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Self-Esteem as a Predictor of Treatment Outcome Among Women with Eating Disorders

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SELF-ESTEEM AS A PREDICTOR OF TREATMENT OUTCOME AMONG
WOMEN WITH EATING DISORDERS

by

Suzanne F. Plowman

A dissertation submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Department of Counseling Psychology and Special Education

Brigham Young University

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

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Suzanne F. Plowman

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As chair of the candidate's graduate committee, I have read the dissertation of Suzanne F. Plowman in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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ABSTRACT

SELF-ESTEEM AS A PREDICTOR OF TREATMENT OUTCOME AMONG WOMEN WITH EATING DISORDERS

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Doctor of Philosophy

Current empirical evidence suggests that true recovery from eating disorders is not possible without a corresponding improvement in body image and self-esteem. Ten studies in current literature evaluate this relationship between self-esteem and clinical eating disorders during inpatient treatment or during follow-up studies but do not provide both pre- (baseline) and post-treatment self-esteem scores. As a result, many questions about the nature of the relationship between eating disorders and self-esteem remain unanswered.

The purpose of this study was to empirically investigate whether a comprehensive measure of self-esteem, given to women at the beginning of inpatient treatment for eating disorders, reliably predicted treatment outcome. Specific and global levels of self-esteem were determined by the *Multidimensional Self-Esteem Inventory* (MSEI). Pearson Product Moment Correlations run on SPSS 10 were used to determine significant results.

Participants in this study included 246 women experiencing anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified who received inpatient treatment at the Center for Change (CFC), in Orem, Utah, during the years 1996 to 2003. For the purposes of this study, outcome was measured upon termination of treatment at the Center for Change. CFC discharge was based on clinical judgment of progression through the treatment program, medical stability, reduction of purging behaviors, body weight, as well as attainment of additional treatment goals designed by the therapist.

The results of the current study replicate earlier research that reports that positive treatment outcome is nearly always associated with high self-esteem at discharge. These findings extend earlier research by suggesting that high levels of self-esteem at admission are associated with positive treatment outcome. This investigation, which is the first to examine self-esteem change scores between admission and discharge, found that women who experience the greatest decrease in eating disorder symptomatology are those who presented at admission with low self-esteem. Further, a significant association was found between improvements in self-esteem and decreases in eating disorder symptomatology. These findings suggest that the women who report high self-esteem at admission, or women who have low self-esteem but make dramatic improvements by discharge, are likely to experience significant reductions in disordered eating behaviors.

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Introduction

Dieting and obsession with weight control by women and girls in today's society may be due to the belief that thinner is better. Some researchers propose that the social pressure to conform to the "ideal" body is the critical factor underlying the current proliferation of cases of eating disorders in the Western world (Attie & Brooks-Gunn, 1989; Brenner & Cunningham, 1992; Miller, 2003).

Disturbed eating behaviors have been recorded for centuries and include practices by the ancient Romans who participated in eating binges and then vomited (purged) into special vomitoriums (R. James, 1763, as cited in Halmi, 2003). Although once considered a disorder of the wealthy, eating disorders have increasingly become more widespread (Turner, 1990). Additionally, it appears that the incidence and prevalence of eating disorders have increased during the past 40 years (Hoek, van Hoeken, & Katzman, 2003; Russell, Szmulker, Dare, & Eisler, 1987) with more than 90% of diagnosable cases occurring in females (American Psychiatric Association, 2000a; Carlat, Camargo, & Herzog, 1997; Spear & Myers, 2001).

An *eating disorder* may be defined as a persistent disruption of eating behavior or a deliberate behavior employed to control weight that may significantly damage physical or mental health (Fairburn, 2001). Eating disorders are generally categorized into three forms, including *anorexia nervosa* (gradual self-starvation), *bulimia nervosa* (binging and purging), and eating disorders not otherwise specified (includes some but not all of the specific criteria for either anorexia or bulimia). While the symptomatology of eating disorders is often overlapping and intertwined (Garrett, 1994), the most common shared symptom is the extreme fear of becoming fat (American Psychiatric Association, 2000b).

Numerous treatment approaches have been used to assist eating disordered patients towards more healthful living. Psychotherapists frequently use group, personal cognitive behavioral therapy (CBT) and interpersonal psychotherapy (IPT) (Mussell, Crosby, Crow, Knopke, Peterson, Wonderlich, et al, 2000; Wilson, 2003). In addition, family therapy and a variety of pharmacological therapies have been shown to be effective, to some degree, in treating patients with eating disorders (de Zwaan, M. & Roerig, J., 2003; Kennedy & Garfinkel, 1992).

Several programs detailed in the eating disorder literature have been directed towards preventing eating disorders (Carter, Stewart, Dunn, & Fairburn, 1998; McVey, Davis, Tweed, & Shaw, 2004; O’Dea & Abraham, 2000; Mussell, Binford, & Fulkerson, 2000; Springer, Winzelberg, Perkins, & Taylor, 1999; Stice, Mazotti, Weibel, & Agras, 2000; Wade, Davidson, & O’Dea, 2003). The majority of these programs, targeting junior and senior high school girls, are psycho-educational in design and have yielded mixed results. Of particular note, one study (Carter et al., 1998) found an increase in eating disordered behaviors following the conclusion of a psycho-educational program.

Historically, eating disorders have presented quite a challenge to the clinician and the researcher alike. The outcome of treatment for anorexia nervosa, for example, has remained relatively unchanged for the past 50 years (Ben-Tovim, 2003; Steinhausen, 2002). A recent meta-analysis of outcome studies recorded that “approximately 30-40% of anorexics recover, another 30-35% improve, and approximately 20-25% have a chronic disorder” (Richards, Baldwin, Frost, Clark-Sly, Berrett, & Hardman., 2000, p. 189). Unfortunately, current anorexia nervosa research finds that there is premature treatment drop out for approximately 50% of patients (Eivors, Button, Warner, & Turner, 2003).

A study by Steinhausen (2002) suggests that advances in understanding the etiology of anorexia nervosa would improve treatment outcomes in the future. It has also been proposed that treating the chronically low level of self-esteem in people with anorexia would directly improve outcome (Button & Warren, 2002; Cervera, Martinez-Gonzalez, & Lahortiga, 2003).

Although the term *bulimia nervosa* was coined as recently as 1979, there has been a great deal of treatment studies completed. In his meta-analysis, Richards et al. (2000) cite Yager's 1988 findings that 27% of people with bulimia demonstrate an acceptable outcome, 40% demonstrate a somewhat acceptable outcome and 33% demonstrate an unacceptable or poor outcome following treatment. Further, studies suggest that pre-treatment of self-esteem consistently and significantly affects positive treatment outcome (Baell & Wertheim, 1992; Fairburn, Kirk, O'Connor, Anastasiades, & Cooper, 1987).

While predictors of therapeutic treatment outcome for people with anorexia and bulimia have been suggested, in a five-year study Ben-Tovim et al. (2003) were unable to specify predictors for patients with Eating Disorders Not Otherwise Specified (EDNOS). Positive treatment outcome may be predicted by the frequency of binge eating episodes at baseline for patients with Binge Eating Disorder (BED), as suggested in a Minnesota study (Peterson, Crow, Nugent, Mitchell, Engbloom, & Mussell, 2000). Further research in this relatively new area of eating disorders needs to be completed in order to promote positive treatment outcome.

Although the exact etiology of specific eating disorders has not been proven (Gual, Perez-Gaspar, Martinez-Gonzales, Lahortiga, de Irala-Estevez, & Cervera-Enguix, 2002; Striegel-Moore & Cachelin, 2001), a number of research studies highlight the importance of self-esteem in the development and maintenance of eating disorders. Results in a 1996 British study

demonstrated that 11 to 12-year-old girls with low self-esteem were at a significant risk in developing severe signs of eating disorders within four to five years (Button, Sonuga-Barke, Davies, & Thompson). Similarly, a 1986 study of adolescent girls found that self-esteem was the major factor in predicting anorexia nervosa (Grant & Fodor). Two recent studies also provide evidence to support the role of self-esteem as a major determinant in the onset of an eating disorder (Cervera, Lahortiga et al., 2003; Gual et al., 2002).

Low self-esteem is a major risk factor that predisposes young women to develop a severe eating disorder and further differentiates clinical cases of eating disorders from dieters (Williams et al., 1993). It has been proposed that in addition to differentiating between dieters and patients with clinical cases of ED, low self-esteem may increase vulnerability to social pressures to be thin. This, in turn, increases the propensity to diet and/or purge (Fairburn & Wilson, 1993; Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999).

Self-esteem often has a leading role in etiology theories of eating disorders despite the fact that self-esteem has not been adequately defined and conceptualized (Keith & Bracken, 1996; McCullough, 1994; Young, 2001). In many studies evaluating self-esteem and eating disorders, the case definitions of self-esteem were based on utilization of different self-esteem instruments, rather than on a clinically defined diagnostic criteria (Cervera, Lahortiga et al., 2003; Griffiths et al., 1999; Gual et al., 2002). For example, many analyses evaluating self-esteem utilize the *Rosenberg Self-Esteem Scale* (RSE; Rosenberg, 1965), which is a one-dimensional instrument yielding only a high or low self-esteem score. This global measure is not designed to specifically measure individual components of self-esteem and its results, a high or low score, may be misleading. The *Multidimensional Self-Esteem Inventory* (MSEI; O'Brien &

Epstein, 1988) corrects for these problems by clearly defining and measuring eight components of self-esteem in addition to identity integration, defensive self-enhancement, and global self-esteem.

Statement of Problem

Current empirical evidence suggests that true recovery from eating disorders is not possible without a corresponding improvement in body image and self-esteem (Bruch, 1962; Rosen, 1990; Warah, 1989) and that the pre-treatment level of self-esteem is a reliable predictor of treatment outcome (Fairburn et al., 1987). Ten studies in current literature evaluate the relationship between self-esteem (mostly using RSE) and clinical eating disorders during inpatient treatment or during follow-up studies. Unfortunately, as these studies do not provide both pre- (baseline), and post-treatment self-esteem scores, it is not possible to determine whether high levels of self-esteem at onset of treatment are predictive of therapeutic treatment outcome. Two British studies correct for this oversight by pre- and post-tests of patients with bulimia nervosa through the use of a quantitative global self-esteem scale which yields results in a singular score of either high or low self-esteem (Fairburn et al., 1987; Troop, Schmidt, Turnbull, & Treasure, 2000). The 1987 study utilized the RSE (Fairburn et al.), while the 2000 study utilized Robson's 1989 *Self-Concept Questionnaire* (Troop et al.). While these two studies assert that a patient's pre-treatment level of self-esteem was a consistent predictor of outcome, this conclusion is based on relatively small sample populations (22 and 51 participants respectively), only administered to patients with bulimia nervosa, and, due to the limited nature of the self-esteem instrument, the studies were unable to investigate which specific components of self-esteem, if any, best predict therapeutic treatment outcomes. Thus, no large-scale

empirical studies have yet been completed which quantitatively explore the relationship between the three *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision's* (DSM-IV) categories of eating disorders, treatment outcomes, and specific components of self-esteem as measured both prior to and at the conclusion of the treatment course. As a result, many questions about the nature of the relationship between eating disorders and self-esteem remain unanswered.

Statement of Purpose

This study will empirically investigate the relationship of self-esteem with the treatment of eating disorders in women using standardized measures of self-esteem and treatment outcome. More specifically, this study will investigate whether a comprehensive measure of self-esteem, given to women at the beginning of inpatient treatment for eating disorders, reliably predicts treatment outcome.

Research Questions

Question one. Is global self-esteem, as measured by the *Multidimensional Self-Esteem Inventory* (MSEI) at admission, predictive of outcome, as measured by discharge scores on the *Body Shape Questionnaire* (BSQ), *Eating Attitudes Test* (EAT), and *Outcome Questionnaire* (OQ-45.2), in women who receive inpatient treatment for eating disorders?

Question two. Is global self-esteem, as measured by the MSEI at admission, predictive of outcome, as measured by change scores at discharge on the BSQ, EAT, and OQ-45.2, in women who receive inpatient treatment for eating disorders?

Question three. Which, if any, components of self-esteem, as measured by the MSEI at admission, are predictive of outcome, as measured by discharge scores on the BSQ, EAT, and OQ 45.2, in women who receive inpatient treatment for eating disorders?

Question four. Which, if any, specific components of self-esteem, as measured by the MSEI at admission, are predictive of outcome, as measured by change scores at discharge on the BSQ, EAT, and OQ 45.2, in women who receive inpatient treatment for eating disorders?

Question five. Are changes in global self-esteem, as measured by the difference between admission and discharge MSEI scores, associated with changes in BSQ, EAT, and OQ-45.2 in women who receive inpatient treatment for eating disorders?

Question six. Are changes in the components of self-esteem, as measured by the difference between admission and discharge MSEI component scores, associated with changes in BSQ, EAT, and OQ-45.2 in women who receive inpatient treatment for eating disorders?

Question seven. Which, if any, combination of components of self-esteem, as measured by the MSEI at admission, discriminate among women diagnosed with AN, BN, and EDNOS who receive inpatient treatment for eating disorders?

Importance of the Study

This study is important because it will help determine if global self-esteem or specific components of self-esteem are predictive of treatment outcome among women diagnosed with the three forms of eating disorders. This study may provide information about which specific aspects of self-esteem are most affected by an eating disorder and what, if any, relative strengths in self-esteem can assist women in overcoming an eating disorder. Additional insight into these issues is important because if there is an empirical relationship between self-esteem at admission

and treatment outcome, it may suggest that pretreatment of low self-esteem at the beginning of inpatient care may be useful for women experiencing eating disorders. Research has not demonstrated that we can successfully “treat” self-esteem directly because self-esteem is a product of conscious internal activities (Branden, 1994; Hudgins, 1979; Morse, Bockoven, & Bettesworth, 1988; Strein, 1988); however, studies suggest that individuals can “earn” high self-esteem by successfully managing tasks which they perceive as difficult (Walz, 1991), and challenging deeply held negative beliefs (Burns, 1993; Ellis, 2000; Mills, 2000). As many eating disordered patients do not receive much benefit from current behavioral, pharmacological, or interpersonal therapy approaches, research that identifies a possibly effective new treatment approach would be valuable as it may improve our overall eating disorder treatment outcome.

Literature Review

Eating disorders, in general, are linked with serious behaviors and injurious eating patterns in particular individuals. Determining the extent to which a population is affected by these injurious eating patterns has been very problematic. One problem is the changing definition of an eating disorder. For example, amenorrhoea was not included in the DSM-III criteria for AN but it is for DSM-IV TR (American Psychiatric Association, 1980; American Psychiatric Association, 2000a). An additional example may be found in defining the term *bulimia nervosa*. Bulimia nervosa was created in 1979 and given three criteria; however, in DSM-IV TR it has eight specific areas of criteria (American Psychiatric Association, 1980, 2000a; Halmi, 2003). These variations in definitions and criteria make it imperative that clinicians and researchers thoroughly review study characteristics prior to comparing eating disorder research.

Although once considered a disorder of the wealthy, eating disorders have increasingly become more widespread (Garrett, 1994; Turner, 1990) and prevalent during the past 40 years (Hoek, van Hoeken, & Katzman, 2003; Russell et al., 1987). According to the American Dietetic Association, more than five million Americans experience eating disorders, with more than 90% of diagnosable cases occurring in females (Spear & Myers, 2001). Eating disorders are relatively rare in the general population and occur in approximately one to three percent of females (Hoek & van Hoeken, 2003; Striegel-Moore, Garvin, Dohm, & Rosenheck, 1999).

An *eating disorder* may be defined as a persistent disruption of eating behavior or a deliberate behavior employed to control weight that may significantly damage physical or mental health (Fairburn, 2001). Eating disorders are generally categorized into three forms, including

anorexia nervosa (gradual self-starvation), *bulimia nervosa* (binging and purging), and eating disorders not otherwise specified (includes some but not all of the specific criteria for either anorexia or bulimia). While the symptomatology of eating disorders is often overlapping and intertwined (Garrett, 1994), the most common shared symptom is the extreme fear of becoming fat (American Psychiatric Association, 2000a).

Defining Key Terms

Anorexia Nervosa. The primary features of anorexia nervosa, according to DSM-IV TR, include a refusal to maintain a minimally normal and healthy body weight; an extreme fear of becoming overweight; a disturbance of body image; and, in postmenarcheal females, amenorrhea. Individuals with AN are further identified as either “restricting,” when weight loss is accomplished by dieting and fasting with no episodes of purging, or “binge-eating/purging,” when the individual regularly binges and purges to lose weight (American Psychiatric Association, 2000a).

Bulimia Nervosa. The primary features of bulimia nervosa, according to DSM-IV TR, include regular repeated episodes of binge eating with the use of inappropriate compensatory behaviors. An episode of binge eating is described as eating huge amounts of food in a distinct amount of time (i.e., two hours) that is unquestionably more food than most people would eat in a comparable time period and a coexistent feeling of lack of control over the amount of food eaten. Inappropriate compensatory behaviors are characterized as self-induced vomiting, the use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain. People diagnosed with bulimia must experience these episodes of binge eating and

inappropriate compensatory behaviors, on average, two times weekly for at least three months (American Psychiatric Association, 2000a).

As with anorexia, individuals with bulimia are further identified by two types. In the first type, *purging*, the individual misuses laxatives, enemas, or diuretics or employs self-induced vomiting during the episode of BN. In the second type, *nonpurging*, the individual uses inappropriate compensatory behaviors such as fasting or vigorous exercise but does not employ self-induced vomiting during the BN episode (American Psychiatric Association, 2000a).

Eating Disorder, Not Otherwise Specified, and Binge Eating Disorder. Eating disorder, not otherwise specified, is a DSM-IV TR category for variants of anorexia and bulimia nervosa which do not meet all of the criteria for either AN or BN but still significantly impair function. Individuals diagnosed with EDNOS include females who have regular menses but meet all the other characteristics of AN, and individuals who meet all the characteristics of AN except their weight falls in the normal range although they have experienced significant weight loss. Individuals also diagnosed with EDNOS include those who meet all the characteristics of BN but engage in inappropriate compensatory behaviors less than two times weekly (or these behaviors continue for less than three months), individuals who engage in inappropriate compensatory behaviors after eating small amounts of food and remain within the normal weight range, and individuals who chew and spit out food without swallowing copious amounts of food (American Psychiatric Association, 2000a).

Another variant of anorexia and bulimia included in EDNOS is binge eating disorder (BED). A diagnosis of BED includes individuals who engage in binge eating without using inappropriate compensatory behaviors similar to those used by individuals with BN, with a

concomitant sense of lack of control during episodes of overeating (American Psychiatric Association, 2000a). Many individuals with a diagnosis of EDNOS are obese and often have a long history of repeated efforts to diet. Individuals with EDNOS commonly eat throughout the day in addition to experiencing episodes of binge eating (Halmi, 2003).

Self-esteem. Self-esteem often has a leading role in etiological theories of eating disorders despite the fact that self-esteem has not been adequately defined and conceptualized (Keith & Bracken, 1996; McCullough, 1994; Young, 2001). Researchers, clinicians, and laypersons often use self-esteem as a construct and as a term, yet few can proffer a specific definition. Mruk in 1999 observed, “the diversity of definitions tends to be impressive. Often, it is as though there are as many ways to define self-esteem as there are people trying to do so” (p. 8).

Self-esteem is often defined as an overall positive appraisal of oneself, which is generally stable no matter the situation (Heine, Lehman, Markus, & Kitayama, 1999). As far back as 1890, William James defined self-esteem in this manner, specifically as the ratio of successes over pretensions, or one’s dominant beliefs about self, meaning that one’s self-esteem is largely due to anticipation of successful outcomes (James, 1890). He described self-esteem as the “average tone of self-feeling that each of us carries about with him, and which is independent of the objective reasons we may have for satisfaction or discontent” (p. 306). Humanist Carl Rogers (1959) furthered this definition by characterizing unconditional positive self regard, or self-esteem, as an enviable state determined by one’s level of congruence, self-awareness, and self-acceptance.

Other theorists posit that self-esteem is dynamic and is a reflection of one's evaluation of personal traits and abilities in a particular situation (Heine et al., 1999). Stanley Coopersmith (1967), a behaviorist, defines self-esteem as an evaluation,

...which the individual makes and customarily maintains with regard to himself: it expresses an attitude of approval or disapproval, and indicates the extent to which the individual believes himself to be capable, significant, successful, and worthy [It] is a personal judgment of worthiness that is expressed in the attitudes the individual holds toward himself. (pp. 4-5)

In his theory of self-efficacy, Bandura (1977) defines self-esteem as consisting of two entities which work together: outcomes and efficacy. An individual may expect or believe that a certain behavior will produce a certain outcome but may be uncertain whether the ability to perform the action (*self-efficacy*) is within his capability (Bandura, 1977). In an analogous definition, Nathaniel Branden (1994) also describes self-esteem as composed of two aspects: confidence in one's ability to think and act, and a sense that one is entitled to assert needs and wants and enjoy the fruits of one's efforts. This depiction of self-esteem is supplemented by Mruk (1999), who clarifies that *global self-esteem* is one's perception of individual competence, and is expressed through conscious and unconscious feelings and behaviors. He asserts that one's record of successes and failures at handling life's challenges leads to a basic insight of self and ultimately determines, negatively or positively, one's self-esteem.

Another approach to defining self-esteem is to identify the multidimensional nature of this construct by its components. In 1989, Mecca, Smelser, and Vasconcellos detailed three areas in which the components of self-esteem fall: (a) *cognitive*, which includes power and

confidence and is a description of self, (b) *affective*, or the level of positive or negative feelings of self, and (c) *evaluative* in regards to one's subjective, ideal model (cited in Walz, 1991).

Conversely, Alexander (2001) characterizes self-esteem as encompassing nine elements: (a) unconditional self-acceptance, (b) sense of capability or efficacy, (c) sense of purpose, (d) appropriate assertiveness, (e) experience of flow and fulfillment, (f) sense of responsibility and accountability, (g) sense of safety and security, (h) sense of belonging, and (i) sense of integrity.

Seymour Epstein (1985), presents a cognitive-experiential view of self-esteem by depicting it as relatively stable over time, as a basic human need which is a conscious and unconscious motivator, and is a consequence of one's understanding of the world and others around us. While he defines global self-esteem as "a generalized summary of feelings of worthiness" (cited in Ponterrotto, 1990, p. 147), Epstein addresses the multidimensional aspects of self-esteem by dividing the construct into three levels: *global*, which is general overall self-esteem, *intermediate*, which broadly focuses on domains in everyday experiences which affect one's self-esteem, and *situational*, which is the manifestation of self-esteem in one's daily life (O'Brien & Epstein, 1988).

In current literature, characterizations of self-esteem are often based on the definition employed by the research instrument used as there is a lack of clinically defined diagnostic criteria (Cervera, Lahortiga et al., 2003; Griffiths et al., 1999; Gual et al., 2002). For the purpose of this study, Stanley Epstein's definition of self-esteem is used as it is conceptualized on the *Multidimensional Self-Esteem Inventory* (MSEI) (O'Brien & Epstein, 1988). The MSEI is a self-report inventory measuring eight components of self-esteem (competence, lovability, likability, personal power, self-control, moral self-approval, body appearance, and body functioning), two

measures of generalized self-evaluation and self-concept (Global Self-esteem and Identity Integration), and a validity check measuring an individual's tendency to embellish his or her self-esteem in order to present more socially pleasing traits (Defensive Self-enhancement).

Eating Disorder Etiology

Although there is no clearly defined etiology for the development of eating disorders, multiple risk factors have been identified including sociocultural (e.g., thinness ideal, socioeconomic status), family and interpersonal (e.g., family dynamics, parenting adequacy), personal vulnerability factors (e.g., personality traits, behaviors, physical development), psychopathological factors (e.g., comorbid diagnoses), traumatic life events (e.g., physical and/or sexual abuse) (Ben-Tovim, 2003; Ghaderi, 2001; Gual et al., 2002; Klein & Walsh, 2003; Mussell, Binford et al., 2000; Striegel-Moore & Cachelin, 2001), and low self-esteem (Cervera, Lahortiga et al., 2003; Gual et al., 2002; Williams et al., 1993). Although research suggests several different etiological models, there is agreement that the development of an eating disorder is multifactorial in nature (Klein & Walsh, 2003; Mussell, Binford et al., 2000; Striegel-Moore & Cachelin, 2001) and it is a relatively rare occurrence in the general population (Hoek & van Hoeken, 2003; Mussell, Crosby, et al., 2000; Pike, 2004; Striegel-Moore & Cachelin, 2001). It is also generally established that eating disorders are significantly more likely to occur in females than in males (Button, 1990; Hoek & van Hoeken, 2003; Lindberg & Hjern, 2003; Mussell, Crosby, et al., 2000; Striegel-Moore & Cachelin, 2001).

Sociocultural factors. Sociocultural factors are generally considered to be particularly important for the development of eating disorders (Ghaderi, 2001; Mussell, Crosby, et al., 2000; Striegel-Moore & Cachelin, 2001). A preoccupation with weight and shape, a prominent risk

factor, often results from the exposure to and adoption of Western views of attractiveness and the ideal thin physique (Ghaderi, 2001; Gross & Rosen, 1988; Klein & Walsh, 2003; Mussell, Crosby, et al., 2000; Striegel-Moore & Cachelin, 2001). The literature indicates that a distorted body image and body dissatisfaction are found in individuals who suffer from ED regardless of ethnicity or socioeconomic status, although treatment is more likely obtained among white females in the higher social classes (Gross & Rosen, 1988; Hoek, van Hoeken, & Katzman, 2003; Klein & Walsh, 2003; Lindberg & Hjern, 2003).

Family and interpersonal factors. Family relationships may also influence the development of eating disorders. It is suggested that the mother's dieting and weight concerns, a father's preference for thinner female body types, parental modeling of the importance of thinness, and direct comments by parents about a child's weight, are central to the development of a girl's body image and eating attitudes (Attie & Brooks-Gunn, 1989; Dominy, Johnson, & Koch, 2000; Mussell, Crosby, et al., 2000). Research further suggests that vulnerable girls come from families with greater conflict and relatively less cohesion and support (Attie & Brooks-Gunn, 1989; Ghaderi, 2001). Moreover, the risk of developing an eating disorder is greater among female relatives of an individual diagnosed with ED (American Psychiatric Association, 2000b; Klump et al., 2002; Strober, Freeman, Lampert, Diamond, & Kaye, 2000).

Personal vulnerability factors. Specific developmental stages, personality and temperamental traits, and certain behaviors may predispose individuals to disordered eating. It is generally agreed that disordered eating behaviors often develop during adolescence (American Psychiatric Association, 2000a; Attie & Brooks-Gunn, 1989; Button, 1990; Carlat et al., 1997; Kreipe et al., 1995; Mussell, Binford, et al., 2000): girls who experience early pubertal

maturation and early menarche are particularly vulnerable (Attie & Brooks-Gunn, 1989; Fairburn, Cooper, Doll, & Welch, 1999). Further, an impaired sense of effectiveness (i.e., locus of control) (Fichter, 1995; Grace, Jacobson, & Fullager, 1985; Mayhew & Edelman, 1989), and poor self-esteem (Button, 1990; Button et al., 1996; Button, Loan, Davies, & Sonuga-Barke, 1997; Fisher, Schneider, Pegler, & Napolitano, 1991; Ghaderi, 2001; Grace et al., 1985; Gross & Rosen, 1988) are preeminent hallmarks leading to the development of eating disorders.

Compared to a non-clinical population, individuals diagnosed with ED are also at higher risk for negative self evaluation (body dissatisfaction) and perfectionism and may utilize eating as a mechanism to avoid feelings of incompetence or failure by redirecting attention to food-related issues (Fairburn et al., 1999; Fichter, 1995; Gross & Rosen, 1988; Ghaderi, 2001; Mussell, Binford, et al., 2000). Moreover, the prevalence of eating disorders appears to be higher among individuals who participate in sports that emphasize leanness, such as ballet, dancing, gymnastics, running, and figure skating (American Psychiatric Association, 2000b; Attie & Brooks-Gunn, 1989; Sundgot-Borgen, 1994).

Psychopathological factors. The literature identifies several psychopathological factors that frequently co-occur and may be comorbid with eating disorders; however, causality has not been determined (Burrows & Cooper, 2002; Ghaderi, 2001; Grilo, Sinha, & O'Malley, 2002; Gross & Rosen, 1998; Klein & Walsh, 2003). Many patients suffer from disorders such as obsessive compulsive disorder (OCD), body dysmorphic disorder, clinical depression, substance abuse disorder (drug and alcohol), anxiety disorder, affective disorder, posttraumatic stress disorder (PTSD), and personality disorders (American Psychiatric Association, 2000b; Burrows & Cooper, 2002; Fairburn et al., 1999; Ghaderi, 2001; Grilo et al., 2002; Gross & Rosen, 1988;

Spear & Myers, 2001). Additionally, it is suggested that parental substance abuse and psychiatric disorders are a further group of risk factors relevant to patients with eating disorders (American Psychiatric Association, 2000b; Carlat et al., 1997; Fairburn et al., 1999; Grilo et al., 2002; Lindberg & Hjern, 2003) especially among patients with comorbid substance abuse (Lilenfeld et al., 1997).

Traumatic life events. Clinicians have long argued that child sexual abuse (CSA) is a risk factor in the development and/or maintenance of eating disorders (American Psychiatric Association, 2000b; Dansky, Brewerton, Kilpatrick, & O'Neil, 1997; Kent, Waller, & Dagnan, 1999; Leonard, Steiger, & Kao, 2003; Smolak & Murnen, 2002; Tobin & Griffing, 1996; Zlotnick et al., 1996). A 1998 meta-analytic study examined the relationship between CSA and ED and found a statistically significant, but small, relationship ($r = .06$) among the sample of college students without a clinical diagnosis of eating disorders (Rind, Tromovitch, & Bauserman, 1998). A 2002 meta-analytic study of this relationship yielded similar results ($r = .10$); however, when a clinical ED group was compared to a non-clinical control group, the results were stronger ($r = .21$) (Smolak & Murnen, 2002). Moreover, studies suggest that patients diagnosed with bulimia nervosa report higher levels of childhood abuse than patients with other forms of eating disorders (American Psychiatric Association, 2000b; Dansky et al., 1997; Leonard et al., 2003). A 1999 study from the United Kingdom, however, reports that of the four forms of abuse (i.e., physical, sexual, emotional, neglect), only childhood emotional abuse was significantly predictive of adult disordered eating attitudes (Kent et al., 1999).

Self-esteem. While a number of research studies highlight the importance of self-esteem in the development and maintenance of eating disorders, two recent studies provide evidence to

support the role of self-esteem as a major determinant in the onset of an eating disorder (Cervera, Lahortiga, et al., 2003; Gual et al., 2002). Moreover, low self-esteem differentiates clinical cases of eating disorders from dieters (Williams et al., 1993). It has been proposed that in addition to differentiating between dieters and patients with clinical cases of ED, low self-esteem may increase vulnerability to social pressures to be thin. This, in turn, increases the propensity to diet and/or purge (Fairburn & Wilson, 1993; Vohs et al., 1999). As current empirical evidence suggests that true recovery from eating disorders is not possible without a corresponding improvement in body image and self-esteem (Bruch, 1962; Rosen, 1990; Warah, 1989) and that the pre-treatment level of self-esteem is a reliable predictor of treatment outcome (Fairburn et al., 1987), further investigation into the relationship of self-esteem and eating disorders may well improve treatment protocols and increase positive treatment outcomes.

Treatment Approaches

Prevention programs. In recent years, there have been several programs detailed in the literature directed towards preventing eating disorders (Carter et al., 1998; McVey et al., 2004; O’Dea & Abraham, 2000; Mussell, Binford et al., 2000; Springer et al., 1999; Stice et al., 2000; Wade et al., 2003). The majority of these programs has targeted junior and senior high school girls and has been psycho-educational in design. Components of the programs include information on healthy eating and nutrition, appropriate exercise, normal female development and maturation, as well as lessons on negative media influences and improving body image (Mussell, Crosby et al., 2000). Unfortunately, the results of these programs were mixed with some programs reporting improvements in attitudes towards eating disorders (Carter et al., 1997; Franko, 1998), while others did not (Killen et al., 1993). It is further disconcerting to note that

the study by Carter and associates (1998) found an increase in eating disordered behaviors following the conclusion of the psycho-educational program.

Predictors of outcome. The literature records significant controversy as to which predictors indicate a favorable outcome, a negative outcome, or whether any significant pre-treatment predictors are present at all (American Psychiatric Association, 2000b; Button et al., 1997; Fairburn et al., 1987). Although some research suggests that poorer prognosis is associated with older age at illness onset (American Psychiatric Association, 2000b; Eckert, Halmi, Marchi, Grove, & Crosby, 1995), high frequency of bulimic behaviors (American Psychiatric Association, 2000b; Ben-Tovim, 2003; Eckert et al., 1995; Richards et al., 2000; Stein et al., 2001; Steinhausen, 2002), chronicity of disorder (Eckert et al., 1995; Richards et al., 2000; Steinhausen, 2002), and comorbid depression (Eckert et al., 1995; Keel & Mitchell, 1997; Stein et al., 2001), other research contradicts or negates these findings (Fairburn, Agras, Walsh, Wilson, & Stice, in press; Fichter et al., 2003; Hsu, 1995; Keel et al., 1999; Shoemaker, 1997; Sunday, Reeman, Eckert, & Halmi, 1996). However, a high level of self-esteem at admission appears consistently as a predictor of therapeutic treatment outcome (Fairburn et al., 1987; Ghaderi, 2001; Stein et al., 2001). While unclear indicators and poor methodology have been cited as contributing to the cause of this controversy (Fairburn, Agras, Walsh, Wilson, & Stice, in press; Hsu, 1995; Striegel-Moore & Cachelin, 2001), it has also been posited that some researchers advanced predictor conclusions while conceding weak evidence (Richards et al., 2000).

Eating disorder treatment. Given the chronicity and the variability of presenting symptomology, there is much debate about the most effective treatment for this disorder.

Psychotherapists frequently use group and personal cognitive behavioral therapy (CBT) and interpersonal psychotherapy (IPT) (Mussell, Crosby et al., 2000; Wilson, 2003). Family therapy and a variety of pharmacological therapies have also been shown to be effective, to some degree, in treating patients with eating disorders (de Zwaan & Roerig, 2003; Kennedy & Garfinkel, 1992). Although religious issues may intensify eating disorder symptomology, spiritual and religious interventions have been found to be influential on eating disorder recovery (Richards et al., 1997). Whatever treatment is chosen, however, it has been suggested by Treasure and Schmidt (2003) in the *Handbook of Eating Disorders*, that a stepped care approach, starting with the least costly, least intensive, and least invasive interventions, may be the best method to match treatment to patient.

The American Psychiatric Association's (2000) *Practice Guideline for the Treatment of Patients With Eating Disorders* recommends three steps in treating patients with Anorexia Nervosa: (1) Nutritional rehabilitation, (2) Psychosocial interventions, and (3) Medications. Unfortunately, there is relatively limited evidence to recommend one therapy over another when treating restricting patients (Treasure & Schmidt, 2003; Wilson, 2003). Wilson (2003), in his recent review of the research, suggests that adolescents with anorexia nervosa demonstrate the most promising results with family therapy while Stein and his associates (2001) advocate individual therapy as more beneficial for patients with late onset AN. Wilson and other researchers propose that individual CBT is moderately effective when treating patients with anorexia nervosa (Waller & Kennerley, 2003; Wilson, 2003). In addition, researchers suggest that the medication, Fluoxetine, has some support for its use with patients experiencing AN,

although overall there is little current empirical evidence demonstrating any specific medication is helpful in treating underweight patients (Klein & Walsh, 2003; Stein et al., 2001).

In contrast to anorexia nervosa, there is an abundance of empirical research regarding the most effective treatment for bulimia nervosa. Cognitive-behavioral treatment and antidepressant therapy are the best researched to date with CBT by itself shown to be superior to other therapies (Fairburn, Agras, & Wilson, 1992; Klein & Walsh, 2003; Stein et al., 2001; Treasure & Schmidt, 2003; Waller & Kennerley, 2003; Wilson, 2003). Interpersonal psychotherapy has reliably demonstrated long-term outcomes consistent with CBT (Fairburn et al., 1992; Stein et al., 2001; Wilfley, Stein, & Welch, 2003; Wilson, 2003). Medications alone, particularly tricyclics and fluoxetine, have been shown to be more effective than a placebo pill; however, the combination of CBT and antidepressant medications has been found to be more successful than medication alone (Stein et al., 2001; Waller & Kennerley, 2003; Wilson, 2003). Moreover, there is conflicting research regarding whether CBT alone or CBT in combination with pharmacotherapy is most effective for patients diagnosed with BN (Stein et al., 2001; Wilson, 2003).

Although research on binge eating disorder (BED) is at an early stage, psychotherapy, pharmacological interventions, and behavioral weight loss programs appear frequently in BED treatment research (Stein et al., 2001; Stunkard & Allison, 2003; Wilson, 2003). In a review of thirteen published BED treatment studies, Stunkard and Allison (2003) found CBT, IPT, and pharmacotherapy similarly effective in decreasing the number of binge eating episodes by 50% or more. It is interesting to note, however, that placebo responses also decreased binge eating, with rates within the 30 to 40% range (Stunkard & Allison, 2003; Wilson, 2003). Reviews of BED treatment research found behavioral weight loss programs as effective as CBT, IPT, and

pharmacotherapy in reducing binge eating and more successful in producing weight loss, at least in the short term (Stein et al., 2001; Stunkard & Allison, 2003; Wilson, 2003). Wilson notes that BED patients on a very low calorie diet demonstrate reductions in binge eating whereas patients with BN on a similar diet will exhibit increased bingeing. This difference, Wilson (2003) postulates, is another indication that patients experiencing BED differ clinically from those experiencing BN.

Cognitive-behavioral treatment. Cognitive-behavioral therapy (CBT) has been the most comprehensively studied form of treatment for eating disorders and demonstrates outcome consistently better than other treatments as well as superior to no treatment at all (Waller & Kennerley, 2003; Wilson, 2003). Oxford's Christopher Fairburn formulated a manual-based CBT treatment that is time-limited and directive and is the most frequently used form of CBT (Wilson, 2003; Wilson & Pike, 2001). Wilson's (2003) manual-based CBT program

consists of cognitive and behavioural procedures for developing a regular pattern of eating that includes previously avoided foods, for acquiring more constructive skills to cope with high-risk situations for binge eating and purging, for modifying abnormal attitudes, and for preventing relapse at the conclusion of acute treatment. (pp. 315-316)

Interpersonal psychotherapy. Interpersonal psychotherapy (IPT) was originally developed to treat major depression but has been successfully adapted to treat eating and mood disorders. Empirical studies demonstrate that CBT yields more rapid results for BN, but long-term results for CBT and IPT are similar. IPT and CBT yield similar short and long term results when treating patients experiencing BED. At present, there are no empirical results for the use of IPT with patients experiencing AN (Wilfley et al., 2003).

Interpersonal Psychotherapy focuses on improving clients' interpersonal competencies and posits that disordered eating behavior is a result of using maladaptive coping skills when faced with interpersonal problems (Wilfley et al., 2003). IPT was developed to “work in identifying and altering a client’s interpersonal functioning [leading] to increased self-esteem; decreases in binge eating and dieting; and [reduced] concerns about eating, weight, and shape” (Stein et al., 2001, p. 713). Research is currently investigating the use of IPT with clients diagnosed with AN (Stein et al., 2001; Wilfley et al., 2003).

Family therapy. A dysfunctional family was originally associated with the development of anorexia nervosa but this theory has recently been called into question (Eisler, le Grange, & Asen, 2003). Although it is uncertain whether or not a family has contributed to the development of an eating disorder, undoubtedly family life is heavily impacted when a member experiences eating disordered behavior. Families trying to deal with this disorder recount that it seems as if all of their family life revolves around the eating disorder, which is similar to experiences reported by families having a member with alcoholism (Eisler et al., 2003).

Family therapy is positively viewed by families when it is perceived not in terms of correcting a dysfunctional family but in terms of mobilizing family resources (Eisler et al., 2003). The Maudsley model of family therapy, which has empirical support, includes three phases covering 15 sessions (Stein et al., 2001). Dare and Szmukler (1991) as cited by Stein et al. (2001) describe the stages of the Maudsley model of family therapy as follows:

In the first phase, the therapist meets with the entire family to increase their concern over the anorexic daughter’s starvation and to help the parents take complete control of their daughter’s eating. The second phase begins when the client gains sufficient weight, at

which point the responsibility for eating is transferred back to her, and family issues not related to eating are discussed. Once relapse likelihood is minimized, the family moves into the final phase, during which sessions focus on promoting appropriate family roles and boundaries. (p. 698)

While the primary focus of family therapy is for the diagnosed member to overcome AN, occasionally families will find it beneficial to change some part of the way they operate as a family (Eisler et al., 2003).

Behavioral weight loss programs. Reviews of BED treatment research found behavioral weight loss programs as effective as CBT, IPT, and pharmacotherapy in reducing binge eating and more successful in producing weight loss, at least in the short term (Stein et al., 2001; Stunkard & Allison, 2003; Wilson, 2003). Wilson (2003) notes that patients experiencing BED on a very low calorie diet demonstrate reductions in binge eating whereas patients experiencing BN on a similar diet will exhibit increased binging. This difference, Wilson (2003) postulates, is another indication that patients diagnosed with BED differ clinically from those diagnosed with BN.

Methods

Setting

The Center for Change (CFC) is a specialty eating disorder clinic which offers comprehensive treatment for women, from acute inpatient and residential care, to outpatient and aftercare. The CFC treats adolescents, ages 13 through 18 years, and adult women of any age, for anorexia, bulimia, and other eating disorders, along with other concomitant emotional illnesses. Patients receive individualized treatment at the Orem, Utah facility including individual, group, and family therapy; recreational, dance, and movement therapy; art and music therapy; nutritional awareness and monitoring; and medical treatment as appropriate.

Although admitted patients have been diagnosed with an eating disorder usually by their personal medical doctor, the CFC's clinical team will evaluate each patient and confirm previous or assign a different diagnosis. That team may include a psychologist, psychiatrist, or possibly a Licensed Clinical Social Worker. The admitted patient and CFC's clinical team will complete a clinical intake, history, and structured interview from which the clinician will diagnose the eating disorder and, if appropriate, co-existing diagnoses using DSM-IV TR criteria. Assessment results, such as from the *Body Shape Questionnaire* (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987), the *Eating Attitudes Test* (EAT; Garner & Garfinkel, 1979), the *Multidimensional Self-Esteem Inventory* (MSEI; O'Brien & Epstein, 1988), and the *Outcome Questionnaire* (OQ-45.2; Lambert, Okiishi, Finch, & Johnson, 1998) are not used for diagnostic purposes.

The Center's treatment program is guided by the belief that disordered eating behaviors are learned, but permanent recovery is possible in a nurturing atmosphere with high quality intervention. The stepped-care treatment approach provided by the CFC offers different levels of

treatment intensity, matched to individual client needs, which are gradually tapered as the client demonstrates success from the structure and assistance they receive. Center treatment is provided from a team of nearly 50 staff members including physicians, psychiatrists, psychologists, registered nurses, registered dietitians, social workers, education coordinators, as well as experiential and expressive therapists. Treatment includes nutritional and dietary counseling, individual and group therapy, and auxiliary experiential therapies (Center for Change, n.d.).

Participants

Participants for this study included 246 women experiencing anorexia, bulimia, or eating disorder variants, who were admitted to the inpatient treatment unit at the CFC during the years 1996-2003. Seventy-seven patients were diagnosed with Anorexia Nervosa, 72 with Bulimia Nervosa, 73 with Eating Disorder Not Otherwise Specified, and 24 patients with other diagnoses or missing information. Participant ages ranged from 18 through 56 years with the majority of participants having an age between 18 and 24 years. The ethnic heritage listed by a majority of participants was Caucasian (96 %), with approximately 4% listing their heritage as African American, Hispanic, or other ethnicities. Fifty-four percent of the participants hailed from the State of Utah, 8 % from California, 6.5 % from Idaho, 3.3 % from Colorado, 3.3 % from Washington, 2.8 % from Nevada, 2.4 % from Wyoming, with other states listed as home for the remaining 19.5 % of participants. The majority of participants were single (74 %), 22 % were married, and a few were divorced or separated (2.8 %).

Onset of eating disorder symptomatology ranged from 7 to 38 years of age for the reporting participants; however, the majority of participants reported the onset of symptoms

occurred between the ages of 12 to 18 years (44.3 %). Many study participants reported concomitant psychiatric diagnosis (39 %). Sixty-two participants (25.2 %) reported a history of childhood sexual abuse, while the majority (184 participants, 74.8 %) reported no such history as seen in Table 1.

Table 1

Participant Description

Variable	Number	Percentage
Age		
18-24	168	68.0
25-33	48	20.0
34-45	25	10.0
46-56	5	2.0
Diagnosis		
Anorexia Nervosa	77	31.3
Bulimia Nervosa	72	29.3
Eating Disorder, NOS	73	29.7
Other Diagnoses/Missing	24	9.7
Ethnicity		
Caucasian	237	96.3
African American	2	0.8
Hispanic	1	0.4
Other	4	1.6
Missing	2	.8
Home State		
Utah	133	54.1
California	20	8.1
Idaho	16	6.5
Colorado	8	3.3
Washington	8	3.3
Nevada	7	2.8
Wyoming	6	2.4
Other	47	19.1

Table 1 (continued).

Variable	Number	Percentage
Missing	1	.4
Marital Status		
Single	182	74.0
Married	54	22.0
Divorced	6	2.4
Separated	1	0.4
Missing	3	1.2
Age of Onset		
7-11	10	4.1
12-18	109	44.3
19-25	30	12.2
28-38	6	2.4
Missing	91	37.0
Comorbid Diagnosis		
Other Axis I or II Diagnosis	58	23.5
No Axis I or II condition	38	15.5
Missing Data	150	61.0
Childhood Sexual Abuse		
Yes	62	25.2
No	88	35.8
Missing Data	96	39.0

Procedures

Treatment at the Center for Change is customized to meet each patient's unique needs; however, most patients commit to a minimum of 12 weeks of inpatient care for AN and 8 weeks for BN. At admission, patients are administered a battery of assessment measures by a member of the CFC clinical team. After issues of confidentiality and patient rights are discussed, patients

sign a consent form indicating that they understand their collected data will be used for research and evaluation purposes. Following this three-hour assessment process, the results are evaluated, summarized, and added to the CFC's database. Patients complete post-treatment assessments at discharge using the same procedure as at admission.

Patient information used in this study was collected as part of the Center's on-going research and evaluation efforts so no further data collection was needed. This investigator received permission from administrators at the Center for Change to use their database of patient information for this study.

Measures

The measures utilized by the Center for Change to evaluate therapeutic outcomes include the *Body Shape Questionnaire* (BSQ), *Eating Attitudes Test* (EAT), the *Multidimensional Self-Esteem Inventory* (MSEI), and the *Outcome Questionnaire*, (OQ-45.2). These four instruments were developed for use of adult populations. The BSQ and EAT were specifically developed for women who may experience eating problems or who are at risk for eating disorders. The Center for Change's archival data included information on age of eating disorder onset, comorbid diagnosis, history of sexual abuse, and other patient demographics, but did not include patient names.

Body Shape Questionnaire. The BSQ is a 34-item self-report inventory that was empirically derived from interviewing patients experiencing BN, AN, and women without clinical eating disorders. The questionnaire measures concerns about body shape, especially the phenomena of "feeling fat." Scores range from 34 to 204 with higher scores indicating greater distress relating to body shape concerns, such as avoiding situations where people can view your

body (e.g., swimming, communal changing rooms), wanting to be thinner, and feeling self-conscious and ashamed about one's body. The BSQ demonstrated good concurrent validity with the EAT ($r = .61$) and with the Body Dissatisfaction subscale of the *Eating Disorder Inventory* (Garner, Olmsted, & Polivy, 1984) ($r = .66$). Further, patients with clinical bulimia nervosa scored higher on the questionnaire than a community sample of non-disordered women (Cooper et al., 1987). Most women diagnosed with eating disorders are likely to score above 110 on the BSQ while women without eating disorders and without excessive concern of "feeling fat" generally score below 90. Women who score over 110 on the BSQ are considered to have body shape distress in the clinically significant level (Richards, 2000).

Eating Attitudes Test. The EAT is a 40-item self-report inventory which measures behaviors and attitudes which are associated with disordered eating, including anxiety about eating, dieting, frequent weighing of oneself, vomiting, and preoccupation with food. The EAT has demonstrated good internal consistency reliability, with a coefficient alpha of .79 to .94, and good construct validity (Garner & Garfinkel, 1979). Scores range from 0 to 120 with higher scores suggesting more eating disorder symptomology. Women without disordered eating tend to score below 20 on the EAT, while women diagnosed with an eating disorder are likely to score above 50 (Richards, 2000). Women who score over 30 on the EAT are considered to demonstrate disordered eating symptoms within the clinically significant range (Garner & Garfinkel, 1979).

The Multidimensional Self-Esteem Inventory. The MSEI is a 116-item self-report inventory measuring eight components of self-esteem (body appearance, body functioning, competence, likability, lovability, moral self-approval, personal power, and self-control) in

addition to two global measures of self-evaluation and self-concept (Global Self-esteem – GSE and Identity Integration – IDN) and a validity check (Defensive Self-enhancement – DEF). A high score on GSE indicates an individual who is pleased with self, pleased with the past, who feels significant as a person, is self-confident, and who expects future successes. A high score on IDN suggests an individual who has a clear sense of identity, knows who he/she is, knows what he/she wants out of life, has a well defined set of long-term goals, and identifies with an inner sense of cohesion and integration of different aspects of self-concept. The validity check found in the DEF suggests whether or not the individual is defensively inflating his or her presentation. A high score on DEF suggests an overly inflated view of self-worth, claims to possess highly unlikely positive qualities, and a denial of universal human weaknesses. Characteristics of high and low scorers on the components of self-esteem may be found in Appendix A.

The MSEI has demonstrated good internal consistency reliability, with coefficients ranging from .78 to .90. It has also demonstrated strong to adequate convergent and discriminant validity, as seen in a strong coefficient of .81 when comparing the MSEI Global Self-esteem score with the *Rosenberg Self-Esteem Scale* (RSE; Rosenberg, 1965), an instrument which is frequently cited in the literature (O'Brien, 1980). MSEI raw scores are converted to T-scores ($M = 50$, $SD = 10$), with higher scores indicating the examinee has more positive self-esteem. T-scores between 40 and 59 are considered to be within the normal range, scores in the moderately low range of 30 to 39 suggest some clinically significant deficits in self-esteem, and T-scores below 30 suggest serious deficits in self-esteem (Richards, 2000).

Outcome Questionnaire. The OQ-45.2 is a 45-item self-report inventory measuring client changes taking place over the course of mental health treatment. The OQ-45.2 measures symptom distress (i.e., anxiety, depression, and substance abuse), interpersonal relationship distress (i.e., conflict within relationships with family, spouse, and friends), and social role distress (i.e., feelings of inadequacy with one's social role at work, home, and in other settings). The OQ has demonstrated strong reliability, with coefficients ranging from .84 to .93, and strong concurrent validity coefficients with a selection of self-report instruments (Lambert et al., 1996). Total OQ-45.2 scores range from 0 to 180, with mean scores of 73 to 88 seen in clinical sample populations. Scores above 70 should be considered clinically significant (Richards, 2000).

Research Design

As the literature records no variables, with the exception of self-esteem, which consistently predict eating disorder treatment outcomes (American Psychiatric Association, 2000b; Button et al., 1997; Fairburn et al., 1987), no confounding variables will be addressed in this study.

For the purposes of this study, outcome will be measured upon termination of treatment at the Center for Change. The Center for Change requires a minimum treatment commitment of 90 days for women experiencing Anorexia Nervosa and 60 days for women experiencing Bulimia Nervosa. Generally, Center patients achieve this length of stay. Discharge is based on clinical judgment of progression through the treatment program, medical stability, purging behaviors, body weight, as well as additional treatment goals designed by the therapist. Patients who terminate very prematurely, after week two or three, do not complete post-treatment assessments and are not included in this study. While all participants in this study are considered

to have demonstrated a positive treatment outcome, variations in scores may indicate a better or significantly more positive outcome or vice versa. Patient scores on the *Body Shape Questionnaire*, *Eating Attitudes Test*, and the *Outcome Questionnaire* are not used in making discharge decisions, but are part of the center's post-treatment assessments.

Statistical Analysis

Descriptive statistics, including means, standard deviations and ranges, will be calculated to describe participants' scores for all variables. All statistical functions will be performed using the *Statistical Package for the Social Sciences*, version 10. The significant level of correlation for these comparisons will be $p < .05$.

In order to test *Question one*, three Pearson Product Moment Correlation Coefficients will be run to determine the strength of the linear relationship between the MSEI Global Self-Esteem score at admission and discharge scores of the BSQ, EAT, and OQ45.2.

In order to test *Question two*, change scores measuring the difference between admission and discharge results of the BSQ, EAT, and OQ45.2 are first computed by subtracting discharge scores from admission scores. Next, a Pearson Product Moment Correlation Coefficient will be run to determine the strength of the linear relationship between the MSEI Global Self-Esteem score at admission and change scores of the BSQ, EAT, and OQ45.2.

In order to test *Question three*, a Pearson Product Moment Correlation Coefficient will be run to determine the strength of the linear relationship between the ten MSEI subtest scores at admission and the discharge scores of the BSQ, EAT, and OQ45.2. The ten MSEI subtests are as follows: Competence, Lovability, Likability, Personal Power, Self-Control, Moral Self-

Approval, Body Appearance, Body Functioning, Identity Integration, and Defensive Self-Enhancement.

In order to test *Question four*, a Pearson Product Moment Correlation Coefficient will be run to determine the strength of the linear relationship between the ten MSEI subtest scores at admission and the change scores of the BSQ, EAT, and OQ45.2.

To answer *Question five*, a change score measuring the difference between admission and discharge results of the MSEI Global Self-Esteem score is first computed by subtracting the admission score from the discharge score. Next, a Pearson Product Moment Correlation Coefficient will be run to determine the strength of the linear relationship between the MSEI Global Self-Esteem Change score and the change scores of the BSQ, EAT, and OQ45.2

To answer *Question six*, change scores measuring the difference between admission and discharge results of the MSEI subtests are first computed by subtracting the admission scores from the discharge scores for each subtest. Next, a Pearson Product Moment Correlation Coefficient will be run to determine the strength of the linear relationship between the MSEI Subtest Change scores and the change scores of the BSQ, EAT, and OQ45.2.

Finally, to answer *Question seven*, a one-way multivariate analysis of variance (MANOVA) will be conducted to determine if women diagnosed with either AN, BN, or EDNOS present with statistically different levels of self-esteem (components) at admission. An analysis of variance (ANOVA) will then be conducted to determine on which dependent variable patients in the three diagnostic groups differ. Lastly, Fisher's least significant difference (LSD) test will be run on self-esteem components demonstrating significant differences. The LSD test will specify which component means are different from other means and will answer our

research question if it is possible to discriminate between women experiencing AN, BN, and EDNOS on the basis of admission self-esteem component scores.

Results

Question One

Is global self-esteem (GSE), as measured by the *Multidimensional Self-Esteem Inventory* (MSEI) at admission, positively associated with outcome, as measured by discharge scores on the *Body Shape Questionnaire* (BSQ), *Eating Attitudes Test* (EAT), and *Outcome Questionnaire* (OQ-45.2), in women who receive inpatient treatment for eating disorders?

First, a Pearson correlation coefficient was calculated to examine the relationship between patients' global self-esteem at admission and BSQ discharge score. A moderate negative correlation was found ($r(222) = -.548, p < .001$), indicating a significant linear relationship between the two variables. Patients who have higher self-esteem at admission tend to self-report less distress relating to body shape concerns at the time they completed inpatient treatment.

Second, a Pearson correlation coefficient was calculated to examine the relationship between patients' global self-esteem at admission and EAT discharge score. A moderate negative correlation was found ($r(221) = -.476, p < .001$), indicating a significant linear relationship between the two variables. Patients who have higher self-esteem at admission tend to self-report fewer behaviors and attitudes which are associated with disordered eating at the time they completed inpatient treatment.

Finally, a Pearson correlation coefficient was calculated to examine the relationship between patients' global self-esteem at admission and OQ45.2 discharge score. A moderate negative correlation was found ($r(222) = -.653, p < .001$), indicating a significant linear relationship between the two variables. Patients who have higher self-esteem at admission tend

to self-report less symptom, interpersonal relationship, and social role distress at the time they completed inpatient treatment, as seen on Table 2.

Table 2

Intercorrelations Among MSEI Global Self-Esteem (GSE) at Admission and Discharge Scores

Variables	1	2	3	4
1. GSE/Admission	--	-.548**	-.476**	-.653**
2. BSQ/Discharge			.643**	.468**
3. EAT/Discharge				.487**
4. OQ.45/Discharge				--

** Note. ** $p < .01$, two-tailed.

Question Two

Is global self-esteem, as measured by the MSEI at admission, positively associated with outcome, as measured by change scores at discharge on the BSQ, EAT, and OQ-45.2, in women who receive inpatient treatment for eating disorders?

First, a Pearson correlation coefficient was calculated to examine the relationship between patients' global self-esteem at admission and BSQ change score. A weak negative correlation was found ($r(191) = -.221, p < .002$), indicating a significant linear relationship between the two variables. Patients who have higher self-esteem at admission tend to report/experience greater reductions in body shape concerns during inpatient treatment.

Second, a Pearson correlation coefficient was calculated to examine the relationship between patients' global self-esteem at admission and EAT change score. A moderate negative

correlation was found ($r(193) = -.327, p < .001$), indicating a significant linear relationship between the two variables. Patients who have higher self-esteem at admission tend to report greater reduction in disordered behaviors and attitudes during inpatient treatment.

Finally, a Pearson correlation coefficient was calculated to examine the relationship between patients' global self-esteem at admission and OQ45.2 change score. A moderate negative correlation was found ($r(198) = -.312, p < .001$), indicating a significant linear relationship between the two variables. Patients who have higher self-esteem at admission tend to experience greater reduction in psychological symptoms, and interpersonal relationship and social role distress during inpatient treatment. Overall, the correlations between MSEI and change scores on the BSQ, EAT, and OQ indicate that patients with more self-esteem at admission not only have less symptomology at admission and discharge, they also experience greater reductions in symptoms during treatment, as seen on Table 3.

Table 3

Intercorrelations Among MSEI Global Self-Esteem (GSE) at Admission and Change Scores

Variables	1	2	3	4
1. GSE/Admission	–			
2. BSQ/Change	-.221**	–		
3. EAT/Change	-.327**	.627**	–	
4. OQ.45/Change	-.312**	.507**	.491**	–

Note. ** $p < .01$, two-tailed.

Question Three

Are any specific components of self-esteem, as measured by the MSEI at admission, positively associated with outcome, as measured by discharge scores on the BSQ, EAT, and OQ 45.2, in women who receive inpatient treatment for eating disorders?

First, a Pearson correlation coefficient was calculated to examine the relationship between components of patients' self-esteem at admission and BSQ discharge score. Weak to moderate negative correlations were found ($r(222) = -.198$ to $-.529$, $p < .001$), as seen on Table 4, indicating a significant linear relationship between the variables. The two self-esteem components that negatively correlate most highly with the BSQ are Body Appearance and Body Functioning. Patients who have higher self-esteem and more positive feelings about their body appearance and body functioning at admission tend to self-report less distress relating to body shape concerns at the conclusion of inpatient treatment.

Second, a Pearson correlation coefficient was calculated to examine the relationship between components of patients' self-esteem at admission and EAT discharge score. Weak to moderate negative correlations were found ($r(221) = -.033$ to $-.451$, $p < .001$), as seen on Table 4, indicating a significant linear relationship between the variables. The two self-esteem components that negatively correlate most highly with the EAT are Body Appearance and Identity Integration. Patients who have higher self-esteem, who feel better about their body appearance, and have a more integrated sense of identity at admission tend to self-report fewer behaviors and attitudes which are associated with disordered eating at the conclusion of inpatient treatment.

Finally, a Pearson correlation coefficient was calculated to examine the relationship between components of patients' self-esteem at admission and OQ45.2 discharge score. Moderate negative correlations were found ($r(222) = -.381$ to $-.649$, $p < .001$), as seen on Table 4, indicating a significant linear relationship between the variables. The two self-esteem components that negatively correlate most highly with the OQ45.2 are Identity Integration and Lovability. Patients who have higher self-esteem, a stronger sense of identity integration, and a stronger ability to express and receive feelings of love at admission tend to self-report less symptom, interpersonal relationship, and social role distress at the conclusion of inpatient treatment, as seen on Table 4.

Table 4

Intercorrelations Among Components of SE at Admission (A) and Discharge (D) Scores

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. BSQ/D	–												
2. EAT/D	.643**	–											
3. OQ45.2/D	.468**	.487**	–										
4. Competence/A	-.329**	-.307**	-.456**	–									
5. Lovability/A	-.372**	-.333**	-.613**	.507**	–								
6. Likability/A	-.349**	-.356**	-.548**	.640**	.608**	–							
7. Personal Power/A	-.260**	-.338**	-.381**	.598**	.371**	.666**	–						
8. Self-Control/A	-.379**	-.196**	-.404**	.495**	.336**	.343**	.286**	–					
9. Moral Self-Approval/A	-.288**	-.178**	-.417**	.467**	.424**	.317**	.268**	.521**	–				
10. Body Appearance/A	-.529**	-.451**	-.432**	.521**	.479**	.693**	.563**	.370**	.258**	–			
11. Body Functioning/A	-.426**	-.326**	-.473**	.631**	.368**	.597**	.512**	.527**	.338**	.636**	–		
12. Identity Integration/A	-.397**	-.403**	-.649**	.541**	.526**	.550**	.513**	.568**	.456**	.551**	.533**	–	
13. Def. Self-Enhancement/A	-.198**	-.033**	-.425**	.297**	.471**	.320**	.111	.403**	.496**	.187**	.209**	.362**	–

Note. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Question Four

Are any specific components of self-esteem, as measured by the MSEI at admission, positively associated with outcome, as measured by change scores at discharge on the BSQ, EAT, and OQ 45.2, in women who receive inpatient treatment for eating disorders?

First, a Pearson correlation coefficient was calculated to examine the relationship between components of patients' self-esteem at admission and BSQ change score. Very low, non-significant correlations were found which indicates that most of the components of self-esteem at admission are not correlated with changes in body shape concerns during treatment. One significant negative correlation is noted between the BSQ change score and the Body Appearance score which suggests that patients who had more positive Body Appearance self-esteem at admission tended to experience greater reductions in body shape concerns during treatment.

Second, a Pearson correlation coefficient was calculated to examine the relationship between components of patients' self-esteem at admission and EAT change score. Mostly weak to moderate negative correlations were found ($r(193) = -.193$ to $-.323, p < .001$), as seen on Table 5, indicating a significant linear relationship between most of the variables. The two areas of self-esteem that negatively correlate most highly with changes on the EAT are Body Appearance and Identity Integration. Patients who report high self-esteem at admission, who experience a clear sense of identity, and feel physically attractive tend to report greater reductions in behaviors and attitudes which are associated with disordered eating during inpatient treatment.

Finally, a Pearson correlation coefficient was calculated to examine the relationship between components of patients' self-esteem at admission and OQ45.2 change score. Mostly

weak negative correlations were found ($r(198) = -.140$ to $-.265$, $p < .001$), with one moderate negative correlation ($r(198) = -.357$, $p < .001$), as seen on Table 5, indicating a significant linear relationship between the variables. The area of self-esteem that negatively correlates most highly with the OQ45.2 is Identity Integration. Patients who report high self-esteem at admission and who experience a clear sense of identity tend to report greater improvements in interpersonal relationships, social role, and symptom distress during inpatient treatment, as noted on Table 5.

Table 5

Intercorrelations Between Components of SE at Admission (A) and Change (C) Scores

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. BSQ/D	–												
2. EAT/D	.627**	–											
3. OQ45.2/D	.507**	.491**	–										
4. Competence/A	-.063	-.249**	-.140*	–									
5. Lovability/A	-.078	-.214**	-.264**	.507**	–								
6. Likability/A	-.083	-.215**	-.265**	.640**	.608**	–							
7. Personal Power/A	-.070	-.193**	-.167**	.598**	.371**	.666**	–						
8. Self-Control/A	-.088	-.206**	-.255**	.495**	.336**	.343**	.286**	–					
9. Moral Self-Approval/A	-.014	-.125	-.168*	.467**	.424**	.317**	.268**	.521**	–				
10. Body Appearance/A	-.265**	-.300**	-.212**	.521**	.479**	.693**	.563**	.370**	.258**	–			
11. Body Functioning/A	-.140	-.254**	-.270**	.631**	.368**	.597**	.512**	.527**	.338**	.636**	–		
12. Identity Integration/A	-.140	-.323**	-.357**	.541**	.526**	.550**	.513**	.568**	.456**	.551**	.533**	–	
13. Def. Self-Enhancement/A	.013	.043	-.194**	.297**	.471**	.320**	.111	.403**	.496**	.187**	.209**	.362**	–

Note. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Question Five

Are changes in global self-esteem, as measured by the difference between admission and discharge MSEI scores, associated with changes in BSQ, EAT, and OQ-45.2 in women who receive inpatient treatment for eating disorders?

First, a Pearson correlation coefficient was calculated to examine the relationship between patients' Global Self-Esteem change score and BSQ change score. A moderate positive correlation was found ($r(185) = .585, p < .001$), indicating a significant linear relationship between the variables, as seen in Table 6. Patients reporting the greatest changes in global self-esteem report the greatest reductions in distress relating to body shape concerns.

Second, a Pearson correlation coefficient was calculated to examine the relationship between patients' Global Self-Esteem change score and EAT change score. A moderate positive correlation was found ($r(186) = .449, p < .001$), indicating a significant linear relationship between the variables, as seen in Table 6. Patients reporting the greatest changes in global self-esteem report the greatest reductions in behaviors and attitudes which are associated with disordered eating.

Finally, a Pearson correlation coefficient was calculated to examine the relationship between patients' Global Self-Esteem change score and OQ45.2 change score. A moderate positive correlation was found ($r(188) = .612, p < .001$), indicating a significant linear relationship between the variables, as seen in Table 6. Patients reporting the greatest changes in global self-esteem report the greatest reductions symptom, interpersonal relationship, and social role distress, as seen on Table 6.

Table 6

Intercorrelations Among Global Change Scores.

Variables	1	2	3	4
1. GSE/Change	–			
2. BSQ/Change	.585**	–		
3. EAT/Change	.449**	.627**	–	
4. OQ-45/Change	.612**	.507**	.491**	–

Note. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Question Six

Are changes in the components of self-esteem, as measured by the difference between admission and discharge MSEI component scores, associated with changes in BSQ, EAT, and OQ-45.2 in women who receive inpatient treatment for eating disorders?

First, a Pearson correlation coefficient was calculated to examine the relationship between patients' self-esteem component change scores and BSQ change score. Moderate positive correlations were found between all ten components and the BSQ ($r(185) = .310$ to $.566$, $p < .001$), as seen on Table 7, indicating a significant linear relationship between the variables. The strongest positive correlations were found between change scores in Body Appearance and Body Functioning and BSQ change scores. As patients increasingly improve in specific components of self-esteem associated with their perceptions of their body, they also self-report less distress relating to body shape concerns.

Second, a Pearson correlation coefficient was calculated to examine the relationship between patients' self-esteem component change scores and EAT change score. Moderate positive correlations were found between eight components and the EAT ($r(186) = .300$ to $.433$, $p < .001$), with two weak positive correlations ($r(186) = .213$ and $.229$, $p < .001$) between Defensive Self-Enhancement and Moral Self-Approval change scores, as seen on Table 7, indicating a significant linear relationship between the variables. The strongest positive correlations were found between change scores in Body Functioning and Identity Integration change scores with the EAT change score. As patients increasingly improve in specific components of self-esteem, and as they are able to evaluate their self-worth in a less defensive manner, they self-report fewer behaviors and attitudes which are associated with disordered eating.

Finally, a Pearson correlation coefficient was calculated to examine the relationship between patients' self-esteem component change scores and OQ45.2 change score. A moderate positive correlation was found between all ten components and the OQ45.2 ($r(188) = .353$ to $.572$, $p < .001$), indicating a significant linear relationship between the variables, as seen in Table 7. The strongest positive correlations were found between the OQ45.2 and Body Functioning and Identity Integration change scores. As patients improve in specific areas of self-esteem, they tend to self-report less symptom, interpersonal relationship, and social role distress, as noted on Table 7.

Table 7

Intercorrelations Among Component Change (C) Scores

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. BSQ/D	–												
2. EAT/D	.627**	–											
3. OQ45.2/D	.507**	.491**	–										
4. Competence/A	.482**	.352**	.460**	–									
5. Lovability/A	.415**	.364**	.509**	.694**	–								
6. Likability/A	.441**	.368**	.516**	.738**	.746**	–							
7. Personal Power/A	.422**	.412**	.429**	.701**	.669**	.748**	–						
8. Self-Control/A	.409**	.300**	.468**	.645**	.530**	.627**	.533**	–					
9. Moral Self-Approval/A	.345**	.229**	.365**	.674**	.554**	.612**	.493**	.612**	–				
10. Body Appearance/A	.566**	.388**	.438**	.657**	.671**	.746**	.640**	.564**	.507**	–			
11. Body Functioning/A	.519**	.433**	.550**	.628**	.643**	.710**	.635**	.618**	.525**	.720**	–		
12. Identity Integration/A	.451**	.429**	.572**	.662**	.676**	.664**	.560**	.636**	.608**	.671**	.689**	–	
13. Def. Self-Enhancement/A	.310**	.213**	.353**	.576**	.618**	.595**	.525**	.524**	.657**	.586**	.469**	.551**	–

Note. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Question Seven

Does any combination of components of self-esteem, as measured by the MSEI at admission, discriminate among women diagnosed with AN, BN, and EDNOS who receive inpatient treatment for eating disorders?

A one-way multivariate analysis of variance (MANOVA) was conducted to determine if women diagnosed with either AN, BN, or EDNOS present with statistically different levels of self-esteem (components) at admission. MANOVA results revealed significant differences among the diagnoses on two of the dependent variables, Wilks' $\Lambda = .717$, $F(18,422) = 4.23$, $p < .001$. An analysis of variance (ANOVA) was then conducted to determine the differences among the diagnostic groups in terms of each of the ten subcomponents of self-esteem, as seen on Tables 8 and 9.

Lastly, Fisher's Least Significant Difference (LSD) test was run on self-esteem components demonstrating significant differences in order to specify which component means are different from other means and to answer our research question that it is possible to discriminate between women diagnosed with AN, BN, and EDNOS on the basis of admission self-esteem component scores. Diagnosis differences were significant for the MSEI "Self-control" scale ($F(2,219) = 19.44$, $p < .001$), $\eta^2 = .151$ and the "Moral Self-approval" scale ($F(2,219) = 3.40$, $p > .05$), $\eta^2 = .035$. Other MSEI scales were not significantly correlated with diagnosis. Non-significant results were demonstrated by the following MSEI scales: Competence ($F(2,219) = .86$, $p > .05$), $\eta^2 = .008$, Lovability ($F(2,219) = 1.10$, $p > .05$), $\eta^2 = .010$, Likability ($F(2,219) = 2.38$, $p > .05$), $\eta^2 = .021$, Personal Power ($F(2,219) = 1.34$, $p > .05$), $\eta^2 = .012$, Body Appearance ($F(2,219) = 2.13$, $p > .05$), $\eta^2 = .019$, Body Functioning

($F(2,219)=2.34, p > .05$), $\eta^2 = .019$, Identity Integration ($F(2,219)=.95, p > .05$), $\eta^2 = .010$, and Defensive Self-enhancement ($F(2,219)=1.77, p > .05$), $\eta^2 = .016$.

Results on the MSEI Self-control and Moral Self-approval scales at admission discriminate among women diagnosed with AN, BN, and EDNOS who receive inpatient treatment for eating disorders. Women diagnosed with AN are more self-disciplined, persevering, good at setting and achieving goals, in control of emotions, exercise restraint in eating, drinking, and/or use of drugs (Self-control – SFC) than women diagnosed with EDNOS and BN. Further, women diagnosed with EDNOS demonstrate greater Self-control (SFC) than women diagnosed with BN. Women diagnosed with AN, more than women diagnosed with BN and EDNOS, are pleased with their moral values and behavior, have clearly defined moral standards and act in a way that is consistent with moral values, and set a positive moral example for others (Moral Self-approval – MOR). Further, women diagnosed with BN demonstrate greater Moral Self-approval (MOR) than women diagnosed with EDNOS, as seen on Tables 10 and 11.

Table 8

Univariate Test Data by Diagnosis

Effect: Diagnosis	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.717	4.233	18.000	422.000	.000

Table 9

Univariate ANOVA Results for Components of Self-Esteem (MSEI scores)

MSEI Scale	SS Type III	df	MS	F	Sig.	η^2
Competence	315.597	2	157.799	0.862	.424	.008
Lovability	332.194	2	166.097	1.102	.334	.010
Likability	956.949	2	478.475	2.376	.095	.021
Personal Power	486.021	2	243.010	1.337	.265	.012
Self-control	5666.147	2	2833.073	19.439	.000	.151
Moral Self-approval	1650.166	2	825.083	3.995	.020	.035
Body Appearance	487.192	2	243.596	2.128	.122	.019
Body Functioning	459.060	2	229.530	2.340	.099	.021
Identity Integration	203.020	2	101.510	0.947	.390	.009
Def. Self-enhancement	484.421	2	242.210	1.768	.173	.016

Table 10

Descriptive Statistics for Women Receiving Inpatient Treatment by Diagnosis on the MSEI at Admission.

MSEI Scale	Diagnosis	<i>N</i>	<i>M</i>	<i>SD</i>
Competence	307.10 Anorexia Nervosa	77	36.302	13.675
	307.51 Bulimia Nervosa	72	35.739	13.713
	307.50 Eating Disorder NOS	73	33.540	13.192
Lovability	307.10 Anorexia Nervosa	77	40.363	11.571
	307.51 Bulimia Nervosa	72	40.440	10.839
	307.50 Eating Disorder NOS	73	37.797	14.188
Likability	307.10 Anorexia Nervosa	77	33.627	13.104
	307.51 Bulimia Nervosa	72	38.148	15.664
	307.50 Eating Disorder NOS	73	33.810	13.762
Personal Power	307.10 Anorexia Nervosa	77	34.363	13.583
	307.51 Bulimia Nervosa	72	37.708	13.705
	307.50 Eating Disorder NOS	73	34.787	13.142
Self-control	307.10 Anorexia Nervosa	77	38.012	11.986
	307.51 Bulimia Nervosa	72	25.697	12.900
	307.50 Eating Disorder NOS	73	32.749	11.294
Moral Self-approval	307.10 Anorexia Nervosa	77	45.814	15.176
	307.51 Bulimia Nervosa	72	40.348	13.229
	307.50 Eating Disorder NOS	73	39.858	14.580
Body Appearance	307.10 Anorexia Nervosa	77	30.791	10.101
	307.51 Bulimia Nervosa	72	31.834	11.940
	307.50 Eating Disorder NOS	73	28.275	9.996
Body Functioning	307.10 Anorexia Nervosa	77	29.732	9.592
	307.51 Bulimia Nervosa	72	27.882	10.343
	307.50 Eating Disorder NOS	73	26.236	9.788
Identity Integration	307.10 Anorexia Nervosa	77	36.925	11.358
	307.51 Bulimia Nervosa	72	34.683	10.500
	307.50 Eating Disorder NOS	73	35.270	9.017
Def. Self-enhancement	307.10 Anorexia Nervosa	77	56.344	11.891
	307.51 Bulimia Nervosa	72	53.754	10.502
	307.50 Eating Disorder NOS	73	52.902	12.600
Missing		24		

Table 11

LSD Post Hoc Results for MSEI Components of Self-Esteem at Admission by Diagnosis

Dependent Variable	(I) Diagnosis	(J) Diagnosis	Mean Difference (I-J)	SE	Sig.
Competence	AN	EDNOS	2.762	2.210	.213
		BN	.563	2.213	.800
	EDNOS	AN	-2.762	2.210	.213
		BN	-2.199	2.247	.329
	BN	AN	-0.563	2.218	.800
		EDNOS	2.199	2.247	.329
Lovability	AN	EDNOS	2.566	2.006	.202
		BN	-0.076	2.013	.970
	EDNOS	AN	-2.566	2.006	.202
		BN	-2.643	2.039	.196
	BN	AN	0.076	2.013	.970
		EDNOS	2.643	2.040	.196
Likability	AN	EDNOS	-0.183	2.318	.937
		BN	-4.521	2.327	.053
	EDNOS	AN	0.183	2.318	.937
		BN	-4.338	2.357	.067
	BN	AN	4.521	2.327	.053
		EDNOS	4.338	2.357	.067
Personal Power	AN	EDNOS	-0.424	2.202	.848
		BN	-3.345	2.210	.132
	EDNOS	AN	0.424	2.202	.848
		BN	-2.921	2.239	.193
	BN	AN	3.345	2.210	.132
		EDNOS	2.291	2.239	.193
Self-control	AN	EDNOS	5.262*	1.972	.008
		BN	12.315*	1.979	.000
	EDNOS	AN	-5.263*	1.972	.008
		BN	7.052*	2.005	.001
	BN	AN	-12.315*	1.979	.000
		EDNOS	-7.052*	2.005	.001
Moral Self-approval	AN	EDNOS	5.956*	2.348	.012
		BN	5.467	2.356	.021
	EDNOS	AN	-5.956*	2.348	.012
		BN	-0.490	2.388	.838
	BN	AN	-5.467*	2.357	.021
		EDNOS	0.490	2.388	.838

Table 11 (continued).

Dependent Variable	(I) Diagnosis	(J) Diagnosis	Mean Difference (I-J)	SE	Sig.
Body Appearance	AN	EDNOS	2.516	1.748	.151
		BN	-1.043	1.754	.553
	EDNOS	AN	-2.516	1.748	.151
		BN	-3.558*	1.777	.046
	BN	AN	1.043	1.754	.553
		EDNOS	3.559*	1.777	.046
Body Functioning	AN	EDNOS	3.496*	1.618	.032
		BN	1.851	1.624	.256
	EDNOS	AN	-3.496*	1.618	.032
		BN	1.645	1.645	.318
	BN	AN	-1.851	1.624	.256
		EDNOS	1.645	1.645	.318
Identity Integration	AN	EDNOS	1.655	1.692	.329
		BN	2.242	1.698	.188
	EDNOS	AN	-1.655	1.692	.329
		BN	0.587	1.720	.733
	BN	AN	-2.242	1.698	.188
		EDNOS	-0.587	1.720	.733
Def. Self-enhancement	AN	EDNOS	3.441	1.912	.073
		BN	2.589	1.919	.179
	EDNOS	AN	-3.441	1.912	.073
		BN	-0.852	1.944	.662
	BN	AN	-2.589	1.919	.179
		EDNOS	0.852	1.944	.662

Note. * $p < .05$.

Discussion

The purpose of this study was to examine the relationship of self-esteem with the treatment of eating disorders in women using standardized measures of self-esteem and treatment outcome. More specifically, this study investigated whether a comprehensive measure of self-esteem, given to women at the beginning of inpatient treatment for eating disorders, reliably predicts treatment outcome. The present study was important because current empirical evidence suggests that true recovery from eating disorders is not possible without a corresponding improvement in body image and self-esteem (Bruch, 1962; Rosen, 1990; Warah, 1989) yet only ten current studies evaluate this relationship (Baell & Wertheim, 1992; Button & Warren, 2002; Crowther-Rakochoy, 1996; Fairburn et al., 1987; Huon & Brown, 1984; Jacobi, Paul, deZwaan, Nutzinger, & Dahme, 2004; Joiner, Schmidt, & Wonderlich, 1997; Lautenbacher, Kraehe, & Krieg, 1997; McFarlane, McCabe, Jarry, Olmsted, & Polivy, 2001; Troop et al., 2000). Further, only two of these studies (Fairburn et al., 1987; Troop et al., 2000), which were both conducted in Great Britain, measure both pre- and post-treatment levels of self-esteem, and measure only the global self-esteem of a small number of patients diagnosed with Bulimia Nervosa (22 and 51 participants respectively). Thus, the literature does not report whether high levels of self-esteem or its components at onset of treatment are predictive of therapeutic treatment outcome among women diagnosed with AN, BN, and/or EDNOS.

The present study was unique in five respects. First, this study focused on a relatively large sample of women diagnosed with eating disorders ($N = 246$). Second, this study evaluated self-esteem at admission and at the conclusion of inpatient treatment for eating disorders rather than appraising self-esteem solely as a measure of treatment outcome. Third, this study

investigated women diagnosed with more than one type of eating disorder (e.g., Anorexia Nervosa, Bulimia Nervosa, and Eating Disorder Not Otherwise Specified). The fourth unique aspect of this research was the evaluation of eight specific components of self-esteem, as well as global self-esteem. Finally, the fifth unique aspect of this study was ascertaining whether any combination of components of self-esteem at admission correlated with the diagnoses of women receiving inpatient treatment for eating disorders. There are very few studies in current literature which evaluate this diagnostic difference (Griffiths et al., 1999).

Research *Question one* and *Question three* investigated the relationship of Global Self-Esteem or the components of self-esteem at admission with discharge scores on the BSQ, EAT, and OQ-45. All findings from both questions were statistically significant indicating that women who self-report higher self-esteem at admission report less distress relating to body shape concerns, few behaviors and attitudes associated with disordered eating, and less symptom, interpersonal relationship, and social role distress at inpatient discharge. Women who report higher self-esteem at admission significantly self-report positive therapeutic outcome at discharge. While many studies in current literature have found a correlation between high self-esteem discharge scores and therapeutic treatment outcome, the findings in this study suggest that inpatients who *begin* treatment with high self-esteem report greater positive treatment results at discharge.

The results for *Question one* and *Question three* are not unexpected, given current research that positive treatment outcome is nearly always associated with high self-esteem at outcome. Women with higher self-esteem at admission are more likely to experience less body shape concerns, fewer disordered eating behaviors and attitudes, and less symptom and social

role distress at treatment discharge. These results extend data in current literature which only assess self-esteem at discharge. Unfortunately, these results may lead clinicians to pessimistically view future treatment outcome when clients present with low self-esteem at admission.

Another similar finding was found in the results from *Question two*. Women who report high global self-esteem at admission experience greater reductions in body shape concerns, in disordered eating behaviors and attitudes, and in psychological symptoms, interpersonal relationship and social role distress. In other words, women with high overall (global) self-esteem at admission recount the greatest changes from admission to discharge in their BSQ, EAT, and OQ-45 scores. Thus, women who *begin* treatment with high self-esteem report the most positive treatment results at discharge *and* report the most significant reductions in body shape concerns, disordered eating behaviors and attitudes, and in psychological symptoms, interpersonal relationship, and social role distress.

It is interesting that similar findings were also found in *Question four*, which investigated the relationship between components of self-esteem at admission and BSQ, EAT, and OQ-45 change scores. Statistically significant results were found between the OQ-45 change scores and all components of self-esteem indicating that women reporting higher self-esteem, when evaluating a specific area, experience the greatest decrease in the amount of interpersonal relationship, social role, and symptom distress. Also, this study found statistically significant results between decreases in disordered eating attitudes and behaviors (EAT change scores) and the following self-esteem components at admission: Competence, Lovability, Likability, Personal Power, Self-Control, Body Appearance, Body Functioning, and Identity Integration.

Findings were not significant between EAT change scores and admission Moral Self-Approval and Defensive Self-enhancement scores.

The non-significant correlation of admission Moral Self-Approval with change EAT scores suggests that women's self-report of satisfaction with personal moral values and behavior at admission (MOR) do not significantly correlate with a decrease in disordered eating behaviors and attitudes (EAT change scores). A possible explanation for this non-significant correlation may be that women with an eating disorder feel unworthy and unacceptable and have deluded themselves into thinking when they get control over their bodies and eating behaviors they would feel less inadequate (Richards, Hardman, & Berrett, 2005). This explanation appears plausible when we refer to the results from *Question six*, where *improvement* in Moral Self-Approval over treatment (change scores) is significantly associated with a decrease in disordered eating attitudes and behaviors over treatment (EAT change scores). The finding that an increase in feelings of Moral Self-Approval is significantly correlated with a decrease in disordered eating attitudes and behavior is similar to findings from a 2003 study (Smith, Richards, Fischer, & Hardman, 2003, as cited by Richards et al, 2005) which found an increase in spiritual well-being is significantly associated with decreases in disordered eating attitudes.

A non-significant finding in *Question four* was found in the correlation between EAT change and admission Defensive Self-Enhancement scores. This non-significant association suggests there is little association with a woman's defensive or honest evaluation of self-worth at admission with treatment improvement (decreases) in disordered eating attitudes and behaviors. This finding implies that therapeutic eating disorder treatment outcome is possible for women who acknowledge common human weaknesses and candidly evaluate their self-worth as well as

for women who deny universal human weaknesses and present with an overly inflated view of self-worth.

The finding in *Question four* that most components of self-esteem at admission are not significantly correlated with changes in body shape concerns from admission to treatment discontinuance is interesting. For some clinicians it may be reassuring to believe that all clients, whether they self-report high or low self-esteem (components) at admission, have the same chance to become much less concerned with their body shape. An inpatient with initially high self-esteem is no more likely to decrease her concern about “feeling fat” than is another inpatient with initially low self-esteem. This finding may allow clinicians to feel more positive about therapeutic treatment outcome for those women who present with lower self-esteem at admission. However, this study found that an increase in the components of self-esteem over treatment (*Question six*) is significantly correlated with a decrease in body shape concerns over treatment (BSQ change scores). Thus, as women become less concerned with their body shape during eating disorder treatment they also demonstrate an increase in the specific areas of self-esteem; however, the self-report level of (components) self-esteem at admission is not associated with a decrease in body shape concerns over treatment (change scores), with the exception of Body Appearance self-esteem.

The results from *Question two* and *Question four* are more optimistic than are the results from *Question one* and *Question three* because the former results suggest that the greatest changes or decreases in eating disorder symptomatology will be seen in women who present with lower self-esteem at admission. This offers clinicians hope that no matter the self-reported level of self-esteem at admission, women *can* experience improvement in ED symptomatology.

Current research in eating disorders greatly emphasizes the association at treatment discharge of high self-esteem and therapeutic outcome, yet this is the first study which suggests that women who experience the most change in ED symptoms are the women who present at admission with low self-esteem.

Research *Question five* and *Question six* investigated the relationship of changes in global self-esteem and changes in the components of self-esteem with changes in BSQ, EAT, and OQ-45.2 in women who receive treatment for eating disorders. All findings from both questions were statistically significant suggesting that as patients improve in self-esteem during treatment (both global and components) they tend to self-report less distress relating to body shape concerns, less behaviors and attitudes associated with disordered eating, and less symptom, interpersonal relationship, and social role distress.

The results from *Questions five* and *Question six* are the most optimistic results of this study. These results suggest that women reporting the greatest change and/or improvement in self-esteem also report the greatest change and/or improvement in ED symptomatology. This is very positive information for clinicians. These results extend the voluminous data suggesting that high self-esteem is associated with reduction in eating disorder symptoms by suggesting that women experiencing the greatest decrease in disordered eating behaviors, body shape concerns, and social role distress will also experience the greatest change or increase in self-esteem. Therefore, women who report low self-esteem at admission are just as likely to experience significant reduction in eating disordered symptomatology if their self-esteem significantly changes during treatment.

This is the first study which suggests there is an association between improvements in self-esteem with improvements (or decreases) in eating disorder symptomatology from admission to discharge. This is also the first study to measure improvements in self-esteem associated with improvements in eating disorder symptomatology for a large population of women experiencing anorexia, bulimia, and EDNOS.

The findings from this study suggest that improvements in self-esteem during treatment (Questions Five and Six) as well as high self-esteem at admission (*Question one* and *Question three*) are associated with positive treatment outcome. These findings support many studies which suggest that true recovery from eating disorders is not possible without a corresponding improvement in self-esteem (Baell & Wertheim, 1992; Button & Warren, 2002; Bruch, 1962; Crowther-Rakochy, 1996; Fairburn et al., 1987; Huon & Brown, 1984; Jacobi, Paul, deZwaan, Nutzinger, & Dahme, 2004; Joiner, Schmidt, & Wonderlich, 1997; Lautenbacher, Kraehe, & Krieg, 1997; McFarlane, McCabe, Jarry, Olmsted, & Polivy, 2001; Rosen, 1990; Troop et al., 2000; Warah, 1989).

The finding from *Question seven* that patient self-report scores on the MSEI Self-Control (SFC) scale at admission are significantly different depending on the woman's diagnosis agrees with current literature and DSM-IV TR criteria for eating disorders. This study found the mean SFC scores at 25.7 for women diagnosed with BN, 32.8 for women diagnosed with EDNOS, and 38.0 for women diagnosed with AN. Higher scores on SFC suggest self-discipline, control of emotions, restraint in eating and drinking, and perseverance, while lower scores suggest the opposite -- a lack of self-discipline and self-control. Women diagnosed with AN have been characterized as having "a strong need to control one's environment . . . perfectionism, and

overly restrained initiative and emotional expression” (American Psychiatric Association, 2000a, p. 585) which is correlated with this study’s findings of significantly higher SFC scores.

Generally considered to be on the opposite end of the eating disorder spectrum, women diagnosed with BN have been described as having “a sense of lack of control . . . [or] of impaired control” (American Psychiatric Association, 2000a, p. 590), which is also consistent with the lower mean SFC scores for women diagnosed with bulimia. Women diagnosed with EDNOS may exhibit most of the criteria for Anorexia Nervosa or Bulimia Nervosa or Binge-eating Disorder so this study’s finding that women diagnosed with EDNOS obtain mean SFC scores falling between those of women diagnosed with AN or BN concurs with current literature. Although women diagnosed with AN are highly successful in restricting their weight gain, it is interesting that they do not find themselves significantly more competent, loveable, or likable than women diagnosed with BN, who find themselves unable to control their binges and purges. Again, this finding concurs with the literature which suggests that women diagnosed with AN demonstrate a “pervasive dissatisfaction with [their] body” and with themselves (Halmi, 2003, p. 24).

The second finding from *Question seven*, patient self-report scores on the MSEI Moral Self-Approval (MOR) scale at admission are significantly different depending on diagnosis, also corroborates current research. This study found the mean MOR scores at 39.86 for women diagnosed with EDNOS, 40.35 for women diagnosed with BN, and 45.81 for women diagnosed with AN. Higher scores on MOR suggest an individual who is pleased with personal moral values and behavior, has clearly defined moral standards, acts in a way that is consistent with moral values, and sets a positive moral example for others. Lower MOR scores suggest the

opposite – guilty and displeased with moral values or behavior, unclear about moral beliefs and standards, and often acts in an unethical or immoral manner.

Women diagnosed with anorexia present with the highest mean scores on the MOR scale, which relates to Mogul’s 1980 study suggesting that women diagnosed with AN “have an exaggerated wish for aesthetic and moral superiority” (cited in Richards et al., 2005, p. 6), and Banks’ 1997 report that current autobiographies of women experiencing anorexia attribute their food rejection to religious, moral, and ethical beliefs (cited in Richards et al, 2005, p. 8). Further, research by Joughin, Crisp, Halek, and Humphrey (1992) suggests that women diagnosed with anorexia who lost the most weight were the most religious. Conversely, the same study also suggests a negative correlation between bulimic symptomatology and religious beliefs: less religiosity was associated with greater symptoms of bulimia. The authors hypothesize that

bulimic tendency and religious belief are affected by some common factor, or that a relaxation of religious belief allows indulgence, but it seems most likely that profound religious belief . . . cannot be sustained when the individual repeatedly gives in to the ‘sin’ of gluttony. (p. 404)

The finding of no significant differences in any other area of self-esteem when self-report scores on the MSEI are reviewed by patient diagnosis is in accord with the DSM-IV TR which characterizes the overall self-esteem of women with eating disorders as “highly dependent [or excessively influenced] by their body shape and weight” (American Psychiatric Association, 2000a, p. 585, 589). The findings from *Question seven* suggest that women who present for eating disorder treatment are similar in their self-reported levels of competence, lovability,

likability, personal power, body appearance, and body functioning regardless of their diagnosis (AN, BN, or EDNOS). However, women diagnosed with anorexia nervosa present with significantly higher self-reported levels of SFC and MOR. These results may benefit clinicians in diagnosis and/or in treatment planning.

Conclusion

The purpose of this study was to examine the relationship of self-esteem with the treatment of eating disorders in women undergoing inpatient treatment using standardized measures of self-esteem and treatment outcome. Results from this large study confirm findings from smaller studies which suggest that true recovery from eating disorders is associated with a corresponding improvement in self-esteem. However, this study further suggests that women with high self-esteem at admission to inpatient treatment for eating disorders will also demonstrate therapeutic treatment results, suggesting an improvement in self-esteem may not be necessary for a positive outcome; perhaps solely high self-esteem at treatment conclusion. Conversely, this study suggests the greatest changes or decreases in eating disorder symptomatology will be seen in women who present with lower self-esteem at admission. Another unique finding is that women reporting the greatest change/improvement in self-esteem also report the greatest change/improvement in ED symptomatology. These results suggest that women who report lower self-esteem at admission are just as likely to experience significant reductions in eating disordered symptomatology *if* their self-esteem significantly changes during treatment. This offers clinicians hope that no matter the self-reported level of self-esteem at admission, women can experience improvement in ED symptomatology. Finally, the results from this study suggest that clinicians will find women diagnosed with anorexia nervosa

reporting significantly higher levels of Moral Self-Approval (MOR) and Self-Control (SFC) when compared to women diagnosed with bulimia and eating disorders not otherwise specified.

The findings of this study suggest therapeutic results in inpatient eating disorder programs are more likely when treatment addresses issues of low self-esteem. Women who begin treatment with higher self-esteem or make improvements in their self-esteem are significantly more likely to experience positive results from eating disorder treatment.

Study Limitations

As this study is largely correlational, no causal relationships between self-esteem and eating disorder symptomatology can be suggested. The results of this study only suggest that high self-esteem at admission and discharge are positively associated with therapeutic treatment outcome. However, these correlational findings add clarity to the current literature when many questions about the nature of the relationship between eating disorders and self-esteem remain unanswered.

As most of the women in this study were Caucasian, generalizability of these results with other ethnic populations is limited. Further, this study was completed with an inpatient population which may be different from women seeking out patient treatment and from those women in the general population. Differences may include greater (or less) family support as well as socioeconomic status due to the greater costs involved in inpatient treatment. An additional limitation is the question of whether this study measured the length of treatment or willingness to engage in treatment rather than the effects of self-esteem. Finally, as many participants in this study self-reported high religiosity, these results may have been skewed by

devoutness. Therefore, results from this study may not safely be generalized to other populations.

Lastly, the data regarding patients' self-esteem, body shape concerns, eating attitudes and behaviors, and symptom distress were collected by using the patients' self-reported information. Self-reports may only be partially accurate and may be influenced by the patient's wish to appear more or less affected by the eating disorder. Further, self-esteem cannot be fully measured by observable and quantifiable instruments and cannot be independently verified for accuracy. Perhaps future research in self-esteem and eating disorders could use a baseline and multiple repeated measurements of these constructs, thereby providing a mean score which may be less susceptible to patient efforts to present in a more positive or negative light.

Suggestions for Further Research

Additional clarity on the relationship of eating disorders and self-esteem may be encouraged by research investigating the following:

1. Measurement of self-esteem, body shape concerns, eating attitudes and behaviors, and symptom distress completed at baseline and multiple administrations in order to obtain mean scores of symptomatology and perhaps decrease patient efforts to present in a more positive or negative light.
2. Generalizability of this study may be increased by utilizing a more diverse ethnic population, including clients from both inpatient and outpatient programs, including adolescents, and including men as well as women.
3. Experimental studies, although difficult to conduct, are needed to determine if low self-esteem causes or contributes to eating disorders or if eating disorders cause or contribute to

low self-esteem. If low self-esteem *causes* eating disorders, it would be interesting to study which, if any, mediating factors may protect individuals from demonstrating the characteristics of an eating disorder.

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APPENDIX A

Characteristics of High and Low Scorers on The Multidimensional Self-Esteem Inventory (MSEI)

Scale	High Scores	Low Scores
A. Global Self-esteem (GSE)		
	Pleased with self, feels significant as a person, self-confident, pleased with past, expects future successes.	Self-critical, dissatisfied with self, feels insignificant as a person, self-doubting, displeased with past, expects future failures unless major life changes are made.
B. Components of Self-esteem		
1. Competence (CMP)	Competent, feels capable of mastering new tasks, learns quickly and does well at most things, feels talented, feels effective and capable.	Incompetent, feels unable to master new tasks, learns slowly and often fails in difficult endeavors, ineffective, feels lacking in skills or talents.
2. Lovability (LVE)	Worthy of love, feels cared for by loved ones, accepted as a person, can count on support from loved ones, able to express and receive feelings of love, involved in satisfying intimate relationship.	Unlovable, doubts that loved ones care, fears rejection because of certain aspects of personality, unsure whether loved ones can be counted on for support, has difficulty expressing or receiving feelings of love, doubts about finding or maintaining an intimate relationship.
3. Likability (LKE)	Likeable, popular, accepted by peers and included in their plans, enjoyable companion, gets along well with others, popular in dating situations, expects to be liked, makes a good first impression.	Unlikable, unpopular, not accepted by peers and often excluded from peers' plans, has difficulty enjoying being with and getting along with others, unsuccessful in dating situations, fears rejection, and often makes a poor first impression.
4. Personal Power (PWR)	Powerful, successfully seeks positions of leadership, good at influencing others' opinions and behaviors, assertive, has a strong impact on others.	Powerless, poor leader and avoids leadership positions, a follower who is strongly influenced by others' opinions and behaviors, unassertive, rarely has a strong impact on others.
5. Self-control (SFC)	Self-disciplined, persevering, good at setting and achieving goals, not easily distracted, in control of emotions, exercises restraint in eating, drinking, and/or use of drugs.	Lacks self-discipline, often fails to complete tasks, difficulty with setting and achieving goals, easily distracted, not in control of emotions, lacks self-control in eating, drinking, or use of drugs.

Appendix A (continued)

Characteristics of High and Low Scorers on The Multidimensional Self-Esteem Inventory (MSEI)

Scale	High Scores	Low Scores
<p>6. Moral Self-approval (MOR) Pleased with moral values and behavior, has clearly defined moral standards and acts in a way that is consistent with moral values, sets a positive moral example for others.</p>		<p>Guilty and displeased with moral values or behavior, unclear about moral beliefs and standards, often acts in an unethical or immoral manner, ashamed of setting a poor moral example for others.</p>
<p>7. Body Appearance (BAP) Physically attractive, pleased with appearance, feels that others are attracted because of appearance, feels sexually attractive, takes care to enhance physical appearance.</p>		<p>Physically unattractive, displeased with appearance, feels that others are repelled by their looks, doubts sexual attractiveness, indifferent or unaware of ways to improve physical appearance.</p>
<p>8. Body Functioning (BFN) Well-coordinated, agile, in good physical condition, comfortable with body, enjoys physical activities such as dancing or sports, feels healthy and feels a sense of vitality and vigor in body functioning.</p>		<p>Awkward, clumsy, uncoordinated, in poor physical condition, uncomfortable with body, dislikes engaging in physical activities, feels unhealthy and that body is dull, lifeless, and sluggish.</p>
	C. Identity Integration (IDN)	
<p>Clear sense of identity, knows who he/she is, knows what he/she wants out of life, well defined long-term goals, inner sense of cohesion and integration of different aspects of self-concept.</p>		<p>Confused, lacking a sense of identity and purpose, unsure of what he/she wants out of life, no long-term goals, much inner conflict among different aspects of self-concept.</p>
	D. Defensive Self-enhancement (DEF)	
<p>Defensive, overly inflated view of self-worth, claims to possess highly unlikely positive qualities, denies ubiquitous human weaknesses.</p>		<p>Open, nondefensive evaluation of self-worth, makes no claims of rare virtues, and acknowledges common human weaknesses.</p>

(O'Brien & Epstein, 1988, p. 6).