prevention efforts may affect people differently based upon their body size. The current
study does not offer a large enough sample to explore this possibility further. Future
research should examine a larger sample in order to be able to examine a possible
interaction between prevention and body mass index, for example. This would then have
implications for the idea that there is no one prevention effort that will work for all
people. For instance, other potential variables that might influence prevention could be
one’s social support network, level of risk (primary versus secondary prevention), and readiness to change. All of these variables should be considered in future prevention efforts as we continue to tailor our research more specifically for people.

Another possible route for future research to take would be working with different populations for prevention and promotion. The sample from the current study was rather homogeneous (2 women of color participated in the experimental groups). James, Phelps, & Bross (2001) suggested that African-American college women were similar to Caucasian college women, and that prevention efforts directed toward them might be similar to those directed toward their White counterparts. They did not, however, look at prevention in their research. One possible future direction would be to do a needs-assessment with a more ethnically diverse population to see if their expressed needs regarding eating concerns and prevention would be similar to or different from those expressed by the UNH sample. Based upon those results, it may be beneficial to implement the prevention programming from the current study with a more ethnically diverse population.

Other populations of interest would be non-college samples. The current research indicated that those in this college sample had progressed quite far through the stages of readiness to change. Prevention efforts with groups that were earlier in the stage of change process might respond more favorably to the program under investigation here, or they may need something different entirely. Working with those outside of the college-population could prove to be very interesting and could benefit a wider community of people.
Research indicates that the prevalence of eating concerns among males continues to increase (Pope, Olivardia, Gruber, & Borowiecki, 1999). Because of this, it would also be interesting to determine first, if self-efficacy is related to males' eating concerns in the same way it is for females. If so, then it would be interesting to see if a similar type of prevention program would be helpful for males.

Beyond prevention programming, future research should further examine the relationship between self-efficacy and resistance to factors related to the development of eating concerns. Longitudinal research examining self-efficacy and eating concerns in women as they begin college and the following them throughout their time in college could provide a clearer picture of how self-efficacy operates in relation to eating concerns. It might be the case that self-efficacy could fit well into a larger theoretical structure that describes resiliency or the lack of it in females for a number of behaviors, including eating concerns.

Feminists have discussed the results of research on eating concerns as a demonstration of women's lack of power and control in our society (Brown & Jasper, 1993). Because of the position in which women and girls find themselves in our culture, they turn to their bodies as a source of worth and esteem, with their sense of self becoming more related to their physical attractiveness than their physical effectiveness (Lerner, Orlos, & Knapp, 1976). These attitudes and behaviors are reinforced through cultural values and others trying to give compliments, boost morale, or make jokes. Fredrickson and Roberts (1997) discuss how women become objects, “treated as bodies—and in particular, as bodies that exist for the use and pleasure of others” (p 175). As part of the objectification theory they proposed, it was suggested that as the
objectification increases, the focus on the body increases and the focus on other areas in women's lives decreases. The results from research on self-efficacy, both in the current study and in the past (Bennett et al., 1991; LaPlant, under review; Love et al., 1985; Wagner et al., 1987) support the theoretical framework of self-objectification theory. Future research examining resiliency and prevention should examine self-efficacy's relationship to self-objectification empirically. It may be the case that self-objectification mediates the relation between efficacy and eating concerns, and that self-objectification should then become part of prevention programming efforts.

Conclusions

It does appear that using self-efficacy as a means for prevention of eating concerns can be effective, though it is difficult to judge the strength of that effectiveness from the current research. Methodological and sampling issues limit the internal and external validity of the results from the evaluation of the new prevention program. Future research should address these limitations, as well as extend the program to samples beyond the college population, modify the components and structure of the program, and explore how self-efficacy may fit into a larger theoretical framework to explain and prevent eating concerns at both ends of the weight continuum.
REFERENCES


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Strahan, E.J., & Spencer, S.J. (2002). Selling thinness: Exploring the impact of cultural norms on women's feelings about the self and their identification with the domains of weight and physical appearance. Poster session at the annual meeting of the Society for Personality and Social Psychologists, Savannah, GA.


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Eating Disorders Inventory (EDI)

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. RESULTS ARE COMPLETELY CONFIDENTIAL. Read each question and mark the answer that applies best for you. Please answer each question very carefully. Thank you.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>always</td>
<td>usually</td>
<td>often</td>
<td>sometimes</td>
<td>rarely</td>
<td>never</td>
</tr>
<tr>
<td>2. I eat sweets and carbohydrates without feeling nervous.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. I think about dieting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. I feel extremely guilty after overeating.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. I am terrified of gaining weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I exaggerate or magnify the importance of weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>7. If I gain a pound, I worry that I will keep gaining.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. I eat when I am upset.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. I stuff myself with food.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. I have gone on eating binges where I have felt that I could not stop.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. I think about bingeing (overeating).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. I eat moderately in front of others and stuff myself when they're gone.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. I have the thought of trying to vomit in order to lose weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. I eat or drink in secrecy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. I think that my stomach is too big.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. I think that my thighs are too large.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. I think that my stomach is just the right size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18. I feel satisfied with the shape of my body.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19. I like the shape of my buttocks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20. I think my hips are too big.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21. I think that my thighs are just the right size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>22. I think my buttocks are too large.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>23. I think that my hips are just the right size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>24. I feel ineffective as a person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>25. I feel alone in the world.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
26. I feel generally in control of things in my life.  
27. I wish I were someone else.  
28. I feel inadequate.  
29. I feel secure about myself.  
30. I have a low opinion of myself.  
31. I feel that I can achieve my standards.  
32. I feel that I am a worthwhile person.  
33. I feel empty inside (emotionally).  
34. I get frightened when my feelings are too strong.  
35. I get confused about what emotion I am feeling.  
36. I can clearly identify what emotion I am feeling.  
37. I don't know what's going on inside of me.  
38. I get confused as to whether or not I am hungry.  
39. I worry that my feelings will get out of control.  
40. I feel bloated after eating a small meal.  
41. When I am upset, I don't know if I am sad, frightened or angry.  
42. I have feelings I can't quite identify.  
43. When I am upset, I worry that I will start eating.  

Eating Self-Efficacy (ESE)

For the tasks you can do here, check them in the column Can Do, if you expect you could do them now. For the tasks you check under Can Do, indicate in the column Confidence how confident you are that you could do them. Rate your degree of confidence by recording a number from 10 to 100 using the scale given below:

<table>
<thead>
<tr>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
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<tbody>
<tr>
<td>quite</td>
<td>moderately</td>
<td>very</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uncertain</td>
<td>certain</td>
<td>certain</td>
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<td></td>
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</tr>
</tbody>
</table>

Can Do | Confidence
---|---|
44. Make healthful food choices |  |
45. Be flexible in eating habits |  |
46. Able to eat in a healthy manner at home |  |
47. Able to eat in a healthy manner at restaurants |  |
48. Able to eat in a healthy manner in dining halls |  |
50. Able to eat in a health manner at a party |  |
51. Know what the food groups are |  |
52. Know what foods are in each food group |  |
53. Know appropriate serving sizes for food groups |  |
54. Able to know when hungry |  |
55. Able to eat when hungry, not just at predesignated times |  |
56. Able to not eat when not hungry, even if it is a predesignated time. |  |
57. Able to avoid eating because of depression. |  |
58. Able to avoid eating because of anxiety. |  |
59. Able to avoid eating because of boredom. |  |

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60. Able to avoid eating because of stress.  

**Academic Self-Efficacy (ASE)**

<table>
<thead>
<tr>
<th>Can Do Confidence</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>61. Finish a reading assignment for a course on time.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>62. Finish and understand a reading assignment for a course.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>63. Explain assigned material to someone else.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>64. Pass a test on the assigned material.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>65. Get a B on a test with assigned material.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>66. Get an A on a test with assigned material.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>67. Pass a course with at least a D.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>68. Pass a course with at least a C.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>69. Pass a course with at least a B.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>70. Pass a course with an A.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>71. Retain knowledge after a course is over.</td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>

**Social Self-Efficacy (SSE)**

<table>
<thead>
<tr>
<th>Can Do Confidence</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>72. Call out to someone you know and stop and chat.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>73. Sit with a group of classmates at school who ask you to join them.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>74. Sit with a group of classmates at school who have not specifically asked you to join them.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>75. Go to a party with a girlfriend.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>76. Strike up a conversation with strangers at a party.</td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>77. Go out on a date.</td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>

**Stages of Change for Eating Behaviors (SOCE)**

Please answer “yes” or “no” to the following statements.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>78. I made my eating habits more healthful more than six months ago.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>79. I have taken action to improve my eating habits within the past six months.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80. I am intending to take action to improve my eating habits in the next month.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>81. I am intending to take action to improve my eating habits in the next six months.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ)

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

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>completely disagree</td>
<td>neither agree nor disagree</td>
<td>completely agree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

82. Women who appear in TV shows and movies project the type of appearance that I see as my goal.  
83. I believe that clothes look better on thin models.  
84. Music videos that show thin women make me wish that I were thin.  
85. I do not wish to look like the models in the magazines.  
86. I tend to compare my body to people in magazines and on TV.  
87. In our society, fat people are not regarded as unattractive.  
88. Photographs of thin women make me wish that I were thin.  
89. Attractiveness is very important if you want to get ahead in our culture.  
90. It’s important for people to work hard on their figures/physiques if they want to succeed in today’s culture.  
91. Most people do not believe that the thinner you are, the better you look.  
92. People think that the thinner you are, the better you look in clothes.  
93. In today’s society, it’s not important to always look attractive.  
94. I wish I looked like a swimsuit model.  
95. I often read magazines like *Cosmopolitan*, *Vogue*, and *Glamour* and compare my appearance to the models.
Rosenberg Self-Esteem Scale (RSE)

Please use the following scale to answer the next ten questions.

<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 agree</td>
<td>agree</td>
<td>disagree</td>
<td>strongly disagree</td>
</tr>
</tbody>
</table>

96. I feel that I am a person of worth, at least on an equal basis with others. 1 2 3 4
97. I feel that I have a number of good qualities. 1 2 3 4
98. All in all, I am inclined to feel that I am a failure. 1 2 3 4
99. I am able to do things as well as most other people. 1 2 3 4
100. I feel I do not have much to be proud of. 1 2 3 4
101. I take a positive attitude toward myself. 1 2 3 4
102. On the whole, I am satisfied with myself. 1 2 3 4
103. I wish I could have more respect for myself. 1 2 3 4
104. I certainly feel useless at times. 1 2 3 4
105. At times I think I am not good at all. 1 2 3 4

Knowledge Test for Information (KTI)

For the following, please choose the letter that best corresponds with what you believe to be the most appropriate choice.

106. What is an eating concern?
   a. being concerned about type of food available
   b. being concerned about amount of food available
   c. being overly concerned about food and eating, but not exercise
   d. being overly concerned about food, eating, and exercise
107. Which of the following is a physiological factor leading to eating concerns?
   a. being very thin
   b. being anxious
   c. very low blood sugar
   d. being bored

108. Which of the following is a physiological consequence of an eating concern?
   a. normal menstrual cycles
   b. hypotension
   c. strong teeth
   d. strong bones

109. What is the distinction between anorexia and bulimia?
   a. Restrictive eating is typical of anorexia while bingeing is typical of bulimia
   b. Restrictive eating is typical of bulimia while bingeing is typical of anorexia
   c. Restrictive eating is not typical of either anorexia or bulimia
   d. Binge eating is not typical of either anorexia or bulimia

110. Which of the following is a psychological factor leading to eating concerns?
   a. being overweight
   b. having a low self-esteem
   c. having a high self-esteem
   d. amenorrhea

111. Of the following, which is a psychological factor leading to eating concerns?
   a. lanugo
   b. sense of effectiveness
   c. sense of ineffectiveness
   d. a starving body

112. Which of the following is a psychological consequence of an eating concern?
   a. depression
   b. social isolation
   c. anxiety
   d. loss of a job

113. Of the following, which is a psychological consequence of an eating concern?
   a. socioeconomic status
   b. gender
   c. body is deprived of food
   d. low self-esteem

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114. Which of the following is a social risk factor leading to eating concerns?
   a. low self-esteem
   b. depression
   c. gender
   d. social isolation

115. Of the following, which is a social risk factor leading to eating concerns?
   a. sense of ineffectiveness
   b. media
   c. starvation
   d. loss of job

116. Which of the following is a social consequence of an eating concern?
   a. stigma
   b. depression
   c. imbalance of electrolytes
   d. cultural norms

117. Of the following, which is a social consequence of an eating concern?
   a. socioeconomic status
   b. family norms
   c. gender
   d. deterioration of relations with others

**Knowledge Test for Efficacy (KTE)**

118. What is the size of one serving of cheese?
   a. 1 oz
   b. 2 oz
   c. 4 oz
   d. 6 oz

119. Which of the following is NOT a consequence of restrictive eating?
   a. lower metabolism
   b. fatigue
   c. increase muscle mass
   d. fat gain

120. What is externally directed eating?
   a. eating directed through interoceptive awareness
   b. eating directed through preset pattern
   c. eating directed through satiety
   d. eating directed through internal cues
121. Which of the following is a benefit of physically connected eating?
   a. it's concrete
   b. it's specific
   c. it's flexible
   d. it's finite

122. How many servings of the milk group should you get each day?
   a. 1-2
   b. 2-3
   c. 3-4
   d. 4-5

123. Which of the following is a good condition for studying?
   a. studying when tired
   b. studying at night
   c. studying with music
   d. studying during the day

124. A specific memory improvement strategy refers to encoding or processing the meaning of things, not just their appearance or sound. What is it called?
   a. deep processing
   b. explicit memory
   c. short-term memory
   d. automatic encoding

125. In parallel distributed processing models of memory, how is knowledge represented?
   a. concepts
   b. images
   c. connections
   d. propositions

126. The answer is: review or practice of material while you are learning it. What is the question?
   a. What is learning?
   b. What is rehearsal?
   c. What is recognition?
   d. What is nepotism?

127. Which of the following is a place you can go for help with academics on campus?
   a. SHARPP
   b. Counseling Center
   c. CFAR
   d. TNH
128. Which of the following is characteristic of an overly concerned listener?
   a. focus in and out while speaker is communicating
   b. follow words of speaker intently
   c. unable to offer feedback because of entanglement in speaker’s words
   d. able to ask for clarification of speaker's words

129. How is assertiveness different from aggression?
   a. assertiveness is standing up for own rights without denying others, while aggression
tenies rights of others
   b. aggression is standing up for own rights without denying others, while assertiveness
tenies rights of others
   c. assertiveness involves self-denial and aggression does not
   d. aggression involves self-denial and assertiveness does not

130. How is assertiveness different from passive behavior?
   a. assertiveness involves self-denial and passive behavior does not
   b. passive behavior involves self-denial and assertiveness does not
   c. assertiveness is standing up for own rights without denying others, while passive
behavior denies rights of others
   d. passive behavior is standing up for own rights without denying others, while
assertiveness denies rights of others

131. What is "reflecting" in active listening?
   a. having eye contact
   b. having a posture of interest
   c. putting yourself in shoes of speaker
   d. repeating speaker's words back to her or him

132. What is "shadowing" in active listening?
   a. communicating interest with words
   b. paraphrasing what you think speaker has said
   c. trying to keep conversation on-topic
   d. going beyond sympathy

Demographics
133. Age:

134. Height:

135. Weight:
136. Have you ever been diagnosed with:
   a. Depression? Yes No
   b. Anxiety? Yes No
   c. Anorexia Nervosa? Yes No
   d. Bulimia Nervosa? Yes No
   e. Substance Abuse? Yes No
   f. Obsessive-Compulsiveness? Yes No

137. Have you ever had treatment for:
   a. Depression? Yes No
   b. Anxiety? Yes No
   c. Anorexia Nervosa? Yes No
   d. Bulimia Nervosa? Yes No
   e. Substance Abuse? Yes No
   f. Obsessive-Compulsiveness? Yes No

138. Are you currently experiencing:
   a. Depression? Yes No
   b. Anxiety? Yes No
   c. Anorexia Nervosa? Yes No
   d. Bulimia Nervosa? Yes No
   e. Substance Abuse? Yes No
   f. Obsessive-Compulsiveness? Yes No

139. Are you currently having treatment for:
   a. Depression? Yes No
   b. Anxiety? Yes No
   c. Anorexia Nervosa? Yes No
   d. Bulimia Nervosa? Yes No
   e. Substance Abuse? Yes No
   f. Obsessive-Compulsiveness? Yes No

**Summative Evaluation Questions**

1. What were the three most helpful things in the group for you? Please explain why those were helpful.
2. What were three things that you think should be taken out of the group experience or changed? Please explain why you would take them out or how you would change them.
3. Please comment on your experience in the group. For instance, you might write about if the group has changed things for you personally, or your experiences with others.
### Rotated Factor Loadings, Communalities, Variance, and Percent Variance for Eating Self-Efficacy Scale

<table>
<thead>
<tr>
<th></th>
<th>F1: &quot;Choices&quot;</th>
<th>F2: &quot;Mood&quot;</th>
<th>F3: &quot;Knowledge&quot;</th>
<th>( h^2 )</th>
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</thead>
<tbody>
<tr>
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<td>.241</td>
<td>.173</td>
<td>.552</td>
</tr>
<tr>
<td>ESE2</td>
<td>.749</td>
<td>.068</td>
<td>.142</td>
<td>.586</td>
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<td>.052</td>
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<td>.365</td>
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<td>3.7</td>
<td>2.6</td>
<td></td>
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<tr>
<td>% SD²</td>
<td>27%</td>
<td>23%</td>
<td>16%</td>
<td></td>
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</tbody>
</table>

**Note:** Bolded numbers indicate items that were included as part of that factor.
APPENDIX C

Program for Information Group

I. Detailed Outline

A. What are eating concerns?
   1. Begin by asking the participants about how many of them have ever heard of anorexia or bulimia nervosa? Then ask how many have ever known someone with either of those conditions.
      a. This will set the stage in terms of what they already know.
   2. Give definitions of anorexia nervosa and bulimia nervosa
      a. Anorexia Nervosa: 1) a refusal to maintain a normal body weight for one's age and height, 2) severe fear of gaining weight or becoming fat, even if the person is underweight, 3) body image distortion and inappropriate influence of the body on self, and 4) amenorrhea in females (American Psychological Association, 1994).
         i. Subtype I: Characterized by restrictive eating behaviors
         ii. Subtype II: Characterized by binge and purge sessions.
      b. Bulimia Nervosa: 1) chronic binge sessions, 2) chronic purge sessions to compensate for the bingeing, 3) binge/purge sessions happen minimally twice per week for a duration of at least three months, 4) body image has an inappropriate sway on one's appraisal of self, and 5) does not only occur during episodes of anorexia (American Psychological Association, 1994).
      c. We also known that females are disproportionately likely to have an eating disorder as compared to men. In terms of numbers, one estimate is that for every 10 to 20 females that have anorexia nervosa, there is one male that has it (Bryant & Bates, 1985).
   3. Clinical eating disorders are not the only problems that people, females in particular, experience in relation to eating and body. People that are NOT experiencing any problems in relation to eating are aware of when they are hungry and need to eat as well as when they are full, or satiated, and no longer need to consume food. Generally people without any eating concerns will eat when they are hungry, if possible.
   4. The term that we use to describe problems with eating and body that are not limited to the clinical range is called eating concerns. People with eating concerns could have a number of different issues. They might have a preoccupation with food, dieting, or weight. Though they might not be clinically diagnosable, people with eating concerns might still feel a great deal of body dissatisfaction, and tend to engage in behaviors to compensate for those feelings, such as excessive dieting, excessive exercising, or some binge/purge sessions.
   5. What does this mean to us? We cannot simply categorize people as either having an eating disorder or being, "normal". Rather, eating concerns can be seen on a continuum. At one end we might find someone with no concerns at all, a person that is perfectly happy with her or his body, and
who does not engage in any unhealthy behaviors. As we progress along the continuum we would see successively worse feelings about self in relation to body and eating, as well as increasingly unhealthy behaviors, so that we would finally find those with clinically diagnosable eating disorders at the other end of the continuum of eating concerns.

B. Physiological factors related to eating concerns: Risks for & consequences of unhealthy behaviors.

1. Many of you were probably aware, on some level, of the concepts discussed with the term eating concerns. What many people are unaware of, however, are some of the risk factors that may lead to eating concerns and the consequences of engaging in unhealthy behaviors related to eating concerns. This week we'll discuss some of the physiological risks and consequences, and in subsequent weeks we'll talk about psychological and social factors.

2. In terms of physiological risks for eating concerns, what types can you think of? Take a couple of minutes to discuss this with a partner.

3. Here are some of the risks we have. Let's see how we compare with you. (These will be listed on a sheet of paper on a flip chart.)
   a. Obesity or being overweight
   b. Body is deprived of food (calories)
   c. Body is "starving"
   d. Blood sugar is very low
   e. Eating is too far for the blood sugar to reset
   f. Carbohydrates drive insulin up
   g. Eating quickly dulls taste sensitivity

4. Did anyone have anything else that isn't on our list? (If so, discuss and add to list if appropriate.)

5. What types of physiological consequences can you think of that might be a result of engaging in unhealthy eating behaviors?

6. Here is our list. Again, let's compare it. (List on flip chart.) (Vandereycken, & Meermann, 1984; Winokur & Clayton, 1994)
   a. delayed menarch or amenorrhea
   b. infertility or problems with pregnancy
   c. erosion of enamel on teeth
   d. problems with esophagus
   e. hypotension
   f. dry skin
   g. lanugo-fine hair that covers body
   h. hair loss
   i. osteoporosis
   j. dehydration

7. Did anyone have anything else that isn't on our list? (If so, discuss and add to list if appropriate.)
Discussion Questions:
*Do you think it is possible to change any of the physiological risks of eating concerns? If so, how? What would you tell someone similar to yourself about these risks and their behaviors?
*Were people aware of the extent to which unhealthy eating habits related to eating concerns can affect one physiologically?
*Leave time open during the discussion period for any comments or questions the participants might want to bring up at this time.

A. What are some psychological risk factors of eating concerns?
1. Take some time to discuss this among yourselves.
2. Here is our list (on flip chart) (LaPlant, 1999; Rose & Simon, 1985)
   a. boredom
   b. anger
   c. depression
   d. loneliness
   e. low self-esteem
   f. sense of ineffectiveness
3. Did anyone have anything else that isn't on our list? (If so, discuss and add to list if appropriate.)

B. Why are these psychological factors considered risks?
1. Have a discussion with participants about their ideas as to why these factors might lead to eating concerns. Also see if they disagree with anything on the list. Why don't they think those factors would be problematic?
2. Tell participants about research in this field. In other words, people have found that many of these factors are, indeed, related to eating concerns, but people are still trying to figure out WHY they are related. For example, some thing that low self-esteem, or self-worth, leads people to place value in their bodies and then they become disproportionately swayed by what happens to their bodies or how their bodies look.

C. What are some psychological consequences of engaging in behaviors related to eating concerns?
1. Have participants brainstorm about this.
2. List their ideas on the flip chart. Add the following if necessary:
   a. depression
   b. low self-esteem
   c. sense of ineffectiveness
   d. loneliness

D. How might these psychological consequences be related to the physiological consequences we discussed last week?
1. Brainstorming session. There are not any predesignated "right" answers for this. This exercise is an opportunity for the group to stretch themselves and make meaningful connections between the information that they are learning.
Discussion questions:
*What are some other ways that people might respond to the psychological risk factors we discussed?
*Is it possible to change so that people wouldn't experience the risk factors at all? How might this be accomplished?

Leave time open during the discussion period for any comments or questions the participants might want to bring up at this time.

A. What are some social risk factors related to eating concerns?
1. Brainstorm about this for a few minutes. Social risk factors could be on a number of levels, from familial, to immediate environment, to cultural. See if you can think of some on multiple levels.
2. Here is a list that we came up with (have on flip chart) (LaPlant, 1999; Rose & Simon, 1985)
   a. norms, rules, and expectations from the family
   b. socioeconomic status
   c. gender
   d. media (To help aid in seeing this, some visual examples from magazines, perhaps video clips as well.)
   e. cultural standards (ex: "What is beautiful is good", Dion et al., 1972; Feingold, 1992)
   f. environmental norms/social situations
3. Does anyone want to add anything additional to the list we have created? (Discussion of any new items and why they should be part of the list--or why items on list should not be there.)
4. How might these risk factors be related to the other risk factors discussed?
   a. This discussion is meant to facilitate an understanding that these risk factors do not operate in isolation, but instead are interrelated and influence one another. This is important so that they realized how all aspects of themselves and their lives affect each other, so that they might be more conscious of how they live.

B. Why are these risks of eating concerns?
1. Have small group discussions about this question. Return to larger group with ideas and discuss.
2. During the larger group discussion, bring in research that has examined these factors in relation to eating concerns. For example, work by Stormer and Thompson (1996) where they found that it isn't just cultural norms that lead to eating concerns, but the internalization of those norms for one's self that is related to eating concerns.

C. What are some social consequences of engaging in behavior related to eating concerns?
1. Brainstorming time in group for this question.
2. List group's idea on chart. If necessary, add the following:
   a. strange looks or comments from people (depending on behavior)
b. possibility of losing friends over behavior or deterioration of relationships

c. friends and family worrying about the one engaging in this behavior

d. work, either for a job or in school, suffers as a result of behaviors

D. How might these consequences relate to the physiological and psychological consequences we have discussed in previous weeks?

1. Discussion of if they are or are not related. Also, why would they be related to each other? Again, like Week 3, this discussion is meant to help the participants make meaningful connections between the various points of information that they are learning. By this point, they should be able to see more connections than they were able originally.

Discussion questions:
*What are some other ways that people might respond to the social risk factors we discussed?
*Is it possible to change so that people wouldn't experience the risk factors at all? How might this be accomplished?

Leave time open during the discussion period for any comments or questions the participants might want to bring up at this time.

Program for Efficacy Group
I. Detailed Outline
   A. Dieting
      1. What is dieting? Pose this question to participants. Their responses should all surround the theme of restrictive eating.
      2. How do people diet? What does this dieting do to people? (material provided by Lisa Dinsmore, Nutritionist, Health Services) After presenting the following information, ask participants if they were aware of the consequences of the various types of restrictive eating. Discuss any surprises.
         a. Method 1: skipping meals or decreasing calories. Consequences: lowers metabolism so we store fat more easily from fewer calories; brain's and muscle's demand for fuel causes rebound munchies, usually for high fat and high sugar items; poor attention span, irritability, fatigue; muscle tissue may be lost.
         b. Method 2: cut out starchy foods. Consequences: body loses its best source of stable energy, so more likely to feel moody and tired; later eat higher fat and sugary foods to satisfy munchies.
         c. Method 3: cut out meats without comparable replacement. Consequences: may risk iron deficiency which leads to fatigue; energy from meals may not last long, causing more hunger between meals for high fat, high sugar foods.
         d. Method 4: go on preplanned meal replacement diet or liquid diet. Consequences: 95% chance of regaining any lost weight in 1-2 years; give away control to plan, lowering self-esteem; lose muscle mass.
along with fat, lowering metabolism, making it easier to store fat on fewer calories; temporary, not permanent change; expensive.

e. Method 5: fasting. Consequences: most of weight lost is water; muscle mass decreases, lowering metabolism, with subsequent fat gain; can be medically dangerous for some individuals.

3. Why do people diet? What really happens when we diet? (material provided by Lisa Dinsmore, Nutritionist, Health Services) Again, discuss information after presented.

a. Reason 1: to be slim. Reality: being slim is temporary, as 95% of dieters regain weight longitudinally. Many women even become more fatter, leading to more dieting, called the "diet cycle", with possible consequence of obesity.

b. Reason 2: to be healthier. Reality: dieting cycling increases health risks more than being overweight; no evidence that being plump in unhealthy, but there is evidence that being too slim is unhealthy; dieting decreases muscle mass, and muscles are needed for good health; many diets are unhealthy--you can't function as well with restricted calories, you are often moody and irritable, become obsessed with food.

c. Reason 3: to be more attractive. Reality: Do you want your friends to like you for your body or yourself? What are long term relationships based upon? Are you any fun to be around while dieting?

B. Normal eating

1. What is normal eating? Ask participants this question. After listing their responses, read quote about normal eating (see attached for quote).

2. Externally versus Physically-Connected Eating (Kratina, King, & Hayes, 1996)

a. What is externally directed eating? This is when we eat because of cues or messages that we receive outside of ourselves. Some characteristics of this type of eating include: restrictive dieting, eating by the clock, eating by a pre-set pattern (ex: 3 meals/day), putting food in good/bad categories.
   i. Pros: concrete, finite, specific, measurable way of eating; familiar to most people
   ii. Cons: not flexible, may prompt binging, causes disconnection from internal hunger cues; fear of food; hides dysfunctional eating

b. What is physically connected eating? This is when we eat because of cues from our own bodies, internal cues. Some characteristics of this type of eating include: flexible, varied, explorative, emphasis on satiety and pleasure.
   i. Pros: flexible, develops trust in self, naturally reinforcing self-regulation, and self-confidence
   ii. Cons: unfamiliar to many people, may be at-odds with others around you

3. What is the food pyramid and serving size?
a. Discuss the food pyramid and serving sizes in conjunction with one another. Provide handout on how much you are supposed to get per food group per day, as well as handout on ways to figure out serving size. (see attached)

b. Discuss nutrients especially critical to women—calcium and iron. Also provide handout on key nutrients for your health. (see attached)

C. Eating healthy in college (material provided by Lisa Dinsmore, Nutritionist, Health Services)

1. Eating healthy in the dining halls
   a. Choice is key! There are many food options in the dining halls, and the choice is yours as to what you eat.
   b. Employ balance, variety, and moderation in your choices.
   c. To make the most of your choices, Dining Services provides their menus on-line. They include the Healthiest Choice Eating Guide in conjunction with their menus to help students find the healthiest food choices available to them. (For the week that we are doing this "lesson", I will bring copies of this in for participants to peruse.)

2. Eating health with food delivery
   a. Get the most for your money in terms of nutrition and taste
   b. When ordering food, think about the rest of your day and what you have eaten. Try to balance fat and calorie intake. Also think about moving more on days where you have a higher calorie intake rather than restricting food intake.
   c. Be sure to check your internal cues for hunger before you order!

D. Campus Resources: Provide information about each of these offices

1. Office for Health Education and Promotion: This office offers nutritional counseling and information. There is also a library of resources on health and wellness issues that are loaned to people for 2-week time periods. Located in Health Services on the second floor, 2-3823.

2. Other Health Services Staff: Health Services offers a variety of information and services related to health and well-being. Staff can help you with concerns that you might have relating your nutrition and wellness.

3. Counseling Center: This office provides free consultation and therapy for full time students. Located in Schofield House, 2-2090.

4. Dining Services: This office provides the services of a nutritionist to students with a meal plan. They also provide a website that provides information on meals being served in the various dining halls. 2-2583

Activities:
*Have participants match up their filled out food pyramid with the daily requirements. Everyone should find out what they are missing, then take the time to figure out what they could do to bridge the gap.

*Discuss what they might want to change about their eating habits after learning more information about nutrition and eating. Brainstorm about any perceived barriers to change.
*Provide Hunger/Fullness Awareness worksheet for participants so they can work on physically directed eating.

Leave time open during the discussion period for any comments or questions the participants might want to bring up at this time.

A. Studying Conditions
1. What are some studying conditions that might not be the best for learning?
   a. Get suggestions from participants.
   b. Provide the following if they are not brought up: studying when tired, studying at night, studying with the television on or other distractions
   c. Discuss why these conditions might not promote learning. Have participants give their own explanations. Supplement their ideas when necessary.
2. What are some studying conditions that are probably best for learning?
   a. Get suggestions from participants.
   b. Provide the following if they are not brought up: studying during the day, using a study lounge, breaking studying up instead of trying to read or review information all at once.
   c. Discuss why these conditions might be best for learning. Have participants give their own explanations. Supplement their ideas when necessary.

B. How does memory work? (LaPlant, Introductory Psychology lecture notes)
1. Parallel Distributed Processing (PDP) Demonstration: Read participants a list of words that are related to bedtime, which does not include the word sleep. Then ask them to do a distracter task, such as writing down as many of the states as they can remember in 1 minute. Then ask them to write down all of the words they recall from the list at the beginning. Next, ask them how many recalled an outrageous word that wasn't on the list. After that ask them how many recalled the word sleep. What generally occurs here is that most people recall the word sleep, which wasn't on the list. This leads into a discussion of what the PDP theory of memory is.
   a. Another example: Here is a set of clues about an item. Guess what you think the item is. 1) It is orange. 2) It grows below the ground. 3) It is a vegetable. 4) Rabbits characteristically like this item. *What should happen is that participants will be able to guess what the item is (a carrot!) before the last clue is read.*
2. PDP: This is an approach where memory is described as a series of networks or links between the information we have stored in memory. In the activity we just did, most of the words you saw were related to sleep, and so that link was activated for you, creating the impression that you had seen that word previously.
   a. Another example: Here is a set of clues about an item. Guess what you think the item is. 1) It is orange. 2) It grows below the ground. 3) It is a vegetable. 4) Rabbits characteristically like this item. *What should happen is that participants will be able to guess what the item is (a carrot!) before the last clue is read.*
3. Levels of Processing Demonstration: Explain to participants that a list of words will be read to them. If the letter "A" is read before the word, they are to write down the number of syllables in the word. If the letter "B" is read before the word, they should decide whether the word is pleasant or
unpleasant. As a distracter, ask the participants why they think we are doing this activity. Discuss for a minute or 2. Then ask them to write down as many words as they can remember. Tally the number of "A" words people remembered and the number of "B" words. People should have remembered more "B" words. This will lead into a discussion of processing information and memory.

4. Ask participants why they think they remembered more "B" words. Explain two types of general categories of processing, shallow and deep. With shallow, we only attend to the sensory characteristics of stimuli or their physical properties. With deep, we attend to the meaning of the stimuli. Deep processing helps us remember more.

5. Two ways to process information: 1) maintenance rehearsal, a type of shallow processing, where we simply repeat information over and over again. We might do this to try and remember a phone number. 2) elaborative rehearsal, a type of deep processing, where we have a deeper analysis of the stimuli, either because of its meaning or its associations with other things we already know.

C. Studying Strategies
1. Ask participants about studying strategies they or others they know use.
2. Discuss how these strategies may or may not relate to what they now know about memory.
3. Have participants brainstorm about what the best studying methods might be and why. Discuss these. Add suggestions if they seem to be drawing a blank. For example, could discuss the technique of paraphrasing what you read, putting it in your own words is a way to process the information more deeply, by attending to its meaning and because you need to make associations with what you already know to paraphrase.

D. Campus Resources: Provide information about each of these offices
1. ACCESS (Accessing Career Challenges in Education through Specialized Services): This office deals with learning and other disabilities. They offer testing and help set-up liaisons with instructors so maximize the learning environment for people. Located in the MUB, 2-2607.
2. Center for Academic Resources: This office provides individual and group help with studying, tutoring and study skills. Located in Wolff House: 2-3698
3. Writing Center: This office works with students on use of grammar, etc. They can work with students to improve writing projects for courses. Located in Hamilton-Smith 5C, 2-3272.

Activities:
* Have participants identify how they currently study and where some problems might exist based upon what we have discussed. This can be done on an individual level or with others.
* Next, have participants create a plan for modifying their studying habits to increase their learning potential.
* Discuss what types of modifications might be accomplished more easily.
*Discuss potential barriers to changing studying habits and how we could possibly overcome those barriers.

*Leave time open during the discussion period for any comments or questions the participants might want to bring up at this time.*

A. Assertiveness

1. What is it? "The ability to stand up for your own right without denying the rights of others... can be contrasted with aggression, which infringes upon the rights of other people... can also be contrasted with passive behavior, which involves self-denial or not standing up for your rights" (Matlin, 1993, p 221).
   a. Examples of each: Aggressive: "Ms. Kate, you graded my paper unfairly and you better change it." Assertive: "Excuse me, Ms. Kate, I would like to discuss my grade with you." Passive: "Um, excuse me, Ms. Kate. If you're busy, I'll sit down. It's not that important." (from Connor, Serbin, & Ender, 1978, as cited by Matlin, 1993, p 222).
2. How does assertiveness relate to our relationships with others?
   a. Assertiveness can work two ways in our relationships with others. First, it can help us speak for ourselves without taking away from other people. It can also be a tool used to empower people through the realization that they and others have the right to be heard, without a power struggle.
   b. Have group brainstorm about other ideas as to why assertiveness would be important.

B. Active listening Skills: Not only is it important how we communicate ourselves to others, but how we listen to them in return. Have participants fill out Listening test—see attached (Cullari, 2001). Discuss results, see if any surprises for people.

1. What are overly concerned listeners? There are people who become so entangled in what the speaker is saying that they are unable to fully process or offer any feedback to the speaker.
2. What are less-than-interested listeners? These listeners focus in and out while the speaker is communicating with them. Part of this is due to self-interest and part is due to a lack of attention.
3. What are actively focused listeners? These people follow the words of the speaker intently, being able to ask for clarification of information and understanding the content in a way that the previous listener type could not (Cullari, 2001).
4. Why would we want to use active listening over the other types? Pose this question to group, see what types of responses follow.
5. What does active listening involve?
   a. Focusing/following: you need to have eye contact, set a posture of interest, as well as communicating interest with words as well. To "follow" means that you try to keep the conversation on-topic.
b. Empathizing: this means going beyond sympathy to actually putting yourself in the shoes of the other person, feeling what that person feels in order to better understand what the speaker is going through.

c. Reflecting: this involves periodically repeating the speaker's words back to that person.

d. Shadowing: occasionally paraphrase to the speaker what you think has been said. Ex: Speaker, "I am really stressed out about a test that I have tomorrow and I am not sure if I have time to get everything done that I need to." Listener, "It sounds as if you are saying time is a big issue for you." (Cullari, 2001)

C. Campus Resources

1. UNH website (www.unh.edu): from this page, if you take the link for directories, you can find a list of all the campus organizations' web pages. Each page for an organization will give you information about what that organization does, where it is located (if it has an office), when it meets, and what kinds of activities it does.

2. MUB: Not only is there a daily listing of activities occurring in the MUB at the information desk across from the coffee shop, there are also listings of all of the movies that plan in the MUB, and events for which you can purchase tickets. The Student Activities Office is also located in the MUB, around the corner from the CIS Help Station.


Activities:
*Discussion about when to use, if at all, the communication styles introduced
*Discussion of the appropriateness of the different types of listening. Participants worked with the material from the listening section to decide if and when they could use the different listening techniques described.

Leave time open during the discussion period for any comments or questions the participants might want to bring up at this time.
References


What is normal eating anyway?

"Normal eating" is being able to eat when you are hungry and continue eating until you are satisfied. It is being able to choose food you like and eat it and truly get enough of it—not just stop eating because you think you should. Normal eating is being able to use some moderate constraint in your food selection to get the right food, but not being so restrictive that you miss out on pleasurable foods. Normal eating is giving yourself permission to eat sometimes because you are happy, sad or bored, or just because it feels good. Normal eating is three meals a day, most of the time, but it can also be choosing to munch along. It is leaving some cookies on the plate because you know you can have some again tomorrow, or it is eating more now because they taste so wonderful when they are fresh. Normal eating is overeating at times, feeling stuffed and uncomfortable. It is also undereating at times and wishing you had more. Normal eating is trusting your body to make up for your mistakes in eating. Normal eating takes up some of your time and attention, but keeps its place as only one important area of your life.

In short, normal eating is flexible. It varies in response to your emotions, your schedule, your hunger, and your proximity to food."

Ellyn Satter, RD, ACSW
How to Get Your Kid to Eat—But Not Too Much

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SEVEN WAYS TO SIZE UP YOUR SERVINGS

1. A thumb of food is about the size and thickness of a card of playing cards or an olive in a can.

2. A medium apple or banana is about the size of a tennis ball.

3. A cheese slice is about the size of a standard deck of cards.

4. A cup of the cream is about the size of a small milk carton.

5. A single ice cream portion of chocolate ice cream is about the size of your fist.

6. The top of a jar or can of fruit juice is about the size of the palm of your hand.

7. A handful of nuts is about the size of the palm of your hand.

MOST IMPORTANT: A picture is worth a thousand words. Always observe portion sizes and your personal needs.
AH foods provide us with a combination of calories, vitamins, minerals, fiber, and water. Calories are present in carbohydrates, proteins, and fats. Food are categorized into the groups found in the Food Pyramid by certain common nutrients. Understanding the functions of carbohydrates, proteins, and fats gives us a basis for planning healthy meals and snacks. Not sure how to make it work for you? Contact a registered dietitian for your own unique eating plan.

**Carbohydrates**

- Aid in fat metabolism
- Primary energy source for physical activity, body processes, and brain cell function
- Fiber aids in elimination, intestinal health, promotes feelings of fullness, regulates cholesterol and blood sugar

**Simple Sugars**
- **Common Names:** fructose, sucrose, dextrose, lactose, sugar, molasses, honey, high fructose corn syrup
- **Food Pyramid Groups:** fruit group, dairy group, sweets/extras group
- **Food Sources:** fruits, fruit juices, dairy products, cereals, pasta, jelly, syrups, cakes, candies, cookies

**Complex Carbohydrates**
- **Common Names:** starch, potatoes
- **Food Pyramid Groups:** starch/grain group, vegetable group, protein group
- **Food Sources:** grains, cereals, beans, peas, corn, potatoes, tomatoes, dried beans and peas (legumes)

**Fiber**
- **Common Names:** Fiber (found in carbohydrates, proteins, vitamins, minerals, water)
- **Food Pyramid Groups:** starch/grain group, fruit group, vegetable group, protein group
- **Food Sources:** less refined foods, i.e. whole grains, whole fruits and vegetables, dried beans and peas, nuts and seeds

- Build and repair muscles and all other tissues
- Help maintain fluid balance, electrolytes
- Act as carriers for vitamins, minerals, hormones, and the immune system

**Common Names:** amino acids
- **Food Pyramid Groups:** protein group, dairy group, legume group, vegetable group
- **Food Sources:** meat, fish, poultry, beans, milk, eggs, cheese, whole grains

- Primary carrier of flavors in foods
- Provide and store fat-soluble vitamins A, D, E, and K
- Combine with proteins to form stable cell membranes
- Concentrated energy source that provides a satisfied feeling after meals

**Common Names:** lipids, oils, monounsaturated fats, polyunsaturated fats, saturated fats, omega-3 and -6 fatty acids, trans fatty acids
- **Food Pyramid Groups:** sweets/extras group, protein group, dairy group
- **Food Sources:** animal and dairy products, fish, eggs, soy and meat substitutes, nuts and seeds, salad dressings, oils, margarine, avocado, olives, wheat germ, sweets
DISCOVERING YOUR INTERNAL CUES: Hunger, Fullness, Appetite and Satiety

Being aware of internal cues is an insightful and empowering process as you relearn to nourish yourself in a joyful, healthful manner. Sometimes it is difficult to notice these internal cues until they are intense. For example, you may not recognize appetite until it is in the form of a strong craving. Or, the sensation of fullness may not be recognized until you feel uncomfortably stuffed. You may feel that extreme sensations are uncomfortable and feel a need to eat at the first sign of hunger.

The following questions will guide you in exploring your beliefs and experiences of hunger, fullness, appetite and satiety. Note the following brief descriptions of each term:

- **Hunger**—the state of discomfort or weakness caused by lack of food.
- **Fullness**—having had ample food or drink.
- **Appetite**—a desire for food or drink.
- **Satiety**—having satisfied the appetite or desire.

★ How do you know when you are hungry?
★ Can you touch the part(s) of your body where you feel hunger? Fullness?
★ Do you experience different types of hunger? More gradual onset versus urgent?
★ How do your hunger vary from day to day? Your appetite?
★ How do you know when you are full? Satisfied? What's the difference?
★ Have you ever felt full, but not satisfied? Have you ever felt satisfied, but not full?
★ How do you decide when to start eating and stop eating?
★ How do you feel about yourself/food/body when you are hungry/full/satisfied?
★ What happens to your hunger if you do not eat right away? Your appetite?
★ Is there an intensity of hunger or fullness you are not comfortable with? Why is that?
★ Is your desire for food or the taste of food affected by your hunger or fullness level?
★ How often do you eat your favorite foods? How often do you eat what you desire?
★ Do you feel fat when you are full? Thin when you feel hungry?
★ Would your eating style be different from what it is now if it did not impact your weight or health? (You can also insert physical activity for eating in this same question.)
★ What was the last time you ate and were satisfied?
★ What do you typically do if you are eating and realize the food is not enjoyable?

**Hunger/Fullness Awareness Activity**

Goal: To increase awareness of internal eating cues and discover your own personal meal pattern.

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**Listening Self-test.** Test yourself on your current listening skills by completing this self-test. Mark these statements according to whether you engage in them R (rarely), S (sometimes), or A (always):

- _____ I allow speakers to complete sentences.
- _____ I make sure I understand the other person’s point of view before responding.
- _____ I listen for the important points.
- _____ I try to understand the speaker’s feelings.
- _____ I visualize my response before speaking and think of alternative phrasing.
- _____ I try to think of a solution before speaking, if one seems called for.
- _____ I am relaxed and calm when listening.
- _____ I use affirming sounds (“um,” “yes,” “I see,” “oh”) when listening.
- _____ I look at the person who is speaking.
- _____ I am patient when listening.
- _____ I ask clarifying questions when someone speaks.
- _____ I try not to show by my body language how I feel about the discussion.

What was your grade? If you rated yourself as an “A” (always) on four of the statements, you are not a good listener. An “A” rating on 5-9 would be fair, on 10-12 is an excellent listener.

Improve your rating by becoming more aware of your body language and your choice of words. The process of improving on listening skills also involves utilizing your *third ear*.