A validation study of a measure of dieting self-efficacy

Philip Lawrence Ascheman
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A validation study of a measure of dieting self-efficacy

Ascheman, Philip Lawrence, Ph.D.

Iowa State University, 1991
A validation study of a measure of dieting self-efficacy

by

Philip Lawrence Ascheman

A Dissertation Submitted to the
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Signature was redacted for privacy.

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For the Major Department

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For the Graduate College

Iowa State University
Ames, Iowa
1991

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INTRODUCTION

Self-efficacy expectations have long been implicated as an important factor in the ability of individuals to make behavioral choices in various areas of their lives. One area that has received consistent support is the link between self-efficacy and choices made in the control of dieting behaviors. The purpose of this study was to establish a previously developed 30-item measure of dieting self-efficacy as a useful tool in measuring that factor. The underlying principles of self-efficacy and the basic dynamics of the major eating disorders were examined under separate headings. Prior findings with this measure were then discussed and the current research was described. Through the course of this study, support was offered for the validity of a specific measure of dieting self-efficacy.

Scope of the Problem

During the later half of the 1980s, the United States witnessed a tremendous increase in interest in health and wellness issues, a trend that is continuing in the 1990s. Within this trend, there has been a strong focus on eating and weight control. Rosenblatt (1988) reported that the diet industry alone generates at least ten billion dollars a year and that "at any time, 20% of the U.S. population is taking part in some kind of weight-loss program" (p. 137).
In that same year, Predicasts reported that 227 million dollars were spent on retail, over the counter diet aids. This is not surprising, given the high number of Americans who are estimated to be overweight.

Although estimates of the prevalence of obesity vary considerably, typical estimates suggest that between 30 and 40% of Americans are at least 20% overweight (Walen, Hauserman, & Lavin, 1977). Other research has estimated that 20% of American adults between the ages of 20 and 74 are mildly obese (20% overweight) and that an additional 7% are severely obese (40% overweight) (Kanders, Forse, & Blackburn, 1991). There is also evidence that the proportion of overweight adults in the United States is increasing, particularly among women, the poor, and minority groups (Berkow & Fletcher, 1987; Kanders, Forse, & Blackburn, 1991).

There has also been a recent increase in interest in the treatment of anorexia nervosa and bulimia nervosa, two psychiatric disorders involving abnormal eating behaviors. Anorexia nervosa is a self-induced starvation in which up to 23% of all cases result either directly or indirectly in death (Herzog, 1988). Because of periodic changes in diagnostic criteria, it has been difficult to gain an accurate assessment of the incidence of anorexia nervosa, especially over time. Estimates have ranged from 0.24
(Theander, 1970) to 4.06 (Szmukler, 1985) per 100,000 population per annum with typical estimates near 2.0 (Tolstrup, 1990). There is also evidence that the incidence rate has increased over the last several decades (Bruch, 1973; Jones, Fox, Babigian, & Hutton, 1980; Theander, 1970; Willi & Grossman (1983).

Changes in criteria for anorexia nervosa have also made it difficult to assess its relative impact on the various subgroups of society, but current estimates suggest that up to 95% of the cases involve females (Logue, 1986; American Psychiatric Association, 1987). Onset of the disorder generally occurs before age 35 (Herzog, 1988; American Psychiatric Association, 1987) and the most common onset is during adolescence between ages 13 and 18 (Herzog, 1988).

Conflicting criteria have also plagued the accurate assessment of bulimia nervosa, a disorder involving the consumption of large quantities of food (binging) followed by vomiting (purging) or laxative use. The American Psychiatric Association (1987) reports a prevalence rate for bulimia nervosa of 4.5% for females and 0.4% for males in a sample of college freshman. A review of the published literature by Bennett (1987), however, found reported prevalence as high as 18.6% for college females and 1.7% for college males, utilizing DSM-III (American Psychiatric
Association, 1980) criteria. For high school females, Bennett's review found a range of prevalence from 2.0% to 20.1%.

Clearly, obesity and other eating disorders are affecting a relatively large portion of the population, and their prevalence is apparently rising. Exactly how serious this problem is, however, awaits the development of standardized assessment criteria and procedures.

Unfortunately, research has been unable to keep up with the interest in these areas and many questions remain concerning why people eat the way they do. Of particular interest to the diet industry are questions involving which factors are relevant to successful dieting and other weight control treatments. If specific factors can be identified and controlled, weight control programs can be modified to be more effective. The psychological community is also likely to benefit from knowledge concerning weight control in its focus on the understanding and treatment of eating disorders.

Currently, the majority of weight loss and eating disorder treatments involve two primary components. The first component, medical intervention, involves the stabilization of physiological factors related to body weight and the prescription of specific diet guidelines necessary for change. The second component, psychological
intervention, focuses on changing cognitions that affect the individual's ability to make choices regarding eating behaviors. A particular aspect of this second component, identifying cognitions concerning dieting behaviors, was the primary focus of this study.

The Role of Cognition in Change

One of the fundamental premises of psychological theory is that cognitive thoughts or insights can be translated into adaptive behaviors (Ivey, Ivey, & Simmek-Downing, 1987). While there is considerable agreement on this premise, there is much less agreement on the specific role that cognitions play in inducing change. Arkowitz and Hannah (1989) highlighted this point by showing the relative importance of cognition to several of the major theories. In their view, psychodynamic theory focuses primarily on the affective re-experiencing of past events and in identifying the relationship between past and current behavior. Through such insights, the reliving of events can free individuals to select new courses of action. In this view, cognition is secondary to the affective component of re-experiencing unconscious events.

In contrast, the cognitive theories are based on the assumption that cognitions themselves have the primary role in determining behaviors (Arkowitz & Hannah, 1989). Beck, for example, has long argued that cognitions are an
intrinsic part of psychopathology. Faulty cognitions cause individuals to revert to primitive information processing systems that limit choices in behavior (Beck & Weishaar, 1989). The goal in therapy is, therefore, to uncover maladaptive patterns of thinking, to change them, and to allow new behaviors to be implemented.

An intermediate view is taken by social learning theory, that assigns cognition a mediating role between behavior and the environment. In this view, the three components are on an equal level and interact reciprocally. That is, cognitions, behaviors, and the environment mutually act upon each other (Bandura, 1977a, 1977b, 1984, 1989a, 1989b, 1989c). By assigning a mediating role to cognitions, social learning theory explains how changing cognitions can alter behavior and how practicing behaviors can be instrumental in changing cognitions.

**Self-Efficacy Expectations**

In explaining the presence of cognitive behavioral change across various modalities of therapy, Bandura (1977a) employed the concept of self-efficacy expectation as the central aspect of cognition that produces behavior change. This seminal article defined self-efficacy expectation as "the conviction that one can successfully execute the behavior required to produce the outcome" (p. 193). Using this definition, high self-efficacy may be
further defined as a strong belief that one can accomplish a goal; low self-efficacy is a weak belief in the ability to accomplish a goal. In simple terms, the belief that one can accomplish a given task (high self-efficacy) is prerequisite to successful behavioral action.

In further defining the parameters of self-efficacy, Bandura (1977a, 1977b) contrasted self-efficacy expectation with outcome expectation. Outcome expectation was defined as the belief that a particular behavior would result in a particular outcome. To illustrate this difference, the belief that winning a race will result in a gold medal (outcome expectation) is different from the belief that one has the ability to win the race (efficacy expectation). Thus, an individual may fail to engage or persist in an activity either because the goal does not appear to be attainable, due to lack of ability, or because the goal is not subjectively worthwhile. Further, high perception of ability is necessary to accomplish a task, while high attractiveness of the outcome does not predict success. Therefore, of the two types of expectancies, Bandura (1977a) considers self-efficacy to be the dominant predictor of behavior and the appropriate factor for consideration.

Efficacy expectation may also be contrasted with locus of control, although in this respect some theorists have
argued that self-efficacy is "old wine with new labels" (Kirsch, 1985). Rotter (1954) defined locus of control as the perception that outcome is dependent on internal factors, such as skill, or on external factors, such as the ability of others. This argument has received wide support from attribution theorists (Bem, 1967) and has been widely incorporated into social theory. Self-efficacy expectation, however, is conceptually independent of locus of control and is therefore a different theoretical construct. When locus of control is internal, self-efficacy may be high, with the self-judgment that the required skills are either available or attainable. Despite the internal judgment that the skill is required for performance, however, self-efficacy may be low in that the individual does not believe that he or she has the ability to perform. When locus of control is perceived as being highly external, self-efficacy is removed from consideration because ability will presumably be unrelated to outcome (Bandura, 1989b, 1989c).

Finally, self-efficacy may be contrasted with self-esteem (Bandura, 1982), a subjective belief concerning self-worth. When self-efficacy is high, self-esteem may be high with the individual experiencing pride in accomplishment or in anticipation of accomplishment. Self-esteem may be low, however, in individuals who are not
satisfied with their performance, despite the accomplishment of their goals. A clarifying example might be the student who remains depressed and who harbors self-deprecating thoughts despite perfect grades in school. Low self-esteem may also coexist with either high or low self-efficacy expectations. Individuals may feel bad about their perception of lack of abilities or in spite of their perceptions of strong abilities. Thus, in at least some instances, self-efficacy and self-esteem may function independently.

Dimensions of Self-Efficacy

Self-efficacy also differs from more global constructs such as self-esteem and locus of control in that self-efficacy refers to very specific interactions with the environment (Goldfried & Robins, 1982). Bandura (1977a) identified these interactions or dimensions as generality, strength, and magnitude. Generality refers to the extent to which a self-efficacy expectation relevant to one task influences other tasks. Self-perception of efficacy varies not only across tasks, but within levels of the same task and under different environmental situations (Bandura, 1986). That is, perceived ability in one task may not generalize to other tasks, even though they may be closely related. An illustration of this phenomenon is the ability of a poly-drug abuser to refrain from using all drugs at
home but the inability to resist alcohol while in the company of friends at a tavern.

One noteworthy exception to the rule of task specificity is a measure of general self-efficacy developed by Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers (1982). Their General Self-Efficacy Scale (GSES) was found to be a good measure of expectation of personal ability to initiate and persist in behavior (Sherer & Adams, 1983) across a wide range of behaviors (Tipton & Worthington, 1984). Other studies, however, have supported the belief that specific self-efficacy measures are better at predicting their related tasks than more general measures of self-efficacy (Barrios, 1985; Wang & Richard, 1988).

A second dimension of self-efficacy, strength, refers to the resiliency of the expectation in light of disconfirming experience. Weak expectations are easily disconfirmed while strong expectations may be quite resistant to change (Bandura, 1977a).

Magnitude of a self-efficacy expectation refers to the hierarchy of the difficulty of a particular task. Individuals with low self-efficacy may be limited to less difficult measures of a task, while individuals with high self-efficacy may be better able to cope with the more extreme demands of a task. Common examples of hierarchical
tasks are found in the treatment of phobias. In a snake phobia, a low magnitude task would be observing a snake, while a high magnitude task would be allowing the snake to crawl on an arm. Numerous studies have given empirical and theoretical support for the strength and magnitude dimensions of self-efficacy (Bandura, 1977a; Bandura, Adams & Beyer, 1977; Bandura, Adams, Hardy & Howells, 1980; Maddux, Sheren & Rogers, 1982).

Sources of Change

The central argument of Bandura's self-efficacy theory is that self-efficacy expectations determine which behaviors will become dominant and which will be ultimately produced. Bandura (1989b) summarized four major processes through which these expectations regulate behavior. They include cognitive, motivational, affective, and selectional processes.

Bandura (1989a, 1989b) demonstrated that the cognitive processes take three forms. First, when perceived self-efficacy is high, individuals select high goals and make strong commitments to reach those goals (Bandura & Wood, 1989). Further, high goals have been shown to increase performance (Mento, Steel, & Karren, 1987). Second, people construct anticipatory scenarios relative to their levels of self-efficacy. People with high self-efficacy construct positive scenarios; people with low
self-efficacy construct scenarios of failure. Positive scenarios, including the visualization of success, increase the planfulness of actions and result in increased performance (Kazdin, 1979; Bandura, 1986). Third, high self-efficacy increases perseverance in planning in the face of the difficult task of predicting outcomes based on ambiguous information (Bandura, 1989b).

The second process by which self-efficacy expectations affect behavior is by influencing motivation (Bandura 1977a, 1982, 1986, 1989a, 1989b, 1989c). Thus, self-efficacy theory has relevance for the major theories of motivation. In regard to attribution theory (Bem, 1967), for example, self-efficacy can mediate attributions of causation and performance by biasing the weight of the attributions (Silver, Mitchell & Gist, cited in Bandura, 1989c). In expectancy value theory (Atkinson, 1964; Fishbein, 1967), motivation is affected by the expectation of particular outcomes, with higher motivation related to more valued outcomes. Self-efficacy expectations intervene in this process by influencing which outcomes are perceived to be attainable. Highly valued outcomes are not pursued by people who do not believe that they have the ability to attain them (Betz & Hackett, 1986). In a practical application, McCaul, O'Neill, and Glasgow (1988) showed that by including self-efficacy in a measure of expectancy
value, the ability to predict behaviors was increased. Finally, motivation and self-efficacy are addressed by social comparison and dissonance theories. In general, these theories contend that motivation varies to the degree to which people's beliefs in their abilities are consistent with their levels of performance. When discrepancies exist between expectations and performance, the individual is motivated to either increase performance or to devalue the goal.

A third process by which self-efficacy affects behavior is through the affective process. Specifically, anxiety related to the threat of stressful events is frequently implicated as a factor in impaired performance. Self-efficacy is related to anxiety by the cognitive process of expectation. In short, in a personally important task, anxiety increases as self-efficacy decreases.

Finally, self-efficacy directs behavior by its influence on the selection of behaviors. Individuals choose activities in which their competencies can be expressed, and they avoid activities in which they believe themselves to be incompetent (Hackett & Betz, 1981). When self-efficacy for a given activity is high, individuals are likely to engage in those activities and to avoid other activities.
Through the combined effects of cognitive, motivational, affective, and selectional processes, self-efficacy expectations determine which activities will be initiated, how much effort will be expended in attaining the goals, and how long effort will be sustained in overcoming obstacles. When perceived self-efficacy is high, individuals not only select more difficult goals, expend greater effort in attaining them, and persevere longer in their efforts, they increase their performance levels and the likelihood that the goals will be attained.

**Sources of Self-Efficacy Information**

Bandura (1977a) postulated four sources of information that would affect an individual's level of self-efficacy: performance accomplishments (behavioral enactments), vicarious experience, verbal persuasion, and emotional or physiological arousal. Performance accomplishments, the most effective source of information, include such modes of induction as participant modeling, performance desensitization, and self-instructed performance. Regardless of the mode, performance accomplishments may be problem congruent (self-monitoring) or problem incongruent (trying a new behavior).

Vicarious experiences, such as live or symbolic modeling, observational learning, and imitation, are also powerful sources of self-efficacy information. Their
effects depend on several factors, including the similarity of the observer to the model, the number and variety of the models, and the perceived power of the models (Maddux & Stanley, 1986).

Verbal persuasion and emotional arousal are also effective methods of providing self-efficacy information but they are generally less powerful than the performance methods. Verbal persuasion includes information that comes from suggestion, self-instruction, and interpretations. It is influenced by such factors as expertness, trustworthiness, and attractiveness of the source (Maddux & Stanley, 1986). Sources of emotional arousal include attribution, relaxation, symbolic desensitization, and physiological arousal such as fatigue and pain. Emotional and physiological arousal influence percepts of self-efficacy by providing additional information that must be cognitively justified. That is, if one experiences anxiety, it must be because there is a risk of failure.

Of the four, performance accomplishments were postulated to be the most powerful sources of information, especially when they provide clear and unambiguous experiences of success or failure. This is because they involve the development or modification of memory schemas directly addressing the ability or inability to perform specific tasks.
Arkowitz and Hannah (1989) reviewed the use of behavioral enactments (performance accomplishments) by various forms of therapy. They found them to be useful factors across such diverse strategies as behavioral, cognitive, and psychodynamic therapies. In behavioral therapies, reinforcement is often directly related to performance of the required task. In cognitive therapies, performance accomplishments may involve, for example, a therapist's suggestion that the client experiment with a new, contradictory behavior. An example of the use of performance accomplishments in psychodynamic therapy might be a therapist encouraging a client to act out a transference issue by taking control of the session.

Self-Efficacy Outcome Research

Perhaps the most compelling aspect of self-efficacy theory is its extensive history of empirical research relating levels of self-efficacy to changes in behavior. Support for the role of self-efficacy effects on behavioral change in addictive behavior, for example, was given by Condiotte and Lichtenstein (1981), DiClemente (1981), and Baer, Holt, and Lichtenstein (1986). Their studies showed the ability of specific self-efficacy measures to predict relapse in smoking cessation treatments. Self-efficacy was also shown to be an important factor in the treatment of phobias (Bandura & Adams, 1977) and in changes in diverse
types of social behavior (Kazdin, 1979). Other studies showing the importance of self-efficacy were reviewed by Stretcher, DeVellis, Becker, and Rosenstock (1986) including such diverse behaviors as alcohol abstinence (Rist & Watzl, 1983), exercise (Ewart, Taylor, Reese & Debusk, 1984; Kaplan, Atkins & Reinsch, 1984), and the use of contraceptives (Gilchrist & Schinke, 1983).

Several studies have also been conducted regarding self-efficacy as a factor in the control of eating behavior and weight control, the focus of the current study. Bruch (1973), for example identified "personal ineffectiveness" as a major contributor to the continuation of eating disorders. A belief in personal ineffectiveness in the ability to follow a prescribed dieting regimen was also identified by Gormally, Black, Daston, and Rardin (1982), who believed that unsuccessful attempts in dieting led to expectations of failure in future dieting.

The importance of self-efficacy as a factor in weight loss was also identified through the use of specific eating self-efficacy measures. Glynn and Ruderman (1986), for example, found that scores of an Eating Self-Efficacy Scale (ESES) were significantly related to weight loss in a weight reduction program. Further support was given by a factor analysis of the Bulimic Thoughts Questionnaire (BTQ) (Phelan, 1987) that showed three factors: self-schema,
salient beliefs, and self-efficacy. All three factors were successful in differentiating between obese, normal, and bulimic women. Finally, in a large scale study of the prevalence and correlates of bulimia in high school females, Bennett, Spoth, and Borgen (1987, 1991) found that a short, four-item eating self-efficacy scale was significantly correlated with the Bulimia Test (BULIT).

While these tests showed psychometric difficulties related to their length and narrow focus, their results support the relevance of self-efficacy to eating behaviors and of the ability of paper and pencil tests to measure it. The current study involves the further development of such a measure. In order to demonstrate utility and effectiveness of the measure, it should be applicable to a wide range of eating behaviors, including both normal and abnormal habits. The following section describes three populations that are believed to represent a continuum of control of eating: low control (obesity), variable control (bulimia nervosa), and excessive control (anorexia nervosa).

Eating Behaviors

Biological Influences

At the most basic, biological level, body weight is determined by the balance of caloric intake and the expenditure of energy. In normal individuals, weight is
stable because food intake is offset by energy consumption. When caloric intake exceeds energy output, the result is a weight gain. When energy output exceeds caloric intake, the result is a weight loss. This is presumed to occur as a result of self-regulatory mechanisms in the brain that control hunger, satiety, and body metabolism.

Research with animals during the 1940s hypothesized that the self-regulation centers were in the hypothalamic region of the brain (Brobeck, 1946; Hetherington & Ranson, 1940). The location was further specified by research during the 1950s that localized a hunger center, that controls the initiation of eating, in the lateral hypothalamus, and a satiety center, that regulates cessation of eating, in the ventral medial hypothalamus (Anand & Brobeck, 1951). These findings resulted in a number of biological models of eating, the most detailed of which was from Stellar (1954), who offered considerable evidence for localization based on electrical stimulation and lesion studies with animals. The model was later enhanced by research that identified prominent roles for several neurotransmitters in controlling eating behaviors (Grossman, 1971, 1975, 1981; Stricker & Zigmond, 1974).

A second major biological factor that has been investigated in obesity research is the metabolic "set point." The set point is hypothesized to control the body's
response to changes in food intake and activity levels by providing feedback to the appropriate control centers and to the brain regions that control metabolism (Herman & Mack, 1975; Nisbett, 1972; Peters & Gunion, 1980). When caloric intake is increased beyond the relative capacity of the system, the body adjusts the metabolic rate to maintain the set weight. When the body increases its use of energy, signals are sent to the hunger center to initiate eating and to the satiety center to delay cessation. The reciprocal of these actions occurs when the caloric intake is reduced or when the body fails to utilize existing energy stores.

Although there have been a number of criticisms of the biological model of eating, it has generally withstood the test of time. One criticism that helped to shape its later development, however, was the argument of volitional choice in eating. More recent models have gone beyond the more primitive brain regions and have included the cerebral cortex in the physiology of eating (Olefsky, 1991).

Cognitive Influences

In these models, the hunger and satiety centers provide feedback to the cerebral cortex, which processes the information and, depending on other inputs, makes a decision as to whether eating behaviors will be initiated or inhibited. Thus, cognitions play a central role in
determining eating behaviors. Further, cognitions may over-rule the biological factors, such as when an individual who is starving resists eating tainted food or when contestants in an eating contest gorge themselves well beyond reasonable levels of physical comfort. A more common occurrence of cognitive control over eating behavior is in dieting. Despite physiological cues of hunger, individuals can restrict their intake of food in order to lose weight or to increase their intake to gain weight.

The specific content of the cognitive inputs that influence eating control and weight loss have received considerable attention. Of considerable importance among these factors are cognitions related to self-efficacy. In this context, self-efficacy is defined as the perceived ability to control the amount of food consumed. It should be noted that this definition does not presuppose that weight must be decreased, maintained, or increased, or even that one has the ability to complete the behavior; it is merely the perception or belief that control exists. High self-efficacy may be further defined as a strong belief that eating can be controlled while low self efficacy may be defined as a weak belief in that ability. Based on these definitions, the three major eating disorders, obesity, bulimia nervosa, and anorexia nervosa, may be described as existing on a continuum of eating behaviors.
Obesity

Although there is no universally accepted medical definition of obesity, it is typically defined as excess deposits of fat resulting in weight that exceeds ideal weight (Olefsky, 1991; Kanders, Forse, & Blackburn, 1991). Ideal weight is defined (usually by insurance companies) in terms of actuarial estimates of weight and height commensurate with the longest life expectancy (Olefsky, 1991). A commonly used height and weight table is shown in Table 1. The Merck Manual of Diagnosis and Therapy (Berkow & Fletcher, 1987) further defines three levels of obesity: mild obesity is described as 20 to 40% overweight, moderate obesity as 41-100% overweight, and severe (morbid) as more than 100% overweight. Increased health risks have been shown to occur at all levels of obesity, and recent studies have implicated even lower degrees of excess weight (Kanders, Forse, & Blackburn, 1991).

According to Olefsky (1991) and other recognized medical authorities (Berkow & Fletcher, 1987; Kanders, Forse, & Blackburn, 1991), the primary cause of obesity is overeating. Although there are rare cases involving physiological abnormalities, these tend to be the exception rather than the rule. The critical factor is a lack of
Table 1
Height and weight table for adults

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<td>145 - 159</td>
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</table>

control in food intake. Thus, self-efficacy is implicated as a prominent factor and obesity may be used to represent an extreme (low) end of the eating self-efficacy continuum.

Anorexia Nervosa

Difficulties in establishing universally accepted definitions and diagnostic criteria have also occurred for anorexia nervosa. Self-starvation was first introduced into the literature in 1689 by Richard Morton (cited in Golden & Sacker, 1984), an English physician, who described the disorder as "a nervous consumption." Almost 200 years later, in 1873, a more extensive clinical description was offered by Sir William Gull (cited in Golden & Sacker, 1984), who coined the current name of "anorexia nervosa." Since those first descriptions, the criteria for the disorder have changed a number of times, complicating diagnosis and research efforts (Bemis, 1978). Even in recent times, the pathognomic signs of the disorder have undergone significant revisions as may be noted in differences between the Feighner criteria (1972), and two separate sets of criteria consecutively endorsed by the American Psychiatric Association (APA) (1980, 1987). Under current APA guidelines, anorexia nervosa is described in the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R) (American Psychiatric Association, 1987) as the refusal to maintain a minimum
body weight (15% below expected), fear of gaining weight, disturbance of body image, and amenorrhea (in females). The full criteria appear in Table 2. Future changes in criteria are also likely, as research has called the importance of distorted body image into question (Horne, Van Vactor, & Emerson, 1991; Penner, Thompson, & Coover, 1991), and older objections to other criteria remain (Halmi, 1983).

If obesity occupies one end of the eating control spectrum, anorexia nervosa may be shown to occupy the opposing high end. Theories suggesting a source for the extreme control of eating habits displayed by anorexics come primarily from the family literature. Specifically, mothers of anorexics are seen as being dominant and over-protective, and setting extremely high expectations of obedience and success for their offspring (Golden & Sacker, 1984). During adolescence, anorexics are dependent on their mothers for approval, but at the same time, they strive for their own independence and control. One of the few ways that they can demonstrate self-control is through dieting. By losing weight, they gain control not only of themselves, but of the family dynamics (Bruch, 1973).

Although they experience significant hunger associated with their self-starvation, anorexics are able to consistently deny themselves food. Thus, anorexics are
Table 2

DSM-III-R diagnostic criteria for Anorexia Nervosa

307.10 Anorexia Nervosa

A. Refusal to maintain body weight over a minimal weight for age and height, e.g., weight loss leading to maintenance of body weight 15% below that expected; or failure to make expected weight gain during period of growth, leading to body weight 15% below that expected.

B. Intense fear of gaining weight or becoming fat, even though underweight.

C. Disturbance in the way in which one's body weight, size, or shape is experienced, e.g., the person claims to "feel fat" even when emaciated and believes that one area of the body is "too fat" even when obviously underweight.

D> In females, absence of at least three consecutive menstrual cycles when otherwise expected to occur (primary or secondary amenorrhea). (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen administration.)

Note. From the "Diagnostic and Statistical Manual of Mental Disorders, Third Edition" (pp. 65-67) by the American Psychiatric Association, 1987, Washington, D.C.: APA.
viewed as having considerable self-efficacy in regards to their control of eating habits.

Bulimia Nervosa

Bulimia nervosa represents a middle ground between obesity and anorexia nervosa in terms of the ability to control eating behaviors. Bulimia was first described in the 1950s as an eating disorder related to obesity and anorexia. It was characterized by eating binges, the consumption of large amounts of food in a short period of time (Stunkard, 1959). Since its first conception however, a separate diagnosis of bulimia nervosa met skepticism and resistance by many theorists and those professional disagreements continue today (Horme, Van Vactor, & Emerson, 1991). The basic controversy involves whether bulimia nervosa is a separate disorder or a variant of either anorexia nervosa or obesity.

The initial argument for bulimia as a separate disorder (Russel, 1979) was complicated by findings that subgroups of anorexics were vomiting (Beumont, 1976; Casper, Eckert, Halmi, & Goldberg, 1980; Dally, 1979) or binging (Garfinkel, Moldofsky, & Garner, 1980; Hsu, Crisp, & Harding, 1979). Numerous attempts were made to define the limits of overlap with the other disorders, resulting in a wide variety of names and diagnostic criteria for the disorder. Examples include bulimarexia (Boskind-Lodahl &
White, 1978), that emphasized self-starvation and binging, bilimarexia (Boskind-Lodahl & White, 1978), that excluded individuals who vomited (purging) or used laxatives or diuretics, and bulimia nervosa (Russell, 1979), that included both binging and purging behaviors.

In spite of the apparent overlap, convincing arguments have been made that while binging and purging may be symptomatic in either group, bulimics differ from anorexics on several dimensions including lower impulse control (Pyle, Mitchell, & Eckert, 1981; Wilson & Mintz, 1982), greater weight (including low, normal, and obese) and weight fluctuations (Fairburn, 1981; Halmi, Falk, & Schwartz, 1981), premorbid disorganizing life stress (Strober, 1985), and a higher incidence of depression and anxiety (Casper, Eckert, Halmi, & Goldberg, 1980; Glassman & Walsh, 1983; Johnson & Larson, 1982). Paradoxically, the link between bulimia and depression and the relative effectiveness of tricyclic antidepressants and MAOIs (e.g., Brotman, Herzog, & Woods, 1984; Pope & Hudson, 1982) has been used to argue that bulimia nervosa is a symptomatic variant of a biologically mediated affective disorder (Johnson & Maddi, 1986). While this issue still needs to be resolved, there is a general consensus that bulimia nervosa is a distinct entity (Tobin, Johnson, Steinberg,
Staats, & Dennis, 1991). Current criteria (American Psychiatric Association, 1987) for bulimia nervosa include a specified frequency of binge eating, a feeling of lack of control, concern with body shape and weight, and various methods of preventing weight gain (Table 3).

A family based etiology for bulimia nervosa, similar to that of anorexia nervosa, was developed by Palazolli (cited in Schwartz, Thompson, & Johnson, 1982), who suggested that eating disorders be viewed as a struggle for independence. In the face of arbitrary and unempathic mothering, the adolescent uses eating behaviors as a last effort to gain perfect control over the body, as a way to gain control of self, and a method to deny the control of the mother. Others have suggested that for bulimics, a preoccupation with weight is pulled between desire for self-validation and fear of men. Binging becomes a way to take control of their lives, but fear of becoming overweight and being rejected by men results, and purging ensues (Gandour, 1984). A sense of power is again gained during periods of self-denial but increases the risk of binging behavior (Striegel-Moore, Silberstein, & Rodin, 1986).

Regardless of the criteria used or the etiological theory to which one subscribes, there is in bulimia nervosa, a clear message of fluctuating control of eating
Table 3

DSM-III-R diagnostic criteria for Bulimia Nervosa

307.51 Bulimia Nervosa
A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).

B. A feeling of lack of control over eating behavior during the eating binges.

C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.

D. Persistent overconcern with body shape and weight.

Note. From the "Diagnostic and Statistical Manual of Mental Disorders, Third Edition" (pp. 67-69) by the American Psychiatric Association, 1987, Washington, D.C.: APA.
behaviors. Normal eating behaviors occur much of the time but are interrupted by uncontrollable urges to overeat. Further, bulimia nervosa occurs in all weight ranges. Thus, bulimia nervosa, that is characterized by intermittent lack of self-efficacy, may be viewed as occupying the middle ground between obesity, with little self-efficacy, and anorexia nervosa, in which high self-efficacy is a dominant characteristic.

Gender Differences in Eating Behaviors

While there is considerable disagreement concerning the prevalence, incidence, and even the definition of the eating disorders, it is relatively clear that the problems are more common in women than in men (APA, 1987). Gender differences are also apparent in the prevalence of obesity. Foreyt (1987) and others, reported that, using a variety of measures of obesity, men outnumber women until about age 35; obese women outnumber obese men in later years. Further, the prevalence of overweight males increases until approximately age 54, and then declines while the prevalence of overweight women continues to increase (Walen, Hauserman, & Lavin, 1977).

As of yet, the cause of such differences is unclear. However, feminist theorists have suggested that a Western, male-dominated culture, in which women derive their identities from the perceptions of men (Boskind-Lodahl &
may influence young women to strive to be thin. This may partially account for the relatively lower numbers of young females who show signs of obesity, as well as the relatively higher numbers of women who develop eating disorders.

This general concept has received considerable report from several authors who have shown parallels between the fashion industry's image of thinness as desirable and women's dieting and exercising behaviors. Logue (1986), suggested that the fashion industry has been a major factor in causing women to adopt personal standards of thinner as better. Herzog (1988) reported that a study of "men's magazine" centerfold models and Miss America winners between 1950 and 1970 showed a progressive decline in bust and hip measurements. Garner, Garfinkel, Schwartz, and Thompson (1980) further documented how cultural expectations have caused women's weight to gradually fall over time.

The Dieting Self-Efficacy Test

The primary instrument of interest in the current study was the Dieting Self-Efficacy Test (DSET). The DSET was initially developed under the name of the Eating Self-Efficacy Expectation (ESEE) measure (Ascheman, 1989) in response to the need for an instrument to measure self-efficacy specific to eating behaviors. Due to
theoretical difficulties associated with explaining non-dieting eating behaviors, the ESEE was renamed the Dieting Self-Efficacy Test. Here, dieting is defined as the restriction of food intake related to intentional weight loss. The instrument, itself, however, remains unchanged. The change in name simply reflects a change in the focus of the research and in the general description of the potential uses of the instrument. A further discussion of change in focus is found in the "Method" section of this paper. This section briefly reviews the initial development of the instrument and research findings prior to the current study.

The ESEE was initially composed of 118 declarative statements that were written to represent ten domains of eating behaviors suggested by the most commonly used eating disorder questionnaires. The response format was a five-point Likert scale ranging from agree strongly (1) to disagree strongly (5). Several items were reverse scored so that a high score represented high self-efficacy and a low score represented low self-efficacy.

Through a pilot study, utilizing scores from 41 undergraduate students at Iowa State University, and a larger scale study with 258 female undergraduates from the same institution, the scale was reduced to its current content of 30 items. Item selection was completed through
a series of eliminations that retained items with the highest levels of inter-item correlations and that were found to produce a single statistical factor. Redundant and other subjectively questionable items were also eliminated. Three items from a short, six-item self-efficacy scale, developed by Bennett (1987), were included in the final 30-item version of the instrument. The current version of the instrument is shown in Appendix A.

Based on the large study population, coefficient alpha for the final 30-item measure was 0.945. The population mean was 92.65 with possible minimum and maximum scores of 30 and 150, respectively. The standard deviation was 23.80. Further psychometric data regarding distributions for age, gender, and other demographic variables were not available due to the limited population sample.

Initial support for the validity of the instrument was obtained through comparisons of the ESEE with the Self-Efficacy Scale, the California Psychological Inventory, and the ESTEEM, a seven-item measure of self-esteem related to eating behaviors. Correlational analyses showed that the relationships between the ESEE and these measures were generally below levels of statistical significance. Significant relationships tended to be low and were predictable. This was offered as evidence of
discriminant and convergent validity for the ESEE.

A final analysis was presented to show the relationship between deviations from personal ideal and medically recommended ideal weights and the ESEE and SES. Trend analysis supported the discriminant validity of the ESEE measure in that a linear trend was present for the ESEE but not for a general measure of self-efficacy. Further, it was found that high ESEE scores were associated with being below an ideal weight (high self-efficacy) and low ESEE scores were associated with being above an ideal weight (low self-efficacy).

Purpose of the Study

The focus of the current study was on further defining the psychometric properties of the DSET, and on offering corroborating evidence for the validity of the measure. Two primary groups were administered the DSET in order to meet the overall goals in this project. Through the course of this study, the psychometric properties of the DSET were established for groups of normal weight, underweight, and overweight subjects. Additional normative data were reported for various subgroups, including, anorexics, bulimics, students, adults, males, and females. Evidence for the validity of the instrument when used as a measure of dieting self-efficacy was obtained via the prediction of scores by these subgroups.
Specific hypotheses, that were considered, are shown below.

Hypotheses

1. The psychometric properties of the DSET would be comparable to those found in the initial, instrument-development study of the DSET (ESEE).

2. DSET scores are related to the weight of subjects such that higher DSET scores, reflecting high dieting self-efficacy, will be attained by subjects near their ideal weights; lower DSET scores, reflecting low dieting self-efficacy, will be attained by subjects who perceive themselves to be overweight.

3. Scores from subjects in a substance abuse treatment program will be comparable to those received by non-substance abusers.

4. Males will score systematically higher on the DSET than will females.

5. Scores from an adult group will be comparable to scores received by a student group.

6. DSET scores will show a relatively low level of correlation with SES scores and they will be affected by different subject factors.

7. Anorexics and bulimics will appear on opposite ends of the dieting spectrum, as indicated by their DSET scores.
8. Unsuccessful dieters will score relatively lower than their non-dieting counterparts.
METHOD

This study utilized data from a total of 451 subjects gathered from two base populations. In order to determine if the instrument could be utilized with both student and adult groups, data were gathered from representative samples of both groups.

Group One - Subjects

Group one was composed of 214 students who were members of psychology courses at a large, midwestern university. Group members were selected from a larger pool of research subjects based on their completion of the Dieting Self-Efficacy Test (DSET), the Self-Efficacy Scale (SES), and other appropriate forms. Selection procedures are described in the "Group One - Procedures" section, below.

Of the 214 subjects in the student research group, 49.5% were females and 50.5% were males. Ages for the group members ranged from 18 to 43 with a mean age of 21.8 years and standard deviation of 3.3 years. Consistent with the estimated prevalence rate for eating disorders among college students (previously cited), 2.3% of the subjects reported having been previously diagnosed as having bulimia nervosa and 0.5% reported a diagnosis of anorexia nervosa. In this sample, 78.6% of the group reported their race as White, 4.9% as Black, 1.3% as Hispanic, and 10.3% as Asian.
The remaining 4.9% reported their race to be "other" or declined to respond to the question. In comparison to the data offered by the Bureau of the Census for the State of Iowa (U.S. Bureau of the Census, 1990), the current data set was comparable to the state racial demographics with the exception of a higher percentage of Asian subjects and a lower percentage of White subjects. This, however, is consistent with the typical populations found in university settings. A comparison of the sample and state racial backgrounds is given in Table 4.

Group One - Procedure

Students were asked to participate in a large, multi-dimensional, psychology research project via a sign-up sheet. The project involved the completion of a wide variety of self-report measures, including the Dieting Self-Efficacy Test (DSET) and the Self-Efficacy Scale (SES), the two measures of interest in the current study. Not all students completed the same measures. The forms completed as part of the current study are shown in Appendix A. Participants were allowed to sign up for one or two research sessions and were given extra credit in their course work, commensurate with the time spent in the research activity. A total of 407 students completed one or two sessions.

In order to participate in the study, students were
Table 4
Comparison of the racial composition of the student group and the state population

<table>
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<th>Race</th>
<th>Student group (N=214) %</th>
<th>State of Iowa (N=2,776,755) %</th>
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<tr>
<td>White</td>
<td>78.6</td>
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<tr>
<td>Black</td>
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<td>1.1</td>
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<tr>
<td>Other</td>
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<tr>
<td>Total</td>
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</table>
required to sign an informed consent statement. The signed form was later detached from the test materials in order to assure the anonymity of the individuals involved in the study. Prior to their participation, all potential subjects were informed that participation was completely voluntary and that individual results would remain strictly confidential. All subjects were treated in accordance with the human subjects guidelines of the American Psychological Association and the guidelines of the Department of Psychology and Iowa State University human subjects review committees.

Within the current study, in order to complete the DSET, the SES, and the appropriate demographic information sheet, subjects were required to appear during both sessions. Data from subjects who completed only one of the measures or who did not complete the demographic information sheet were omitted from this study. This resulted in data from a total of 220 subjects from the pool. Data from an additional six subjects were omitted due to an excess of missing responses (three or more) on either the DSET or the SES, or for omitting critical data on the demographic sheet. For the remaining 214 subjects, nine individuals omitted one item on the DSET, two individuals omitted two items on the DSET, and seven omitted one item on the SES. Scores for those subjects
were calculated by using the average score for the measure in place of the omitted items.

Group Two - Subjects

Group two included 237 adult volunteers who were members of an after-care support program for substance abuse or who were similarly involved in an eating disorder program. Both programs included patients in the process of ongoing recovery and other concerned persons. The majority of the subjects (N = 229) were from the substance abuse program.

In the combined group, 47.3% of the subjects were female and 52.3% were male. The average age for the group was 40.0 years with a standard deviation of 11.4 years and a range of 20 to 75 years. The racial composition of the group was 94.5% White, 2.9% Black, 1.3% Hispanic, 0.8% Asian, and 0.5% other. Statistics from the Bureau of the Census for the State of Iowa (U.S. Bureau of the Census, 1990) were used in comparing the racial composition of the group with that of the geographic region from which they were collected. The current sample was generally consistent in racial composition with the state population, as shown in Table 5.

Additional information regarding the composition of the group regarding their reasons for involvement with their respective programs showed that 3.0% had been given a
Table 5
Comparison of the racial composition of the adult sample group and the state population

<table>
<thead>
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<th>Race</th>
<th>Adult Group (N=237) %</th>
<th>State of Iowa (N=2,776,755) %</th>
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</thead>
<tbody>
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<td>White</td>
<td>94.5</td>
<td>95.8</td>
</tr>
<tr>
<td>Black</td>
<td>2.9</td>
<td>1.7</td>
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<td>Hispanic</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Asian</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Other</td>
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<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
previous diagnosis of bulimia nervosa, 0.8% had been diagnosed with anorexia nervosa, and 58.7% reported having completed treatment for substance abuse. The remaining 37.6% of the sample reported that they had not been diagnosed as having any of the disorders. These were primarily family members and other concerned persons of the individuals being treated.

**Group Two - Procedures**

Initial contact with the substance abuse recovery group members was made via a letter that was presented by staff members to the individual support groups. The research materials (see Appendix A.) were then presented directly to the groups by the researcher. Due to the nature of the groups, signed informed consent was not required but an informed consent statement was read to each group and copies appeared in the research packets. Subjects were then asked to fill out the research materials and place them in an envelope when they finished. Several copies of a debriefing statement were placed near the envelope and subjects were asked to read the statement prior to leaving.

Two individuals declined to participate at the time of testing. Data from three subjects were omitted from further consideration based on the previous criterion of less than three missing responses on the DSET. Six
individuals omitted either one or two items on the DSET and their scores were calculated by the manner previously described.

The remaining eight adult subjects were members of an eating disorder recovery group. The members of the group were read an introductory letter, by a staff member, requesting their participation in the research project. They were then given research packets containing the instruments of interest in the current study and two measures from an additional research project. Group members were asked to complete the research packets on their own and to return them, sealed in envelopes that were provided, to staff at the next meeting. Signed informed consent was required. Anonymity was assured by removing the informed consent statements from the research packets upon receipt by the researcher. The overall response rate for this group was less than four percent. All of the eight subjects who returned packets competed all of the items. Two additional packets were returned blank.

The relatively low response rate for the eating disorder treatment group, compared to the substance abuse treatment group, may have been due to a number of factors, including lack of direct contact with the eating disorder group by the researcher, the requirement of signed informed consent, and the addition of two other instruments. The
content of the research packets for the eating disorder recovery group is shown in Appendix C.

All subjects in the substance abuse recovery group and the eating disorder recovery group were 18 years of age or older. All subjects were treated in accordance with the human subjects guidelines of the American Psychological Association and the guidelines of the Department of Psychology and Iowa State University human subjects review committees.

Instruments

The Dieting Self-Efficacy Test (DSET)

As previously described, the DSET is a 30-item instrument under development for use in measuring self-efficacy expectations relative to dieting behaviors. Responses are given in a five-point Likert format. Two items are reverse scored so that high scores reflect high self-efficacy and low scores reflect low self-efficacy. Possible scores range from 30 to 150. During the initial development of the instrument, the scale showed a mean of 92.65 and standard deviation of 23.80 for a group of college women (Ascheman, 1989). The scale showed an acceptable level of reliability with a coefficient alpha of 0.945 in that study. Test administration takes approximately five minutes.
The Self-Efficacy Scale (SES)

The SES was developed by Sherer et al. (1982) to assess generalized expectation of self-efficacy. The 30-item scale consists of two subscales, a 17-item general self-efficacy measure and a six-item social self-efficacy measure. Seven filler items were not used in the current study, resulting in a 23-item measure. Responses are given in a five-point Likert format. Fourteen items were reverse scored before totaling so that a high score reflects high self-efficacy and a low score reflects low self-efficacy. Possible scores range from 23 to 115. Both subscales demonstrate acceptable reliability with Cronbach alphas of 0.86 to 0.71. Studies by Sherer and Adams (1983) and others have supported the validity of the SES in its ability to predict success in vocational, educational, and military settings.

Data Analysis

In order to further define the psychometric properties of the DSET, and to further establish it as a valid instrument, a number of subgroup comparisons were made. The primary comparisons included the original instrument development group with females in the current student group, males versus females, students versus adults, substance abusers versus non-substance abusers, bulimics versus normals, and dieters versus non-dieters. Due to
unequal cell sizes, analysis of variance procedures used a partial sums of squares model (SAS - General Linear Model) to test for significant differences between DSET scores of the various groups.

Because deviation from an individual's perceived ideal weight was found to be an important factor in previous research with this instrument, that factor was included in the majority of the comparisons. Specifically, discrepancies between subjects' reported weights and their perception of their "best" weights were converted to percent deviations. Thus, an individual who reported being 150 pounds and 15 pounds over weight was recorded as being ten percent overweight. Likewise, a person reporting being 250 pounds and 25 pounds over weight would be in the same category. Data were then grouped by the percent deviation, resulting in nine weight groups (identified as "P-groups" for Percentage deviation from ideal weight). P-groups were established using 5% increments with the exceptions of P-group 5 (0% over- or underweight), P-group 1 (greater than or equal to 15% underweight), and P-group 9 (greater than or equal to 15% overweight.) Due to the small number of subjects reporting being greater than 0% underweight, P-groups 1 through 4 were collapsed for analysis (identified as P-group 1-4). The final P-group descriptions are shown in Table 6.
Table 6

Pgroup (percent deviation from ideal weight) descriptions

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<thead>
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<th>Pgroup</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1-4</td>
<td>Greater than 0% underweight</td>
</tr>
<tr>
<td>5</td>
<td>0% over or underweight</td>
</tr>
<tr>
<td>6</td>
<td>Greater than 0% overweight and less than or equal to 5% overweight</td>
</tr>
<tr>
<td>7</td>
<td>Greater than 5% overweight and less than or equal to 10% overweight</td>
</tr>
<tr>
<td>8</td>
<td>Greater than 10% overweight and less than or equal to 15% overweight</td>
</tr>
<tr>
<td>9</td>
<td>Greater than 15% overweight</td>
</tr>
</tbody>
</table>
Other planned analyses included comparisons of the DSET and SES, and calculation of corrected inter-item correlations, item by item correlations, and coefficient alphas for the measure. Group and subgroup means and standard deviations, for the measure were also reported.
RESULTS

Initial Group Comparisons

In an effort to replicate the findings of the original study (Ascheman, 1989), comparisons were made between the Dieting Self-Efficacy Test (DSET) and the Self-Efficacy Scale (SES) scores from the original instrument development group and the subjects in the current, student group. Because the original group was composed entirely of females, only data from the female subjects in the current study were utilized.

The mean DSET score of the original group (N = 253) was 92.65 with a standard deviation of 27.8. The mean DSET score of females in the current student group (N = 106) was 102.69 with a standard deviation of 28.4. Analysis of variance, using the previously described regression model, showed the groups to be not significantly different (F(1, 359) = 3.44, p<.06) at the .05 level of significance. A comparison of the SES scores, however, showed a significant difference between the two groups (F(1, 359) = 14.82, p<.0001). The mean scores for the original and current groups were 79.05 and 85.08 respectively.

The finding of a difference in the groups on SES scores, a measure of general self-efficacy, but not on DSET scores, a measure of dieting self-efficacy, initially appeared to be problematic for the study. A possible
explanation for the differences, however, was uncovered by looking at differences in the P-groups, or percent deviation from perceived ideal weight. A two-sample Student's t statistic using pooled variance was used to compare the two groups at each of five levels of P-group. It should be noted that no subjects from either the instrument development group or the current student group reported being in excess of 15% overweight. Therefore, P-group 9 was not considered in these analyses. Alpha was set at .05 for the two-tailed tests. The results of the comparisons and a breakdown of the DSET and SES scores for the groups, by P-groups, is shown in Table 7.

In these comparisons, the groups were found to be different on DSET scores on only three of the five levels of P-group. Further, the mean DSET scores were not systematically higher or lower for either group. This supports the initial finding of no significant difference between groups on DSET scores. However, not only were the SES scores significantly different between groups at all levels of SES, but the means were systematically higher for the current student group. A possible explanation for this discrepancy was that in the current study, subjects were required to attend two testing sessions rather than one. Also, the current study was conducted at the beginning of a semester, which usually draws students with relatively
Table 7

DSET and SES scores for the scale development group (N = 253) and current, female student group (N = 106) by P-groups

<table>
<thead>
<tr>
<th>P-group</th>
<th>Group</th>
<th>N</th>
<th>DSET Mean</th>
<th>DSET SD</th>
<th>SES Mean</th>
<th>SES SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>Development</td>
<td>22</td>
<td>109.1</td>
<td>24.83</td>
<td>74.7</td>
<td>14.11 *</td>
</tr>
<tr>
<td>1-4</td>
<td>Student</td>
<td>11</td>
<td>106.2</td>
<td>29.31</td>
<td>85.9</td>
<td>11.72</td>
</tr>
<tr>
<td>5</td>
<td>Development</td>
<td>72</td>
<td>103.2</td>
<td>20.33 *</td>
<td>78.3</td>
<td>14.56 *</td>
</tr>
<tr>
<td>5</td>
<td>Student</td>
<td>35</td>
<td>115.8</td>
<td>21.67</td>
<td>84.3</td>
<td>14.33</td>
</tr>
<tr>
<td>6</td>
<td>Development</td>
<td>77</td>
<td>91.4</td>
<td>20.66 *</td>
<td>82.6</td>
<td>12.28 *</td>
</tr>
<tr>
<td>6</td>
<td>Student</td>
<td>31</td>
<td>99.0</td>
<td>24.49</td>
<td>86.5</td>
<td>7.76</td>
</tr>
<tr>
<td>7</td>
<td>Development</td>
<td>52</td>
<td>83.5</td>
<td>22.70 *</td>
<td>77.7</td>
<td>14.37 *</td>
</tr>
<tr>
<td>7</td>
<td>Student</td>
<td>21</td>
<td>95.4</td>
<td>31.50</td>
<td>84.4</td>
<td>12.54</td>
</tr>
<tr>
<td>8</td>
<td>Development</td>
<td>30</td>
<td>74.5</td>
<td>21.61</td>
<td>77.4</td>
<td>12.55 *</td>
</tr>
<tr>
<td>8</td>
<td>Student</td>
<td>8</td>
<td>73.9</td>
<td>34.14</td>
<td>83.5</td>
<td>14.26</td>
</tr>
<tr>
<td>9</td>
<td>Development</td>
<td>0</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>9</td>
<td>Student</td>
<td>0</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

Note. No subjects from either group reported being in excess of 15% overweight.

Significant difference (p<.05) between Development and Student group indicated by *.
higher levels of motivation. Thus, higher general self-efficacy scores for the current group may be related to a population that is more motivated, and that would be expected to be generally more self-efficacious. DSET scores, however, were less affected by motivation to participate in the study than by the perception of deviation from ideal weight.

While the ad hoc analyses provided a reasonable explanation of the differences between groups, they suggested caution in terms of over generalizing the results of the current study group.

**Gender and Age Differences in the DSET**

Because the original study used only female subjects, it was deemed important to determine if male and females differed on dieting self-efficacy, as determined by the DSET. Specifically, it was hypothesized that there would be no significant differences in DSET scores due to gender. In addition, it was hypothesized that DSET scores would not be affected by age differences between groups, other than what may be accounted for by changes in perceptions of ideal weight. Therefore, DSET scores were compared between the student and adult groups and between genders.

Before the adult group could be considered to be a representative sample of adults, possible influences of substance abuse on DSET score needed to be determined.
Scores were compared between 81 adult, non-abusers (M = 101.47, SD = 22.85) and 139 adult substance abusers (M = 105.86, SD = 23.40). Analysis of variance using partial sums of squares for unequal sized samples showed the substance abuse subgroup to be not significantly different than the non-abusing group (F(1, 219) = 0.25, p<.6164).

The adult and student groups were then compared without regard for differences in perceived weight deviation. The mean DSET score for the 214-subject student group was calculated to be 109.31 (SD = 24.82); the mean DSET score for the 237-subject adult group was calculated to be 101.26 (SD = 25.54). Analysis of variance showed the groups to be not significantly different (F(1, 410) = 1.05, p<.3053). Scores for subjects in P-group 9 were omitted in this analysis because the student group had no members in that category. When comparisons between the student and adult groups were made by level of P-group, significant differences were indicated at P-group levels 6 and 8, only. Comparisons between scores of the two groups are shown in Table 8.

Due to the small number of differences in mean scores between the two groups and the overall finding of no significant differences in variance, it was determined that the two groups could be combined in order to determine any possible gender differences in the DSET. Combining the two
Table 8

Comparison of DSET scores between student and adult groups at six levels of percent deviation from ideal weight (P-groups) (N = 451)

| P-group | Students | | | | Adults | | | |
|---------|----------| | | | N  | Mean | SD | | N  | Mean | SD | | F | p  |
| 1-4     | 41       | 116.46 | 22.71 | 25 | 117.08 | 14.91 | 0.00 | .9590 |
| 5       | 85       | 117.95 | 19.30 | 30 | 118.60 | 16.46 | 0.03 | .8703 |
| 6       | 45       | 104.60 | 24.89 | 41 | 114.73 | 17.81 | 4.63 | .0343 |
| 7       | 31       | 97.00  | 28.93 | 61 | 99.63  | 25.69 | 0.20 | .6585 |
| 8       | 12       | 73.08  | 27.64 | 40 | 92.93  | 21.54 | 6.86 | .0116 |
| 9       | 0        | -----  | ----- | 40 | 75.45  | 21.42 | ---- | ---- |

Note. No subjects from the student group reported being in excess of 15% overweight (P-group 9).
groups increased the number of subjects to be compared and ensured that there were sufficient numbers in each P-group, for both genders, so that adequate comparisons could be made.

Using the General Linear Model (GLM) regression procedure, male DSET scores were found to be significantly different than female scores ($F(1, 451) = 48.96$, $p<.0001$). Comparisons were also made between genders, within P-groups. The results are shown in Table 9. These comparisons suggested that differences between males and females existed at three of the six levels of percent deviation from perceived ideal weight. Specifically, males showed higher DSET scores than females when they believed they exceeded their ideal weight by 1% to 15% or by more than 20%. These comparisons also indicated that males' scores were systematically higher than their female counterparts within the same P-groups (Figure 1).

It is also interesting to note the relative distribution of males and females within the P-group levels. While 52.5% of the males reported that they were at or below their ideal weight, only 26.9% of the females reported the same perception (see Table 10). Thus, it may be that females over-estimate their own weight or that they under-estimate their own ideal. This is consistent with the previously cited feminist theories on eating disorders,
Table 9
Comparison of male and female DSET scores at six levels of percent deviation from ideal weight (P-groups) (N = 451)

<table>
<thead>
<tr>
<th>P-group</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>1-4</td>
<td>50</td>
<td>118.94</td>
<td>17.77</td>
<td>16</td>
<td>109.69</td>
<td>25.10</td>
</tr>
<tr>
<td>5</td>
<td>72</td>
<td>119.57</td>
<td>17.55</td>
<td>43</td>
<td>115.70</td>
<td>20.06</td>
</tr>
<tr>
<td>6</td>
<td>34</td>
<td>117.21</td>
<td>19.29</td>
<td>52</td>
<td>104.35</td>
<td>22.78</td>
</tr>
<tr>
<td>7</td>
<td>43</td>
<td>107.72</td>
<td>21.01</td>
<td>49</td>
<td>90.86</td>
<td>28.80</td>
</tr>
<tr>
<td>8</td>
<td>21</td>
<td>94.43</td>
<td>21.82</td>
<td>31</td>
<td>84.23</td>
<td>25.36</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>86.33</td>
<td>21.44</td>
<td>28</td>
<td>70.79</td>
<td>20.01</td>
</tr>
</tbody>
</table>
Figure 1. Male and female DSET scores at six levels of P-group (N = 451)
Table 10

Percent of male and female subjects in six levels of percent deviation from ideal weight (P-groups) (N = 451)

<table>
<thead>
<tr>
<th>P-group</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>Cumulative %</td>
<td>N</td>
</tr>
<tr>
<td>1-4</td>
<td>50</td>
<td>21.55</td>
<td>21.55</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>72</td>
<td>31.03</td>
<td>52.59</td>
<td>43</td>
</tr>
<tr>
<td>6</td>
<td>34</td>
<td>14.66</td>
<td>67.24</td>
<td>52</td>
</tr>
<tr>
<td>7</td>
<td>43</td>
<td>18.53</td>
<td>85.78</td>
<td>49</td>
</tr>
<tr>
<td>8</td>
<td>21</td>
<td>9.05</td>
<td>94.83</td>
<td>31</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>5.17</td>
<td>100.00</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100.00</td>
<td>219</td>
<td>100.00</td>
</tr>
</tbody>
</table>
that suggest that females are striving for an unrealistic thinness.

Validation Analyses

Self-Efficacy Scale Comparisons

In order to provide evidence for the validity of the Dieting Self-Efficacy Scale, the DSET scores of the student group were compared to their scores on the Self-Efficacy Scale. During the initial development of the DSET (Ascheman, 1989) it was predicted that the instrument would correlate to a low degree with the SES, a more general measure of self-efficacy. This hypothesis was consistent with Bandura's argument that self-efficacy measures should be situation-specific. While self-efficacy may be viewed as an underlying factor in an individual's ability to complete a task, high or low self-efficacy in one realm of behavior should not necessarily influence or be highly correlated with another.

Based on the responses of the initial development group (N = 253), the correlation between the DSET and the SES (0.25) was found to be statistically significant. In the current study (N = 214), the correlation was somewhat lower (r = 0.10, p = .1557). It is likely that the current student group had generally higher levels of general self-efficacy, and that the range of their scores was restricted due to the method of selection of subjects.
that required subjects to attend two testing sessions. Thus, it may be argued that while general self-efficacy scores became less variable, dieting self-efficacy scores remained unaffected. Under this condition, the correlation between the two measures would likely decrease.

Further evidence for the discriminant validity of the DSET, as compared to the SES, and the construct validity of the DSET was found in the manner in which DSET scores, but not SES scores, were related to the subjects' perceptions of deviation from ideal weight. Table 11 shows that as percent deviation from ideal weight increased (people believe that they are relatively more overweight), their corresponding DSET scores decreased. This is a logical relationship in that individuals who believe that they are overweight are also likely to believe that they cannot diet effectively or otherwise control their weight. As the discrepancy between their perceived ideal weight and their current weight increases, their level of perceived control would be expected to decrease.

When DSET and SES scores were analyzed within their respective P-groups, the GLM procedure indicted a significant difference between P-group scores on the DSET \(F(4, 214) = 16.24, p<.0001\) but no significant difference between P-groups on the SES \(F(4, 214) = 1.16, p<.3288\). When a Tukey's Studentized Range Test (HSD) was applied to
Table 11
Comparison of a student group's DSET and SES scores at five levels of percent deviation from ideal weight (P-groups) (N = 214)

<table>
<thead>
<tr>
<th>P-group</th>
<th>N</th>
<th>Mean (DSET)</th>
<th>SD</th>
<th>Mean (SES)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4</td>
<td>41</td>
<td>116.50 a</td>
<td>25.98</td>
<td>84.50 a</td>
<td>13.31</td>
</tr>
<tr>
<td>5</td>
<td>85</td>
<td>117.95 a</td>
<td>19.30</td>
<td>83.48 a</td>
<td>12.38</td>
</tr>
<tr>
<td>6</td>
<td>45</td>
<td>104.60 b</td>
<td>24.89</td>
<td>84.73 a</td>
<td>9.79</td>
</tr>
<tr>
<td>7</td>
<td>31</td>
<td>97.00 bc</td>
<td>28.93</td>
<td>84.84 a</td>
<td>11.77</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>73.08 c</td>
<td>27.64</td>
<td>81.00 a</td>
<td>15.16</td>
</tr>
</tbody>
</table>

Note. Using Tukey's post hoc test, means with different subscripts within columns are significantly different (p<.05) from each other.
DSET scores at five levels of weight deviation, significant differences in DSET scores were found between several P-groups (Table 11). This was seen as supporting the construct validity of the DSET.

In contrast, the SES scores remained relatively stable without regard to the perception of discrepancy between ideal and actual weight. The Tukey's test showed no significant differences in mean scores between the various P-groups. Thus, it was shown that the DSET responded in a predictable manner to perceptions of weight, while the perceptions were unrelated to SES scores. This point is further illustrated in Table 12 and Figure 2, utilizing standard scores ($M = 50, \text{SD} = 10$) for a more direct comparison of the DSET and SES.

**Linearity of the DSET**

During the initial development of the DSET, it was proposed that DSET scores would respond to differences in perception of ideal weight in a linear manner. In that study, analysis suggested that this was true across both overweight and underweight groups. Thus, individuals with anorexia nervosa would be seen as being highly controlled in their dieting habits and would show the highest DSET scores. Obese individuals and overweight bulimics were believed to fall on the opposite end of the spectrum with corresponding low levels of DSET scores.
### Table 12

Student DSET and SES standard scores at six levels of percent deviation from ideal weight (P-groups) \((N = 214)\)

<table>
<thead>
<tr>
<th>P-group</th>
<th>(N)</th>
<th>DSET Mean</th>
<th>SD</th>
<th>(N)</th>
<th>SES Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>41</td>
<td>52.77</td>
<td>8.78</td>
<td>41</td>
<td>50.44</td>
<td>9.04</td>
</tr>
<tr>
<td>6</td>
<td>85</td>
<td>53.34</td>
<td>7.46</td>
<td>85</td>
<td>49.55</td>
<td>10.74</td>
</tr>
<tr>
<td>7</td>
<td>45</td>
<td>48.18</td>
<td>9.62</td>
<td>45</td>
<td>50.63</td>
<td>8.49</td>
</tr>
<tr>
<td>8</td>
<td>31</td>
<td>45.24</td>
<td>11.18</td>
<td>31</td>
<td>50.72</td>
<td>10.21</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>36.00</td>
<td>10.68</td>
<td>12</td>
<td>47.40</td>
<td>13.15</td>
</tr>
</tbody>
</table>

Note. Standard scores calculated with mean 50 and standard deviation 10.
Figure 2. A comparison of student DSET and SES standard scores at five levels of P-group (N = 214)
Changes in the conceptualization of the instrument as a measure of dieting self-efficacy, as contrasted with a measure of eating self-efficacy, however, called the previous relationship into question. The primary concern involved whether underweight individuals are over-controlled in their restriction of food intake or if they are under-controlled in their ability to increase food intake. Thus, underweight subjects might interpret the word "diet" to mean gain of weight as opposed to the more conventional interpretation of loss of weight.

It is easy to see, for example, that an underweight fashion model might wish to reduce even further in order to be more acceptable within his/her profession. The model would likely interpret "diet" as losing more weight. In contrast, an underweight athlete might view "dieting" as the process by which he/she gains weight. The same confound may occur for individuals with anorexia nervosa. Their interpretation and, consequently, their scoring of the DSET might change with respect to their intent to gain or lose weight.

Unfortunately, these questions could not be directly addressed in the current study, due to an extremely low number of individuals who reported being underweight. P-groups 1 through 4 were collapsed due to statistical difficulties associated with limited numbers of subjects in
the lowest numbered cells. The pattern of the unanalyzed data in Table 13, showing the mean scores of subjects in the underweight groups, however, would appear to suggest that the DSET is non-linear in relation to the overweight categories.

Also, although only two anorexics were identified in the study, their individual scores suggest that underweight individuals may interpret the word "diet" differentially. Subject A scored 144 on the DSET. This score was 1.4 standard deviations above the mean for her corresponding P-group (5) (M = 115.70, SD = 20.06). At 70 inches tall, her reported weight of 160 pounds was within five pounds of a medically desirable weight (see Table 1). This suggests a normal weight individual who had been previously treated for anorexia nervosa but who has retained a high degree of confidence in her ability to restrict food intake.

In contrast, subject B scored 90 on the DSET. This score was in excess of 3.5 standard deviations below the mean of her corresponding P-group (3) (M = 109.67, SD = 5.51). At 56 inches tall, she reported being 12 pounds (15%) underweight. In this case, it may be either that she has interpreted the questions as meaning the ability to increase weight or as the ability to lose even greater amounts of weight. The fact that she considers herself to be under her ideal weight, however, would seem to imply
Table 13
Comparison of DSET scores for underweight subjects at four levels of percent deviation from ideal weight (P-groups) (N = 66)

<table>
<thead>
<tr>
<th>P-group</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>99.33</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>118.40</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>122.89</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
<td>118.35</td>
</tr>
</tbody>
</table>
that the former explanation would be more credible.

The problem of interpreting the word "diet" is theoretically less problematic for individuals who describe themselves as being overweight. At overweight levels, feminist theory would suggest that individuals would not choose to be more overweight. Thus, it is reasonable to assume that dieting would be interpreted as meaning the intentional loss of weight due to the restriction of food intake.

**Bulimia Nervosa**

Traditionally, bulimia nervosa has been considered to be a special case of obesity. By their own standards, bulimics believe themselves to be obese, regardless of whether they are medically obese, normal, or underweight. In addition, by definition, they have a perceived impaired ability to control their binging habits. Therefore, it was hypothesized that bulimics would show relatively lower self-efficacy for dieting behaviors than a non-bulimic comparison group. Further, it was believed that the differences would continue to exist when comparisons were made within their respective P-groups.

A total of 11 individuals from the student and adult groups reported carrying the diagnosis of bulimia nervosa. Each of P-groups 5 through 9 were represented, with the majority of the subjects reporting being greater than 5%
overweight. The DSET scores of the bulimic group were compared to the scores of a group consisting of all 451 males and females from the adult and student groups.

A two-sample Student's t statistic using pooled variance showed the mean of the bulimic group (M = 49.18, SD = 10.76) to be significantly different (p<.001) from the mean of the comparison group (M = 105.08, SD = 25.97). Formal comparisons by P-group membership were limited due to the small number of bulimics appearing in each P-group. Table 14, however, shows that in each P-group, bulimics scored between 1.2 and 3.9 standard deviations below the mean of their respective P-groups. Further, the mean score of all bulimics was 1.2 standard deviations below the mean of the most overweight P-group (M = 75.45, SD = 21.42).

The ability of the DSET to confirm the relatively lower levels of dieting self-efficacy in the bulimic group, as is consistent with the definition of bulimia, supported the construct validity of the measure.

Dieters and Non-Dieters

A consistent finding in all of the preceding analyses was that as percent deviation from perceived ideal weight increased (subjects are more overweight), dieting self-efficacy declined. It was assumed that the perception of being overweight provides a cognitive, corrective experience that maintains the relative level of
Table 14
Comparison of DSET scores for a bulimic group (N = 11) and a comparison group (N = 385) at five levels of percent deviation from ideal weight (P-groups)

<table>
<thead>
<tr>
<th>P-group</th>
<th>Bulimic Group</th>
<th>Comparison Group</th>
<th>Difference in SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>45.00</td>
<td>115</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>34.00</td>
<td>86</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>54.25</td>
<td>92</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>43.00</td>
<td>52</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>50.55</td>
<td>42</td>
</tr>
</tbody>
</table>

Note. The comparison group consisted of males and females from the student group and adult group. The difference in SD column reflects the deviation of the bulimic group from the mean of the corresponding comparison group in standard deviations.
self-efficacy for dieting. Further, self-efficacy theory would predict that success in dieting would increase self-efficacy scores. Although the current study was unable to address these assumption directly, some inferences can be made from the data that the corrective experiences need to be positive. That is, in order for self-efficacy in dieting to increase, one must have experienced a weight loss in response to the behavior.

Scores from two subgroups of the adult subject group were compared in order to determine if dieting success was related to DSET scores. The dieting group consisted of 97 subjects from P-groups 5 through 9 (normal weight or overweight) who reported that they dieted either frequently or almost continuously. The non-dieting group consisted of 99 subjects from the same P-groups who reported that they dieted infrequently or never. Bulimics were excluded from the two subgroups.

It was predicted that at each P-group level, dieters would score lower on the DSET than their non-dieting counterparts. Initially, this may appear to be non-intuitive. However, it was believed that dieters who were still unsuccessful at achieving or maintaining their desired weights were experiencing continual negative corrective experiences. That is, that despite their
continuing dieting efforts, overweight individuals would continue to be overweight, and believe that they were unsuccessful in dieting. For those who had achieved their perceived normal weight, the negative corrective experiences would include repetitive, minor weight gains associated with repetitive failures in dieting. Thus, self-efficacy for dieting would be relatively low. Individuals who had lost weight and who were no longer dieting, and those who were otherwise satisfied with their current weight, would experience relatively high self-efficacy. Individuals who had never dieted would be presumed to have nominal levels of self-efficacy based on their cognitive experience, alone.

Analysis of variance using GLM procedures indicated that the dieting and non-dieting groups were significantly different \((F(1, 196) = 70.28, p < .0001)\) with means of 90.28 \((SD = 20.40)\) and 114.55 \((SD = 20.12)\), respectively. Table 15 shows the means of the dieter and non-dieter groups within their respective P-groups. This is further illustrated in Figure 3. As predicted, the dieting group showed consistently lower scores at each P-group level than did the corresponding non-dieting group. Even at normal weight perceptions (P-group 5), continuous dieters had difficulty maintaining those weights and they showed a corresponding low level of self-efficacy for dieting.
Table 15
Comparison of dieter and non-dieter subgroups of an adult population at five P-group levels (N = 166)

<table>
<thead>
<tr>
<th>P-group</th>
<th>Dieters</th>
<th></th>
<th></th>
<th>Non-dieters</th>
<th></th>
<th></th>
<th>Tukey's HSD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>(.05)</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>94.00</td>
<td>24.01</td>
<td>26</td>
<td>122.38</td>
<td>11.55</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>16</td>
<td>99.31</td>
<td>16.18</td>
<td>25</td>
<td>124.60</td>
<td>10.26</td>
<td>*</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>95.55</td>
<td>19.76</td>
<td>27</td>
<td>110.30</td>
<td>25.05</td>
<td>*</td>
</tr>
<tr>
<td>8</td>
<td>25</td>
<td>90.52</td>
<td>20.70</td>
<td>13</td>
<td>101.23</td>
<td>21.01</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>23</td>
<td>76.43</td>
<td>17.21</td>
<td>8</td>
<td>93.63</td>
<td>14.57</td>
<td>*</td>
</tr>
</tbody>
</table>

Note. Tukey's HSD indicates a significant difference between Dieters and Non-dieters at the 0.05 level.
Figure 3. Dieter and non-dieter DSET scores at five levels of P-group (N = 196)
Summary Statistics

The preceding analyses provided general support for the construct validity of the Dieting Self-Efficacy Scale. In this section, the content validity of the instrument is assessed.

Based on the instrument-development population responses, the DSET was found to have a high degree of internal consistency (0.95). It remained to be seen whether the internal consistency would remain at a high level when utilized with a different population.

In the current study, Cronbach's Coefficient Alpha was calculated utilizing the responses from 451 subjects from the student and adult groups. The 0.96 coefficient showed the DSET to be highly internally consistent. Separate analyses by gender and by adult and student groups had little effect on the level of the coefficient (range of 0.95 to 0.97). Corrected item-total correlations for the 451-subject group ranged from 0.24 (item 16) to 0.81 (item 27). All inter-item correlations were significant (p<.0001) with the exception of item 16 (Most of the time I can resist the urge to stuff myself) that showed four correlation coefficients less than 0.07 and 14 coefficients between 0.09 and 0.11. The item had previously been retained in the instrument, despite relatively low correlations with other items, due to its clear content.
concerning overeating.

Means, standard deviations, and item-total correlations for each item, based on the 451 subject group, are reported in Table 16. Both the minimum (1) and maximum (5) response was given for each item, by subjects in this group. The range of possible scores on the DSET is 30 to 150. Actual scores ranged from 34 to 150. Summary statistics for other subgroups are provided in Table 17.
Table 16

Item statistics for the Dieting Self-Efficacy Test

(N = 451)

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Mean</th>
<th>Standard Deviation</th>
<th>Item-total Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.20</td>
<td>1.34</td>
<td>0.694</td>
</tr>
<tr>
<td>2</td>
<td>3.93</td>
<td>1.36</td>
<td>0.552</td>
</tr>
<tr>
<td>3</td>
<td>3.34</td>
<td>1.42</td>
<td>0.758</td>
</tr>
<tr>
<td>4</td>
<td>4.40</td>
<td>1.12</td>
<td>0.468</td>
</tr>
<tr>
<td>5</td>
<td>3.03</td>
<td>1.47</td>
<td>0.636</td>
</tr>
<tr>
<td>6</td>
<td>3.22</td>
<td>1.76</td>
<td>0.438</td>
</tr>
<tr>
<td>7</td>
<td>3.44</td>
<td>1.42</td>
<td>0.650</td>
</tr>
<tr>
<td>8</td>
<td>3.74</td>
<td>1.32</td>
<td>0.709</td>
</tr>
<tr>
<td>9</td>
<td>3.96</td>
<td>1.24</td>
<td>0.687</td>
</tr>
<tr>
<td>10</td>
<td>2.90</td>
<td>1.34</td>
<td>0.487</td>
</tr>
<tr>
<td>11 *</td>
<td>3.78</td>
<td>1.14</td>
<td>0.520</td>
</tr>
<tr>
<td>12</td>
<td>3.48</td>
<td>1.27</td>
<td>0.740</td>
</tr>
<tr>
<td>13</td>
<td>3.11</td>
<td>1.13</td>
<td>0.611</td>
</tr>
<tr>
<td>14</td>
<td>3.07</td>
<td>1.34</td>
<td>0.684</td>
</tr>
<tr>
<td>15</td>
<td>3.72</td>
<td>1.21</td>
<td>0.679</td>
</tr>
<tr>
<td>16 *</td>
<td>3.52</td>
<td>1.22</td>
<td>0.244</td>
</tr>
<tr>
<td>17</td>
<td>3.54</td>
<td>1.24</td>
<td>0.617</td>
</tr>
<tr>
<td>18</td>
<td>3.31</td>
<td>1.43</td>
<td>0.686</td>
</tr>
<tr>
<td>19</td>
<td>3.80</td>
<td>1.20</td>
<td>0.686</td>
</tr>
<tr>
<td>20</td>
<td>3.25</td>
<td>1.30</td>
<td>0.566</td>
</tr>
<tr>
<td>21</td>
<td>3.52</td>
<td>1.29</td>
<td>0.786</td>
</tr>
<tr>
<td>22</td>
<td>4.16</td>
<td>1.19</td>
<td>0.538</td>
</tr>
<tr>
<td>23</td>
<td>2.90</td>
<td>1.40</td>
<td>0.742</td>
</tr>
<tr>
<td>24</td>
<td>2.78</td>
<td>1.47</td>
<td>0.644</td>
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<tr>
<td>25</td>
<td>4.01</td>
<td>1.13</td>
<td>0.660</td>
</tr>
<tr>
<td>26</td>
<td>3.24</td>
<td>1.47</td>
<td>0.707</td>
</tr>
<tr>
<td>27</td>
<td>3.67</td>
<td>1.41</td>
<td>0.813</td>
</tr>
<tr>
<td>28</td>
<td>3.38</td>
<td>1.33</td>
<td>0.779</td>
</tr>
<tr>
<td>29</td>
<td>4.02</td>
<td>1.15</td>
<td>0.752</td>
</tr>
<tr>
<td>30</td>
<td>3.65</td>
<td>1.31</td>
<td>0.807</td>
</tr>
</tbody>
</table>

Note. Items indicated by * were reverse scored.
Table 17
DSET summary statistics for subgroups

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (male and female)</td>
<td>214</td>
<td>109.31</td>
<td>24.82</td>
</tr>
<tr>
<td>Male students</td>
<td>108</td>
<td>115.81</td>
<td>21.30</td>
</tr>
<tr>
<td>Female students</td>
<td>106</td>
<td>102.69</td>
<td>28.40</td>
</tr>
<tr>
<td>Adults (male and female)</td>
<td>237</td>
<td>101.26</td>
<td>25.54</td>
</tr>
<tr>
<td>Male adults</td>
<td>124</td>
<td>110.36</td>
<td>21.13</td>
</tr>
<tr>
<td>Female adults</td>
<td>113</td>
<td>91.67</td>
<td>26.29</td>
</tr>
<tr>
<td>Males (student and adult)</td>
<td>232</td>
<td>112.90</td>
<td>21.34</td>
</tr>
<tr>
<td>Females (student and adult)</td>
<td>219</td>
<td>96.81</td>
<td>27.87</td>
</tr>
<tr>
<td>Bulimia Nervosa</td>
<td>11</td>
<td>49.18</td>
<td>10.76</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>139</td>
<td>105.86</td>
<td>23.40</td>
</tr>
<tr>
<td>Non-substance abuse</td>
<td>81</td>
<td>101.47</td>
<td>22.85</td>
</tr>
<tr>
<td>Dieter</td>
<td>99</td>
<td>114.55</td>
<td>20.12</td>
</tr>
<tr>
<td>Non-dieter</td>
<td>97</td>
<td>90.28</td>
<td>20.40</td>
</tr>
<tr>
<td>All subjects</td>
<td>451</td>
<td>105.08</td>
<td>25.98</td>
</tr>
</tbody>
</table>
DISCUSSION

Although several areas of interest within the current study were hampered by low numbers of subjects, the overall results of the study suggest that the DSET is a valid instrument in quantifying dieting self-efficacy perceptions.

Evidence for the reliability of the scale was offered through a measure of internal consistency. The coefficient alpha (0.96) reported for the DSET was consistent with the coefficient reported after the instrument-development process (0.95). The internal consistency of the instrument was substantially greater than the minimum 0.80 recommended by Sattler (1988) as evidence of measuring a single construct.

Discriminant evidence for the construct validity of the DSET was suggested by the low level of correlation between DSET and SES scores. As asserted by Bandura (1977a), self-efficacy is not a global trait. Therefore, self-efficacy for one behavior should not necessarily correspond to the same level of self-efficacy for a different behavior. Because the SES has a strong, social component (Sherer et al., 1982), it was hypothesized that the dieting component of the DSET would not show a strong relationship to that measure.

Additional evidence for the validity of the DSET was
provided in the manner in which the levels of DSET scores, but not SES scores, were related to differences in deviation from subjects' perceived ideal weights. As predicted, subjects who reported being overweight scored low on the DSET, reflecting relatively lower confidence in their abilities to diet. Subjects who were near their perceived ideal weight showed relatively higher scores on the DSET, reflecting a higher confidence in their dieting abilities. Further, when data from the overweight subjects were grouped into categories based on the percent of deviation from the subjects' ideal weights, significant differences were found between mean DSET scores. The mean scores for the subgroups showed a consistent trend of lower scores for progressively more overweight subjects. There were no significant differences in SES scores between the subgroups. This further suggested that the DSET measures something different than the more global SES.

An unplanned but suggestive difference was also found by comparing the DSET and SES scores between the subjects from the initial, instrument-development group and the current study, student group. While the DSET scores were found to be relatively consistent between the two groups, the SES scores were not. It was believed that differences in the SES scores were true differences in general self-efficacy, related to a difference in selecting
subjects for the two studies. Thus, it was argued that the SES scores were effected by factors other than dieting and related behaviors while the DSET scores were not.

DSET scores were also uneffected by the presence of substance abuse as a primary diagnosis for subjects. Scores for recovering substance abusers were not significantly different from their non-substance abusing cohorts.

As predicted, group membership based on age was not a determining factor in dieting self-efficacy scores, although there were several differences noted in the subjects' perceptions of being overweight. There was no overall difference between DSET scores of a student group and an adult group. When differences in weight deviation were taken into account, differences continued to be minimal.

Consistent with the feminist theories of weight perceptions and the tendency towards females' striving for thinness (Logue, 1986), significant differences were found between male and female scores on the DSET. Although the progressive trend of low scores for overweight subjects and higher scores for normal weight subjects continued in both genders, male scores were consistently higher than female scores.

The hypothesis concerning the dieting self-efficacy of
anorexics was not confirmed during the current study due to the low number of subjects (2) reporting anorexia nervosa as a preexisting diagnosis. The extremely high score of one anorexic subject appeared to support the belief that anorexics are over-controlled in their dieting behaviors. A second subject, however, showed a DSET score in the moderate range. An argument was presented that the subject may have interpreted the word "diet" in the questionnaire, to mean a controlled regimen of gaining weight. While it is unlikely that overweight individuals would use such an interpretation, the example suggests a need to specify that the word "diet" should be read as a process of restricting food in order to lose or maintain current weight, for any future use of the instrument.

In contrast, and consistent with the DSM-III-R (1982) description of bulimia nervosa, the hypothesis regarding the expected low level of dieting self-efficacy for bulimic subjects was confirmed. A bulimic group scored significantly lower on the DSET than a comparable group of non-bulimics. In addition, bulimics in this study scored a minimum of one standard deviation below the mean of the matched weight group. Because these comparisons were based on small numbers of bulimic subjects, future research will be needed in order to confirm this finding. These results, however, were consistent with the pathognomic indicator of
bulimia of a feeling of lack of control in overeating behaviors (APA, 1987). As such, this would appear to be a strong indicator of construct validity for the DSET.

Finally, the study found significant differences between overweight dieters and overweight non-dieters. Non-dieters scored consistently higher on the DSET than their weight-matched cohorts. It was suggested that non-dieters would show higher dieting self-efficacy because they lack repeated cognitively disconfirming experiences. Such experiences, either positive or negative, were presented by Bandura (1977a) as being the primary source of self-efficacy information. Individuals who diet repeatedly, but who continue to remain in excess of their ideal weights, would be expected to have relatively lower self efficacy than those who do not have the negative experience of failure.

Future Directions

It is clear, from the above discussion, that additional research will be needed to fully develop the Dieting Self-Efficacy Test as a clinically useful instrument. The data to date, however, appear to strongly support the instrument as being a valid instrument for measuring the belief in ability to diet successfully. Despite a number of statistical difficulties in the current study, involving the comparisons of small groups, all
major, expected trends in responses were supported.

As previously indicated, future use of the instrument should include specific instructions regarding the intended meaning of the term diet. While the lack of a definition is unlikely to affect the interpretation made by individuals who are overweight, it is likely that at least some underweight individuals will respond in an unusual manner.

Additional research will also be required in order to establish the clinical utility of the DSET. Specifically, it will need to be determined if relative levels of dieting self-efficacy are related to success or failure in weight loss programs. A recent study utilizing the newly developed Weight Efficacy Life Style Questionnaire (WEL) (Clark, Abrams, Niaura, Eaton, and Rossi, 1991) strongly suggests that this is possible. That research indicated that subjects demonstrated significant improvement on the WEL as a result of treatment. The study failed, however, to consider male and female subjects separately. The current study indicates that gender may be an important factor in discussing self-efficacy related to weight and dieting. Unfortunately, the WEL was not available for comparison purposes at the time of the current research. Determining if the DSET has a similar sensitivity to treatment outcome will require extensive clinical trials,
that were beyond the scope of the present research. Further, it will need to be determined if self-efficacy expectations about dieting can be modified, and if so, how this can best be accomplished.

In addition to its potential use as a predictor of success or failure in dieting programs, with further research, the DSET may also find reasonable use in the treatment of eating disorders. The DSET may be used, for example, as a measure of progress in the treatment of bulimia nervosa or of anorexia nervosa. Clearly, it could have utility in quantifying the feeling of lack of control in eating that is a pathognomic indicator of bulimia nervosa.

Finally, the DSET may show utility as a research instrument in our continuing efforts to understand basic, human eating behaviors.
REFERENCES


ACKNOWLEDGMENTS

At this time, I would like to extend thanks to those individuals whose advice and guidance contributed to the completion of this dissertation. First, I am deeply indebted to my major professor, Fred Borgen, for his continual help and encouragement in all phases of this project and throughout my graduate studies. Secondly, my thanks go the members of my committee, Fred Brown, Doug Epperson, Phyllis Miller, and Gary Phye, for their approval of this study and for their helpful suggestions. Next, thanks is offered to Nan Bennett, whose research inspired this study. I also wish to express my thanks to the Psychology Department and University Human subjects committees for their reviews and certifications of this research.

Finally, a special thanks goes to my family, especially to my wife, Vicki, whose encouragement throughout this process made it all possible. It is to her that I dedicate this dissertation.
APPENDIX A. STUDENT GROUP QUESTIONNAIRE PACKET

(Instruments are omitted.)
GENERAL INSTRUCTIONS

This packet contains two inventories that ask you to respond to statements about your attitudes, feeling, behaviors, and experiences. Try to be as honest and as serious as you can in marking your answers. While some of the questions may appear to be unusual, they have been included in order to represent a wide range of beliefs and behaviors. Please work quickly but do not skip any questions or pages. There are no right or wrong answers so just answer as best you can. Should any discomfort arise as a result of responding to the questions presented, come to the front or simply raise your hand and an experimenter will assist you.

The inventories are to be completed in the order presented, the brief one followed by the longer, and the answers recorded in the correct place on the answer sheet provided. For the second inventory two answer sheets are required; therefore when you have filled one answer sheet, raise your hand and an experimenter will provide you with an answer sheet to complete the remaining items.

YOU ARE NOT TO MARK ON ANY OF THE TEST BOOKLETS. Specific instructions necessary to completion are given at the beginning of each inventory; please read these instructions carefully! When you have completed the material, bring all of the material up to the researcher. Do not lay the material down on the table; hand it directly to the experimenter, who will provide you with the extra credit coupon. You must use a number two lead pencil. If you do not have one with you, inform one of the experimenters and one will be provided you.

Thank you for participating in this project.

** DO NOT PUT YOUR NAME ON ANY OF THE MATERIAL

*** BE SURE TO MARK YOUR DATE OF BIRTH AND SEX IN THE APPROPRIATE SPACES ON THE ANSWER SHEETS
GENERAL INSTRUCTIONS

This packet contains several questionnaires that ask you to respond to statements about your attitudes, feelings and behaviors. Try to be as honest, and as serious as you can in marking your answers. While some of the questions may appear to be unusual, they have been included in order to represent a wide range of beliefs and behaviors. Please work quickly but do not skip any questions or pages. There are no right or wrong answers so answer as best you can.

The questionnaires are to be completed in the order presented, and the answers recorded in the correct place on the answer sheet provided. YOU ARE NOT TO MARK ON ANY OF THE TEST BOOKLETS. Specific instructions necessary for completion are given at the beginning of each questionnaire; please read these instructions carefully! When you have completed all the material in this packet bring all of the material up to the experimenter. Do not lay the material down on the table; hand it directly to the experimenter, who will provide you with the extra credit coupon. You must use a number two lead pencil. If you do not have one with you, inform one of the experimenters, and one will be provided for you.

Thank you for participating in this project.

** DO NOT PUT YOUR NAME ON ANY OF THE MATERIAL.

*** BE SURE TO MARK YOUR DATE OF BIRTH AND SEX IN THE APPROPRIATE SPACES ON THE ANSWER SHEETS
INFORMED CONSENT STATEMENT

The purpose of this statement is to give you information to help you decide whether you wish to participate in a research project investigating feelings, attitudes, behaviors, and experiences that you may have had. You will be asked to complete one short experiences inventory and a lengthy personality inventory that together may take two hours.

Upon completion of the inventories, you will receive two extra credit points applicable towards the designated class and the researcher will gain data, therefore making the time spent beneficial to both parties.

There are no known risks to you and all of your answers will be treated with strict regard for confidentiality. However, the content of the questionnaires may involve sensitive, personal, and intimate information. Some questionnaire items may, for some persons, generate discomfort or concern. But be assured that your name will not appear on any answer sheets and will not be connected with any part of the information coming out of the research. Summaries of the results of this research will report group data only.

Participation in this research is completely voluntary and you may withdraw at any time without penalty or loss of credit. If questions arise about any task during your participation, you may ask the experimenter for clarification. Should you experience discomfort, as a result of responding to any of the questions in the inventories, the experimenters are prepared to assist you.

I HAVE READ AND UNDERSTAND THE ABOVE INFORMATION AND AGREE TO PARTICIPATE IN THE RESEARCH.

__________________________________________
Signature

__________________________________________
Print your full name

__________________________________________
Date
INFORMED CONSENT STATEMENT

The purpose of this statement is to give you information to help you decide whether you wish to participate in a research project investigating feelings, attitudes, and behaviors. You will be asked to complete several brief questionnaires that should take less than one hour.

Upon completion of the questionnaires, you will receive one extra credit point applicable towards the designated class and the researcher will gain data, therefore making the time spent beneficial to both parties.

There are no known risks to you and all of your answers will be treated with strict regard for confidentiality. Your name will not appear on any answer sheets and will not be connected with any part of the information coming out of the research. Summaries of the results of this research will report group data only.

Participation in this research is completely voluntary and you may withdraw at any time without penalty or loss of credit. If questions arise about any task during your participation, you may ask the experimenter for clarification.

I HAVE READ AND UNDERSTAND THE ABOVE INFORMATION AND AGREE TO PARTICIPATE IN THE RESEARCH.

__________________________________________
Signature

__________________________________________
Print your full name

__________________________________________
Date
DEMOGRAPHIC INFORMATION

Please provide the following information about yourself to help us analyze the responses received. This information is confidential and will not be used in any way which will identify you as an individual. Summaries of this survey will report group data only.

Please give your age _____ and current grade point average _____.

For the following questions, fill in on the answer sheet the number of the response that fits you best.

1. Gender: (1) Female (2) Male

2. Classification:
   (1) Freshman (4) Senior
   (2) Sophomore (5) Graduate Student
   (3) Junior (6) Other

3. Religious Affiliation:
   (1) Buddhist (5) Protestant
   (2) Catholic (6) Other Christian
   (3) Jewish (7) Not affiliate
   (4) Moslem (8) Other

4. Marital status:
   (1) Single (4) Separated/Divorced
   (2) Engaged (5) Widowed
   (3) Married (6) Other

5. Parents' marital status
   (refers to natural/biological parents):
   (1) Single (4) Separated/Divorced
   (2) Engaged (5) Widowed
   (3) Married (6) Adopted, not known

6. Number of siblings (brothers and/or sisters).

7. Your order of birth (in relation to siblings):
   (1) Only child (5) Fourth child
   (2) First child (6) Fifth child
   (3) Second child (7) Sixth child
   (4) Third child (8) Seventh or later child

8. Please give a general rating of the experience you had growing up in your family.
   Unhappy Neutral Happy
   1 2 3 4 5 6 7 8 9 10

9. When you were growing up were either of your parents heavy or problem drinkers?
   (1) Yes (2) No

---

NCS Trace Optic: M10-6669 15 42804-9
104 PART II
PERSONAL DESCRIPTORS
*** FILL IN THE BLANKS ***

ENTER YOUR WEIGHT IN POUNDS __________

ENTER YOUR HEIGHT IN INCHES __________
(5 ft. = 60 inches, 6 ft. = 72 inches)

CIRCLE YOUR RACIAL BACKGROUND (optional)
WHITE ASIAN
BLACK NATIVE AMERICAN
HISPANIC OTHER________

CHECK WHICH ONE APPLIES

I am more than 20 pounds under my ideal weight
I am 16 to 20 pounds under my ideal weight
I am 11 to 15 pounds under my ideal weight
I am 5 to 10 pounds under my ideal weight
I am within 5 pounds of my ideal weight
I am 5 to 10 pounds over my ideal weight
I am 11 to 15 pounds over my ideal weight
I am 16 to 20 pounds over my ideal weight
I am more than 20 pounds over my ideal weight

CHECK WHICH ONE APPLIES

I have lost weight or stayed the same weight
in the last six months.
I have gained weight in the last six months.
Enter the number of pounds you have lost or
gained in the last six months.__________

CHECK ALL THAT APPLY

I have started a diet in the last 6 months.
I have not started a diet in the last 6 months
I have never been diagnosed as having an
eating disorder.
I have been diagnosed as having bulimia nervosa
I have been diagnosed as having anorexia nervosa

ENTER YOUR DATE OF BIRTH __________
month/day/year
APPENDIX B. ADULT GROUP (SUBSTANCE ABUSE RECOVERY)

QUESTIONNAIRE PACKET

(Instruments are omitted.)
Dear Facilitator,

Please allow me to introduce myself. I am a former Children of Alcoholics facilitator at Powell CDC and currently a graduate student in psychology at Iowa State University. As part of my doctoral dissertation, I am developing a questionnaire which focuses on people's belief in their ability to control eating behaviors. For many individuals, over-eating or dieting appear to have an addictive quality similar to that of chemical dependency. For this reason, I would like to include you and your group members as participants in a survey that I am conducting. Participation by both chemically dependent and non-dependent group members will be quite helpful so that direct comparisons can be made.

Individual participation in the survey will be completely voluntary and strict confidentiality will be maintained. I will be responsible for presenting the materials, answering questions, and etc. My request to you is for about ten minutes of your group time so that I can administer the survey. I will plan to contact you next week to see if suitable arrangements can be made.

Feel free to share this letter with the members of your group at the next meeting. Thank you in advance for your help with this research.

Philip L. Ascheman, M.S.

Please encourage your group members to assist Phil in this noteworthy project. Phil was a Powell volunteer for four years and received the Clem Byrnes Award for his outstanding contribution to the Powell recovering community.

Thank You,

Jerry Owens
Manager Outpatient Services
INFORMED CONSENT STATEMENT

This information is given to help you decide if you wish to participate in a survey about your feelings, attitudes, and behaviors concerning dieting and other common situations. The survey is part of a research project by Phil Ascheman, a graduate student in psychology at Iowa State University. Your answers will be used to help develop one of the two questionnaires you will be asked to complete.

Participation in the survey is completely voluntary and your decision will not effect your regular treatment program. Further, you may change your mind at any time and withdraw from the study if you wish. The entire survey will take about ten minutes to complete. Your name will not be recorded and your answers will be kept strictly confidential. There are no known risks to you except that answering the questions may make you reflect on your own attitudes. If you have any questions about this survey, you may ask the researcher or contact the people listed below.

After completing the survey (or if you decide not to participate), please place the answer sheets in the large envelope that has been provided. You may keep this sheet so that you have a copy of the names below.

DO NOT PUT YOUR NAME ON ANY ANSWER SHEET!

Philip L. Ascheman, M.S. or: Fred Borgen, Ph.D.
Psychology Services, 116B Psychology Department
VAMC Iowa State University
Knoxville, Iowa 50138 Ames, Iowa 50011
(515) 828-5035 (515) 294-3236
BACKGROUND INFORMATION

1. Gender (check one):
   _____ Female
   _____ Male

2. Racial Background (check one):
   _____ White
   _____ Black
   _____ Asian
   _____ Hispanic
   _____ Other (write in) ________________

3. Marital status (check one):
   _____ Single (never married)
   _____ Married
   _____ Divorced
   _____ Widow/Widower

4. Age

5. Height
   _____ feet _____ inches

6. Weight
   _____ pounds

7. Regardless of medical tables, I think my ideal weight is:
   _____ pounds

8. Dieting habits: I diet (check one)
   _____ Never or rarely
   _____ Hardly ever
   _____ Sometimes
   _____ Often
   _____ Almost continuously

9. Please check if you have been treated for:
   _____ Obesity (original weight ____________)
   _____ Bulimia (compulsive eating and purging)
   _____ Anorexia (extreme weight loss)
   _____ Alcoholism
   _____ Substance Abuse (other than alcohol)
   Please enter the date you completed treatment
   _____ Date completed treatment

10. If you have ever been treated for a disorder other than those listed above, by a psychologist, psychiatrist, or other mental health professional, please indicate the year treated and the disorder.
    _____ Year ___________________________ Diagnosis

11. When you were growing up were either of your parents heavy or problem drinkers?
    _____ Yes
    _____ No
DEBRIEFING STATEMENT

Please detach this sheet and keep it so that you have the name and address at the bottom.

Thank you for your cooperation in being a participant in this research project. The information that you have given will be a great help in developing the questionnaires that you completed that involved eating habits. Your responses will be combined with those of other participants so that average scores, and other important information can be defined for various groups of people. If you have any questions or comments about this research, you may contact Philip L. Ascheman at the number listed below. Again, thank you for your help in this research.

Philip L. Ascheman, M.S.
Psychology Services, 116B
Veterans Administration Medical Center
Knoxville, Iowa 50138
(515) 828-5035

or:

Fred Borgen, Ph.D.
Psychology Department
Iowa State University
Ames, Iowa 50011
(515) 294-3236
APPENDIX C. EATING DISORDER GROUP QUESTIONNAIRE PACKET

(Instruments are omitted.)
Dear Client:

Please allow me to introduce myself. I am a graduate student in Psychology at Iowa State University. As part of my doctoral degree program, I am conducting a study of personality factors related to weight control. This type of research requires a large number of volunteer participants in order to make accurate conclusions. The clinic where you received this letter has agreed to help me by offering their clients the option of participating in the study.

I would greatly appreciate your taking a few minutes to look at the attached materials (especially the Informed Consent page) so that you can decide if you would be willing to be a participant. The entire study should take between 15 and 20 minutes of your time and would be a great help to me, and perhaps to others who are seeking treatment similar to yours.

If, after reading the informed consent statement, you decide that you would like to participate in this study, fill out the enclosed materials, seal them in the attached envelope, and return it to the staff. If you wish, you may take the materials home and complete them. You should not feel as if there is any pressure on you to participate and your decision will not in any way affect your treatment here. To ensure that your decision remains confidential, however, you may place the uncompleted forms in the envelope and return them. The staff will not open the envelopes and neither they nor I will make any attempts to determine who has returned the forms.

Thank you in advance for your cooperation.

Sincerely,

Philip L. Ascheman, M.S.
INFORMED CONSENT STATEMENT

The purpose of this statement is to give you information to help you decide whether you wish to participate in a research project investigating feelings, attitudes, and behaviors about eating. Your decision will in no way affect your treatment and participation is completely optional. You will be asked to complete a general information sheet and four questionnaires which should take about fifteen minutes. To ensure that the treatment staff does not know if you have consented to be a participant in this study, you may seal this packet, either completed or not, in the enclosed envelope and return it. After the sealed envelopes are returned to me, I will remove this page. No other identifying information will remain on the answer sheets and no one will contact you regarding your participation in this research.

While some of the questions in this research may appear to be unusual, they have been included in order to represent a wide range of beliefs and behaviors. There are no right or wrong answers so you will be asked to answer as best you can. These questionnaires ask you some personal questions, which may cause you to reflect on your own experiences. Consequently, you must be informed that some individuals may experience some negative feelings as a result of answering the questions. All of your answers, however, will be treated with strict regard for confidentiality. Your name will be removed from any answer sheets at the conclusion of this study and personal information which you give will not be connected with any part of the research.

Participation in this research is completely voluntary and you may withdraw at any time. If questions arise during or after your participation, you may contact me at the following:

Philip L. Ascheman, M.S. or: Fred Borgen, Ph.D.
Psychology Services, 116B Psychology Department
VAMC Iowa State University
Knoxville, Iowa 50138 Ames, Iowa 50011
(515) 828-5035 (515) 294-3236

I HAVE READ AND UNDERSTAND THE ABOVE INFORMATION AND AGREE TO PARTICIPATE IN THE RESEARCH.

__________________________________________
Signature

__________________________________________
Print your full name

__________________________________________
Date
BACKGROUND INFORMATION

1. Gender (check one):
   - Female
   - Male

2. Racial Background (check one):
   - White
   - Black
   - Asian
   - Hispanic
   - Other (write in) __________________________

3. Marital status (check one):
   - Single (never married)
   - Married
   - Divorced
   - Widow/Widower

4. Age

5. Height
   ______ feet ______ inches

6. Weight
   ______ pounds

7. Regardless of medical tables, I think my ideal weight is:
   ______ pounds

8. Dieting habits: I diet (check one)
   - Never or rarely
   - Hardly ever
   - Sometimes
   - Often
   - Almost continuously

9a. Please check if you are currently being treated for:
   - Bulimia nervosa (non-purging) or other weight control disorder
   - Bulimia nervosa (purging type)
   - Anorexia nervosa
   Please enter the date you most recently began treatment
   ______ Date began treatment

9b. Please check if you were previously treated for:
   - Bulimia nervosa (non-purging) or other weight control disorder
   - Bulimia nervosa (purging type)
   - Anorexia nervosa
   Please enter the date you completed treatment
   ______ Date completed treatment

10. If you have ever been treated for a disorder other than those listed above, by a psychologist, psychiatrist, or other mental health professional, please indicate the year treated and the disorder.
   ______ Year ___________________________ Diagnosis
DEBRIEFING STATEMENT

Please detach this sheet and keep it so that you have the name and address at the bottom.

Thank you for your cooperation in being a participant in this research project. The information that you have given will be a great help in developing the questionnaires that you completed that involved eating habits. Your responses will be combined with those of other participants so that average scores, and other important information can be defined for various groups of people. If you have any questions or comments about this research, you may contact Philip L. Ascheman at the number listed below. Again, thank you for your help in this research.

Philip L. Ascheman, M.S.
Psychology Services, 116B
Veterans Administration Medical Center
Knoxville, Iowa 50138
(515) 828-5035

or:
Fred Borgen, Ph.D.
Psychology Department
Iowa State University
Ames, Iowa 50011
(515) 294-3236
APPENDIX D. DIETING SELF-EFFICACY TEST
DSET
INSTRUCTIONS: This questionnaire involves your attitudes, feelings, and habits concerning eating. For each item below, in the space provided, enter the number which best describes the way you feel about the statement. There are no right or wrong answers. Do not spend a lot of time on any one question, but be careful to answer each item accurately. Please answer truthfully, describing yourself as you really are, not how you would like to be.

1 = Agree strongly
2 = Agree moderately
3 = Neither agree nor disagree
4 = Disagree moderately
5 = Disagree strongly

1. I frequently overeat, even when I plan not to.
2. My friends would laugh at me if they knew how much I eat.
3. At times, it seems impossible to control my weight.
4. I sometimes have the urge to vomit after eating.
5. I think a lot about getting fat.
6. Dieting just doesn't work for me.
7. Sometimes I go on eating binges.
8. Before I eat, I often feel depressed.
9. My life seems to revolve around food.
10. I eat snacks even when I am not hungry.
11. I can normally control my eating behavior.
12. Even when I try, I have trouble controlling my weight.
13. I give up on diets after a few days.
14. I often eat more food than I want.
15. I spend too much time eating.
16. Most of the time I can resist the urge to stuff myself.
17. I bounce between feeling that I don't have enough control of my eating to feeling that I try too hard to control it.
18. I overeat when I am distressed.
19. After a diet, I usually go on an eating binge.
20. I think about food often.
21. I frequently overeat.
22. Sometimes I eat so much I get sick.
23. I wish I could better control my eating.
24. If I am not careful, I know I will get fat.
25. I can't control how much I eat.
26. My weight makes me look unattractive.
27. I think I have a problem with my eating.
28. I often find myself eating, even when I didn't plan to.
29. I can't help overeating.
30. At times, it seems impossible to control my eating habits.
APPENDIX E. SELF-EFFICACY SCALE
INSTRUCTIONS: This questionnaire is a series of statements about personal attitudes and traits. Read each statement and decide to what extent it describes you. Please indicate your own personal feelings about each statement below by marking the number that best describes your attitude or feeling. Please be truthful and describe yourself as you really are, not as you would like to be.

1 = Disagree strongly
2 = Disagree moderately
3 = Neither agree nor disagree
4 = Agree moderately
5 = Agree strongly

1. When I make plans, I am certain I can make them work.
2. One of my problems is that I cannot get down to work when I should.
3. If I can't do a job the first time, I keep trying until I can.
4. It is difficult for me to make new friends.
5. When I set important goals for myself, I rarely achieve them.
6. I give up on things before completing them.
7. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
8. I avoid facing difficulties.
9. If something looks too complicated, I will not even bother to try it.
10. If I meet someone interesting who is very hard to make friends with, I'll soon stop trying to make friends with that person.
11. When I have something unpleasant to do, I stick to it until I finish it.
12. When I decide to do something, I go right to work on it.
13. When trying to learn something new, I soon give up if I am not initially successful.
14. When I'm trying to become friends with someone who seems uninterested at first, I don't give up very easily.
15. When unexpected problems occur, I don't handle them well.
16. I avoid trying to learn new things when they look too difficult for me.
17. Failure just makes me try harder.
18. I do not handle myself well in social gatherings.
19. I feel insecure about my ability to do things.
20. I am a self-reliant person.
21. I have acquired my friends through my personal abilities at making friends.
22. I give up easily.
23. I do not seem capable of dealing with most problems that come up in my life.

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