

The Pennsylvania State University

The Graduate School

College of Education

MULTIDIMENSIONAL PERFECTIONISM AND RELATIONAL HEALTH IN CLINICAL  
AND SUBCLINICAL EATING DISTURBANCES

A Dissertation in

Counseling Psychology

by

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Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

August 2008

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## ABSTRACT

This study investigated multidimensional perfectionism, depression, and relational health and quality in women with clinical, subclinical, and without eating concerns. Perfectionism, affective instability, and interpersonal difficulties are identified as core features, or “maintaining mechanisms,” of the most chronic and treatment-resistant eating disorders (Fairburn et al., 2003). Goals of the study were to better understand if and how these variables differ across severity of eating disorder symptoms. It was predicted that the clinical group would have the highest perfectionism and depression scores and the lowest relational health scores, that the asymptomatic group would have the lowest perfectionism and depression scores and highest relational health scores, and that the subclinical group scores would fall between these groups.

Two hundred and eight female college students and 38 women in treatment at an eating disorders clinic completed the Almost Perfect Scale-Revised, the Perfectionistic Self-Presentation Scale, the Quality of Relationships Inventory, the Relational Health Indices, and the Center for Epidemiologic Studies Depression Scale. Two MANOVA were performed; one on the perfectionism and depression variables, and the second on the relational variables. Significant effects were found for both sets of variables, but only two variables, APS-R Discrepancy and Depression differentiated all 3 groups (clinical eating disorders, subclinical eating concerns, and asymptomatic) in the predicted directions. The strong link found between depression and APS-R Discrepancy in those with eating disturbances suggests that depression is an affective correlate to the cognitive processes of maladaptive perfectionism. Higher levels of perfectionistic self-presentation were linked with clinical eating disorders, but this interpersonally-directed dimension of perfectionism did not differentiate the subclinical and asymptomatic groups. Findings regarding relational health were significant, however, effect sizes were small. They suggest that the most severe eating disorder symptoms may be associated with less relational support, depth, authenticity and engagement.

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## Acknowledgments

The profound and enduring support of Bob Slaney and Jill Morgan were the foundation of my extended effort and my completion. Thanks to my committee members Joyce Illfelder-Kaye, Peggy Lorah, and Ed Yoder for both helping me along the way and for making our meetings a delightful experience. For help and consultation, thank you to Ali Kimyaghalam, Karen Grace-Martin, Kenneth Wang, Isabel Rachlin, Stacy Snyder, and Joan Lovejoy. Thanks to the Penn State Alumni Society for their grant support in helping to defray some of the dissertation costs.

My deepest thanks and lifelong friendship to: Nancy Marks, Liz Solar, Loreen Hurley, Stephanie Nyzio, Jenny Chang, Chloe House, Chad Johnson, Vince Kiefner, Norma Ortega, Carmenlita Sayles, Suki Montgomery, Matt Boone, and Ken Cohen. Love and boundless gratitude to my proud, patient, supportive family—Barbara Baum, Nancy Brown, Ali Campbell, Becca Campbell, Bob Patterson, Tim Patterson, Robin Puckett, Jackie Rabinovitz, and Marcia Venard. Thanks and love cannot speak to the ocean of support, patience, home cooking, redecorating, cheerleading, heavy lifting, and bear hugs, given to me by my partner, Porter Smith, but they are all I have.

This effort is dedicated to the late Aaron and the very present Jackie Rabinovitz, beings of endless faith and devotion. Without you both, nothing is possible.



## CHAPTER 1

### Introduction

The incidence of clinical eating disorders is relatively small, yet they are one of the most life-threatening of all psychological syndromes. Lifetime prevalence rates of anorexia nervosa and bulimia nervosa range from .3% to 4.2 % (American Psychiatric Association [APA] Work Group on Eating Disorders, 2006). Mortality rates among women with eating disorders, and particularly with anorexia, are higher than for any other psychological disorder. The suicide rate for women with anorexia is reported to be twelve times that of women of matched age in the larger population (APA Work Group on Eating Disorders, 2006). The prevalence of subclinical eating concerns is potentially more far-reaching and while more difficult to estimate, it is thought to affect anywhere from 20% to 60% of college aged women (Maine, 2001; Mintz & Betz, 1988). Over 50% of female college students report a history of chronic dieting, and 40% use diet aids such as drinks or pills to aid in weight loss efforts suggesting that preoccupation with body image and eating is widespread (American Psychiatric Association Work Group on Eating Disorders, 2006). These subclinical behaviors are risk factors for the development of full syndrome eating disorders (Lowe et al., 1996).

There has been a great deal of attention to developing prevention and treatment for eating disorders over the past thirty years, yet outcome research suggests that much more needs to be done. Treatment for eating disorders may leave anywhere from 10% to 30% of those treated for anorexia and bulimia with poor outcome, and another 30% with fair or intermediate outcome (Agras et al., 2003; APA Work Group on Eating Disorders, 2006; Fairburn, Cooper, & Shafran, 2003; Zerbe, 1993). These statistics indicate that up to two thirds of people with eating disorders do not achieve full recovery, and an estimated one third live lives that could involve multiple

hospitalizations, limited social and work lives, and marginalization due to the treatment-refractory nature of their disorders. The tremendous human cost for this under-treated group belies the importance of identifying the factors in both personality and environment that may hinder recovery.

Theories of eating disorders from the psychodynamic and the cognitive behavioral traditions point in similar directions. Psychodynamic theorists have conceptualized eating disorders as related, in part, to a disruption of self-concept often referred to as the false self (Bruch, 1973; Goodsitt, 1997, Sands, 1999; Strober, 1991). The false self construct involves having an idealized public self that results from alienation from or disavowal of aspects of the true self that are considered unacceptable (such as rage, vulnerability, trauma). The public false self then cultivates idealized relationships with others which may ultimately feel lonely and disappointing. In this conceptualization, distress is linked to the effort to project a more perfect self, alienation from one's true self, and alienation from genuine connection with others.

From the cognitive behavioral perspective, Fairburn, Cooper, and Shafran (2003) identified four "maintaining mechanisms" that they believe serve as underpinnings of the most treatment-resistant eating disorders. These are 1) "clinical perfectionism" which is the holding of excessively high standards for oneself, 2) interpersonal difficulties, such as conflictual family dynamics, or a pattern of failed relationships, 3) "mood intolerance," or difficulty in managing and regulating mood swings, and, 4) pervasive low self-esteem. These maintaining mechanisms are conceptually related to the construct of the false self, particularly the mechanisms of "clinical perfectionism" (in which the authors are emphasizing that there is a pathological and distressing aspect to the perfectionism) and interpersonal difficulties. Difficulty in tolerating negative affect

and the experience of low self-esteem appear to be internal states that may be related to maladaptive perfectionism and interpersonal problems.

There is already a great deal of evidence that perfectionism is correlated with eating disorders (Ashby, Kottman, & Schoen, 1998; Joiner, Heatherton, Rudd, & Schmidt, 1997; Minarik & Ahrens, 1996; Srinivasagam et al., 1995; Sutander-Pinnock, Woodside, Carter, Olmsted, and Kaplan, 2003). However, the measures of perfectionism vary widely and measure everything from a fairly simple, unidimensional construct (EDI; Garner, Olmstead, & Polivy, 1983a, 1983b), to multidimensional constructs measuring, among other things, expectations from parents (Frost et al., 1990), perfectionism directed toward others (Hewitt & Flett, 1990, 1991), and, both adaptive and maladaptive intrapsychic dimensions of perfectionism (APS-R; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996). It is important to isolate the way in which perfectionism is problematic for this particular population. The APS-R measures a positive dimension represented by holding high standards for one self, and a negative dimension represented by a perceived discrepancy between exceedingly high standards and performance. This perceived discrepancy seems to conceptually reflect both aspects of the false self and of eating disorder symptomatology in which the individual's desired body image is never attained.

There is also a significant body of research related to eating disorders and interpersonal difficulties. Various studies implicate dysfunctional attachment styles (Broberg, Hjalmer, & Nevenon 2001; Cole-Detke & Kobak, 1996), perceptions of poor social support (Grissett & Norvell, 1992; Rorty, Yager, Buckwalther, & Rossotto, 1999; Wonderlich et al., 2001), and diminished relationship quality (Grissett & Norvell, 1992, Striegel-Moore et al., 1986) as co-occurrences with eating disorders. In many of these investigations, social support is measured in a generalized way (the number of people in a social support network, or the individual's

“perceived social support”) that asks the individual to assess his or her overall interpersonal network or support. This does not address the actual quality of specific relationships. Given the relational bind and potential for idealization presented by the false self construct, it may be difficult for those with eating disorders to provide an accurate picture of their overall network. A theory of psychological development that emphasizes relational health contributes another dimension.

The Relational/Cultural theory of psychological development (Jordan, 2001) is an expansion of theoretical writings from the Stone Center at Wellesley College, a group of feminist developmental theorists. In particular it is a reworking of “self-in-relation theory” (Surrey, 1991). Relational/Cultural theory emphasizes affirming and growth-promoting interpersonal relationships as central to healthy human development. Essential qualities of “relational health” (Liang et al., 2002) are engagement, authenticity, empowerment/zest (the energizing experience of genuine connection), mutual empathy, and diversity (ability to integrate differences). The focus on the quality of specific relationships provided by Relational/Cultural theory encourages a more detailed account of the important relationships that exist in an individual’s life. It also invites an understanding of the depth of these relationships and of what “support” actually means in the context of a particular relationship. This information may be helpful in identifying the presence of relationships that suggest a social network, but that, under closer examination do not represent a sense of being known or understood for the eating disordered individual. This information does not extend only to social network but may be extrapolated to therapeutic relationships (with both therapists and in therapy or self-help groups). The APA Work Group on Eating Disorders (2006) cites a review of 23 studies of individuals recovered from eating disorders conducted by Bell (2003) in which participants were asked to cite influences or

treatments they found most helpful. Empathic, understanding, and supportive relationships were identified as “critically important.”

Data from the Treatment of Depression Collaborative Research Project, an NIMH sponsored multisite project studying outcome of short-term treatment of depression, found a link between maladaptive perfectionism and poor treatment outcome (Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998). Further analyses of this data revealed that the effect of perfectionism on treatment outcome was accounted for by two interpersonal factors—poor therapeutic alliance and a lack of satisfying relationships outside of therapy. These findings have not been replicated in treatment of eating disorders but the high comorbidity of depression with eating disorders, coupled with the association of eating disorder symptomatology with interpersonal difficulties and perfectionism, suggests that these findings are likely to be relevant to this population.

An important but less examined population is those who are diagnosed as “eating disorder not otherwise specified,” and those diagnosed as having subclinical eating disorders, or disorders that do not meet criteria for a DSM-IV diagnosis. Although the DSM-IVR diagnostic classification of “Eating Disorder Not Otherwise Specified” (ED NOS) makes up about 50% of the diagnoses assigned to patients in outpatient settings (APA Work Group on Eating Disorders), the range of criteria covered makes it difficult to assess prevalence rates and the effects of treatment on this population. This is compounded by variability in the research of what is considered ED NOS and what is considered a sub-clinical eating disorder (Mintz, O'Halloran, Mulholland, & Schneider, 1997). These two categories include many more people than those with anorexia and bulimia combined, yet the difficulty in defining them has contributed to these groups being understudied. This study included the ED NOS group as part of the group considered to have clinical eating disorders. Diagnostic criteria were assessed using the

Questionnaire for Eating Disorders Diagnoses or the Q-EDD (Mintz et al., 1997). This measure also detects the group that indicates some preoccupation with body image and eating and some disordered eating patterns that do not meet criteria for ED NOS, bulimia, or anorexia, and this group was termed the subclinical group. Additionally, a group of individuals indicating no eating disturbances were surveyed. The following research questions were studied.

### *Research Questions*

The overall research question for this study was: How do presence and severity of eating concerns relate to adaptive and maladaptive perfectionism, and to having authentic and supportive interpersonal relationships? More specific questions were:

- 1) Perfectionism and Eating Disorders: Although there is a solid amount of research pointing to the relationship of perfectionism to eating disorders, definitions and conceptualizations of perfectionism have varied significantly. Assessment of multidimensional perfectionism across three groups (those with clinical eating disorders, subclinical eating disorders, and without eating disorders) was designed to contribute to a more contextualized and detailed understanding of the relationship between perfectionism and eating disorders. The research questions regarding perfectionism were: How do adaptive and maladaptive dimensions of perfectionism vary across the 3 eating disorder status groups? How does perfectionistic self-presentation vary across the 3 groups?
- 2) Relational Health and Quality and Eating Disorders: There is empirical evidence that eating disorders are associated with deficits in social support in general. The research question regarding relational health and quality was: What differences exist when the

quality and health of specific relationships (peer, community, mentor) are measured in the 3 eating disorder status groups?

- 3) Depression and Eating Disorders: The research questions regarding depression were: How does depression vary across the three eating disorder status groups (asymptomatic, subclinical, and clinical)? Does depression correlate with the perfectionism variables or the relational health variables in a significant way?
- 4) The Eating Disorder Continuum: The research questions regarding the continuum of eating disorders were: Is the subclinical eating disorder group characterized by a pattern of significant differences in relational health, perfectionism, perfectionistic self-presentation, and depression from both that of the clinical eating disorder group, and the non-eating disorder group?

#### *Significance of the study*

The significance of this study is that it contributes to the understanding of intrapersonal and interpersonal correlates of eating disorders and subclinical eating disturbances. This understanding allows for better identification of vulnerability to eating disorders and offers the potential to design more specialized and effective treatments. More specifically, this study targeted 2 areas, perfectionism and interpersonal relationships, that are considered primary mechanisms that maintain chronic eating disorders, and that have been identified as barriers to good treatment outcome in depression, a commonly comorbid disorder.

## CHAPTER TWO

### Literature Review

There is an extensive literature on the psychological study of eating disorders. Since early observations of anorexia nervosa by physicians Sir William Gull in 1868, and Charles Laseque in 1873 (Brumberg, 2000), eating disorders have been a source of fascination, first for the medical profession, then the psychological profession, and increasingly for the general public. Sociocultural theorists suggest that the dominant culture in the United States has become increasingly preoccupied with diet and weight over the past four decades and that this preoccupation has been expressed in popular media, advertising, and conceptions of beauty (Striegel-Moore, Silberstein & Rodin, 1986; Surrey, 1991). An estimated 40% to 60% of high school females are on diets (Maine, 2001). One study found that nearly 80% of 18 year old females surveyed were unhappy with their bodies, and 80% of 10 year old girls feared being fat (Maine, 2001). A 1988 study found that nearly two thirds of a sample of college women indicated some level of sub-clinical eating or body image disturbance (Mintz and Betz, 1988).

Eating disorders are far more likely to strike females. The male-female eating disorder prevalence ratio is estimated to be between 1:6 and 1:10 (APA Work Group on Eating Disorders, 2006). Estimated lifetime prevalence rates of eating disorders range from .3 to 3.7 percent of the female U.S. population for anorexia, and 1.0 to 4.2 percent of the same population for bulimia (APA Work Group on Eating Disorders, 2006). Binge eating disorder is estimated at 2 to 5 percent of the US population (Spitzer et al., 1993). In the past, eating disorders have been considered disorders of White women from high socio-economic status backgrounds, however, more recent data indicate that Native American and Latina female adolescents are as likely to develop these disturbances (Shisslak et al., 2006). African-American and Asian-American



women appear less likely than these other groups to develop eating concerns, although studies differ widely on these conclusions (Crago, Shisslak, & Estes, 1996; Striegel-Moore et al., 2003). Gilbert (2003) points out that there are several factors, however, that may skew the data. Women of color are underrepresented in clinical samples because eating disorders are underdiagnosed, because they may be underserved by the mental health care system, or because they may not seek treatment as readily due to lack of access, familiarity, or comfort. Gilbert suggests that eating disorders may develop differently in women of color than in Caucasian women because women of color may be responding not only to pressure from the media and dominant culture to be thin, but also to racism. Additionally, some measures of eating disorder symptomatology, such as body mass index, may not translate across cultures (APA Work Group on Eating Disorders, 2006) suggesting that further research is required to detect and treat eating disorders across culturally different groups.

An analysis of several outcome studies of those treated for anorexia indicates that only 44% had what was considered “good outcome,” which included weight restoration to at least 85% of expected weight and regular menstruation (APA Work Group on Eating Disorders, 2006). Twenty-eight percent had intermediate outcome, and 24% had poor outcome. Nearly 5% of patients died. Treatment success rates for women with bulimia nervosa appear to be significantly better, but still leave approximately one quarter to one third of those treated with intermediate to poor outcome (APA Work Group on Eating Disorders, 2006). Keel, Mitchell, Miller, Davis, and Crow (1999) conducted a long-term follow-up study of women treated for bulimia (mean 11.5 years to follow-up) and found that nearly 30% continued to engage in bingeing and purging although frequency had decreased for many.

There is also a significant increase in risk of suicide among women with eating disorders (Milos, Spindler, Hepp, & Schnyder, 2004; Pompili, Mancinelli, Girardi, Ruberto, & Tatarell, 2004) and, in fact, suicide is the leading cause of death among individuals with anorexia. In a study of 326 patients diagnosed with anorexia nervosa over a 20 year period, Birmingham, Su, Hlynsky, Goldner, & Gao, (2005) found a standardized mortality ratio of 10.5 per cent, which is higher than other psychiatric disorders.

The reality of these risks and human costs underlies the urgency of understanding the features of these disorders that may serve as barriers to effective treatment. The literature on the etiology, conceptualization, and central theoretical models of eating disorders will be reviewed. The remainder of this review will focus on the specific variables being considered in this study. These variables are the quality of specific relationships, multidimensional perfectionism, and affective disturbance as an indicator of distress. The study research hypotheses will also be presented.

### *Etiology of Eating Disorders*

Theories of the etiology of eating disorders abound. Most researchers concur that the etiology of eating disorders is “multi-determined” (Agras et al., 2004; Brumberg, 1988; Ferguson & Pigott, 2000; Striegel-Moore & Cachelin, 2001; Vitousek & Manke, 1994; Wonderlich, Mitchell, Peterson, & Crow, 2001). They are generally believed to be caused by a combination of factors that includes biological vulnerability, psychological disposition, developmental/ interpersonal factors, and socio-cultural influences. Most models of eating disorders include a combination of etiological factors, and multidisciplinary treatment is the accepted “best practice” for eating disorders (APA Work Group on Eating Disorders, 2006). Each of these etiological

factors will be considered followed by a review of the most influential theoretical models of eating disorders.

Psychiatry and neuropsychology are making great strides in identifying biological and genetic factors that may contribute to eating disorders. Possible neurotransmitter and neuroendocrine imbalances are being investigated and the search for a genetic link is advancing (Agras et al., 2004; Ferguson & Pigott, 2000; Wonderlich et al., 2005). Ferguson and Pigott (2000) provide a review of the neurobiology and pharmacotherapy of anorexia and bulimia. They note that it is not clear whether the differences found to be associated with eating disorders are causal or correlational. Monoamines, neurotransmitters whose functions include appetite-related behaviors, are hypothesized to be disturbed in bulimia. The proven efficacy of Selective Serotonin Reuptake Inhibitors (SSRI's) in the treatment of bulimia supports this hypothesis. Serotonin is found to be at low levels during active bulimia and at high levels during recovery phases, indicating that the serotonin system is unstable. People with anorexia were found to have consistently elevated serotonin activity during both active and recovery phases of the disorder. SSRI's have little to no effect with anorexia nervosa. Neuropeptides, which function as neurotransmitters in the central nervous system, are also found to have abnormal activity in people with eating disorders. In particular, neuropeptides that are related to feeding functions are implicated. Again, there is no evidence to conclude that these abnormalities are "trait" or "state" related.

Striegel-Moore and Cachelin (2001) review family and twin studies for heritability of eating disorders. Several family studies have found that first degree relatives of individuals with anorexia or bulimia are significantly more likely to have eating disorders than relatives of matched controls. Studies of twins have had mixed results. One study found 22% concordance

for anorexia in dizygotic twins and only 10 percent concordance in monozygotic twins suggesting that the genetic link is not clear (Walters & Kendler, 1995 as cited in Striegel-Moore & Cachelin, 2001). There is empirical evidence that other factors such as gestational length may be at play as much as genetic factors (Cnattingius, Hultman, Dahl, & Sparen, 1999). Evidence for a genetic contribution in bulimia is somewhat stronger with multiple analyses of data from the Virginia Twins Registry showing varying but consistent levels of genetic contributions. Striegel-Moore and Cachelin (2001) point out that there are methodological controversies in this research including low power due to sample size, and findings that family-environment models have nearly as strong a fit as genetic models in some of the analyses.

The role of psychological disposition or personality in the etiology of eating disorders has also been studied extensively. In a meta-analysis of over a decade of literature on personality and eating disorders, Cassin and von Ranson (2005), report that people with anorexia and bulimia generally share several characteristics. These characteristics include perfectionism, obsessive-compulsive tendencies, harm avoidance, low self-directedness, low cooperativeness, and traits of avoidant personality disorder. Perfectionism is one of the most consistently identified personality traits associated with eating disorders (Fairburn, Cooper, & Shafran, 2003; Goldner, Cockell, & Srikameswaran, 2002; Vitousek & Manke, 1994). Hilde Bruch's (1978) astute clinical commentary on her work with clients with eating disorders describes a persistent presentation of the perfect child/adolescent, who is intently focused on pleasing her caregivers. Empirical research has also shown robust support for the relationship of perfectionism to both anorexia (Caspar, 1990; Franco-Paredes, Mancilla-Diaz, Vasquez-Arevalo, Lopez-Aguilar, & Alvarez-Rayon, 2005; Strober, 1980) and bulimia (Goldner et al., 2002; Joiner, Heatherton, & Keel, 1997). Trait perfectionism is found to persist into recovery in individuals with anorexia

and bulimia (Stein et al., 2002; Vitousek & Manke, 1994). These findings raise the question of whether perfectionism is a personality marker that co-occurs with eating disorders and remains past recovery, or whether perfectionism is a treatment-resistant component of the disorders. Personality and behavioral constructs related to perfectionism have also been researched and found to be consistently related to eating disorders. These include perfectionistic self-presentation, a behavioral and interpersonal application of perfectionism in which the individual projects a perfect front to others (Hewitt, Flett, & Ediger, 1995), and “feeling like a fraud” or perceived fraudulence in which the individual experiences herself as failing to meet her perfectionistic standards and believes that others do not know her true, and by her estimation less competent, self (Striegel-Moore et al., 1993).

In addition to the biological and dispositional factors that contribute to eating disorders, it is widely believed that aspects of the individual’s interpersonal environment contribute to the etiology of eating disorders (Striegel-Moore & Cachelin, 2001; Thompson & Wonderlich, 2004; Wonderlich, Mitchell, Peterson, & Crow, 2001). Family-related issues such as non-supportive parenting, physical and sexual abuse, the incidence of eating disorders and mental illness among other family members, and high parental expectations are considered likely to be relevant. Other interpersonal concerns such as lack of close friendships, frequent moves, and the experience of being bullied are implicated as well. Striegel-Moore and Cachelin (2001) review both case control and prospective studies. In case control studies, the participants are matched and compared on relevant variables, while in prospective studies a sample of an at-risk population is surveyed on variables believed to contribute to the development of the disorders. In a series of case control studies Fairburn and colleagues (1997, 1998, 1999) attempted to identify risk factors for anorexia, bulimia, and binge eating disorder. . An extensive series of risk factors from four

domains (dieting risk, personal vulnerability, environmental vulnerability, and other risk factors) were assessed using a structured interview. In Fairburn et al.'s study of bulimia, high parental expectations and risk of obesity uniquely distinguished people with bulimia from healthy controls and other psychiatric controls. Several other factors (parental psychiatric diagnosis, childhood sexual or physical abuse, poor parenting) distinguished both people with bulimia and other psychiatric controls from the healthy group. The factors that uniquely distinguished those with anorexia from healthy and other psychiatric controls were perfectionism and negative self-evaluation. Prospective studies of risk factors for eating disorders found that weight concerns (worry over weight, fear of weight gain, feeling fat) and dietary restraint were the most common risk factors for the development of eating disorders. Striegel-Moore and Cachelin (2001) point out that these factors overlap with the symptoms of the disorders and therefore the results run the risk of describing the onset of the disorders rather than actual risk factors.

The findings in the case control studies that weight concerns are risk factors for the development of eating disorders point to a sociocultural contribution to the etiology of eating disorders. Sociocultural models of eating disorders (Stice, 1994; Striegel-Moore, Silberstein, & Rodin, 1986; Twamley & Davis, 1999) suggest that the cultural emphasis on thinness as essential to female beauty puts many women at risk for disordered eating. Those believed to be most at risk are those who internalize this ideal and then experience dissatisfaction because they believe they do not meet this ideal. Eating disorder behaviors are believed to result, in part, from this dissatisfaction in those individuals most susceptible to cultural influences. During the last half of the 20<sup>th</sup> century, the female body ideal as expressed in popular culture and media shrunk as the actual average weight of US women increased reflecting a social context for this body/self discrepancy (Twamley & Davis, 1999).

### *Theoretical Models of Eating Disorders*

Conceptual models of eating disorders generally integrate multiple etiological factors, with an emphasis on one factor as primary. For the most part, these models have focused either on biological factors, intrapsychic factors, behavior, external/cultural influences, or interpersonal concerns. The most prevalent models in each of these areas will be reviewed for an understanding of how they contribute to more current integrated models.

Strober (1991) developed a model of anorexia nervosa rooted in the biological and genetic factors in eating disorders. This model was based on the work of Cloninger (1987) that identified biological markers for temperamental traits. Cloninger identified three dimensions of temperament: harm avoidance, reward dependence, and novelty seeking. These dimensions of temperament are believed to be strongly related to brain physiology, and thus, to be heritable. Personality types are believed to be made up of contributions of each of these three dimensions. The same is theorized to be true for psychopathology. Strober suggests that personality in anorexia nervosa is characterized by high levels of harm avoidance and reward dependence, and low levels of novelty seeking. This model was supported in a study by Caspar (1990) which found that women who had recovered from anorexia were higher on harm avoidance and lower on novelty seeking than a control group. The differences for reward dependence were not significant but were in the predicted direction. Strober's model combines these dimensions of temperament with a developmental perspective. It is proposed that individuals who are highly dependent on outside approval (reward dependence), cautious and somewhat anxious (harm avoidant), and fearful of change (low in novelty seeking) are confronted with the demands of adolescent development in a culture that emphasizes a thin beauty ideal and thus become highly

vulnerable to eating disorders. This model offers the possible contribution of heritable aspects of temperament that likely contribute to increasing the risk of eating disorders.

Psychoanalytic models of eating disorders are founded in intrapsychic concerns. The psychodynamic tradition focuses on the effects of developmental antecedents on intrapsychic conflict. Early psychoanalytic theories of anorexia nervosa interpreted the illness as an avoidance of adult female sexuality, or more specifically, fears of “oral impregnation” (Waller, Kaufman, & Deutsch cited in McIntosh et al., 1998). Object relations theorists developed this model further and suggested that eating disorders symbolized the rejection of the body as a representation of the mother, or maternal object (Selvini-Palazzoli as cited in Sands, 2003). Bruch (1973) offered a related theoretical construct that was grounded in developmental thought and clinical practice, and therefore more contextualized and utilitarian. She identified eating disorder symptoms as signifying a crisis in separation and individuation that often occurred at a developmental moment the individual could not manage. The client was believed to be caught in a need for control and an ambivalent struggle for and against autonomy. Bruch observed the characteristic difficulty patients with eating disorders had in identifying their own bodily and affective states as a defining feature of the disorders. She believed this struggle originated primarily in the mother’s (or primary caretakers’) failure to validate the independent needs and perceptions of the child.

A self-psychological perspective expands and refocuses the object relations model by emphasizing the failures of the parent/caregiver in the tasks of mirroring, and validating the child’s needs (Goodsitt, 1986, 1997). These failures are believed to have prevented the child from learning ways to tolerate highly stimulating affective states through self-soothing and self-regulation. In this model, the emphasis moves away from classical drive theory. Eating



disorders are seen as a maladaptive yet effective way to accomplish self-regulation. The effects of self-starvation and of bingeing and purging are both mentally distracting and emotionally numbing, thereby allowing the individual to cope with the stimulation. The body is thought to represent unacceptable and unintegrated aspects of the self. The self-psychological model serves as a bridge between models that emphasize intrapsychic conflict and those that integrate interpersonal factors.

Sands (2003) integrates a feminist and relational perspective with self-psychology. She agrees that eating disorders occur in response to “chronically unattuned” primary caretakers who failed to help the individual find ways to modulate the affect stirred by dependency needs. She notes that the lack of attunement in the caretakers has left the premorbid eating disorder client with an inability to manage the interpersonal need that has “too often brought with it painful feelings of shame, helplessness, and rage” (Sands, 2003. p.104). The individual is believed to lack a balanced experience of connection and autonomy, and, as a result, to bring to adulthood a profound mistrust for his or her capacity for closeness. Sands suggests that preoccupation with food, weight, and eating disordered behaviors protects the person from the challenge of finding a way to modulate closeness and autonomy. The body becomes the voice of the conflict about connection. Sands writes,

“The body’s desires, because of their urgency and inescapability, are but particularly vivid and dramatic concretizations of overwhelming, early need. These patients are as afraid of their desires for soothing, admiration, love, or any other emotional nourishment as they are of their appetites for food or sex. They fear any affective relational experiences that make them feel out of control, messy, or ‘too much,’ because they do not have the ability to metabolize intense affect” (p. 104).

This submergence in the eating disorder protects the person from authentic but potentially messy, conflictual relating with the unattuned caregiver, and enables the maintenance of an idealized but ultimately inauthentic way of relating. In a sense the eating disorder “saves the day” by allowing the person to maintain the relation with the parent and manage the potentially disruptive feelings of anger, disappointment, abandonment, etc.

Feminist models of eating disorders integrate the impact of sociocultural influences on women into their conceptualization and treatment models (Kearney-Cook & Striegel-Moore, 1997; Maine, 2001; Steiner-Adair, 1991). Striegel-Moore, Silberstein and Rodin (1986) laid out preliminary features of a model of bulimia that incorporated sociocultural factors with biological and developmental factors. This model is somewhat dated twenty-two years later but still has relevant ideas. Being a woman is identified as a risk factor given that women constitute about 90% of those with eating disorders. Striegel-Moore et al. ask what it is about being female, which females are most vulnerable, and what it was about being female in that moment in history. They identify the obvious cultural emphasis on thinness and attractiveness, and propose that women who most deeply internalize this emphasis will be most vulnerable. Environments and subcultures are thought to encourage the development of bulimia; for instance, females participating in sports or professions that require a particular body type, college sororities, boarding schools, etc. The centrality of the pursuit of beauty to the female sex role stereotype, and of thinness to the definition of beauty, make the attainment of a thin body a prized goal for those women most influenced by the stereotype. The authors note that it is also common for women who have made less traditional career choices to embrace the cultural value of thinness. They suggest that these women may be high achievers who see thinness as another achievement. Another hypothesis is that this may be a way of attaining power in environments that do not offer

more direct pathways. Clearly the politics of women in the workplace have changed in the past two decades, but there is still evidence of powerful socialization of women that encourages many women to prioritize appearance as a dimension of self-esteem.

Striegel-Moore et al. (1986) address the integration of sociocultural and developmental factors in creating a predisposition to bulimia. The effects on girls of learning the power of body shape and size may contribute to a higher likelihood of having a self-concept rooted in the perceptions of others. Striegel-Moore et al. write, “For girls more than for boys it seems that self-concept is an interpersonal construct” (p. 250). For some girls, the developmental tasks of adolescence—of developing identity and the ability to form close peer relationships—may strain their social and emotional resources. Events in the individual’s personal history might make her more vulnerable to interweaving self-concept with body image. This developmental crisis sets the stage for an eating disorder.

Theories of women’s psychological development advanced by Jean Baker Miller and Carol Gilligan in the 1970’s and 1980’s emphasized the importance of mutually enriching relationships for women’s psychological health. Relational-cultural theory (Jordan, 1997, 2001) was born out of the earlier Relational Theory of Women’s Psychological Development and offers a more complex, expansive and inclusive theory of psychological development than its predecessors. The current articulation of this theory will be examined in depth later. Surrey (1991) used the earlier version of relational theory of women’s development to conceptualize eating disturbances. Surrey furthers the notion of the interpersonal nature of self-concept for women with eating disturbances. The standards of beauty promoted by others, indeed by the larger culture, are internalized and become the basis for self-esteem and self-definition. The pursuit of external standards is believed to contribute to the lack of interoceptive awareness, or

attunement to one's own bodily sensations, that characterizes eating disorders. Feeling good or bad about oneself becomes defined in relation to being "good"/eating restrictively or being "bad"/eating indulgently, and the body's true knowledge of hunger and fullness is compromised. Sense of self becomes inextricably bound up with success or failure at controlling bodily appetites. "A sense of effectiveness or agency becomes related to control over one's eating, which then becomes an important index of overall self-esteem. This connection between inner control, sense of agency, or effectiveness, and self-esteem reflects an arena for the expression of a basic and somewhat hidden aspect of a more general aspect of self-esteem in women. Effectiveness comes to represent the ability to *control* oneself rather than to *express* oneself" (p. 245, Surrey). This model integrates a psychodynamic perspective and posits that women's relationship to food, at core, reflects relationship with the mother (nurturance) and via female identification, with the self. The connection to nurturance suggests a relationship to the internal landscape of intimacy, connection, attachment. As such, eating disturbances in women represent relational disturbances.

Similar feminist and relational models of eating disorders note the pressure many women in Western cultures experience to deny emotions seen as non-feminine such as anger, aggression, competitiveness, etc. (Maine, 2001; Steiner-Adair, 1991). Non-idealized reactions, affect, and relationships are suppressed in favor of the "tyranny of the nice and kind" (Steiner-Adair, 1991). Relational disconnections are seen as "predisposing, precipitating, and perpetuating factors" of eating disorders" (Maine, 2001). In attempts to compensate for disconnection in important relationships, women who develop eating disorders learn to present a more ideal and less controversial self, both within themselves and to others. "Women with eating disorders have a particular area of expertise: They are experts in false relationships." (Steiner-Adair, 1991, p.230).

A treatment goal that emphasizes autonomy may evoke past isolation and disconnection. The relationally-based approach to treatment is redefined as being rooted in the healing of relational disconnections through individual and group therapy, and through attention to the individual's social network.

One of the most treatment-focused orientations is cognitive-behavioral. Fairburn and colleagues have been instrumental in advancing cognitive behavioral models of anorexia (Fairburn, Shafran, & Cooper, 1999), bulimia (Fairburn, Cooper, & Cooper, 1986), and, most recently, an inclusive transdiagnostic cognitive behavioral model of eating disorders (Fairburn, Cooper, & Shafran, 2003). The transdiagnostic model is essentially a consolidation and extension of prior models of anorexia and bulimia. Fairburn et al. (2003) argue that one theory is adequate to address the maintaining factors of the full range of eating disorders. They argue that there is homogeneity in the constellation of symptoms and that individuals tend to cross diagnostic boundaries when viewed longitudinally. The transdiagnostic cognitive behavioral model emphasizes what maintains the disorders rather than what allowed them to develop.

Central to the model is a distorted system of self-evaluation that over-values the importance of eating, weight, and body. These cognitive distortions are believed to be primary features of these disorders. Most related behaviors and cognitions are thought to stem from this dysfunctional method of self-evaluation. Binging is seen to occur in response to pervasive dietary restraint and harsh self-judgment when that restraint is even slightly loosened. Purging is a reactionary but temporary abandonment of restraint and is self-reinforcing because it provides the individual with the belief that she has regained control. In the recent expansion of the theory, four maintaining mechanisms of eating disorders that are proposed to contribute to poor treatment outcome were added. "Clinical perfectionism" (defined as being perfectionism "of

clinical significance”) is one mechanism. This includes evaluating self-worth based on perfectionistic standards, and experiencing negative affect when these standards are inevitably not met. Interpersonal difficulties are cited as another maintenance factor. The authors acknowledge that this has been underestimated in prior versions of this model. They point out that interpersonal factors are very often triggers for eating disorder episodes, and that some interpersonal environments (family members with eating disorders, sororities with community focus on body image) contribute, as do stressful interpersonal processes. The other two maintaining mechanisms are pervasive low self-esteem, which includes a sense of hopelessness about change, and difficulty in tolerating intense mood states (termed “mood intolerance”). In the cognitive behavioral model, traumatic or invalidating events in the individual’s life are believed to create vulnerability to the self-evaluation schemas that come with eating disorders, but, as noted, these antecedents are not a focus.

Wonderlich, Mitchell, Peterson, and Crow (2001) developed a model of bulimia nervosa that integrates psychobiological, cognitive, cultural, interpersonal and intrapersonal factors. Wonderlich et al. suggest that people with bulimia are likely to have experienced various forms of disruption of healthy attachment. Circumstances that might interfere with attachment include adoption, sexual or physical abuse, having parents with mental illness or substance abuse, and the perception of the familial environment as disconnected and ultimately non-supportive. The model suggests that these experiences often lead to interpersonal difficulties in adolescence and adulthood. A specific type of negative self-evaluation follows from these interpersonal and attachment difficulties. The model uses self-discrepancy theory (Higgins, 1987) to more precisely describe this negative self-evaluation. Discrepancies between actual self and internalized ideals are hypothesized to cause psychological distress. Wonderlich et al. posit that,

in bulimia, “these individuals perceive a deficit in themselves, which reflects a discrepancy between their perceived actual self-concept and a comparative ideal standard that they apply to themselves or they believe others apply to them” (p. 179). Wonderlich et al. suggest that the experience of “global self-discrepancy” is translated into an experience of body or appearance self-discrepancy. The negative affect generated by the self-discrepancies affects relationships. Two interpersonal patterns, submission and withdrawal, emerge as mechanisms to defend against possible rejection or other relational crises evocative of earlier painful experiences. The pattern of submission involves the individual’s attempts to please others at the cost of expressing her genuine self. The withdrawal pattern occurs when the individual loses hope of resolving the relational concerns in the relationship and disengages. The intrapersonal dimension is expressed in patterns of self-attack, self-neglect, and self-control. Self-control can take the form of extreme attempts to control body and appearance. Self-neglect involves managing the negative affect through reckless behaviors. Self-attack includes the characteristic and relentless self-criticism that accompanies eating disorders.

Themes that run through all of these eating disorder theories are the existence of relational disturbance (lack of attunement, abuse, interpersonal difficulties), a disturbance of self-concept (self-discrepancy, externally determined self-concept, disavowal of troubling parts of the self), and efforts to manage these disturbances through the development of a less vulnerable, more perfect self. Some type of emotional distress/negative affect is also implied in each model. The notion of a false self, defensively constructed in response to a number of perceived relational threats or stressors (Winnicott, 1964) has been associated with the personality presentation in eating disorders. Psychodynamic and self-psychological theorists suggest that people with eating disorders have developed a pleasing front to present to others at the expense of sharing a more

authentic self (Bruch, 1973; Goodsitt, 1997; Johnson, 1991; Striegel-Moore, Silberstein, and Rodin, 1993; Strober, 1991). These individuals frequently harbor a sense of emptiness and believe their “authentic self” to be inadequate. The false self can serve both of the interpersonal purposes described in the Wonderlich et al. model: It allows withdrawal of the authentic self from engagement that feels too dangerous, and submission to the will of important others by providing a self tailored to the needs of others.

In the eating disordered individual, the false self is thought to be expressed in the drive for perfection in physical appearance and in areas of achievement (Strober, 1991) and, interpersonally, in the attempt to present oneself as perfect to others (Cockell et al., 2002; McClintock and Evans, 2001). Perfectionism is one of the personality traits most clearly associated with eating disorders, which suggests that maladaptive perfectionism is a reasonable way to represent an intrapsychic aspect of false self organization. In particular, the experience of having extremely high standards and perceiving oneself as not meeting these standards has been identified as a significant dimension of maladaptive perfectionism (Slaney, Rice, & Ashby, 2002) and has been termed “discrepancy.” Discrepancy is defined as “the perception that one consistently fails to meet the high standards one has set for oneself” (Slaney et al., 2002, p. 69). Discrepancy is a useful construct in thinking about the false self because it sets the stage for the maladaptive perfectionist to “feel like a fraud” when he or she does not meet his/her self-imposed standards. The construct of perceived fraudulence, or “feeling like a fraud” is another possible manifestation of the false self. The intrapsychic experience of presenting the self in a manner that feels inauthentic is captured by perceived fraudulence.

In this study, the interpersonal dimensions of the false self were conceived of and operationalized as perfectionistic self-presentation and as measures of relational health and



quality. Perfectionistic self-presentation is the behavioral correlate of the false self construct. Perfectionistic self-presentation is a construct developed by Hewitt and Flett, (1993b) to capture the dimension of presenting oneself to others as perfect and actively avoiding the appearance of imperfection. Relational health, as defined in the Relational-Cultural theory of psychological development, is measured in terms of feeling empowered, authentic, and mutually engaged in important relationships.

The co-occurrence of major depression or dysthymia with eating disorders is between 50 and 75 % (Halmi et al., 1991; Lewinsohn, Striegel-Moore, & Seeley, 2000). This significant comorbidity suggests the relevance of depression as a variable indicating distress, and also underscores the importance of accounting for the effects of depression. Therefore, depression was also measured to allow a more full understanding of whether relational disturbances are distinctly related to eating disorders or may be a product of the accompanying negative affect.

#### *Eating Disorder Continuum*

There has been substantial debate in the field of eating disorders research as to the underlying structure of eating disorders (Garner, Olmstead, & Garfinkel, 1983; Mintz, O'Halloran, Mulholland, & Schneider, 1997; Scarano & Kalodner-Martin, 1994; Tyrka & Subich, 2003). Some theorists have argued that eating disorders are distinct from subclinical eating and body image disturbances (Bruch, 1973; Garner et al., 1983) and should be researched and treated as such. Others have proposed and investigated a continuum of eating disorders. Support for this model is found in the high incidence of subclinical disturbances that have been observed in some populations. Heatherton, et al. (1995) surveyed college students regarding body concerns and weight management and found that a substantial number utilized behaviors that would be considered disordered. Regular binge eating was reported by 19% of women and

6% of men, and regular fasting was endorsed by 12.4% of women and 3% of men. An earlier study (Mintz & Betz, 1988) surveyed 682 college women on eating behaviors, weight management habits, endorsement of thinness ideal, self-esteem and body image. Approximately two thirds of those surveyed had some level of disturbed eating and body image. The level of disordered eating was correlated with lower self-esteem and greater endorsement of sociocultural body ideals. Clearly there is a need to identify the subclinical as well as the clinical population.

The concept of an eating disorder continuum is that distinctions between individuals who meet criteria for a DSM-IV-R diagnosable disorder and those with sub-threshold eating disturbances exist along a continuum. Behavioral differences clearly exist, but it is hypothesized that underlying psychological processes in disordered and sub-clinical groups are shared (Scarano & Kalodner-Martin, 1994). Scarano & Kalodner-Martin defined the continuum and identified six groups, or “points” based on the then-current DSM-III criteria. These are normal eaters, weight-preoccupied persons, chronic dieters, purgers, sub-threshold bulimics, and bulimics.

Tylka and Subich (2003) used taxometric procedures to explore the latent structure of eating disorders. They used a series of sociocultural and psychological indicators of eating disorders in the analyses. Tylka and Subich found no latent taxon, or categorical structure for eating disorders, bolstering the notion of an eating disorder continuum. They note that these results differ from prior taxometric analyses of eating disorders, and attribute this difference primarily to the indicators selected. The earlier analyses had used behavioral indicators such as bingeing, purging, restricting that essentially defined the disorders. Tylka and Subich chose psychological and sociocultural indicators that were related to the disorders but not essential to their definition, to strengthen the taxometric analysis.

Mintz, O'Halloran, Mulholland, and Schneider (1997) developed a questionnaire based on DSM-IV criteria to distinguish among the eating disorders, and between individuals with eating disorders, individuals who are symptomatic, and those who are asymptomatic. The Weight Management Questionnaire (WMQ; Mintz & Betz, 1988) was revised to reflect DSM-IV criteria. The revised instrument is the Questionnaire for Eating Disorder Diagnoses (Q-EDD; Mintz, O'Halloran, Mulholland, & Schneider, 1997). Validity and reliability studies (detailed in chapter 3) indicate that the Q-EDD is a strong measure of a three-pronged eating disorder continuum (asymptomatic, symptomatic, and DSM-IV-diagnosed eating disorder). While many studies attempt to assess these three groups, none of the measures have been as faithfully based on the DSM-IV or shown as strong psychometric properties. The Q-EDD was used in this study to measure and define these three groups.

#### *Relational Health and Quality and Eating Disorders*

A likely casualty of the false self construct in eating disorders is rewarding and mutually supportive interpersonal relationships. If the social self is inauthentic, then relationships based in it may be experienced as inauthentic, confirming a belief that the true self is unacceptable. Hilde Bruch observed a chameleon-like interpersonal style in many of her young patients.

“Friendship patterns reveal similar over compliant adaptation to others that characterizes the whole life of these children. Quite often there has been a whole series of friendships, but with only one friend at a time. With each new friend anorexics will develop different interests and a different personality. They conceive of themselves as blanks who just go along with what the friend enjoys and wants to do. The idea that they have their own individuality to contribute to a friendship never occurs to them.” (Bruch, 1978; p. 48)

There is evidence that eating disorders are associated with interpersonal deficits (Grissett & Norvell, 1992; Rorty, Yager, Buckwalther, & Rossotto, 1999; Striegel-Moore et al., 1986; Wonderlich et al., 2001). A significant body of literature provides empirical support for the presence of impaired social functioning in people with eating disorders. Cole-Detke and Kobak (1996) investigated attachment and symptoms of eating disturbances and depression in 61 college women. The sample was broken down into four groups: eating disorders, depression, depression and eating disorders, and a control group. Eating disorder symptoms were measured using the Eating Disorders Inventory (EDI; Garner et al., 1983), and the Bulimia Criteria Questionnaire (BCQ; Katzman, Wolchik, & Braver, 1984). The Beck Depression Inventory (Beck et al., 1979) was used to measure depression. Attachment was assessed using the Adult Attachment Interview (AAI; George et al., 1985), and each interview was rated using a Q-sort developed by the second author in which 100 items related to attachment strategies and “working models” of important attachment figures are ranked to force a bell shaped curve. The sample was predominantly Euro-American with 5% African-American and 3% Asian-American. The AAI was chosen based on prior research with this method that found that people with eating disorders have unstable attachments. In this study they found that participants with eating disorder symptoms used “deactivating attachment strategies” which involve withdrawal and diversion from attachment cues. This was contrasted with people with depression who were more likely to use “hyperactivating attachment strategies” which would draw excessive attention to attachment-related cues and information. The authors suggest that deactivating attachment strategies found in women with symptoms of eating disorders indicate an early experience of unavailable attachment figures. They further suggest that the development of preoccupation with food and weight is a diversion from the unsuccessful attempts at interpersonal connection to

goals that are more attainable, i.e. body and weight related goals. Weaknesses of this study include the sample size of the four groups which ranged from 17 to 20, and low representation of women of color in the sample. However, the finding of attachment-related strategies of withdrawal and diversion from cues is consistent with the interpersonal styles suggested by Wonderlich et al., (2001).

Another study of attachment styles in women with eating disorders was conducted by Broberg, Hjalms, and Nevenon (2001) in Sweden. They surveyed a community sample of 315 Swedish women, aged 18 to 24 and a clinical group of 145 patients in treatment for eating disorders, also aged 18 to 24. The findings replicate previous results indicating that women with eating disorders are more likely to have insecure attachment and general interpersonal difficulties as measured by the Relationship Questionnaire (RQ; Griffin & Bartholomew, 1994). The RQ measures styles of attachment modeled after Bowlby's attachment theory. They also utilized EDI subscales related to social adjustment. Broberg et al. further found that there was a subset of women in the control group who had previously had eating concerns. This subgroup also had a higher level of insecure attachment, indicating that interpersonal difficulties may persist even after resolution of symptoms. The sample size in this study is impressive. However, it is difficult to know how the cultural differences between Sweden and the US might affect surveys of interpersonal attachment.

Strober and Humphrey (1987) reviewed literature on familial influences in both anorexia and bulimia. They note that historically, the anorexic client was believed to have difficulty with individuation and separate identity formation (Bruch, 1973), and this insight led to treating the family as well as the patient. Strober and Humphrey cite the work of Minuchin, Rosman, and Baker (1978), who formulated five patterns of dysfunctional interaction in families with an

anorexic member. These are enmeshment, conflict avoidance, poor conflict resolution, over-protectiveness, and rigidity. Family dynamics in clients with bulimia are believed to run along similar lines with support from studies done by Humphrey (1986a). In short, Strober and Humphrey conclude that descriptive and observational studies indicate that “bulimic and anorexic families are enmeshed, intrusive, hostile, and negating of the child’s emotional needs” (p. 655). Growing up in this type of environment would present the individual with challenges regarding how to modulate affect and interpersonal distance and closeness.

These earlier studies undoubtedly contribute to the understanding of clinical treatment of eating disorders. However, the samples in these studies are demographically similar. African-American, Asian-American, Latino, or American Indian people are rarely included, and never in numbers large enough to provide significant insights. Males were also not believed to be a relevant subgroup. Therefore, while an understanding of the role of family in development of eating disorders and related interpersonal problems is essential, it may not offer a full explanation. Experiences in interpersonal environments other than the family should be considered.

Grissett and Norvell (1992) investigated the quality of social networks of 21 undergraduate women with bulimia as contrasted with 21 matched controls to better understand what they term the “disturbed’ relationship between women with bulimia and their social environment. They administered the Perceived Support Scale (PSS; Prociando & Heller, 1983) to measure participants’ perceptions of received support, information, and feedback. The Quality of Relationships Inventory (QRI; Pierce, Sarason, & Sarason, 1991) was used to measure participants’ perceptions of support, conflict, and depth in specific relationships. In this study, the relationships selected for the QRI were mother, father, closest same-sex friend, and romantic

partner. The Social Interactions Scale (SIS) is a revision of a scale by Abbey et al. (1985) and it measures perceptions of both positive and negative interactions, attributions for the interactions, and perceptions of the impact of these interactions. Grissett and Norvell also administered the Social Competence Questionnaire (COM-Q; Sarason, Sarason, Hacker, & Basham, 1985) to measure social discomfort, and the Symptoms Checklist-90-R (SCL-90-R; Derogatis, 1977) to measure psychiatric symptomatology. They found that women with bulimia perceived significantly less social support from friends and families than controls, and identified more negative social interactions. In terms of quality of relationships, the bulimia group reported significantly more relationship conflict, and this was particularly true in family relationships. The scores on the subscales for the Quality of Depth and Quality of Support from the QRI did not differ significantly between the groups. The findings suggest that women who develop bulimia may be made more vulnerable by perceptions of low social support, and may end up using the eating disorder to cope with higher rates of perceived or actual conflict.

Rorty, Yager, Buckwalther, and Rossotto (1999) explored the amount and the quality of social support in women with bulimia, women recovered from bulimia, and a control group. Each group had 40 women. Actively bulimic women were found to have fewer people in their social network that they felt could provide emotional support than women in recovery from bulimia and a non-clinical comparison group. Both actively bulimic and recovering women expressed less satisfaction with the quality of their social support than members of the comparison group. Quality of social support was measured by the Social Support Questionnaire (SSQ; Grant, Patterson, and Yager, 1988) which, in addition to assessing size of social network, assesses satisfaction with practical support and with emotional support. The quality of social support as defined in this study is measured as the number of supportive people and the self-

reported experience of satisfaction with that support. This does not address the way in which the individual experiences himself or herself in the relationship, i.e. as authentic, enlivened, guarded, etc.

Women with both anorexia and bulimia were found to have smaller social networks than a comparison group in another study of clinic patients in the UK (Tiller et al., 1995). Actual and ideal levels of social support were assessed with the Significant Others Scale (SOS; Power, Champion, & Aris, 1988) which was completed for peer, family and significant other relationships. Participants completed the questionnaire twice per relationship, once reflecting the actual levels of support and the second time indicating ideal levels of support. The differences between actual and ideal levels of social support were calculated. Dissatisfaction was calculated as a discrepancy score between actual and ideal levels of support. Patients with eating disorders set lower ideals of social support than the non-clinical group. People in the clinical group were less likely than the comparison group to have a best friend or a second best friend, which could indicate that the components of relational health (engagement, empowerment, tolerance of conflict) are reduced or absent in this group. On the whole, the anorexia group and the bulimia group were found to have similar social networks. Some differences were found between the eating disorder groups. Patients with anorexia were more satisfied than their counterparts with bulimia with their level of social support. The study had a relatively large clinical group, with 81 patients with bulimia, 44 with anorexia, and 86 students for comparison. The comparison group was not screened for eating disturbances, which was acknowledged but dismissed due to low incidence of eating disorders in the general population. However, there is a significantly higher incidence of eating disorders among female college students than among the general population so this may be a more significant limitation to the study. Additionally, there is also a



relatively high occurrence of subclinical eating disturbances in this population and information about the relational health and quality of this intermediate group as it compares to a clinical and non-eating disordered group would be useful.

One study that does investigate whether sub-clinical eating disturbances were also associated with interpersonal deficits was conducted by Holt and Espelage (2002). Interpersonal problem-solving, relationship conflict, and social support were measured. Matched groups of 39 undergraduate women with and 39 without eating disturbances were surveyed. Disordered eating was associated with less effective problem solving in interpersonal as well as food and weight-related situations. These results were inconsistent with the results of other studies on perceived social support, and relationship quality. They found no difference in perceived social support between the control group and the disordered eating group. For relationship quality, they used only the perception of conflict scale from the QRI (Pierce et al., 1991) with the hypothesis that women with disordered eating would be more likely to perceive conflict in relationships. This hypothesis was not supported. A possible alternate interpretation of their data is that some women with eating disorders may be conflict avoidant and therefore may tune out or be reluctant to admit conflict when it does arise. The findings of this study suggest that there may be a significant difference between the social networks and perceptions of social support in people with clinical eating disorders versus disordered eating. This could provide further evidence that social support is a defining factor in eating disorders. As is true of many studies of this nature, the sample was predominantly Caucasian, which limits the generalizability of the results.

A study conducted by Bloks, Van Furth, Callewaert and Hoek (2004) investigated which coping strategies were associated with eating disorder behaviors. A longitudinal design was used to follow 146 women treated for eating disorders at two Dutch clinics over a 2.5 year period.

Seventy-two women were diagnosed with anorexia nervosa, 47 women were diagnosed with bulimia nervosa, and 27 women were diagnosed with eating disorder not otherwise specified (ED NOS). Participants were assessed at the start of treatment, at the end of treatment, at one year follow-up and at 2.5 year follow-up. Coping skills were assessed with the Utrecht Coping List (UCL; Scheurs et al., 1993) which measures 7 coping skills including seeking social support, passive reacting, palliative reacting, and avoiding. Seeking social support was one of two active coping strategies that predicted reduced anorexic and bulimic symptomatology and improved global functioning. The other strategy, termed “active tackling,” means dealing with potential obstacles directly. Quantity or quality of social network was not addressed in this study but it raises the question of whether actively seeking support and engagement should be viewed as distinct from simply having a large social network and being the receiver of support. There may be an element of empowerment in seeking support.

Researchers have largely conceptualized the interpersonal deficits associated with eating disorders in terms of perception of social support, amount of social support, or structure of the social network. The actual experience of being in-relation is more difficult to quantify and is generally not the way interpersonal well-being is measured. Pierce, Sarason, and Sarason (1991) found that general perceived social support is a related but distinct construct from relationship-specific perception of social support. In other words, a general belief that social support is available is different from a perception that support is available in particular relationships. The Quality of Relationships Inventory (Pierce et al., 1991) measures experiences of support, depth, and conflict in relationships. Relational conflict has a negative valence in this scale. Support is defined in terms of the other being available when needed. Depth is primarily a measure of commitment to and appreciation of the relationship. Research indicating that women with eating

disorders may experience more dissatisfaction with social support networks that are similar to those of controls (Jacobson & Robins, 1989) suggests that the individual with the eating disorder may experience the quality of specific relationships differently. Relational quality is a component of relational health and well-being, and gaining an understanding of specific relational bonds is an important complement to the existing research on more generalized perceptions of social support networks.

Relational/Cultural Theory of psychological development allows an investigation into more specific qualities of relational engagement that are relevant to the false self organization. Relational-Cultural Theory (Jordan, 2001) developed out of a critique of previous developmental theories that emphasized separation and autonomy, and measured growth in terms of independence. For instance, Abraham Maslow's hierarchy of needs places the need for love and belonging just above the need for safety and for having biological needs met. While this placement clearly values the role of relationship, this is one of the four levels of needs that are considered essentially physiological while the fifth level, self-actualization, is considered truly growthful. Lawrence Kohlberg's theory of moral development has been critiqued by feminist scholars, notably Carol Gilligan, for its emphasis on laws or rules over caring and relationships. Relational-cultural theory suggests that these theories themselves have grown out of a cultural bias rooted in models of science that emphasize delineation, reductionism, and objectivity. Traditional theories of psychological development focus on the intrapsychic realm of the individual with little attention to development that occurs in relationship with others. Relationships are considered in prior theories, but as secondary to the goals of separation and independence. Relational-cultural theory challenges the notion that the boundary of the separate

self exists to protect the self from disturbing intrusions. Instead, the boundary of the self is conceived of as porous and its exchange with the world as a source of growth and development.

The core of relational-cultural theory is that isolation/disconnection is “a primary source of suffering for most people” (Jordan, 2001, p. 95) and healing is conceptualized as taking place within a growth fostering relationship. Experiences of empathic failure by a caregiver that do not get repaired result in heightened sensitivity to relational disconnection, rejection, or abandonment. The child questions his or her feelings of disappointment, anger, etc. and attempts to identify with the caregiver’s response and, in the process becomes disconnected from his or her self. “The child begins to act inauthentically in relationships, and thus, although feeling superficially safer, feels less real, less seen, and less understood” (p. 96). A relational bind occurs in which the child continues to want and need close connection but feels she must disavow her own experience to maintain a semblance of this connection. Ultimately this relational bind, and its resulting sense of isolation, lacks of authenticity, and paralysis can support the development of pathology and the experience of a false self.

The relational bind is proposed to exist not only on the level of the individual but also in the cultural context. On a societal level, experiences of chronic disconnection and disavowal of authentic parts of oneself can occur as a result of all forms of bias and abuses of power. “All the ways that the dominant groups shame and silence nondominant groups contribute to disconnection on a societal level” (Jordan, p. 96). Similarly, Kitron (2001) has conceived of the false self in sociocultural contexts as a possible response to religious persecution, colonialism, racism, and acculturation. The inclusion of a larger cultural context for development of psychopathology is overdue, and makes relational-cultural theory a more inclusive and relevant theory than its predecessors.

Relational-cultural theory has been applied to eating and body image disturbances. Three studies look at eating disturbances and aspects of relational health as defined by Relational/Cultural theory. Sanftner, Tantillo, and Seidlitz (2004) explored the relationship between eating disorders and perceived mutuality in relationships with partners and friends. Perceived mutuality is an element of relational health defined as “the ability to simultaneously experience the feelings and thoughts of another person and to know one’s own different feelings and thoughts” and is, in part, mutual empathy. It involves not only being receptive but also actively engaging the other. The Mutual Psychological Development Questionnaire (MPDQ; Genero, Miller, & Surrey, 1992) was used to measure six elements of relational mutuality. These are mutual empathy, engagement, authenticity, empowerment, zest (a sense of feeling enlivened and energized in the relationship), and diversity (being able to integrate differing opinions). Thirty-five women with eating disorder diagnoses were compared with a control group of 39 women who did not meet DSM criteria for an Axis I diagnosis of any type. The authors found that 69% of the eating disorder group had a current or past comorbid diagnosis of a depressive disorder. An analysis of covariance was performed to control for the possible confounding of depression and eating disorder effects. The eating disorder group had lower perceived mutuality in relationships with both friends and partners than the control group. When depression was controlled, the eating disorder group had no difference in perceived mutuality with partners, but continued to have significantly lower levels than the control group with friends. The authors noted that these results were somewhat surprising and divergent from their expectations that partner relationships would be more troubled. They suggest that participants might be idealizing partner relationships because it would be too painful to confront dissatisfaction in a primary relationship. The authors note that the high level of depression comorbidity is consistent with

actual comorbidity in this population. The results are ultimately not conclusive as to whether the lower levels of perceived mutuality are related to eating disorders in particular, or are related to depression or psychopathology in general.

In a study comparing relational group therapy with cognitive behavioral group therapy, Tantillo and Sanftner (2003) looked at bulimia symptom severity, depression and perceived mutuality across sixteen weeks of group therapy in a sample of fifteen women with bulimia nervosa. The participants were recruited from a university affiliated mental health clinic and ages ranged from 20 to 54. Both types of group treatment were effective in reducing bulimia symptoms and depression at the end of the group and at 6 and 12 month follow-up intervals. Relational therapy did not change the perceived mutuality scores with parents. However, lower levels of perceived mutuality with fathers were correlated with higher levels of bulimia symptom severity at all assessment points. This effect did not hold for relationships with mothers. Lower levels of perceived mutuality were correlated with higher levels of depression, which supported previous findings of Genero et al. (1992). The results do not overwhelmingly indicate a relationship between eating disorders and perceived mutuality, but they do leave the door open to this possibility. These studies both had small samples, and inconclusive results. Both studies also emphasize the importance of controlling for the effects of depression in this population.

Nakash, Williams, and Jordan (2004) researched a relationship between relational health, physical health, and body image in 450 female college students. Ethnicity distribution was 58% Caucasian, 28% Asian /Pacific Islanders, 4.3% African American, 4.3% Hispanic, 1% Native American, and 4% other backgrounds. In this study, relational health is measured by a new instrument, the Relational Health Indices (RHI; Liang et al., 2002). The RHI measures authenticity, engagement, and empowerment across three relationships; peer, mentor, and, a non-

dyadic relationship, community. This study focused on peer and community relationships. Nakash et al. measured body image as “relationship with one’s body” through a subscale of the Femininity Ideology Subscale (FIS; Tolman & Porche, 2000). They found that relational health with both peers and community is significantly positively associated with overall physical health. Relationship to body was not significantly correlated with peer relational health, but the authors note that the relationship was “in the desired direction.” Community relational health was negatively correlated with relationship to body scores (low scores indicate better body image). The authors remark that these are preliminary findings and that the results only marginally support the hypothesis that relational health will be associated with a better relationship to body. These are intriguing findings. They do not address relational health and eating disorders but suggest the importance of expanding the research in this direction. The measure of body image is quite specific in its scope of “relationship with the body” and may not capture the dimensions of body image difficulties associated with full syndrome eating disorders.

The MPDQ and the RHI are both relatively new and little-used instruments, so it is still unclear how to best measure the relational health construct identified in Relational/Cultural Theory. A recent re-analysis of the RHI (Frey, Beesley, & Newman, 2005) suggests that, both conceptually and psychometrically, this instrument more effectively measures a unidimensional construct of relational health across the three identified relationships than the multidimensional construct initially intended. Using the RHI to measure the multidimensional construct implies that dimensions of engagement, authenticity, mutuality, and zest would be similar across the three relationships, whereas using it as a unidimensional measure, as suggested by Frey et al, offers a composite relational health score for each relationship . This is also more consistent with the perspective of Pierce et al. (1991) who advocate the importance of measuring the qualities of

a particular relationship rather than measuring a generalized quality of social network. More research into Relational/Cultural Theory and eating disorders would be useful in evaluating how this theory could help inform treatment. Proponents of using this theory to guide treatment suggest that it can help patients to identify the relational deficits that underlie their eating pathology. The positive outcome of increasing relational health would be greater self knowledge and a behavioral and cognitive shift such that, “Food is no longer the focus of relational energy as other, more satisfying connections are available.” (Maine, 2001, p. 1302)

#### *Measuring Perfectionism in Eating Disorders*

Perfectionism has been found to be highly correlated with anorexia, bulimia and eating disorder NOS (Bastiani, Rao, Weltzin, & Kaye, 1995; Bourke, Taylor, & Crisp, 1985; Caspar, 1990; Cooper, Cooper, & Fairburn, 1985; Garner, Olmstead, & Polivy, 1983; Joiner, Katz, & Heatherton, 2000). Although a solid body of research has established an association between perfectionism and eating disorders, findings have varied from study to study. Until the past fifteen years, the vast majority of research on perfectionism in eating disorders was conducted with the assumption that perfectionism is a one-dimensional construct (Flett & Hewitt, 2002) and that it is maladaptive. This research was most often conducted with the six-item Perfectionism Scale of the Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983a, 1983b; Garner, 1991). Recent developments in defining and measuring perfectionism as multidimensional offer the possibility of identifying the aspects of perfectionism that are most salient to the promotion and maintenance of eating disorders. These developments are considered in this section.

Since the 1980's, there has been a deluge of research about perfectionism. Flett and Hewitt (2002) cite an increase of over 300% in articles related to perfectionism between the 1980's and the 1990's, and this interest continues into the present. The drive to more fully



define and measure perfectionism results from its relationship to debilitating psychological disorders such as anorexia, bulimia, depression, and obsessive compulsive disorder. High levels of perfectionism have been linked to suicide (Blatt, 1995; Blatt & Zuroff, 2002). Several writers have sought to describe the personality of the perfectionist and offer ideas about origins and maintenance of the characteristic (Burns, 1980; Hamachek, 1978; Hollander, 1965; Horney, 1950; Pacht, 1986). Horney (1950) considered perfectionism to be a form of neurotic human development that arises from invalidating and narcissistic parenting. It serves as an obstacle to an individual's ability to achieve his or her full human potential. Perfectionism was initially understood as a unidimensional construct by most theorists and researchers (Burns, 1980; Hollander, 1965; Pacht, 1986). However, careful review of these theoretical pieces suggests the beginnings of the debate over the scope and dimensionality of perfectionism.

Hamachek (1978) proposed that perfectionism could be both "normal" and "neurotic." He suggested that normal perfectionists thrive in setting and achieving exceptional goals in selected areas of their lives, while allowing more flexible standards in other areas of their lives they deem less important. Neurotic perfectionists are thought to find feelings of success and pleasure in accomplishment illusive, if not impossible, and to maintain exceedingly high standards regardless of the task at hand. Burns (1980), though not endorsing the possibility of adaptive perfectionism, writes,

"I want to make clear what I mean by perfectionism. I do not mean the healthy pursuit of excellence by men and women who take genuine pleasure in striving to meet high standards....The perfectionists I am talking about are those whose standards are high beyond reach or reason..." (pp. 34).

In his argument against adaptive perfectionism, Burns seems to offer a possible definition of it. Pacht (1984) notes a disagreement with the notion of “normal perfectionists” posed by Hamechek (1978), saying “The insidious nature of perfectionism leads me to use the label only when describing a kind of psychopathology” (p. 387). Hollander (1965) defines perfectionists in terms of behavior or behavioral aspirations, suggesting that they are unable to moderate their wish to perform perfectly based on the demands of a situation or their own values. He suggests the possibility that the perfectionist will limit his or her pursuits to those in which s/he can be ensured success.

While there are many distinguishing characteristics of each of these conceptualizations of perfectionism, there are also several areas of overlap. All agree that perfectionists or “neurotic” perfectionists set exceedingly high standards, judge themselves harshly in relationship to these standards, derive little pleasure from their accomplishments, and experience distress, in part, as a result of their own, and possibly others’ expectations. Some suggest that perfectionism has a negative effect on interpersonal relationships (Burns, 1980; Hollander, 1965; Horney, 1950). Burns proposes that perfectionists play out an unrewarding interpersonal cycle in which they expect others to judge them as they judge themselves, i.e., as falling short. He describes a fear of self-disclosure that prohibits true emotional intimacy. Anticipation of rejection fosters defensiveness, which then alienates others, and justifies the belief that they are required to be perfect to be loved and accepted.

Over the past twenty years, a perspective on perfectionism as a multidimensional construct has come to dominate the literature. Some researchers have focused on positive and negative dimensions of perfectionism (Johnson & Slaney, 1996; Slade & Dewey, 1986; Slade, Newton, Butler, & Murphy, 1991; Slaney & Ashby, 1996; Slaney, Ashby, & Trippi, 1995;

Terry-Short et al., 1995) while others have explored social, individual, motivational, and behavioral dimensions. In the early 1990's, several teams of researchers independently launched investigations into the multidimensionality of perfectionism and the search for an understanding of these discreet dimensions (Frost et al., 1990; Hewitt & Flett, 1990, 1991; Slaney et al., 1995; Slaney & Ashby, 1996; Johnson & Slaney, 1996).

Hewitt and Flett (1991) conceptualize perfectionism in terms of both personal and interpersonal dimensions. They suggest that behaviors, attitudes and cognitions are similar but differ in whether they are self or other directed. Based on this, three dimensions of perfectionism were proposed and researched. "Self-oriented perfectionism" is described as setting high standards for oneself with the aim of avoiding failure and achieving perfection. Harsh self-evaluation based on unrealistically high standards is part of self-oriented perfectionism. In "other-oriented perfectionism" the demand for perfection and accompanying stringent evaluation is directed toward significant others. The third dimension identified by Hewitt and Flett is "socially-prescribed perfectionism" in which the individual believes that significant others hold exceedingly high standards for him/her and will evaluate him/her harshly based on these standards. Hewitt and Flett developed a Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1990, 1991) that measures these three dimensions. This will be referred to as the HFMPS.

Frost, Marten, Lahart, and Rosenblate (1990) explored the conceptualization and measurement of multidimensional perfectionism in a series of studies. They also developed an assessment instrument called the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990) which will be referred to as the MPS-F. This team started with an emphasis on the link of perfectionism to psychopathology and focused on a range of evaluative concerns that they theorized to be dimensions of perfectionism. Five initial dimensions were identified and

included in the instrument. Factor analyses indicated a sixth related dimension (Parental Criticism) which was added. The dimensions are: Excessive Concern Over Mistakes, which includes equating making mistakes with failure and the assumption that others will also evaluate the individual in a similar fashion; Personal Standards, which includes both high standards and basing one's sense of self on the achievement of these standards; Parental Expectations and Parental Criticism (two distinct dimensions), which involve the perception that parents have high standards for the individual and evaluate him/her in a hypercritical manner; Doubts About Actions, describes a general lack of confidence in everyday choices and actions; and Organization indicates a preference for orderliness. This last dimension is considered ancillary due to its less robust intercorrelation with the other MPS scales and other measures of perfectionism. Excessive Concern Over Mistakes is seen as the central factor that accounts for the most variability. Frost et al. note that the subscale of Personal Standards alone is associated with healthy functioning, suggesting an adaptive dimension of perfectionism.

Frost, Heimberg, Holt, Mattia, and Neubauer (1993) compared the MPS-F with the HFMPS. They performed a factor analysis of the two MPS's and found two higher-order factors. The factor deemed "Positive Achievement Striving" includes the Frost et al. scales "Personal Standards" and "Organization," and the Hewitt and Flett scales "Self-oriented Perfectionism" and "Other-oriented Perfectionism." This factor is considered normal or healthy perfectionism. The pathological factor was termed "Maladaptive Evaluative Concerns" and incorporates high loadings on "Concern Over Mistakes," "Parental Criticism," "Parental Expectations," and "Doubts About Actions" from the MPS-F, and "Socially-Prescribed Perfectionism" from the HFMPS. Further support for adaptive and maladaptive dimensions of perfectionism is found in a study by Terry-Short, Glynn-Owens, Slade, and Dewey (1995).

Conceptualizing perfectionism from a behaviorist stance, they focus on the consequences of perfectionistic behavior. They developed a 40-item measure that includes scales for positive and negative perfectionism, and for personal and social perfectionism. A principle components analysis supported positive and negative components of perfectionism. The social vs. personal distinction was only notable in positive perfectionism and was not significant in negative perfectionism. The emphasis on behavior suggests that negative/maladaptive perfectionism is a result of avoidance of negative consequences, and that positive/adaptive perfectionism is a function of achievement of positive consequences.

Other research has focused on multidimensional perfectionism as a trait that can be adaptively or maladaptively expressed. This body of research expands upon Hamachek's discussion of normal and neurotic perfectionists. The conceptualization of perfectionism initially suggested by Johnson and Slaney (1996) and furthered by a number of additional researchers at Penn State may be particularly useful for the study of eating disorders. Johnson and Slaney noted that the majority of research into perfectionism defines perfectionism as essentially problematic at best and pathological at worst. The definitions advanced by most theorists include excessive standards and striving, and critical self-evaluation. Johnson and Slaney further noted that past and current efforts to measure perfectionism are also informed by this perspective (Burns, 1980; Frost et al., 1990; Hewitt & Flett, 1991a, 1991b).

Slaney and Johnson (1992) developed a measure of perfectionism called the Almost Perfect Scale (APS) that incorporated the conceptual literature on perfectionism with concerns brought to counseling that are relevant to perfectionism. The APS sought to measure components of perfectionism free of a negative valence, and thus, to stay open to potentially positive elements of the construct. The initial instrument included six aspects of perfectionism

gleaned from the literature and clinical observations: Personal Standards, Anxiety, Procrastination, Interpersonal Relationships, Counseling Relationships, and Orderliness. In the 1996 study, the APS was administered to 1425 graduate, undergraduate and continuing education students. The factor structure was analyzed and four factors accounted for 84% of the variance. They were Standards and Order, Anxiety, Relationships, and Procrastination. A subgroup of the sample that self-identified as perfectionists predictably scored higher on Standards and Order, and on Anxiety. Less predictably the self-identified perfectionists were similar to non-perfectionists on Relationships, and were less likely than non-perfectionists to procrastinate. These findings suggested that, consistent with Hamachek's conceptualization, perfectionism was not simply a set of pathological dimensions but could include adaptive dimensions. They also challenged some of the common assumptions about perfectionism that underlie other measures. Specifically, the assumptions that perfectionists procrastinate more than non-perfectionists, and that perfectionists suffer interpersonally were not supported. The authors noted that a possible reason for this was that the sample was not a clinical sample.

In a second study, Johnson and Slaney (1996) went on to measure perfectionism in a sample of 50 individuals who had sought counseling, and who both self-identified and were identified by their counselors as perfectionists. The sample was then split into two groups. One group identified perfectionism as problematic in that it interfered with task completion and the other group did not. Clients and counselors had to agree on whether or not perfectionism was problematic. Both groups had equally elevated scores on Standards and Order. This supported the earlier findings that having high standards and being orderly did not, in itself, relate to the experience of perfectionism as problematic. The lack of correlation between interpersonal problems and perfectionism was repeated. Problematic perfectionists scored significantly higher

on Anxiety than non-problematic perfectionists, but the sample as a whole had elevated anxiety scores in comparison with the larger sample in the first study. The findings on procrastination were not consistent with the first study but consistent with anecdotal literature on perfectionism. The problematic perfectionists scored significantly higher on Procrastination. However, the Procrastination and Standards and Order subscales were negatively correlated which replicated the findings in the first study. It is possible that the criteria used for defining problematic perfectionism (interference with task completion) essentially defined procrastination as the problematic element in the construct. As such, procrastination may have been overrepresented in the sample. The study provides support for the conceptualization of perfectionism as having adaptive as well as maladaptive components.

Slaney, Ashby, and Trippi (1995) compared the APS with the MPS-F and the HFMPs. A principle components factor analysis was conducted on the subscales of each of the three measures. They found a two-factor solution that essentially reflected a positive dimension and a negative dimension of perfectionism. This two-factor solution was comparable to the Positive Achievement Striving and Maladaptive Evaluative Concerns factors found by Frost et al. (1993). The APS Standards and Order subscale loaded on the positive perfectionism factor and the other APS subscales (Anxiety, Relationships, and Procrastination) loaded on the negative factor. They then conducted a confirmatory factor analysis on the four factor structure of the APS versus the six factor structure that had originally emerged for goodness of fit. They found that the six factor structure, which again separated Standards and Order into separate subscales and separated the relationships scale into counseling and interpersonal relationships, had a slightly better fit.

In order to further challenge the negative bias discovered in much of the literature and to expand the methodology used to develop an understanding of perfectionism, Slaney and Ashby

(1996) conducted an exploratory qualitative study. The aim was for the researchers to maintain an open stance with participants as to what perfectionism is and how it affects them. They chose to select participants who self-identified as perfectionists or were strongly identified by someone who knew them well as perfectionists. The examiners asked a series of open-ended questions to 32 participants and the data were coded by three or more independent judges. Perfectionism was identified by a majority of perfectionists as having high personal standards as its core component. Orderliness was also identified by many participants, particularly the female participants. A majority of participants cited their perfectionism as both somewhat positive, and also as causing some level of distress. This intriguing ambivalence was further expressed when some of the participants were asked if they would relinquish their perfectionism if they could, and they uniformly said that they would not, regardless of any associated distress. A subset of responses indicated that many participants experienced a discrepancy between their high standards and their evaluation of their own performance.

Rice, Ashby, and Slaney (1998) investigated the relationship of perfectionism, depression and self-esteem using the APS. They predicted that the relationship between depression and perfectionism would be mediated by self-esteem. A sample of 489 participants was split, and half was used for initial modeling and half to validate the results. The APS and the MPS-F were used to measure maladaptive and adaptive perfectionism based on the two factor solution found by each set of researchers. The adaptive factor comprised the APS Standards and Order subscale and the MPS Personal Standards and Organization subscale. The maladaptive factor included the Procrastination, Relationships, and Anxiety subscales of the APS and the Concern over Mistakes, Doubts about Actions, Parental Expectations, and Parental Criticism subscales from the MPS. A confirmatory factor analysis supported this factor structure with the exception of the



APS Procrastination subscale which loaded on both the adaptive and maladaptive dimensions. Structural equation analysis was used and the strongest support was found for a model in which self-esteem mediated the effect of maladaptive perfectionism on depression. Adaptive perfectionism did not significantly affect self-esteem or depression, while maladaptive perfectionism significantly predicted depression and low self-esteem.

The APS studies found that the Standards and Order subscale measured adaptive perfectionism effectively and this finding was bolstered by the qualitative data. The qualitative data offered a more complex picture of the maladaptive dimension of perfectionism than was represented by the APS. Additionally, the findings on the Procrastination subscale indicated that procrastination was not a significant factor in perfectionism. The Relationships and Anxiety subscales did not seem to clearly define an essential element of perfectionism and could, instead, be measuring effects or concomitants of perfectionism. The APS was revised to incorporate these findings and to integrate aspects of the qualitative data that pointed to the experience of distress in perfectionism. The Revised Almost Perfect Scale (APS-R; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996) included several new items to improve the measurement of the adaptive dimension, and added a subscale to measure the concept of “discrepancy,” theorized to be an essential maladaptive dimension of perfectionism. As noted earlier, Discrepancy is the experience of having exceedingly high standards for oneself and the perception that one is not meeting those standards.

Suddarth and Slaney (2001) conducted a principal components analysis of the APS-R, the HFMPS, and the MPS-F. They found that three factors accounted for nearly 68% of the variance. The first factor, maladaptive perfectionism, was composed of the Concern Over Mistakes, Parental Expectations, Parental Criticism, and Doubts About Actions from the MPS-F,

the Discrepancy subscale from the APS-R, and the Socially Prescribed subscale from the HFMPS and it accounted for 35.5% of the variance. The second factor captured the adaptive dimension and accounted for 21.8% of the variance. It was composed of the Personal Standards subscale of the MPS-F, the Self-Oriented and Other-Oriented subscales of the HFMPS, and the High Standards subscale from the APS-R. The third factor included the Order subscale from the APS-R and the Organization subscale from the MPS-F and accounted for 10.6% of the variance. This factor was called Order/Organization. These factors were then used as predictor variables in multiple regression analyses, with measures for locus of control, anxiety, and psychopathology. The maladaptive perfectionism factor accounted for the most variance with each of the measures, with the greatest effects found on measures of trait anxiety and psychopathology. These findings offer robust support for the existence of distinct adaptive and maladaptive dimensions of perfectionism as well as a third dimension related to order.

The conceptualization of perfectionism as measured by the APS-R not only clearly distinguishes three dimensions of perfectionism, but it has also been used to delineate non-perfectionists from perfectionists, and maladaptive from adaptive perfectionists. This has allowed several teams of researchers to begin to further compare characteristics and functioning of each group. Ashby and Kottman (1996) used the APS-R to identify normal and neurotic perfectionists as described by Hamachek (1978). Those scoring above the 67<sup>th</sup> percentile on the High Standards subscale were identified as perfectionists. The Discrepancy subscale scores for this group were then used to distinguish normal from neurotic perfectionists, with the neurotic perfectionists scoring higher on Discrepancy than the normal perfectionists. They found that the neurotic group scored higher on measures of anxiety, procrastination, interpersonal difficulties, and feelings of inferiority. LoCicero and Ashby (2000) identified three groups using the APS-R

adaptive perfectionists, maladaptive perfectionists, and non-perfectionists. The groups were similarly defined by scores on the High Standards subscale, with those above the 67<sup>th</sup> percentile considered perfectionists and those scoring below the 67<sup>th</sup> percentile considered non-perfectionists. Among the perfectionist group, those scoring high on the Discrepancy subscale were considered maladaptive perfectionists and those scoring lower on the Discrepancy subscale were considered adaptive perfectionists. The adaptive perfectionist group was found to score higher on general and social self-efficacy subscales of the Self-Efficacy Scale (Sherer et al., 1982).

Rice and Slaney (2002) also found support for using the APS-R to delineate groups of perfectionists. In two studies of university students, Rice and Slaney used cluster analytic processes to identify three comparable clusters of non-perfectionists, adaptive perfectionists, and maladaptive perfectionists. Both adaptive and maladaptive perfectionists scored higher on the High Standards and Order subscales than non-perfectionists, indicating that these subscales may capture elements of overall perfectionism while the Discrepancy subscale distinguishes between adaptive and maladaptive perfectionism. Maladaptive perfectionists scored higher on the Discrepancy subscale than adaptive perfectionists and non-perfectionists. An interesting finding was that adaptive perfectionists scored even lower than non-perfectionists on Discrepancy, which suggests that having perfectionist features does not, in itself, indicate distress or psychopathology. Maladaptive perfectionists scored higher than adaptive perfectionists on depression and anxiety. They scored lower than adaptive perfectionists on self-esteem and positive affect. Non-perfectionists tended to score between the two groups on measures of self-esteem, depression and anxiety.

Discrepancy, as measured by the APS-R is supported by a robust body of research as defining and measuring maladaptive perfectionism and as being associated with depression, anxiety, and interpersonal difficulties (Accordino et al., 2000; Ashby & Kottman, 1996; Rice & Slaney, 2002; Suddarth & Slaney, 2001). To date, the findings on perfectionism and eating disorders have fluctuated based on the measure of perfectionism.

### *Eating Disorders and Multidimensional Perfectionism*

In a review of literature on perfectionism and eating disorders, Shafran and Mansell (2001) conclude that perfectionism is likely a risk factor for both anorexia nervosa and bulimia nervosa. As noted, Fairburn et al. (2003) cite “clinical perfectionism” (defined as perfectionism that is “clinically significant” and as maladaptive) as a maintaining mechanism of the eating disorders and write; “These patients tend to be extremely self-critical. They set themselves demanding standards in terms of their eating, shape, and weight, and their control, and when they cannot meet them, they see themselves as being at fault rather than their standards being too harsh” (Fairburn et al., 2003; p. 511-12). Hilde Bruch (1978), describing the experience of people with anorexia writes, “...their whole life had been an ordeal of wanting to live up to the expectations of their families, always fearing they were not good enough in comparison with others, and therefore, disappointing failures” (p. 23). Hamachek (1978) suggests that “neurotic” perfectionism develops in a similarly invalidating environment in which the individual’s ability to assess his or her own accomplishments is impaired, “...in an atmosphere of non-approval, a person lacks the necessary feedback for comparing actual performance with external standards” (p. 29). The characteristic of having crushingly harsh self-standards and a perception of perpetually failing to meet them is central to eating disorder pathology.

A new body of research is emerging that utilizes a multidimensional conceptualization of perfectionism in efforts to understand its specific mechanisms in eating disorders. This has represented a significant departure from the earlier unidimensional conceptualization of perfectionism in eating disorders research represented by the EDI perfectionism subscale. The EDI perfectionism subscale assesses cognitive and behavioral manifestations of harshly self-critical perfectionism. Several studies have found higher levels of EDI perfectionism in people with eating disorders than in comparison groups (Joiner, Heatherton, Rudd, & Schmidt, 1997; Minarik & Ahrens, 1996; Srinivasagam et al., 1995). In a review, Franco-Paredes et al., (2005) cite several studies utilizing the perfectionism subscale of the Eating Disorders Inventory (EDI; Garner, Olmstead, & Polivy, 1983a, 1983b) that found no differences between individuals with eating disorder symptomatology and comparison groups on perfectionism (Alvarez, Franco, Mancilla, & Vasquez, 2003; Mateo, 2002; Vasquez, Lopez, Alvarez, Ocampo, & Mancilla, 2000; Mancillo, Franco, Alvarez, & Vasquez, 2003). Frost et al. (1990) found that the EDI Perfectionism scale did not correlate with the Burns Perfectionism Scale (1980) or the Frost MPS. It is likely that these varying results may be related to the way perfectionism is conceptualized, defined, and measured.

Sutander-Pinnock, Woodside, Carter, Olmsted, and Kaplan (2003) conducted a study of the role of perfectionism in outcome of treatment for anorexia nervosa using measures of both unidimensional and multidimensional perfectionism. The sample consisted of 71 women and 2 men (mean age = 27.2 years) diagnosed with anorexia nervosa at an eating disorder treatment facility. Data collected for another study from a group of healthy women served as the comparison data. Interview and questionnaire data were collected pretreatment, at discharge, and then at a follow-up point that was between 6 and 24 months after discharge. The median

follow-up interval was 15.9 months. The EDI and Eating Disorder Examination (EDE) were administered to 55 subjects at pretreatment. The EDI was administered to 27 subjects at discharge, and the EDI, EDE, and MPS-F were administered to 49 subjects at follow-up. The follow-up group was divided into a good outcome group, who were symptom free and maintaining a normal weight, and a poor outcome group with either low weight or symptomatic behaviors. At admission, the clinical group had significantly higher EDI perfectionism scores than the comparison group. At discharge, the mean EDI perfectionism subscale score for weight-restored patients was not significantly different than the mean score of the healthy group. The MPS-F was only administered at post-treatment follow-up. At follow-up, the good outcome group had lower EDI perfectionism scale scores than the poor outcome group, and similar EDI perfectionism scores to the healthy comparison group. The MPS-F findings were different. The good outcome group had higher mean scores on all the MPS-F subscales except Parental Expectations. However, the good outcome and poor outcome groups did not differ significantly on the MPS-F subscales. These findings suggest that the unidimensional and multidimensional measures are assessing different constructs, and that the constructs measured by the MPS-F may represent more stable personality traits. The EDI perfectionism scores appear to be correlated with fewer eating disorder symptoms, suggesting the possibility that the EDI perfectionism scale could be measuring a construct that is more integrated with the disorder itself.

The recent work of Frost et al. (1993), Slaney et al. (1995), and Suddarth and Slaney (2001) in identifying higher order factors of multidimensional perfectionism may help to clarify research findings about perfectionism and eating disorders. The discrepancy construct of the APS-R is conceptually congruent with the Wonderlich et al. model which describes a central component of eating disorder pathology as the translation of an actual-ideal body discrepancy

into a generalized sense of inadequacy. People with eating disorders are caught in a cycle of negative self-evaluation based on unrealistic and distressingly high standards for their appearance, work performance, and public self. It could be argued that a good portion of the distress associated with eating disorders is the result of a perceived discrepancy between the individual's excessive standards for body size and/or control of food intake, and their "performance," i.e. their perceived body size or perceived lack of control of intake. By definition, the ideal that the eating disorder client strives for is unattainable and distressing. For these reasons, APS-R discrepancy seems like a relevant measure of maladaptive perfectionism for eating disorders.

There is limited research to date on perfectionism and eating disorders using the APS-R and its Discrepancy subscale. The data that are available support a link between eating disorders and APS-R Discrepancy. Ashby et al. (1998) explored the relationship between multidimensional perfectionism and eating disorders in a sample of 24 women with eating disorders and a comparison group of 166 female college students. The APS-R and the MPS-F were used to measure perfectionism and the EDI assessed eating disorder symptomatology and cognitive correlates of eating disorders, including unidimensional perfectionism. Principal components factor analysis of the two multidimensional perfectionism scales again found the two perfectionism factors, maladaptive and adaptive which accounted for 58.6% of the total variance. Some of the subscales loading on the maladaptive factor were the Discrepancy subscale from the APS-R and Concern Over Mistakes and Doubts About Actions from the MPS-F. The High Standards and Order subscales of the APS-R, and the Organization subscale of the MPS-F loaded on the adaptive perfectionism factor. The MPS-F Personal Standards subscale loaded on both factors. Ashby et al. found that the eating disorder group had higher scores for the

maladaptive perfectionism factor than the comparison group. They did not score significantly higher or lower on adaptive perfectionism. It is notable that the EDI subscales most highly correlated with maladaptive perfectionism were Interpersonal Distrust, Ineffectiveness, and EDI perfectionism (in that order) which points to the possible relationship of interpersonal difficulties with maladaptive perfectionism in women with eating disorders.

Lacour (1998) looked at perfectionism and aspects of the female gender role as they relate to eating disturbances in 194 female college students. The APS-R was used to measure perfectionism, and the Silencing the Self Scale (STSS) to assess dimensions of gender role. The STSS subscales measures schemas of how to sustain relationships within the bounds of culturally-determined gender roles. The subscales are Divided Self, Care as Self-Sacrifice, Silencing the Self, and Externalized Self-Perception. These schemas are quite relevant to the relational health and false self construct used in this study as they indicate suppression of the authentic self with the goal of maintaining relationships. Lacour revised the EAT-26 to reflect three dimensions: Weight Concerns, Control, and Worry of Others. Discrepancy, Silencing the Self, and the interaction of Discrepancy and Divided Self predicted the Control dimension of the EAT. The Weight Concerns factor was predicted by the Divided Self component of the STSS and the High Standards subscale of the APS-R, and also by the interaction of Divided Self and High Standards. No significant findings occurred for the Worry of Others factor. This study provides support for a relationship between maladaptive perfectionism, gender-role specific relational concerns, and eating disturbances. The interactions between maladaptive perfectionism and self-silencing in predicting eating concerns supports the idea that perfectionism could interfere with the development of authentic relationships in individuals with eating disorders.



Pearson and Gleaves (2006) investigated the question of whether perfectionism is unidimensional or multidimensional, its factor structure, and the relationship of perfectionism to disordered eating and body dissatisfaction in a sample of 286 college women. Perfectionism was assessed using the MPS-F, the Burns Perfectionism Scale (Burns, 1983), the Neurotic Perfectionism Questionnaire (NPQ; Mitzman, Slade, & Dewey, 1994), and the APS-R. Self-esteem was measured by the Rosenberg Self-Esteem Scale, and eating disordered behaviors and attitudes were measured by the BULIT-R, the EAT-26, and the Bulimic Investigatory Test, Edinburgh (BITE; Henderson & Freeman, 1987). Body satisfaction was measured using the Body Esteem Scale (BES; Franzoi & Shields, 1984), the Body Image Assessment (BIA; Williams, Gleaves, Cepeda-Benito, Erath, & Cororve, 2001) which measures current and ideal body image discrepancies, the Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987), and the Body Satisfaction Scale-Body Subscale (Slade, Dewey, Newton, Brodie, & Kiemle, 1990) which assesses satisfaction with eight parts of the body. A series of confirmatory Factor Analyses were conducted and a six factor model yielded the best fit. The six factors were self-esteem, body dissatisfaction, bulimic behavior, and three perfectionism dimensions termed neurotic perfectionism, normal perfectionism, and order. The authors note that neurotic perfectionism had a very high correlation with self-esteem (-.92) while normal perfectionism had a slight positive correlation with self-esteem (.23). Body dissatisfaction had a significantly higher correlation with neurotic perfectionism (.49) than with normal perfectionism (-.13). Bulimia was significantly correlated with neurotic perfectionism (.58) and was not significantly correlated with normal perfectionism. These findings support the earlier findings of Suddarth and Slaney (2001) of perfectionism as a multidimensional construct consisting of

healthy perfectionism, unhealthy perfectionism, and order. This study further supports the conceptual foundation of the APS-R.

Another study of adaptive versus maladaptive perfectionism in women with eating disorders was conducted by Terry-Short et al. (1995). They surveyed a sample of 21 women with eating disorders, 15 women with depression, 20 successful female athletes and a comparison group of 225 women on behavioral correlates of perfectionism. They developed a 40-item scale to measure positive and negative perfectionism, and also social and personal perfectionism. Negative perfectionism is associated with avoidance of negative consequences and positive perfectionism with attainment of positive achievements. Analysis of the data did not support the social and personal perfectionism components, but did find two distinct positive and negative perfectionism factors. As the authors predicted, the eating disorder group showed high levels of total perfectionism (combined positive and negative). This group scored highest of all groups on negative perfectionism, showing significant differences from the athletes and the comparison group. The eating disorder group scored higher than the control group on positive perfectionism but not as high as the athlete group. The authors cite the ratio of negative to positive perfectionism as helpful in understanding the dimensions' contributions to different emotional states. They cite the high positive perfectionism in athletes and its association to positive achievements as evidence. The high total perfectionism in women with eating disorders indicates that their behavior may be motivated by avoidance of negative outcome, and pursuit of achievement. The sample is small so these results must be considered preliminary but offer an intriguing perspective on motivational elements of perfectionism in eating disorders.

Bulik et al., 2003 surveyed 1010 female twins from the Virginia Twins Registry to investigate correlations between dimensions of perfectionism and seven psychiatric disorders

including depression, general anxiety, panic disorder, specific phobia, substance abuse, anorexia and bulimia. Data had been gathered from a larger sample of twins at 4 intervals between 1988 and 1997 regarding lifetime occurrence of psychiatric and substance abuse disorders. Bulik et al. used the diagnostic data from these previous interviews and followed up in 1999 with an administration of a multidimensional perfectionism questionnaire. An abbreviated form of the MPS-F that did not include two subscales related to parental influence or a third subscale measuring organization was used. The remaining three scales were reduced to a total of 12 items by selecting 4 items from the Personal Standards subscale, 4 items from the Concern Over Mistakes subscale, and administering the full 4-item Doubts About Actions subscales. Bulik et al. found that both the Concern Over Mistakes and Doubts About Actions subscales were associated with an elevated occurrence of anorexia and bulimia. Concern Over Mistakes was also protective against substance abuse disorders. Doubts About Actions was also associated with anxiety disorders. The Personal Standards subscale was not associated with any of the seven disorders. This reflects the breakdown of the MPS-F subscales into adaptive and maladaptive dimensions found in earlier studies, and supports the unique association of maladaptive perfectionism with eating disorders.

The question of whether this personality trait precedes the onset of eating disorders, or is generated as part of the symptom cluster has driven much of the research into perfectionism and eating disorders. There is support for the view that perfectionism precedes eating disorder development and may serve as a risk factor. Tyrka, Waldron, Graber, and Brooks-Gunn (2002) conducted a longitudinal study to explore prospective predictors for lifetime diagnoses of anorexia or bulimia. Participants were initially contacted in early adolescence (12-16 years old) and then 2 years later, and finally 8 years from the initial contact and were assessed for the

development of eating disorder syndromes. Tyrka et al. found that perfectionism in adolescence predicted development of anorexia in early adulthood. Bulimia was not as strongly associated with perfectionism in this study, and negative affect was instead seen as a predictor for later onset of bulimia. However, the overlap of diagnostic categories and movement by individuals between categories that has been noted by other authors (Fairburn et al., 2003; Vitousek & Manke, 1995) indicates that perfectionism is present across diagnostic labels.

Perfectionism has been found to persist in people who have recovered from eating disorders as well (Bastiani et al., 1995; Joiner et al., 1997; Srinivasagam et al., 1995; Szabo & Terre-Blanche, 1997; Stein et al., 2002). The general perspective of researchers with these findings is that the data represent persistence of pathology. However, because most of these studies do not assess perfectionism from the maladaptive versus adaptive perspective, it is difficult to assess whether overall perfectionism precedes eating disorders and persists after recovery or whether this breaks down based on a multidimensional perspective.

Srinivasagam et al. (1995) compared 20 women who had recovered from anorexia nervosa with 16 healthy women to assess whether perfectionism persisted after recovery in women with anorexia nervosa. The recovered group had been at a normal weight and had been menstruating regularly for over a year. The recovered group was divided into two groups; one group that had engaged in bingeing and purging while ill and a second group that had not. The Eating Disorders Inventory, MPS-F, and Yale-Brown Obsessive Compulsive Scale (Goodman et al., 1989) were administered. No differences were found on the measures of perfectionism or obsessiveness between the two subgroups of recovered women, so this group was combined for the rest of the analysis. The recovered group showed significantly higher rates of overall perfectionism on both the EDI perfectionism subscale and the MPS-F. The Concern Over

Mistakes and Parental Criticism subscales were also significantly higher in the previously eating disordered group than in the comparison group. The recovered group had higher scores on the rest of the MPS-F subscales but these differences did not reach statistical significance. It is notable that the Personal Standards subscale and the Parental Expectation subscales were the most similar to the comparison group because personal standards are associated with an adaptive perfectionism factor. The other EDI subscales were also elevated in the recovered group, but, again, did not reach significance. On the measure of obsessive compulsiveness, the recovered group endorsed a small number of an extensive number of target symptoms, but the group as a whole tended to endorse the same five target symptoms. These were the need for symmetry, ordering/arranging, repeating, fear of embarrassment, and rereading/rewriting. The recovered group showed a significant elevation in incidence of endorsement for each of these symptoms. Srinivasagam et al. contribute to the literature supporting the persistence of perfectionism after recovery from eating disorders, and the findings strengthen the evidence that perfectionism is a trait that may precede and outlive eating disorder pathology. It also is congruent with the notion that eating disorders may inflate the maladaptive expressions of perfectionism while the less pernicious and possibly adaptive dimensions may be present in recovery. The small sample size is a weakness of the study.

Bastiani et al. (1995) included the HFMPs and the MPS-F in their study of multidimensional perfectionism in 19 women with anorexia. One group of 11 participants was assessed when underweight. The second group of 8 women was assessed within a month of restoration to a normal body weight. A control group of 10 healthy women were also assessed. The findings showed that both groups of women with anorexia scored higher than the control group on overall perfectionism on both the MPS-F and the HFMPs scales. The weight restored

group did not score significantly higher than the control group on the MPS-F Personal Standards and Doubts about Actions subscales. There were no differences between the three groups on Parental Expectations or on the Other-Oriented Perfectionism subscale of the HFMPS. The persistence of perfectionism after weight restoration indicates the stability of the trait and argues against starvation triggering perfectionism. The small sample size of this study underscores the need for replication of these findings.

Davis (1997) surveyed a group of 123 patients with eating disorders (42 with anorexia nervosa, 59 with bulimia nervosa, and 22 with ED NOS) on body satisfaction, multidimensional perfectionism using the HFMPS and the Neurotic Perfectionism Questionnaire, and neuroticism as measured by the Eysenck Personality Questionnaire-Revised (Eysenck & Eysenck, 1991). Davis asserts that the Self-Oriented Perfectionism subscale of the HFMPS is representative of normal perfectionism and the items on the Neurotic Perfectionism Questionnaire are reflective of neurotic or maladaptive perfectionism. No differences were found among the groups on the perfectionism measures, so the data were treated as one group for additional multiple regression analyses. The three subscales of the HFMPS and the NPQ results were entered as main effects on body satisfaction, with Neuroticism added to the model as a covariate. Davis found that only the Self-Oriented Perfectionism subscale of the HFMPS, the NPQ, and Neuroticism were significant independent variables. A second analysis was performed to include an interaction of Self-Oriented Perfectionism and Neurotic Perfectionism, which was found to be highly significant. Self-Oriented Perfectionism is associated with positive body esteem when the levels of Neurotic Perfectionism are low. At high levels of Neurotic Perfectionism, Self-Oriented Perfectionism and Neurotic Perfectionism are both associated with poor body satisfaction. A strength of this study is its relatively large clinical sample. The findings suggest that maladaptive

perfectionism has a more dominant and defining effect on one symptom of eating disorders (body satisfaction) than adaptive perfectionism. Self-oriented perfectionism has been associated with the adaptive dimension of perfectionism (Frost et al., 1993), and findings are mixed regarding its relationship to eating disorders. In this study, it was associated with pathology only when high levels of neurotic perfectionism were also present.

Hewitt, Flett, and Ediger (1995) examined connections between eating disorder symptoms, body image, appearance self-esteem, and dimensions of perfectionism. A sample of 81 female college students was given the HFMPS (Hewitt & Flett, 1991a), the Perfectionistic Self-Presentation Scale (PSPS; Hewitt & Flett, 1993b), the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979), the Bulimia Test (BULIT; Smith & Thelen, 1984), the Body Image Avoidance Questionnaire (BIAQ; Rosen et al., 1991) and a measure of social self-esteem, the Feelings of Social Inadequacy Scale (Janis & Field, 1959) that was enhanced with items specifically related to appearance self-esteem. Self-oriented and Socially-prescribed perfectionism were both significantly correlated with the EAT at  $-.37$  and  $-.42$  (low scores indicate higher levels of anorexic behaviors and attitudes). Socially-prescribed perfectionism was also significantly correlated with the higher scores on the BULIT, with greater body image avoidance, and was negatively correlated with global and appearance self-esteem. The Other-oriented Perfectionism subscale of the HFMPS was also associated with body image avoidance and lower levels of global and appearance self-esteem. These results indicate that self-oriented perfectionism has a more specific link with anorexic behaviors only while socially-prescribed perfectionism shows a robust association with the full range of eating disorder behaviors and attitudes assessed. This may reflect a characteristic of a non-clinical sample in which high standards are associated with sub-threshold restrictive eating and somewhat obsessive body

concerns are more closely associated with anorexia. All of the PSPS subscales were significantly correlated with the EAT and the BULIT, and with the Clothing and Outings subscales of the BIAQ indicating that the construct of perfectionistic self-presentation, defined as “striving to create an image of flawlessness to others” (p. 318), is highly relevant to eating disorders. The PSPS subscales Need to Appear Perfect (later renamed Perfectionistic Self-Promotion) and Need to Avoid Disclosure of Imperfections (later renamed Non-disclosure of Imperfection) were not significantly associated with the total BIAQ score. All subscales of the PSPS were also associated with lower levels of both global and appearance self-esteem, with the exception of a non-significant finding between Non-disclosure of Imperfection and appearance self-esteem. The relevance of perfectionistic self-presentation to eating disorders is explored more fully in another section.

Another investigation into perfectionism and perfectionistic self-presentation in women with anorexia nervosa was conducted by Cockell et al. (2002). In addition to a sample of 21 women in treatment for anorexia, a control group of 17 women with mood disorders and a non-clinical group of 21 women were sampled. The HFMPS, PSPS, and measures of psychological distress (Beck Depression Inventory, Hamilton Depression Inventory, Rosenberg SES, Global Assessment Scale) were administered. Cockell et al. found that women with anorexia had higher levels of self-oriented and socially-prescribed perfectionism than either control group. The anorexia group, psychiatric group, and control group mean scores on Self-oriented Perfectionism were accordingly 93.5, 62.6, and 59.6, and on Socially-prescribed Perfectionism were 79.4, 50.2, and 42.7. The anorexia group also had significantly higher scores on the Perfectionist Self-Promotion subscale with a mean of 58.8 as compared to 36.0 for the psychiatric group, and 35.3 for the control group. The same pattern held with the other two PSPS subscales, with the



anorexia group having consistently higher mean scores than the other two groups. The results were also analyzed to control for psychological disturbance to determine whether perfectionism and perfectionistic self-presentation would still account for unique variance in anorexia.

Women with anorexia continued to show higher levels of Self-oriented and Socially-prescribed Perfectionism and of Non-disclosure of Imperfection than the psychiatric control group but they were not higher than the nonclinical control group once distress was controlled. Other-oriented Perfectionism, Perfectionistic Self-promotion, and Non-display of Imperfection mean scores did not differ significantly once distress was controlled. The results of this study raise the possibility that the dimensions of perfectionism captured by the HFMPs are relevant to eating disorders but do not capture an aspect of perfectionism unique to eating disorders.

Geller, Cockell, Hewitt, Goldner, and Flett (2001) explored inhibited expression of negative affect and interpersonal orientation in women with anorexia. They sampled 21 women in treatment for anorexia, 21 matched psychiatric controls (depression, bipolar, dysthymia), and 21 matched non-psychiatric controls on a range of measures including the Silencing the Self Scale (STSS; Jack & Dill, 1992), the State-Trait Anger Expression Inventory (STAXI; Spielberger et al., 1985), the Perceived Body Image Scale (PBIS; Manley & LePage, 1988), the HFMPs, the Perfectionistic Self-Presentation Scale (Hewitt et al., 2003), and measures of depression, self-esteem, psychiatric severity, and eating disorder status. The women with anorexia were found to have higher levels of depression and psychological impairment, and lower levels of self-esteem than both the psychiatric and non-psychiatric control groups. The psychiatric control group's scores fell between the other groups on these measures. Women with anorexia were also found to have higher scores on the Silencing the Self Scale schemas that reflect putting the needs of others first, and silencing self-expression to avoid conflict than the

other two groups. These findings concur with those of Lacour and provide further empirical support for the projection of a false self in many women with eating disorders. The two control groups did not differ on these scales. Self-oriented and socially prescribed perfectionism were significantly correlated with negative affect inhibition and self-silencing schemas across the entire sample.

McLaren, Gauvin, and White (2001) explored the roles that multidimensional perfectionism, perfectionistic self-presentation, and excessive commitment to exercise play in predicting dietary restraint in a sample of 269 female college students. The measures used were the HFMPs, the PSPS, and the Commitment to Exercise Scale (CES; Davis, Brewer, & Ratusny, 1993). Multiple regression analysis using dietary restraint as the criterion variable indicated that self-oriented perfectionism, socially prescribed perfectionism, and perfectionistic self-presentation (total score) each accounted for a significant amount of variance in dietary restraint (5.3%, 5%, and 8% respectively). Excessive commitment to exercise was an independent predictor of dietary restraint.

There is some evidence that maladaptive perfectionism interacts with stress to trigger eating concerns in non-clinical samples. Ruggiero, Levi, Ciuna, and Sassaroli (2003) used the MPS-F to explore the relationship of stressful events and perfectionism to eating disorders and related attitudes. A sample of 42 female high school students were administered the MPS-F and the Eating Disorders Inventory (EDI; Garner, Olmsted, & Polivy, 1983) on three occasions. First on an average school day, then on a day in which they took an exam, and finally on a day in which they received the results of the exam. At each administration, the Concern over Mistakes subscale of the MPS-F was positively associated with the Body Dissatisfaction subscale of the EDI. The Parental Criticism subscale was associated with Body Dissatisfaction on the average

day and the day of receiving exam results. Drive for Thinness was associated with concern over mistakes and parental criticism only the day of the exam results. The implication is that drive for thinness is an attitude in a non-clinical sample that is more likely to be related with a maladaptive dimension of perfectionism in association with stressful events. These subscales are associated with maladaptive perfectionism factor of the MPS-F termed evaluative concerns. These findings offer support for an association between perfectionism and eating disorder related attitudes in a non-clinical sample of high school students. This suggests that it is not outside of the norm for young women to translate stressful experiences into a negative body-related attitude.

The contribution of perfectionism to maintaining the most severe eating disorders is underscored in some of the research. In a study by Halmi et al. (2000), 322 women with anorexia nervosa were recruited in an international, multisite study of anorexia nervosa and genetic and behavioral correlates. The criteria for anorexia nervosa diagnosis were modified from the DSM-IV requirements to allow participants who were not amenorrheic. The group was divided by anorexia subtypes and included restricting anorexia, bingeing anorexia, and bingeing and purging anorexia. The MPS-F, EDI-2, Yale-Brown Obsessive Compulsive Scale, and Yale-Brown-Cornell Eating Disorder Scale (Mazure, Halmi, Sunday, Romano, & Einhorn, 1994) were administered. Data from a comparison group of 44 healthy women collected for another study was used. Genetic data was also gathered and analysis of paired first degree relatives was included as part of the methodology. Participants were drawn from treatment facilities in Los Angeles, Toronto, Pittsburgh, Philadelphia, New York City, London, and Munich. Some site-related differences were found for the Munich sample, but these did not affect the overall findings. It is unclear if they represent a difference in personality style reflective of German

culture, a glitch in the instrument translation, or another set of factors. For the purpose of this review, the findings on multidimensional perfectionism will be the focus. As predicted, the comparison group had lower scores than all the subtype groups on all the MPS-F subscales except organization, on which there were no significant differences except with the purging group, who scored higher. On the MPS-F, the subtype groups did not differ on any of the subscales with the exception of the Parental Criticism subscale, on which the restricting subgroup scored significantly lower than the purging subgroup. No differences were found among the groups on the EDI perfectionism subscale. The eating disorder groups did not differ on the measure of obsessive compulsive behaviors. The overall MPS-F perfectionism score was negatively correlated with lowest lifetime BMI, suggesting that perfectionism is heightened at critical points in the eating disorder as measured by low weight. A strength of the study was the volume and range of the sample. The authors note that the comparison group was drawn from a single site and had slightly lower mean scores on the MPS-F than normative data reported by the scale developers.

Wonderlich et al. 2005 found support for the existence of three distinct clusters of individuals with bulimia based on personality subtypes and comorbid features. The clusters have been proposed and supported by previous cluster analytical studies (Goldner et al., 1999). A sample of 178 female subjects who endorsed the presence of bingeing and purging behaviors was recruited through advertisements in both clinics and communities in the Midwest. The age range was from 18 to 57 years old, with a mean of 25.56 years of age. Of the 178 women, 119 met DSM-IV criteria for purging type bulimia nervosa, 5 met criteria for non-purging type bulimia, 37 reported sub-threshold but substantial bulimic symptoms and were designated as subclinical, and another 17 were purging with binge eating behavior that did not meet criteria as outlined in

the DSM-IV and were included in the subclinical group. The sample completed measures of eating disorder behaviors and cognitions, personality pathology, multidimensional perfectionism (with the MPS-F), impulsivity, depression, anxiety, obsessive compulsive behaviors, and alcohol and drug abuse. Wonderlich et al. used Latent Profile Analysis to determine the number of clusters based on patterns of comorbid features. Three clusters emerged with the following identifiers. Cluster 1 was termed low comorbidity and showed significantly lower scores across all measures of psychopathology. Cluster 2 is the affective/perfectionistic cluster and was significantly differentiated from the other clusters by high scores on MPS-F total perfectionism, depression, trait anxiety, and obsessive compulsive symptoms. MPS-F subscale scores were not reported and were not factored into the data analysis. Cluster 3 was termed impulsive and was characterized by significantly higher rates of substance abuse, impulsivity, and self-destructiveness. A comparison among the 3 clusters showed no differences in rates of full versus partial syndrome bulimia. However, the perfectionistic cluster showed the highest levels of eating disorder psychopathology indicating that the actual symptoms and attitudes were most severe in this group. Differences were found on rates of lifetime anorexia nervosa, with the affective/perfectionistic cluster having the highest rate (36.5%), the impulsive cluster having the second highest rate (33.3%) and the low comorbidity group having the lowest rate of 15.6%. This study potentially offers support for the assertion of Fairburn et al. (2003) that perfectionism is one of the underpinnings of the most severe and difficult to treat eating disorder profiles. The omission of MPS-F subscales essentially omits the multidimensionality of the measure, and does not allow for an understanding of how the more adaptive dimensions of perfectionism would differ from the maladaptive dimensions across the 3 clusters. This omission calls into question the findings as they relate to perfectionism. A similar analysis that included adaptive and

maladaptive perfectionism could make a significant contribution in understanding the relationship of eating disorder severity with types or dimensions of perfectionism

*Interpersonal Expressions of the False Self: Perfectionistic Self-Presentation*

Few studies have attempted to empirically study the false self construct in eating disorders. One exception is a study by Striegel-Moore, Silberstein, Rodin (1993). The false self was conceptualized as the “social” or “public self.” Striegel-Moore et al. examined the relationship of the social/public self to body esteem and bulimia nervosa in a two phase study. In the first phase a mixed sample of female college students (n=139) and women recruited from the community (n=83) completed measures of self-consciousness, social anxiety, body esteem, perceived fraudulence, eating disorder related behaviors and cognitions, and symptoms of psychological distress. The phase 2 sample included 34 women with bulimia, 33 women from the phase one sample with scores above 20 on the EAT-26 (considered high and indicative of disturbed eating, and a healthy control group of 67 matched controls from the phase 1 sample. The group of women with bulimia completed the same battery of assessments. In the group of college students, perceived fraudulence, public self-consciousness, and social anxiety were negatively correlated with body esteem. The phase 2 analysis showed that bulimics and women with high EAT scores scored higher on social anxiety and public self-consciousness than the healthy control group. The measure of perceived fraudulence differentiated bulimic participants from high EAT subjects, and both groups from controls. The women with bulimia had the highest levels of perceived fraudulence, and the high EAT group scored between the bulimia and control groups. This study offers several strengths. Drawing from a sample that includes both students and community members increases the generalizability of the findings. It is particularly relevant for the understanding of the internal and interpersonal elements of bulimia due to the

clinical sample. It offers some support for the notion that some women with eating disorders experience themselves as presenting a false front.

Perfectionistic self-presentation is an interpersonal style reflected by attempts to project oneself as perfect or to conceal perceived imperfections in interactions with others. It is conceptualized as having dimensions represented in subscales in the PSPS (Hewitt et al., 2003). Hewitt et al. (2003) write "...certain perfectionists are committed to displaying an ideal public self that conveys an image of being flawless. This is in keeping with the evidence suggesting that perfectionism and the ideal self are closely linked (Hewitt & Genest, 1990), and certain individuals have developed an ideal self with a public perspective in mind" (Hewitt et al., 2003, p. 1303). This construct offers an important interpersonal complement to measuring maladaptive perfectionism as a distressing discrepancy between self-expectations and perceived performance. It is also a construct that, at face value, should be negatively related to relational health

Hewitt et al. (2003) performed a series of validation studies on the Perfectionistic Self-Presentation Scale. Factor analysis found that a three factor solution accounted for 44.1% of the variance. The three factors are Perfectionistic Self-promotion, Nondisplay of Imperfection, and Nondisclosure of Imperfection and three subscales were designated to represent these facets. The measure was found to have acceptable internal consistency. Across four validation studies, the internal consistency alphas for the three subscales were as follows: the Perfectionistic Self-Promotion subscale alphas ranged from .84 to .89., the Nondisplay of Imperfection alphas ranged from .83 to .91, and the Nondisclosure of Imperfection alphas ranged from .72 to .86. The validation studies drew samples from student, community, and psychiatric populations, strengthening the generalizability of the findings.

Perfectionistic self-presentation was found to be related to several measures of multidimensional perfectionism, the Big Five personality traits, and narcissism, and was also shown to be a distinct construct from these factors. Particular emphasis was placed on perfectionistic self-presentation being found to be conceptually related but distinct from multidimensional perfectionism as measured by the HFMPs and the MPS-F. Hewitt et al. assert that this construct is a “stylistic expression” of trait perfectionism. This personality style is associated with multiple measures of psychological distress such as depression, anxiety, and lower levels of general, social, and appearance self-esteem, and therefore is believed to be a maladaptive self-presentational style.

In one of the validation studies included in Hewitt et al. (2003), two separate samples completed the PSPS and were also rated on perfectionistic self-presentation facets by family and friends and by clinicians. The ratings were highly correlated in both samples. This both supports the construct validity of the scale and suggests that perfectionistic self-presentation is interpersonally significant. Hewitt et al. conjecture that perfectionistic self-presentation may result from the individual feeling a lack of interpersonal connection. Lower levels of self-esteem were found to be associated with perfectionistic self-presentation which can contribute to interpersonal issues. They suggest that this interpersonal style may reflect an attempt to gain approval and caring from others in place of a stable sense of self-worth. Hewitt et al. write, “This style may foster problematic social or intimate relationships that arise, in part, from reticence to engage in mutual self-disclosure, dishonesty in terms of portrayal of inappropriate personal characteristics and accomplishments, and a perceived lack of authenticity in the eyes of others” (p. 1321).



This suggests a plausible link between relational health and quality and perfectionistic self-presentation that was further explored in this study.

There were conflicting findings on the Perfectionistic Self-promotion subscale, suggesting that it might be less maladaptive than the two other subscales. Perfectionistic self-promotion is an active presentation of the self as flawless whereas both nondisplay of imperfection and nondisclosure of imperfection are passive acts of concealment of aspects of the self believed to be flawed. Perfectionistic Self-promotion was found to be associated with depression, state and trait anxiety, social phobia, and negatively associated with general, academic, and appearance self-esteem. However, when stepwise regression was performed, controlling for gender and HFMPs perfectionism, Perfectionistic Self-promotion positively predicted general, appearance, and social self-esteem. Also, when the MPS-F was included in the analyses, the PSPS subscale of Perfectionistic Self-promotion was the only subscale with a significant positive correlation with the MPS-F Personal Standards and Organization subscales, which have loaded as part of an adaptive perfectionism factor. All PSPS subscales were significantly correlated with all HFMPs subscales. Perfectionistic Self-promotion was also significantly correlated with the MPS-F subscales reflective of maladaptive perfectionism. It is possible that these findings reflect a self-inflating narcissism, as Hewitt et al. suggest, but it is also possible that there are instances and individuals in which perfectionistic self-promotion is an adaptive strategy.

In a similar vein, Kawamura and Frost (2004) hypothesized that self-concealment might mediate the relationship between maladaptive perfectionism and distress. Self-concealment is defined as the need to keep hidden information about the self that is believed to be negative. This is conceptually related to perfectionistic self-presentation in general, and the subdomains of

nondisclosure and nondisplay of imperfection in particular. They suggested that, for the perfectionist, self-concealment could function protectively against the anticipated negative judgments of others. “For perfectionists, the short-term benefit of self-concealment appears to be the avoidance of evaluative threat, but unfortunately, the long-term consequence of self-concealment may be higher levels of psychological distress” (p. 184). A sample of 145 college students completed the MPS-F, the Self-concealment Scale (SCS; Larson & Chastain, 1990), and measures of psychological distress (the Hopkins Symptom Checklist-21, the College Issues Questionnaire). T-tests for gender differences among independent correlations found a significantly larger correlation between maladaptive perfectionism and self-concealment for women than for men. Results from the 29 males in the sample were not included in the other analyses because of these differences. As predicted, self-concealment mediated the relationship between maladaptive perfectionism and distress. Although there was no eating disorder component in this study, it does offer some support for the possibility that self-concealment and related constructs such as perfectionistic self-presentation are associated with distress.

Perfectionistic self-presentation has been included with other measures of perfectionism (most frequently the HFMPS) to study links between eating concerns and perfectionism. As previously noted, perfectionistic self-presentation has been found to be related to anorexia nervosa, dietary restraint, excessive exercise, body image avoidance, and self-esteem (Cockell et al., 2002; Hewitt, Flett, & Ediger, 1995; McLaren et al., 2001). All three PSPS subscales had significant positive correlations with negative affect inhibition and self-silencing schemas in an eating disorder sample, a non-psychiatric control sample, and a mood disordered sample in Geller et al. (2000). In Cockell et al.’s study the PSPS subscale of Nondisclosure of Imperfection differentiated the women with anorexia from both a normal control group and a

non-eating disordered psychiatric control group. McLaren et al. found that perfectionistic self-presentation significantly contributed to predicting dietary restraint in female college students. These findings provide further evidence for the importance of pursuing the relationship of perfectionistic self-presentation in both clinical and subclinical groups.

McGee, Hewitt, Sherry, Parkin, and Flett (2005) looked into the relationship between perfectionistic self-presentation and two facets of body image disturbance (body image evaluation and body image investment) and how these variables affect eating disorder behaviors. The sample was a group of 145 female undergraduates at a Canadian university and was 37% Caucasian, 54% Asian, 5% East Indian, and 3% self-identified as “other.” McGee et al. found that all three dimensions of perfectionistic self-presentation (perfectionistic self-promotion, non-display of imperfection, and nondisclosure of imperfection) were related to eating disorder symptoms as predicted. Stepwise regression was used to determine whether body image investment or evaluation moderated the relationship between eating disorder symptoms and perfectionistic self-presentation. Body image evaluation interactions with all three facets of perfectionistic self-presentation served as significant predictors of eating disturbances. Body image investment did not moderate the relationship, which was predicted by the authors.

The evidence for a link between an interpersonal style that is protective and self-concealing, and that appears to externalize aspects of perfectionism and eating disorders is strong. It makes intuitive sense that a constellation of maladaptive perfectionism, perfectionistic self-presentation, and poor relational quality and health could be foundations for a psychosocial model of eating disorders.

### *Depression and Eating Disorders*

The incidence of depressive disorders is higher in women with eating disorders than in the general population (Fornari et al., 1992; Lewinsohn, Striegel-Moore, & Seeley, 2000). The mechanism that links eating disorders and depression is unclear. A study of monozygotic female twins, aged 16-18, investigated the incidence of comorbid depression and anxiety in monozygotic twin pairs discordant for eating disorders, i.e. one twin has an eating disorder and the other does not (Keel, Klump, Miller, McGue, and Iacono, 2005). The total number of twins with DSM-IV diagnosed eating disorders was 38. However, 5 twin pairs were concordant for eating disorders, reducing the number of eating disorder probands to 33. Of these 33, only 14 were part monozygotic, discordant twin pairs. A control group of 296 twins were also included. Keel et al. found a shared transmission of eating disorders and anxiety disorders, but did not find a significant shared path between depression and eating disorders, although the occurrence rate of depression in non-eating disordered monozygotic twins was higher than that of the control group. These results suggest that depression and eating disorders exist as distinct disorders in women with eating disorders rather than depression resulting from eating disorder symptoms.

Lewinsohn et al. (2000) analyzed a longitudinal data set originally gathered for the Oregon Adolescent Depression Project for epidemiological information about eating disorders in an adolescent and young adult population. In particular, the authors were interested in gathering an adolescent community sample since many previous epidemiological studies included adult populations. Another goal was to gather information about the course of sub-threshold eating disorders in adolescents. The third focus of the data analysis was to gain information on the course of eating disorders and comorbidity with other psychiatric disorders. An extensive

clinical interview that included the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) had been conducted with randomly selected high school students, and then repeated one year later, and then again in the participants' 24<sup>th</sup> year. The information gathered included data on eating disorder behaviors, attitudes, and cognitions and was sufficiently contextualized to allow diagnosis of full and partial syndrome eating disturbances. The base rate of eating disorders among males in the sample was extremely low and this data was dropped. This left a sample of 891 females for first interview, 810 for the second interview, and 538 for the interview at age 24. A full eating disorder syndrome group (n=19), a partial eating disorder syndrome group (n=23), and a no eating disorder group (n=768) were analyzed. The incidence rate for eating disorders was shown to be very low at 2.8% by age 18 which is consistent with prior prevalence studies. The rates of comorbidity of full and partial syndrome eating disorders with depression were extremely high. The full syndrome group had an 84.2% rate of depression comorbidity and the partial syndrome group had a 56.5% rate of depression comorbidity. This is contrasted with a depression rate of 31% in the non-eating disorder group. Anxiety also showed fairly high rates of comorbidity with full syndrome (21.1%) and partial syndrome eating disorder (34.8%) compared with the 10.9% rate of anxiety disorders in the non-eating disorder group, but the link between eating disorders and depression is striking. On depression measures, the partial syndrome group fell at an intermediate range between full and no syndrome groups, indicating support for the spectrum model of eating disturbances. Both the full and partial eating disorder syndrome groups were also at a significantly higher risk of suicide than the non-eating disorder group.

Perez, Joiner, and Lewinsohn (2004) utilized the same data set from the Oregon Adolescent Depression Project as Lewinsohn et al. (2000). Perez et al. focused on whether

major depressive disorder (MDD) or dysthymia was more strongly correlated with bulimia in an adolescent and young adult sample. They included a sample of 937 participants, male and female who were interviewed at the three intervals. This included 17 females with a diagnosis of bulimia nervosa. A logistic regression was used to determine which depression diagnosis was more predictive of bulimia. A lifetime diagnosis of dysthymia, contrasted with current dysthymia and MDD, and lifetime MDD, was the only significant predictor of bulimia. The authors suggest that the unrelenting nature of dysthymia, as opposed to MDD which is more likely to remit, even without treatment, may result in the need for affect regulation associated with bulimia. They further theorize that lower levels of self-esteem associated with dysthymia (as opposed to greater self-esteem fluctuation associated with MDD) may cause women with bulimia to pursue a maladaptive method of self-change. These theoretical explanations make intuitive sense. Dysthymia may allow individuals to function well enough and to be energized enough to binge and purge. This form of affect regulation may, in fact, distract from and regulate affect well enough that dysthymia is not as likely to develop into MDD.

As Troop, Serpell, and Treasure (2001) note, the medical consequences of disordered eating can affect mood, and low mood can affect appetite and behavior regulation. Troop et al. explored the relationship between depression and eating disorders in women with eating disorders and women in remission from eating disorders. This study's aims were twofold. The authors note that both depression and eating disorders comprise a range of symptoms, and one aim was to study the relationship among the multiple factors associated with these disorders. The second aim was to investigate whether depression persisted after eating disorder remission to contribute to the understanding of whether depression is secondary to eating disorders. The volunteer sample was drawn from a database of past and current clients of an eating disorders

clinic. One hundred and fifty-one women with current eating disorders (including AN, BN, and EDNOS) and 57 women in remission from an eating disorder were in the sample. The Short Evaluation for Eating Disorders (SEED; Kordy & Treasure, 1997) was administered to determine eating disorder status and diagnosis. If the participant was in remission, a second SEED was completed for past eating behaviors. The Beck Depression Inventory (BDI) measured depression. Approximately 72% of the women with eating disorder diagnoses were either severely or moderately depressed, while only 28% of the remission group was severely or moderately depressed. A principal components factor analysis was performed for the SEED and the BDI. Three eating disorder-related factors were extracted that accounted for 65% of the variance. These were dietary restraint, bulimia, and body mass index (BMI)/menstruation. The BDI factor analysis strongly suggested a single factor solution but a two factor solution was forced that accounted for 49% of the variance. These factors were cognitive aspects of depression (such as negative thinking, guilt, and self-criticism) and somatic/affective aspects of depression (such as appetite loss, weight loss, anhedonia). There was no significant contribution by the eating disorder factors to the somatic/affective dimension of depression after controlling for the cognitive dimension. However, both dietary restraint and bulimia made a significant contribution to the cognitive factor of depression. The BMI/menstruation factor was unrelated to either aspect of depression. The finding that eating disorder behaviors (dietary restraint, bulimia) but not sequelae (BMI or menstruation status) are uniquely associated with the cognitive dimensions of depression makes intuitive sense. The self-denigrating, pessimistic, and self-critical perspectives measured in this study suggest that maladaptive perfectionism may also play a role. The finding that far fewer women in remission from eating disorders have significant

levels of depression suggests, as Troop et al. note, that the cognitive aspects of depression may be a part of the eating disorder syndrome rather than just co-occurring.

Metalsky et al. (1997) investigated the role of attributional style in moderating depression among patients with bulimia. Twenty-two women with bulimia were compared to 14 women diagnosed with depression on measures of depression and attributional style. In both groups, negative attributional style moderated depression severity. Among the group of women with bulimia, those with negative attributional style had higher levels of depression than those with positive attributional style, who tended to not be depressed. A negative attributional style was characterized as internal, stable, and global. This again suggests a cognitive schema skewed toward self-blame and self-denigration that may be associated with maladaptive perfectionism.

Some of the research into depression and eating disorders has taken a developmental approach. Graber and Brooks-Gunn (2001) conducted an 8 year longitudinal study of subclinical eating and depressive symptoms in adolescent females. They were interested in identifying precedents and social, psychological, or physical correlates of these concerns. One hundred and five adolescent and young adult females were surveyed first at some point between 7<sup>th</sup> and 10<sup>th</sup> grade, then again 2 years later, and a final time in young adulthood. The sample was predominantly Caucasian and from a middle to upper middle class socioeconomic status. Age appropriate measures of eating disturbances, depressive symptoms, body image, physical development, psychopathology, and relationships with peers and parents were administered at each interval. At each time of assessment, the sample was divided into one group with eating symptoms, one group with depressive symptoms, one group with comorbid depressive and eating symptoms, and one group with neither depressive nor eating symptoms. The group with co-occurring eating and depression problems were, not surprisingly, found to have greater



adjustment and social difficulties. Eating problems appeared to be preceded by depressive symptoms in the group that developed both. The co-occurring group had the most troubled peer and family relationships, followed by the depressive group. The eating problems only group had some troubled family relationships but peer relationships comparable to the control group. Early age of menarche and higher BMI were correlated with eating problems in adolescence but not young adulthood. Given that such approximately 85% of women who do have eating disorders have comorbid depression, it seems reasonable that those adolescent girls with co-occurring depressive and eating symptoms may include a group that goes on to develop full syndrome eating disorders. The role of conflictual social relationships in those with eating and depressive concerns is established at the subclinical level by this study. The current study investigated levels of relational health and depression across both clinical and subclinical populations.

Minarik and Ahrens (1996) assessed intercorrelations between eating disorder symptoms, depression, and multidimensional perfectionism as measured by the MPS-F. The goals of the study were twofold: first, to analyze the relationship of multidimensional perfectionism to eating disorders, and second, to test the relationship of MPS-F Personal Standards to depression. They conducted two similar studies with the goal of replicating their initial findings. In study 1, a sample of 39 female college students completed the MPS-F, the BDI, the EAT-26, and the EDI. Minarik and Ahrens anticipated that scores on the MPS-F Parental Expectations and Parental Criticism subscales would have a significant relationship to eating disturbances. Instead, these subscales had no significant correlations with eating disorders. The strongest relationships to eating disorders existed with higher scores on the Concern Over Mistakes and Doubts About Actions subscales, both of which were positively correlated to the EAT-26 and the EDI. The Concern Over Mistakes subscale scores had a .43 correlation with the EAT scores and a .46

correlation with the EDI scores. The Doubts About Actions subscale scores had a .33 correlation with the EAT scores and a .39 correlation with the EDI. Personal Standards had no relationship to eating disorders. Regression analysis showed that Concern Over Mistakes and Doubts About Actions both predicted eating disorder scores. On the measures of depression, personal standards was marginally negatively correlated with depression. All other subscales of the MPS-F were significantly positively correlated with BDI depression scores. BDI depression was not significantly associated with the EAT scores but was marginally associated with the EDI scores, which was a surprising result. The second study administered the same measures and an additional measure of anxiety to a sample of 56 female college students. The results were replicated, with personal standards showing a stronger negative correlation with depression in study two. Anxiety scores did not significantly predict eating disorders, and the two MPS-F subscales, concern over mistakes and doubts about actions again did predict eating disorders. In study 2, depression was strongly correlated with eating disorders. The difference in findings on the relationship between depression and eating disorders is puzzling and may reflect the fact that this is a non-clinical sample. This study strongly suggests that adaptive perfectionism as measured by the Personal Standards subscale is not associated with depression or eating concerns and strengthens the argument for measuring perfectionism in as sensitive a manner as possible to identify the distressing components. It also indicates that aspects of perfectionism that incorporate negative self-evaluation and concern over how one is perceived could be mediators of the relationship between eating disorders and perfectionism.

The link between perfectionism and depression has been soundly established (Hewitt, Flett, & Turnbull-Donovan, 1992; Rice et al., 1998). Treatment of depression is found to be less effective in persons with higher levels of self-criticism and perfectionism (Blatt, Zuroff, Bondi,

Sanislow, and Pilkonis, 1998). A body of analyses of the Treatment of Depression Collaborative Research Project has found that the negative relationship between perfectionism and treatment outcome is accounted for by 1) treatment alliance, and 2) poor social network (Dunkley, Zuroff, and Blankenstein, 2003; Shahar, Blatt, Zuroff, Krupnick, and Sotsky, 2004). This indicates that, in the treatment of depression, there is some interaction between perfectionism and interpersonal factors that seems to be related to poor outcome. There are many studies that link eating disorders and perfectionism, and many others that document the existence of interpersonal deficits in people with eating disorders (Grissett & Norvell, 1992; Rorty, Yager, Buckwalther, & Rossotto, 1999; Tiller, Sloan, Schmidt, Troop, Power, & Treasure, 1997); however, there are relatively few that examine a relationship between maladaptive perfectionism and relational health and quality in women with clinical and sub-clinical eating disorders.

#### *Research Hypotheses*

Given that a significant number of people treated for eating disorders do not experience full recovery, several researchers have addressed the need for a greater understanding of the factors that maintain these disorders (Agras et al., 2003; Fairburn et al., 2002). Fairburn et al., (2003) identified interpersonal deficits and clinical perfectionism as two of four significant barriers to treatment outcome. Treatment of depression is found to be less effective in persons with higher levels of self-criticism and perfectionism (Blatt, Zuroff, Bondi, Sanislow, and Pilkonis, 1998). Analyses of the Treatment of Depression Collaborative Research Project data has found that the negative relationship between perfectionism and treatment outcome is accounted for by 1) treatment alliance, and 2) poor social network (Dunkley, Zuroff, & Blankenstein, 2003; Shahar, Blatt, Zuroff, Krupnick, and Sotsky, 2004). Shahar et al. (2004) found that the negative effect of perfectionism on treatment outcome in depression was mediated by social network which

underscores the potential for the relational domain to aid in prevention and recovery from eating disorders. Perfectionism and unsatisfying social network are significant obstacles to overcoming depression. There are not empirical studies that have explored whether this is true of eating disorder treatment, however, it is reasonable to hypothesize that these factors (perfectionism and poor social network) may also work together to maintain eating disorders.

This study examined aspects of the false self, identified as maladaptive perfectionism, and perfectionistic self-presentation in women with clinical eating disorders, a subclinical group, and a comparison group of asymptomatic women. Relational health, with its emphasis on mutual engagement and authenticity, was also examined in all three groups as a way to look at the interpersonal effects of the false self. Relationships with a peer, a mentor, and with a salient community were assessed. The high comorbidity of eating disorders and depression (Lewinsohn, Striegel-Moore, & Seeley, 2000) presents the possibility that any effects observed could be related to mood disturbance rather than eating pathology. Therefore, depression was also assessed. The research hypotheses for this study were:

1. *Clinical Group*: It was predicted that the group identified as having full syndrome eating disorders (the clinical group) as determined by the Q-EDD would have the highest mean scores on measures of maladaptive perfectionism (high APS-R Discrepancy scores), Perfectionistic Self-Presentation Scale (PSPS) Nondisplay of Imperfection, PSPS Nondisclosure of Imperfection, and CES-D depression. The PSPS Perfectionistic Self-Promotion scale literature indicates that this subscale may group with the adaptive perfectionism factors (Hewitt et al., 2003), therefore it was hypothesized that PSPS Self-Promotion would be lower in the clinical group than in the subclinical or asymptomatic groups. There is very little research to guide predictions on differences across the three

relationships measured (peer, mentor, community), therefore this aspect is exploratory. However, the clinical group is hypothesized to have lower scores on measures of relational health and quality in relationships with peers, mentors, and community. The precedent for hypotheses regarding adaptive perfectionism as measured by the APS-R High Standards subscale is in Ashby et al. (1998), in which an eating disordered sample did not differ from a comparison group,. However, given that research indicates that adaptive perfectionism is associated with positive constructs such as self-esteem (Grzegorek et al, 2004; LoCicero & Ashby, 2000) that are normally not positively correlated with eating disorders, it was predicted that the clinical group would have the lowest scores on APS-R High Standards and APS-R Order.

2. *Subclinical Group*: The group identified as having partial syndrome eating disorders as determined by the Q-EDD (sub-clinical group) was predicted to show higher levels of APS-R Discrepancy,, Perfectionistic Self-Presentation Scale (PSPS), Nondisplay of Imperfection, PSPS Nondisclosure of Imperfection and CES-D depression than the non-eating disorder group, but lower levels than the clinical group. There is not a precedent for adaptive perfectionism in a subclinical group so no predictions were made regarding these results. The sub-clinical group was hypothesized to show a higher level of relational health and quality across the relationships measured than the clinical group, but lower levels than the non-eating disorder group.
3. *Asymptomatic Group*: The non-eating disorder group as identified by the Q-EDD was predicted to show lower scores on measures of APS-R Discrepancy, PSPS Nondisclosure of Imperfection, PSPS Nondisplay of Imperfection, and depression than the other two groups. There is a precedent for Perfectionistic Self-Promotion, a subscale of the PSPS,

to be associated with self-esteem. Therefore, it was predicted that the Perfectionistic Self-Promotion subscale mean scores would be higher in the Asymptomatic group than in the other two groups. Adaptive perfectionism scores as measured by the APS-R High Standards and Order subscales were predicted to highest in the asymptomatic group as well. The non-clinical group was further hypothesized to have higher mean composite scores of relational health across the peer, mentor, and community domains than the other two groups.

## CHAPTER 3

### Method

#### *Participants*

Data were collected at the Pennsylvania State University, a large, predominantly rural, land grant university, and at a treatment center for eating disorders in upstate New York. Two hundred and eight females from Penn State participated in the study. Thirty-eight women in partial hospitalization, intense outpatient, or outpatient treatment for eating disorders in and upstate NY treatment center also participated. Thirty-four participants were excluded due to missing data leaving 180 college students and 32 clinic participants. Only female respondents were included due to the high prevalence rate of eating disorders in women.

The clinical, sub-clinical and the non-clinical samples were extracted from the data collected at both sites. The non-clinical group is categorized as asymptomatic by the Questionnaire for Eating Disorder Diagnoses (Q-EDD; Mintz, O'Halloran, Mulholland, & Schneider, 1997), and the subclinical sample is made up of those respondents characterized by the Q-EDD as "symptomatic" but not meeting DSM-IV eating disorder diagnostic criteria. Finally, the clinical group is those women with DSM-IV diagnosable eating disorders (anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified) per the Q-EDD scoring. The assumption that a percentage of the college and university group would exhibit sub-threshold or partial eating disorders syndromes was based on prior research that suggests that between 20 and 60 % of female college students have sub-threshold eating concerns (Graber et al., 2003; Mintz & Betz, 1988). In this sample, 32.2 % of the university students had subclinical eating disturbances, and 7.2 % had clinical eating disorders.

The total sample of 212 women included 81.6 % Caucasian women, 7.5 % African-American women, 3.8 % Hispanic women, 3.8 % Asian-American/Pacific Islander women, .5 % Native American women, and 2.8 % self-identified as of another ethnicity. Ages ranged from 18-55 with 91 % of the participants between the ages of 18 and 23.

Of the clinic sample, 90.6% had clinical eating disorders and 9.4% had subclinical eating concerns. Within the clinic sample, the 90.6% of women with clinical disorders included 1 American Indian participant, 1 Asian-American/Pacific Islander participant, 1 Hispanic/Latino/Mexican-American participant, and 1 participant self-identified as of “other race.” The remaining 25 clinic participants with full syndrome eating disorders were Caucasian/White. The clinic sample also included 3 participants (9.4%) with subclinical eating concern, and this group included 1 African-American participant and 2 Caucasian/White participants. In the university sample 13 participants (7.2%) had clinical eating disorders and all were Caucasian/White. The university drawn subclinical sample included 58 women (32.2%) of whom 1 was African-American, 3 were Asian-American/Pacific Islander, 2 were Hispanic/Latino/Mexican-American, 50 were Caucasian/White, and 2 were self-identified as “other race.” The asymptomatic university sample of 109 women was composed of 14 African-American women, 4 Asian-American/Pacific Islander women, 5 Hispanic/Latino/Mexican-American women, 83 Caucasian/White women, and 3 women of “other race.”

#### *Procedures for Data Collection*

Data were gathered via a series of self-report questionnaires. An informed consent form was completed by each participant. I provided means of contact to the participants for follow-up, if needed. In the clinical setting, an introductory letter requesting participation was made available to clinic patients. If the individual expressed interest, the questionnaire packets were



made available by clinic staff. Additionally, I presented the study to clinic participants in partial hospitalization during a group time, utilizing the introductory letter as a script. The study was described as research about eating concerns, personality styles, and interpersonal relationships. The voluntary nature of participation was emphasized, and potential participants were assured that their choice to participate or not had no impact on their treatment. Completed packets were left with the clinic administrator, nutritionist, or mental health provider and picked up later. An incentive presented to both groups was the donation of \$2 per participant to an eating disorder advocacy organization.

The university sample was drawn from women's studies, and rehabilitation counseling classes. I attended a meeting of the courses, explained the study in a manner consistent with the description given to the clinical population, and provided questionnaire packets to those who agreed to participate. The packets were collected at the next class meeting. Five points of extra credit were offered as incentive to those students who agreed to complete the questionnaires, and an alternative extra credit project was offered to those who did not wish to participate.

All questionnaires included a participant number, and I am the only person with access to participants' identities.

### *Measures*

Use of multiple measures of dependent variables is recommended to allow for a more complex representation of a construct (Heppner, Kivlighan, & Wampold, 1999). Therefore both perfectionism and perfectionistic self-presentation scales were used to capture maladaptive and adaptive dimensions of perfectionism, and self-presentational or more interpersonally relevant dimensions of perfectionism. The APS-R Discrepancy subscale offers a concept of distress related to extreme high standards and the perception of the self as failing to meet them that is

particularly relevant to eating disorders. Women with eating disorders generally set unrealistic goals related to their bodies and then experience intense distress when their bodies do not comply. The quality of relationships was measured by two instruments as well to gauge the participants' experience of authenticity, engagement, support, conflict, and depth in key relationships with peers, mentors, and their community as they define it (i.e. college community, ethnic group community, geographical community, etc.). As noted, in Chapter Two, the conceptualizations of eating disorder and particularly of the eating disorder not otherwise specified clinical category and the subclinical status, have been defined in highly variable ways. The Q-EDD, with its emphasis on operationalizing the DSM-IV as faithfully as possible was a logical choice to gather the data needed for this study. Finally, the Center for Epidemiological Studies Depression Scale is a simple but well-established research tool for the measurement of depression in both clinical and non-clinical populations. In addition to these measures, a brief information sheet was included to determine whether participants have been or are currently being treated for any psychological conditions via psychotherapy and/or medication.

### *Eating Disorder Status*

*The Questionnaire for Eating Disorder Diagnoses (Q-EDD; Mintz, O'Halloran, Mulholland, & Schneider, 1997).* The Q-EDD was used to assess eating disorders. The Q-EDD is a 50-item self-report questionnaire that has been shown to effectively differentiate DSM-IV diagnosed eating disordered, symptomatic (sub-clinical), and asymptomatic groups. The Q-EDD is designed to distinguish the sub-categories of Anorexia (AN), Bulimia (BN) and of Eating Disorder Not Otherwise Specified (ED-NOS). ED-NOS is defined as including the following sub-categories developed from a DSM-IV list of possible ED NOS constellations; 1) sub-threshold BN, 2) menstruating AN, 3) non-binging BN, and 4) Binge Eating Disorder (BED).

The Q-EDD is scored with a scoring manual that has a set of decision rules to assist in delineation of categories. The criteria for each group are consistent with the DSM-IV and are summarized below with the accompanying Q-EDD method of operationalization and decision rules:

1. Anorexia Nervosa: characterized by extreme fear of weight gain, body weight less than 85% of expected weight for height, and amenorrhea (for 3 consecutive cycles).

Operationalization: Questionnaire includes items related to fear of weight gain, and collection of data on weight, height, and menstrual cycles.

Decision rules: BMI of 17.5 or below, or BMI of 20 or below with endorsement of significant fear of weight gain, and amenorrhea.

2. Bulimia Nervosa: recurrent binge eating characterized by lack of control and occurring at least twice a week for at least three months, compensatory behaviors including vomiting, fasting, and excessive exercise, and self-regard unduly influenced by weight and body concerns.

Operationalization: Questionnaire items regarding binge eating, compensatory behaviors, lack of control, and relationship of body and shape to self-image.

Items are worded to directly reflect the wording of the criteria in the DSM-IV.

Decision rules: Endorsement of binge eating, lack of control, at least one compensatory behavior, and a 4 or 5 on a 5 point Likert scale on the item assessing relationship of body esteem to self-esteem (“Does your weight and/or body shape influence how you feel about yourself?”).

3. Eating Disorders Not Otherwise Specified (ED NOS): Four ED NOS subtypes are operationalized from the DSM-IV. Six are noted in the DSM-IV but one is considered to be extremely rare (chew-spitting type) and the other (normal weight anorexia) is defined as including “significant weight loss” which was thought to be difficult to accurately operationalize in a pencil and paper instrument, therefore these two subtypes were dropped. The remaining four ED NOS subtypes are:
  - a. Menstruating anorexia, which is defined as meeting all criteria for anorexia except amenorrhea. Operationalization: Endorsement of the same questionnaire items used to assess anorexia nervosa, but a negative answer to question assessing amenorrhea.
  - b. Sub-threshold bulimia, which is defined as bulimic behaviors not meeting criteria for frequency. Operationalization: Questionnaire items on bingeing, feeling out of control, equating self esteem and body esteem, and at least one compensatory behavior are all endorsed. However, either the frequency of binges or of compensatory behaviors, or the duration of the disorder is insufficient to warrant a diagnosis of bulimia nervosa.
  - c. Non-binging bulimia is considered to be present when a normal weight individual engages in purging behavior of some type without binge eating. The purging must occur at least twice a week for at least three months. Operationalization: Questionnaire items on binge eating, compensatory behaviors, and calculation of body mass index (BMI) reflect a pattern of using

compensatory behaviors without binge eating in an individual considered to be within the normal weight range.

- d. Binge eating disorder is present when the individual binge eats at least twice a week for at least six months, feels out of control while bingeing, and does not engage in compensatory behaviors or fasting. Operationalization: Questionnaire items assessing frequency of binge eating, feeling out of control, and duration of the disorder, as well as negative responses on questionnaire items assessing compensatory behaviors.

The symptomatic group is defined as having some features of eating disorders but not meeting criteria for any of the DSM-IV designated categories. This is operationalized as participants answering questionnaire items indicating that they engage in some level of fasting, bingeing, compensatory behaviors (vomiting, laxatives, diuretics, diet pills, or excessive exercise), extreme preoccupation with weight and body image, or excessive correlation of weight concerns with self-image, but it is not in combination with the necessary factors, or of sufficient intensity or duration to warrant a clinical diagnosis. The asymptomatic group has no features of clinical or sub-clinical eating disorders, as operationalized by “no” responses to questionnaire items on bingeing, fasting, and use of compensatory behaviors of any kind except for exercise. Respondents are deemed asymptomatic but have “red flags” if their BMI puts them in the category of either severely underweight or grossly obese. In this study there were no respondents with “red flags.”

The foci of three validity studies conducted by Mintz et al. (1997) were to assess how effectively the Q-EDD performs at: 1) DSM-IV clinical eating disorder (ED) from non-ED differentiation, 2) differentiation of ED, symptomatic (sub-clinical), and non-ED (non-clinical)

categories, and 3) differentiation of anorexia from bulimia. Mintz et al. investigated criterion validity by comparing the Q-EDD diagnostic assignment of 137 female college students to diagnostic assignment of the same respondents determined in a structured clinical interview based on DSM-IV criteria. For the differentiation of eating disorder vs. non-eating disorder categories, the accuracy rate was 98% with a false positive rate of .02, false negative rate of .03. Positive predictive power was .94 and negative predictive power was .99. The accuracy rate for the differentiation of the eating disorder, symptomatic, asymptomatic groups was .90. In a clinical sample of 37 women, the Q-EDD results were compared to the diagnostic categories assigned by the respondents' psychotherapists. There was a 78% accuracy rate in distinguishing ED's from non-ED's (includes both symptomatic and asymptomatic), with a 22% false negative rate, i.e., the Q-EDD diagnosed 8 women as non-ED that the clinicians had diagnosed as ED. Within the 8 false negatives, the Q-EDD diagnosed 2 as asymptomatic and 6 as symptomatic suggesting that the false negatives were most likely to occur with respondents who were on the eating disorder continuum. The self-report nature of the instrument when it is administered in a treatment setting may also contribute to the false negative rate. The accuracy rate for differentiation of anorexia and bulimia was 100% in the clinical study and could not be calculated in the two studies of college students due to low occurrence rates of anorexia.

Good convergent validity was found between the Q-EDD and the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979), a self-report measure of eating disorder symptoms, and the Bulimia Test-Revised (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991), a self-report measure of DSM-IV bulimia symptoms. The scores on the BULIT-R and the EAT varied in the expected directions among participants in each Q-EDD diagnostic group, i.e. those categorized as bulimic by the Q-EDD scored in the bulimia range on the BULIT-R, and those characterized

as anorexic by the Q-EDD had mean scores in the anorexia range on the EAT. Mintz et al. used ANOVA with the EAT score as the dependent variable and the Q-EDD category (ED, symptomatic, asymptomatic) as the independent variables. The three Q-EDD groups differed significantly from each other on EAT scores with the ED group scoring the highest, the symptomatic group in the mid-range, and the non-ED group with the lowest scores. This is supportive of the use of the Q-EDD to measure eating disorder behaviors on a continuum.

The Q-EDD test-retest reliability was examined for a 1-3 month interval and then for a two week interval. The 1 to 3 month test-retest kappa values ranged from .54 to .64 and the two week test-retest reliability kappa values ranged from .85 to .94. The authors argue that this is due to the temporal instability of eating disorders, particularly when more precise distinctions are being made between the groups. The interscorer agreement was tested because the instrument is scored using decision rules. On two sets of 50 randomly selected Q-EDD's interscorer agreement was 100 percent.

Although it was an exploratory focus of preliminary validation studies, the Q-EDD has not been shown to conclusively differentiate the four subcategories of the ED NOS. In a study of 37 women with clinician diagnosed eating disorders, the Q-EDD had a 69% accuracy rate when compared to clinician ratings. The accuracy rate increased to 97% if the categories of anorexia and menstruating anorexia were combined and bulimia and sub-threshold bulimia were combined, thereby reducing the eating disorder category to four subcategories. The Q-EDD initially performed better among European American women than a sample of African-American women and changes were made to the instructions and items based on identifying causes of the instrument's high false negative rate.

One of the strengths of the Q-EDD for this study is its ability to discern eating disorder category based on clinically relevant criteria (DSM-IV) with accuracy. This operationalizes the perspective that eating disorders occur on a continuum. The carefully constructed scoring manual with decision rules provides a way to gather data on women with subclinical eating disorder symptoms that makes conceptual sense. The Q-EDD has very good to adequate validity and reliability, and is the only existing instrument that makes the categorical distinctions noted above. The instrument takes about 15 minutes to complete.

### *Perfectionism*

In order to capture more fully the dimensions and interpersonal manifestations of perfectionism, two measures were used. Internal dimensions (i.e. self-evaluative, behavioral, goal-directed) of perfectionism were assessed using the Almost Perfect Scale-Revised (APS-R; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996) and externally directed dimensions of perfectionism were measured with the Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003).

#### *The Almost Perfect Scale (APS-R; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996).*

The APS-R was used to measure perfectionism. It is a 23-item self-report instrument, with item responses on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The instrument has three subscales that measure both adaptive and maladaptive dimensions of perfectionism. They are Discrepancy (12 items), High Standards (7 items), and Order (4 items). The High Standards and Order subscales measure adaptive dimensions of perfectionism (Rice & Slaney, 2002, Suddarth & Slaney, 2001). The APS-R, with its Discrepancy subscale provides an important dimension to this study as it measures “the perception that personal high standards are not being met” (Slaney, Rice, Mobley, Trippi, & Ashby, 2001).



Evidence of reliability is strong. Internal consistency alphas for the three subscales are reported by Slaney et al. (2001) as follows: .92 for the Discrepancy subscale, .86 for the Order subscale, and .85 for the High Standards subscale in a sample of 809 college students. Similarly, Grzegorek, Slaney, Franz, and Rice (2004) report internal consistency coefficients of .92 for Discrepancy, .85 for Order, and .82 for High Standards in another sample of 273 college students. Wei, Heppner, Russell, and Young used the APS-R Discrepancy subscale and report coefficient alphas of .95 and .96 for two administrations. Rice and Pence (2005) similarly report internal consistency alphas of .93, .84, and .88 for Discrepancy, High Standards, and Order respectively.

Test-retest reliability has been found to be good. Grzegorek et al. (2004) found three week test-retest correlations of .72 for High Standards, .83 for Discrepancy, and .80 for Order. Rice and Aldea (2006) also provide supportive data on APS-R test-retest reliability. They looked at stability of APS-R scores at three time points, each 4 to 5 weeks apart. The APS-R Discrepancy subscale test-retest correlations ranged from .76 to .87. The High Standard subscale correlations ranged from .76 to .88, and the Order subscale correlations ranged from .82 to .88 indicating good stability of the APS-R perfectionism dimensions across time. Further, Rice and Aldea investigated the relative stability of APS-R perfectionism in relation to depression (as measured by the CES-D), and the relative stability of APS-R Discrepancy in relation to High Standards and Order. T1 and T3 Discrepancy scores were used in the hierarchical regression analysis. The results indicated that stability of depression scores did account for 35% of the variance in later Discrepancy scores, and that the High Standards and Order Subscale scores from both T1 and T3 accounted for 10% of the variance. However, T1 Discrepancy scores

accounted for an additional 33 % of the variance in the T3 Discrepancy scores, suggesting that Discrepancy, while sensitive to affective state changes, is not a function of depression.

Slaney et al. (2001) examined construct validity by comparing APS-R scores with scores on the Multidimensional Perfectionism Scale (HFMPs; Hewitt & Flett, 1991), the Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990), the Beck Depression Inventory (BDI; Beck, 1978), the Rosenberg Self-Esteem Inventory (Rosenberg, 1965), the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkevec 1990), and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960).

The APS-R subscales showed moderate to high correlations with associated subscales on the FMPS and the HFMPs. For instance, the APS-R High Standard subscale correlations with the HFMPs Self-Oriented Perfectionism subscale were .58 and .64 in two samples. High Standards was correlated with the FMPS Personal Standards subscale at .64. The APS-R High Standards Subscale showed much lower correlations with the FMPS Parental Expectations (.10), Parental Criticism (-.10), and Doubts About Actions (-.11), and the HFMPs Socially-Prescribed Perfectionism (-.05). The APS-R Order subscale and the FMPS Organization subscale had a .88 correlation. The APS-R Discrepancy subscale was significantly correlated with the FMPS Doubts About Actions (.62) and Concern Over Mistakes (.55) subscales, and the HFMPs Socially-Prescribed subscale (.45). Discrepancy had much lower correlations with HFMPs Self-Oriented (.23) and Other-Oriented (.00) and FMPS Personal Standards (.16), Parental Expectations (.16), and Organization (-.13). The pattern of correlations between the APS-R subscales and the subscales of the other measures of perfectionism supports the association of Discrepancy with the maladaptive facets of perfectionism and of High Standards with the more adaptive facets. The Order subscale is uniquely associated with Organization from the FMPS

and both appear to stand independent of the other dimensions. Slaney et al. (2001) point out that the underlying conceptualization of perfectionism differs among the three perfectionism measures, and these differences surface in the correlations of the HFMPS Self-Oriented facet with the Discrepancy subscale (.23) as well as the High Standards and Order subscales.

Further support for the construct validity of the APS-R as a strong measure of both positive and negative facets of perfectionism is present in the correlations with self-esteem, depression, worry, and GPA. Discrepancy was positively correlated with BDI depression (.49), and with PSWQ worry (.46), and was negatively associated with Rosenberg SES self esteem (-.44) and GPA (-.23). High Standards, in contrast, showed modest positive associations with GPA (.34 and .42 with two samples of college students) and self esteem (.19 and .15) and negative associations with depression (-.10) and worry (-.10). The APS-R subscales were found to generally provide stronger associations with the measures of achievement, depression, self-esteem, and worry than the other measures of perfectionism.

Rice and Pence (2005) in a study of obsessive compulsive symptoms and perfectionism found that the APS-R Discrepancy subscale had a significant positive correlation with the Brief Symptom Inventory (BSI; Derogatis, 1993) Obsessive Compulsive subscale (.43). further supporting the APS-R Discrepancy subscale's association with measures of psychological distress.

The APS-R has shown excellent construct validity, internal consistency, and stability over time. For the purposes of this study, the APS-R is proved to be a measure that is fairly distinct from but sensitive to depression. The instrument is a psychometrically sound measure of differences in perfectionism among the eating disorder categories explored in this research. Further, the measure has good face validity, is at an adequate reading level for the target

population, and takes about five minutes to complete. In this study, the APS-R subscale alphas were .88 (Standards), .88 (Order), and .96 (Discrepancy).

*The Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003).* The PSPS was developed to assess how (primarily maladaptive) dimensions of perfectionism are expressed through the external/public self. It is a 27-item self-report measure of the extent to which an individual presents him or herself as perfect, attempts to hide imperfections, or does not disclose faults or flaws. It has three subscales: 1) Perfectionistic Self-Promotion, 2) Non-Display of Imperfection, and 3) Non-Disclosure of Imperfection.

Construct validity was supported by results of validation studies in Hewitt et al. (2003). A principal-components factor analysis of the PSPS found three factors (represented by the subscales) that accounted for 44.1% of the total variance. The three factor structure has been found to be stable across clinical, community, and student samples indicating broad generalizability. Scores of the three PSPS subscales were compared with ratings on the same three facets made by clinicians and also by close relative or friends of study participants. Significant correlations were found between ratings on all three facets with all subscales but the highest correlations were with the subscales that corresponded to the ratings. All three subscales of the PSPS were found to be significantly associated with each subscale of the HFMPS. The highest correlations were between HFMPS Self-Oriented Perfectionism (ranging from .22 to .66) and Socially-Prescribed Perfectionism (ranging from (.44 to .56) and the PSPS subscales, while the correlations between the PSPS and HFMPS Other-Oriented Perfectionism were lower (.20 to .39). This is not surprising as the latter subscale measures perfectionist standards directed toward others and the PSPS measures the presentation of the self as perfectionistic. Internal consistency alphas were calculated in a series of four validation studies and ranged from .84 to

.89 for the Perfectionistic Self-Promotion subscale, from .83 to .91 for the Nondisplay of Imperfection subscale, and from .72 to .88 for the Nondisclosure of Imperfection subscale.

Castro et al. (2004) used a Spanish translation of the PSPS with a sample of 71 patients with anorexia nervosa and a sample of 113 non-clinical women and found internal consistency alphas of .95 for the eating disordered sample, .85 for the nonclinical sample, and .93 for the combined samples.

Convergent validity was assessed by exploring the associations between the PSPS and the HFMPs, the Self-Monitoring and Concern with Appropriateness Scale (Lennox & Wolfe, 1984), the Self-Handicapping Scale (SHS; Rhodewalt, 1990), the Self-Concealment Scale (SCS; Larson & Chastain, 1990), the Rosenberg Self-Esteem Scale (SES; Rosenberg, 1965), a 4-item measure of academic self-esteem developed by the authors, the Appearance Self-Esteem Scale (Pliner, Chaiken, & Flett, 1990), the Positive and Negative Affectivity Schedule (PANAS; Watson, Clark, & Tellegen, 1988), and the Texas Social Behavior Inventory (TSBI; Helmreich, Stapp, & Ervin, 1974) in student and clinical samples. As predicted, significant positive correlations were found between scores on the SHS, the SCS, the negative affect section of the PANAS, and each of the three PSPS subscales. Some of the highest negative correlations were found between the SES general and the Academic Self-esteem Scale and all three dimensions of perfectionistic self-presentation. In particular, the Nondisplay of Imperfection subscale was found to be negatively correlated to general (-.44), academic (-.33), appearance (-.38), and social (-.38) self-esteem in a student sample. Perfectionistic Self-Promotion, the more active advancement of a flawless self-image, was negatively associated with general (-.19), academic (-.33), and appearance (-.16) self-esteem, but at lower levels of association than the Nondisplay of Imperfection subscale. Nondisclosure of Imperfection was negatively correlated with general (-

.24), academic (-.24), and social (-.23) self-esteem but not with appearance self-esteem. In the college student sample, anxiety measured by the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) was associated only with the Nondisplay of Imperfection subscale (.25). Depression measured by the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emory, 1979) showed modest positive correlations with all three subscales in the same sample. In the clinical sample, the SHS (from .33 to .53), the SCS (from .30 to .37), and the negative portion of the PANAS (.31 to .43) were all significantly positively associated with all three dimensions of perfectionistic self-presentation. Hewitt et al. (2003) found that, even after controlling for the effect of what they term the “defensive variables block” (self-concealment and self-handicapping), perfectionistic self-presentation uniquely predicted negative affect. Self-handicapping and self-concealment were significantly positively associated with all dimensions of perfectionistic self-presentation in a college student sample as well.

Predictive validity of the PSPS and measures of distress and self-esteem was examined in clinical and nonclinical samples. Measures used were the 4-item Academic Self-Esteem Scale, the Appearance Self-Esteem Scale, the TSBI, the BDI, the BAI, the FMPS, the Big Five Factor Markers (BFFM; Goldberg, 1992), the Narcissistic Personality Inventory (NPI; Emmons, 1987), the Clance Imposter Phenomenon Scale (CIPS; Clance & O’Toole, 1988), the Fear of Negative Evaluation (FNE; Watson & Friend, 1969), and the Need for Approval Scale (Jones, 1969). Hierarchical regression analyses controlled for gender differences, and for the HFMP dimensions of perfectionism (self-oriented, other-oriented, and socially prescribed). All three PSPS subscales were unique predictors of social self-esteem. Perfectionistic Self-Promotion and Nondisplay of Imperfection uniquely predicted self-esteem as measured by the SES and the

Appearance Self-Esteem Scale, and BDI depression. Nondisplay of Imperfection was also a unique predictor of anxiety and evaluative worries.

Test-retest reliabilities were assessed over a three week period and then over a four month period. Test-retest values for the Perfectionistic Self-Promotion, Nondisplay of Imperfection, and Nondisclosure of Imperfection subscales were, respectively, .83, .84, and .74 at 3 weeks, and .81, .81, and .79 at 4 months suggesting stability of the measure over time. The results of a readability analysis indicated that the PSPS has about a fourth-grade reading level.

The PSPS shows strong internal consistency and construct validity. It is associated with an appropriate variety of personality and mood variables in the expected directions. It measures self-presentational aspects of perfectionism that are highly relevant to the study of eating disorders and appears to do so with good reliability. It has an appropriate readability level and takes about five minutes to complete. In this study, the PSPS alphas were .84 (Nondisclosure of Imperfection), .90 (Nondisplay of Imperfection), and .93 (Perfectionistic Self-Promotion).

#### *Relational Health and Quality*

*Quality of Relationships Inventory (QRI; Pierce, Sarason, & Sarason, 1991)*. The QRI is a 25-item self-report instrument that assesses relationship-specific perceptions of social support, interpersonal conflict, and relationship depth, defined as “beliefs about commitment and security in a relationship” (Pierce et al., 1991, p. 1029). The measure must be completed once for each relationship in question (i.e. friend, spouse, parent). Responses are on a 4-point Likert scale. This measure differs from many other measures of perceptions of social support because it focuses on distinct relationships rather than an aggregate perception of social support. The

measure reflects a theoretical stance that the quality of specific relationships could make a different contribution to overall well-being than the contribution made by a social network.

Construct validity was supported by findings of Pierce et al. (1991). In the validation study the QRI was administered to 210 college students for relationships with mothers, fathers, and a close friend. These scores were compared with scores on the Parental Bonding Instrument (PBI; Parker et al., 1979), the Social Support Questionnaire (SSQ; I.G. Sarason et al., 1983), the Social Provisions Scale (SPS; Cutrona & Russell, 1987), and the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). The QRI scales correlated with these measures in the expected directions. For instance, the QRI mother support scores had a significant correlation of .71 with the Parental Bonding mother care scores. The QRI mother conflict scores, on the other hand, had a significant negative correlation of -.65 with the same parental bonding scale. The QRI Support-mother, QRI Support-father, and QRI Support-friend subscales had negative correlations with loneliness of -.23, -.19, and -.45 respectively. PBI Mother Overprotection was correlated with QRI conflict at .47 and PBI Father Overprotection was correlated with conflict at .28.

In a second set of studies of the psychometric qualities of the QRI (Pierce et al. 1997), participants (119 college students, 74 females and 45 males) were instructed to complete the QRI for both parents and a close friend. Parents of the participants were also contacted by mail and asked to complete the QRI for their child. Participants were contacted again after one year and asked to complete the QRI, and about 70% of student participants complied. Correlations of QRI scores at time 1 and 12 months later at time 2 ranged from .48 to .79, with no overall correlations presented, indicating relative stability over the one year period when taking into consideration the daily fluctuations in perceptions of relationships.. Internal consistency alphas



for the QRI completed by student participants for relationships with parents and best friends, and then by the mothers for relationships with their sons or daughters were reported to be “in the .70s to .90s” with an exception of a .60 alpha for the QRI Depth subscale assessing mothers’ perceptions of their relationships with the student participants.

For this study, the QRI was completed for close friend relationships. The structure and wording of this instrument does not support its use for mentor relationships and/or community relationships. While parent relationships are important and would add another dimension, they are beyond the scope of this study.

The QRI is widely used with generally adequate internal consistency. It appears to measure a construct that is relatively stable over time. The measure is a good complement to the RHI for this study because it assesses the self-reported experience of specific relationships. The measure takes about 5-10 minutes to complete. In the present study, internal consistency alphas were .75 (Depth), .80 (Support), and .87 (Conflict).

*Relational Health Indices (RHI; Liang, Tracy, Taylor, Williams, Jordan, & Miller, 2002).*

The RHI is a 37-item self-report instrument that measures interpersonal well-being based on the Relational/Cultural Theory of psychological development (Jordan, Kaplan, Miller, Stiver, Stiver, & Surrey, 1991; Jordan, 2002). The RHI operationalizes three characteristics of relationships that are theorized to promote growth. These are mutual engagement, authenticity, and “empowerment/zest” the latter of which is the sense of being both emboldened and energized. These three dimensions of relational health (engagement, authenticity, and empowerment) are measured across three types of relationships: peer, community, and mentor. Sample items are “My mentor gives me emotional encouragement and support” for the Mentor domain, “I have a greater sense of self-worth through my relationship with my friend” for the peer domain, and “I

feel a sense of belonging with this community” for the community domain. Responses are on a 5-point Likert scale (from 1-Never to 5-Always). Higher scores indicate greater levels of relational health. The total score range is 0 to 148.

Liang et al.(2002) report good convergent validity of the RHI scores when compared with the Quality of Relationships Inventory (Pierce et al., 1991)designated for peer and for mentor, the Mutual Psychological Development Questionnaire (MPDQ; Genero, Miller, Surrey, & Baldwin, 1992) which measures perceived mutuality in close relationships, and was also designated for peer and mentor, and the peer support subscale of the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The RHI-Peer subscale had significant positive correlations with the MPDQ-Peer subscale of .69, with the MSPSS subscale (.50), and with the QRI-Peer subscales of Depth (.64) and Support (.61), and a significant negative correlation (-.32) with the Conflict subscale. The RHI-Mentor subscale also had significant positive correlations with the MPDQ-Mentor (.68), the QRI-Mentor subscales of Depth (.51) and Support (.58). Correlations between the RHI-Mentor composite and the QRI-Mentor Conflict subscale were non-significant. The role of conflict in the relational quality construct seems to be complex. Initially an RHI subscale for “difference” that included tolerance of conflict was included but after confirmatory factor analysis those items were found to not fit well and were dropped. It may be that the nature of healthy conflict in relationships has yet to be captured by these scales.

The scale developers hypothesized that the RHI would be correlated with lower levels of loneliness, depression, and stress, and higher levels of self-esteem. The general pattern of correlations between the RHI and these measures of adjustment was in the expected directions, however there were inconsistencies. The RHI-Peer composite had a significant but fairly weak

positive correlation with self-esteem of .18, and a significant negative correlation with loneliness of -.35. The RHI-Peer was not significantly correlated with stress or depression. The RHI-Community composite showed a significant positive correlation with self-esteem (.28), and significant negative correlations with loneliness (-.49), depression (-.38), and stress (-.23). The RHI-Mentor composite was weakly correlated with loneliness (-.14) and was not found to be correlated significantly with the stress, depression, or self-esteem outcome measures. Liang et al. suggest that other outcome constructs may be more relevant to the RHI-Mentor subscale such as confidence, leadership, or academic achievement.

Liang et al. (2002) indicate two ways to approach scoring the RHI. Subscale scores across the dimensions of Engagement, Zest, and Authenticity can be calculated for each of the three relationships (providing three subscale scores for each of the three relational domains) or a composite score can be calculated for each relational domain (peer, mentor, community). Liang et al. report Cronbach's alphas of .74 (peer), .72 (mentor), and .86 (community) for the Engagement subscale; of .73 (peer), .72 (mentor), and .87 (community) for the Empowerment/Zest subscale; and of .69 (peer), .77 (mentor), and .75 (community) for the Authenticity subscale. The Cronbach's alphas reported by Liang et al. for the composites are .85 (peer), .86 (mentor), and .90 (community). Frey, Beesley, and Newman (2005) reported Cronbach's alphas for the composite indices of .90 (peer), .91 (mentor), and .86 (community).

Frey et al. (2005) further investigated the psychometric properties of the RHI in a sample of 411 college students that consisted of 247 women, 135 men, and 29 participants that did not indicate gender. One goal of this analysis was to find evidence of validity of the RHI among men and women. The sample was 73% White, 11% Hispanic American, 6% Asian American, 4% African American, 1% Native American, and 3% with unidentified cultural background.

Frey et al. conducted a principal components analysis on the 37-items of the RHI and found a four factor solution that included the mentor relational health composite, the peer relational health composite, and two community-related composites that they named “connection with community” and “alienation from community.” The four factors accounted for 54.47% of the variance. Frey et al. then conducted principal components analyses on each of the three composite indices to explore the internal structure. They found that a single component accounted for 50.9% of the variance for the RHI-Peer composite. Similarly, a single component accounted for 56.1% of the variance on the RHI-Mentor composite. Two components were extracted for the RHI-Community composite and accounted for 53.6% of the variance. The two RHI-Community components mirrored the community alienation and connection components extracted from the RHI as a whole. The results of the Frey et al. study strongly suggest that the RHI functions more reliably as a measure of a unidimensional construct of relational health across the three domains of relationships. Therefore, in this study the composite relational health scores for each relationship domain was used.

In order to gather more explicit data about mentor relationships, an adjustment was made to include a write-in item asking the role of the mentor in the participant’s life, with the following examples given (teacher, academic advisor, spiritual advisor, friend, counselor, etc.). In previous studies, community has been defined as “your college community.” In this study, the RHI was administered to clients in treatment for eating disorders who may or may not be college students. Instructions for the RHI-Community were to answer these items keeping in mind the community with which he or she most identifies, i.e., geographical, religious, cultural, college, or other. The participants were asked to check a box to identify which of these communities they are referring to, and if “other,” they were prompted to write in the type of community.

The RHI is a relatively new instrument with fairly limited psychometric data. The instrument is clearly stronger as a measure of relational health within each relationship category (friend, mentor, and community) as opposed to measuring the dimensions of relational health (authenticity, empowerment, etc.) across all relationship categories. It was selected for inclusion because it measures fairly specific experiences of interpersonal connection in specific relationships which are conceptually consistent with this study. It has adequate internal consistency when scored with composite scores for each relationship category. In this study, the composite relational health scores for each relationship category were used. Cronbach's alphas in this study were .82 (Friend), .88 (Community), and .91 (Mentor).

### *Depression*

*The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977).* The CES-D is a 20-item self-report questionnaire that measures elements of depression such as negative affect, depressive symptomatology, and interpersonal relations. Responses are on a Likert scale ranging from 0 (the presence of the depressive symptom rarely or none of the time) to 3 (presence of the symptom most or all of the time). CES-D scores of greater than 22 indicate major depression; 15-21 indicate mild to moderate depression, and scores of less than 15 are interpreted as no depression.

Internal consistency for the CES-D is good. A review of reliability and validity data for the CES-D by the Measurement Excellence and Training Resource Information Center indicates that in community and clinical samples of older adults, the CES-D had a Cronbach's alpha of .85 for the community group and .90 for the clinical group (Himmelfarb & Murrell, 1983). In the initial development study of the instrument, Radloff (1977) found coefficient alphas ranging from .83 to .84 in community samples and .90 for a clinical sample. Radloff (1977) found test-

retest reliability at two weeks to be .51, at four weeks to be .67, at six weeks to be .59, and at eight weeks to be .59. Rice and Aldea (2006) report test-retest correlations at 3 intervals 4 to 5 weeks apart as .50, .47, and .62. These findings were consistent with other findings (Hann, Winter, & Jacobson, 1999) of .51 test-retest reliability at two and a half weeks.

The CES-D has good convergent and discriminant validity as reported by the Measurement Excellence and Training Resource Information Center review. In comparisons with other measures of depression in community samples, the CES-D correlations ranged from .37 to .51 on the ST-Depression Adjective Check Lists (ST-DACL; Lubin & Van Whitlock, 1995), and from .60 to .63 on two other depression measures (Bradburn Negative Affect (Bradburn, 1969) and Bradburn Affect Balance Scale (Bradburn, 1969). Correlations with these measures in the clinical populations ranged from .55 to .72. The CES-D was found to have correlations with a measure of positive affect in a community population that ranged from -.21 to -.25, and in the psychiatric population the correlation was -.55 indicating strong convergent validity in the expected directions. Correlations of the CES-D with social functioning in the community sample were .13 to .19 and in the clinical sample, the correlation was .24, again indicating adequate discriminant validity in the expected direction.

Psychometric properties of the CES-D are adequate with excellent internal consistency, relationships with convergent and discriminant measures in the expected directions, and there is adequate stability over time. The measure has a fourth grade reading level and takes approximately 10 minutes to complete. In the present study the internal consistency alpha was .92.

## CHAPTER 4

### Results

The guiding research question for this study is whether perfectionism and quality of interpersonal relationships vary across the three eating disorder status groups: those with clinical eating disorders, with subclinical eating concerns and without eating disorders. Data were collected from a total of 246 participants, with 34 of these excluded due to missing, incomplete, or inconsistent data. The remaining total of 212 participants is composed of 109 asymptomatic participants, 61 participants with subclinical eating concerns, and 42 clinical eating disorder participants.

The Almost Perfect Scale-Revised (APS-R), and the Perfectionistic Self-Presentation Scale (PSPS) measured multidimensional perfectionism. The Center for Epidemiologic Studies Depression Scale (CES-D) measured depression. The Relational Health Indices (RHI) and Quality of Relationships Inventory (QRI) measured relational health and quality. The means and standard deviations of the 13 measures (3 subscales each for the APS-R, PSPS, QRI, and RHI, and 1 score for the CES-D) used as dependent variables are presented in Table 1.

Correlation matrices for all variables are presented in Table 2. In general, the correlations are in predicted directions. The correlations between the subscales of the PSPS range from .75 to .81 and raise questions as to whether 3 independent dimensions are being measured, or whether a more singular overall self-presentation style is being measured. The PSPS Self-Promotion subscale correlates mildly with APS-R High Standards and Order, considered to be adaptive dimensions of perfectionism and moderately with APS-R Discrepancy, a reliable measure of maladaptive perfectionism, suggesting that the PSPS Perfectionistic Self-Promotion subscale may measure a dimension of perfectionism that encompasses both adaptive

and maladaptive aspects. Nondisplay also has small but significant correlations with High Standards and Order but a much stronger correlation with Discrepancy. Relational health variables (QRI-Support, QRI-Depth, QRI-Conflict, RHI-Friend, RHI-Mentor, RHI-Community) were also mildly to moderately correlated in expected directions. The RHI and QRI subscales correlate at similar levels as those reported by Liang et al. (2002). The RHI scales have somewhat small correlations with each other. Depression was strongly to moderately positively correlated with the maladaptive perfectionism variables, and mildly to moderately negatively correlated with most of the relational variables, except Conflict, with which it had a small positive correlation. The alpha coefficients for each subscale are presented in Table 2. Alphas for all the scales were adequate to very strong, ranging from .75 to .96.

**Table 1**      *Means and Standard Deviations (n=212)*

<b>Subscale</b>	<b>M</b>	<b>SD</b>	<b>Range</b>
APS-R High Standards	41.39	5.96	7-49
APS-R Order	21.83	4.95	4-28
APS-R Discrepancy	46.87	17.10	12-84
CES-Depression	18.58	11.41	0-60
PSPS Perf. Self-Promotion	40.33	13.33	10-70
PSPS Non-Display of Imperfection	42.01	12.00	10-70
PSPS Non-Disclosure of Imperfection	22.16	8.33	7-49
QRI Support	3.62	.42	1-4
QRI Depth	3.37	.46	1-4
QRI Conflict	1.67	.53	1-4
RHI Mentor	35.25	6.96	0-44
RHI Friend	36.32	5.56	0-48
RHI Community	41.27	8.49	0-56

*Note.* APS-R = Almost Perfect Scale—Revised; CES-D = Center for Epidemiology Studies Depression Scale; PSPS = Perfectionistic Self-Presentation Scale; Perf. = Perfectionistic; QRI = Quality of Relationships Inventory; RHI = Relational Health Indices.



**Table 2**  
*Intercorrelations Between Study Variables*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. APS-R High Standards	<b>.88</b>												
2. APS-R Order	.56**	<b>.88</b>											
3. APS-R Discrepancy	.17	.10	<b>.96</b>										
4. CES-Depression	.05	-.01	.61**	<b>.92</b>									
5. PSPS Perf. Self-Promotion	.32**	.24**	.49**	.43**	<b>.93</b>								
6. PSPS Non-Display of Imperfection	.17*	.15*	.52**	.46**	.81**	<b>.90</b>							
7. PSPS Non-Disclosure of Imperfection	.11	.06	.58**	.48**	.75**	.76**	<b>.84</b>						
8. QRI Support	.07	.12	-.30**	-.26**	-.20**	-.19**	-.29**	<b>.80</b>					
9. QRI Depth	.13	.18**	-.10	-.13	-.09	-.09	-.18**	.60**	<b>.75</b>				
10. QRI Conflict	-.03	-.06	.17*	.20**	.22**	.22**	.28**	-.39**	-.16*	<b>.87</b>			
11. RHI Mentor	.08	.04	-.07	-.17*	-.07	-.13	-.16*	.19**	.24**	-.04	<b>.91</b>		
12. RHI Friend	.14*	.11	-.29**	-.35**	-.24**	-.29**	-.41**	.46**	.39**	-.32**	.30**	<b>.82</b>	
13. RHI Community	.07	.13	-.22**	-.28**	-.12	-.20**	-.22**	.23**	.10	-.07	.21**	.25**	<b>.88</b>

*Note.* APS-R = Almost Perfect Scale—Revised; CES-D = Center for Epidemiology Studies Depression Scale; PSPS = Perfectionistic Self-Presentation Scale; Perf. = Perfectionistic; QRI = Quality of Relationships Inventory; RHI = Relational Health Indices.

\* $p < .05$ , \*\*  $p < .01$ , two-tailed. Cronbach's coefficient alphas are displayed in bold.

Two multivariate analyses of variance (MANOVA) were conducted with the eating disorder status as the between subjects factor; one using the perfectionism related variables (the APS-R subscale scores and the PSPS subscale scores) and the depression variable (CES-D scores), and the other using the relational variables (the RHI subscales and QRI subscales scores). The dependent variables were separated to form conceptually consistent groupings in order to obtain more accurate MANOVA results. Depression was grouped with the perfectionism variables based on evidence in prior research (Rice, Ashby, & Slaney, 1998) of substantive positive correlations between depression and maladaptive perfectionism, as well as significant positive correlations in this study between all maladaptive perfectionism variables (APS-R, Discrepancy, PSPS Self-Promotion, PSPS Nondisplay of Imperfection, PSPS Nondisclosure of Imperfection) and depression (CES-D).

For the perfectionism and depression variables, the multivariate effect was statistically significant, Wilks's  $\Lambda = .58$ ,  $F(14,406) = 9.195$ ,  $p < .001$ , partial  $\eta^2 = .24$ . The results reflect a moderate association between eating disorder status and the combined maladaptive perfectionism plus depression variables. Follow-up ANOVA's found statistically significant differences among the levels of eating disorder groups on APS-R Discrepancy, PSPS Perfectionistic Self-Promotion (Promotion), PSPS Nondisclosure of Imperfection (Nondisclosure), PSPS Nondisplay of Imperfection (Nondisplay), and the CES-D. Effect sizes ( $\eta^2$ ) for the statistically significant mean differences in the perfectionism grouping ranged from .15 to .26. Weinfurt (1995) suggests that eta-square effect sizes should be interpreted as comparable to the  $R^2$  effect size classification suggested by Cohen (1988) in which .01 is small, .09 is medium, and .25 or greater is large. Based on these guidelines, these effect sizes are medium to large. Results of the univariate ANOVAs and the Tukey post hoc comparisons are presented in Table 3.

**Table 3**  
**Means and Standard Deviations for Perfectionism and Depression Variables by Eating Disorder Groups**

Subscale	Asymptomatic <i>n</i> = 109		Subclinical <i>n</i> = 61		Clinical Eating Disorder <i>n</i> = 42		F	$\eta^2$
	M	SD	M	SD	M	SD		
APS-R High Standards	40.79	5.59	42.46	5.24	41.40	7.58	1.55	.01
APS-R Order	21.71	4.41	21.26	5.59	22.98	5.21	1.57	.01
APS-R Discrepancy	40.20 <sup>a</sup>	13.65	48.52 <sup>b</sup>	16.28	61.76 <sup>c</sup>	16.62	31.63	.23
CES-Depression	13.79 <sup>a</sup>	7.55	19.93 <sup>b</sup>	11.07	29.05 <sup>c</sup>	12.81	37.26	.26
PSPS Perf. Self-Promotion	35.76 <sup>a</sup>	10.87	40.41 <sup>a</sup>	12.52	52.05 <sup>b</sup>	13.35	28.51	.21
PSPS Nondisplay of Imperfection	38.23 <sup>a</sup>	10.49	42.97 <sup>a</sup>	11.38	50.43 <sup>b</sup>	12.22	18.61	.15
PSPS Non-Disclosure of Imperfection	19.33 <sup>a</sup>	6.15	21.90 <sup>a</sup>	7.89	29.88 <sup>b</sup>	9.18	31.34	.23

*Note.* APS-R = Almost Perfect Scale—Revised; CES-D = Center for Epidemiology Studies Depression Scale; PSPS = Perfectionistic Self-Presentation Scale; Perf. = Perfectionistic. All univariate *F* tests were significant at  $p < .05$ , two-tailed, with the exception of High Standards ( $p = .216$ ), and Order ( $p = .210$ ). Values with different subscripts indicate significant within-row differences between the clusters using Tukey HSD post hoc comparisons, significant at  $p < .05$ .

For the MANOVA using the relationship variables, the multivariate effect was also statistically significant, Wilks's  $\Lambda = .88$ ,  $F(12,346) = 1.948$ ,  $p = .028$ , partial  $\eta^2 = .063$ . The results indicate a very small association between eating disorder status and the combined relational variables. Follow-up ANOVAs showed statistically significant differences on QRI Support (Support), QRI Depth (Depth), and RHI-Friend (RHIF). However, effect sizes ( $\eta^2$ ) for the statistically significant mean differences among the relational variables across eating disorder status groups were small (Weinfurt, 1995), ranging from .03 to .05. Follow-up ANOVAs and the Tukey post hoc comparisons are presented in Table 4. Results for each research hypothesis are presented below.

**Table 4**  
**Means and Standard Deviation for Relational Health and Quality Variables by Eating Disorder Groups**

Subscale	Asymptomatic <i>n</i> = 109		Subclinical <i>n</i> = 61		Clinical Eating Disorder <i>n</i> = 42		F	$\eta^2$
	M	SD	M	SD	M	SD		
QRI Support	3.71 <sup>a</sup>	0.35	3.56 <sup>a,b</sup>	.47	3.49 <sup>b</sup>	.49	5.44	.05
QRI Depth	3.42 <sup>a</sup>	0.46	3.39 <sup>a,b</sup>	.40	3.21 <sup>b</sup>	.54	3.18	.03
QRI Conflict	1.70	0.47	1.61	.54	1.69	.67	0.70	.01
RHI Mentor	46.44	6.40	47.26	7.18	44.20	7.79	2.15	.02
RHI Friend	46.99 <sup>a</sup>	4.37	46.64 <sup>a</sup>	6.15	44.12 <sup>b</sup>	6.88	4.31	.04
RHI Community	52.57	7.78	49.41	8.90	50.55	9.29	2.94	.03

*Note.* All univariate F tests were significant at  $p < .05$ , two-tailed, except for Conflict ( $p = .497$ ), RHIM ( $p = .120$ ), RHIC ( $p = .055$ ). Values with different superscripts indicate significant within-row differences between the clusters using Tukey HSD post hoc comparisons, significant at  $p < .05$ , two-tailed. QRI = Quality of Relationships Inventory; RHI = Relational Health Indices.

#### *Clinical Group Results*

It was predicted that the group with clinical eating disorders would have the highest scores of the three groups on the APS-R Discrepancy scale, the PSPS subscales, and on the CES-D. Univariate ANOVA's with Tukey post hoc comparisons indicated that this group did show significant differences from the asymptomatic and subclinical groups on Discrepancy, Perfectionistic Self-Promotion (Promotion), Nondisclosure of Imperfection (Nondisclosure), Nondisplay of Imperfection (Nondisplay), and Depression. All differences for this group were at the  $p < .001$  level with the exception of Nondisplay at the  $p < .003$  level. It was predicted that the clinical group would not significantly differ from the other groups on adaptive perfectionism as

measured by the APS-R High Standards and Order subscales, and no significant differences were found on these variables.

The clinical group was hypothesized to have the lowest mean scores on measures of quality of relationships (QRI Support, QRI Depth, and QRI Conflict), and relational health (RHI-Friend, RHI-Mentor, RHI-Community). Significant differences were found between the clinical group and the asymptomatic group on QRI-Support, QRI-Depth, and RHI-Friend, and between the clinical and subclinical groups as well on the RHI-Friend scale. Effect sizes were  $\eta^2 = .05$  for QRI Depth,  $\eta^2 = .03$  for QRI Support, and  $\eta^2 = .04$  for RHI-Friend, and based on Cohen's (1992) classification of effect sizes, these are less than what would be considered a small effect and therefore, they are considered tentative. The clinical group did not differ significantly from the other 2 groups on RHI-Mentor, RHI-Community, or QRI-Conflict.

The hypotheses for the clinical group were partially supported. There was strong support for the hypothesis that this group would differ from the other 2 groups on the measures of maladaptive perfectionism. The hypothesis that no significant mean differences would be found on adaptive perfectionism measures was also supported by these results. The findings on the hypotheses on the relational variables were mixed. The clinical group differed from only the asymptomatic group on 2 relational variables (QRI Support and QRI Depth), and from both the subclinical and asymptomatic groups on RHI-Friend. No differences were found on the remaining 3 relational variables (RHI-Mentor, RHI-Community, and QRI Conflict). Relational variables did not differ significantly between the clinical and subclinical groups, with the exception of RHI-Friend.

### *Subclinical Group*

The subclinical group was hypothesized to differ from both the clinical and asymptomatic groups on Discrepancy, Promotion, Nondisclosure, Nondisplay, and Depression. It was predicted that the subclinical group would have higher mean scores on these variables than the asymptomatic group and lower mean scores than the clinical group. This was true for scores on the Discrepancy and Depression scales only. On all of the Perfectionistic Self-Presentation subscales, the subclinical group differed significantly from the clinical group and had significantly lower scores, but no differences were found with the asymptomatic group on this scale. No predictions were made for the subclinical group regarding the adaptive perfectionism measures of High Standards and Order and no differences were found for this group.

The subclinical group was hypothesized to have higher mean scores on all subscales of the RHI and the QRI than the clinical group, and lower mean scores on those measures than the asymptomatic group. This group differed from the clinical group only on the RHI-Friend scale with higher mean scores. No other differences were found for the subclinical group on the relational variables.

The data partially support the hypotheses regarding differences for the subclinical group on maladaptive perfectionism variables and depression. The subclinical group is only significantly different from both groups in predicted directions on the APS-R Discrepancy scale and the depression scale. The subclinical group scores and asymptomatic group scores for the Perfectionistic Self-Presentation Scale subscales did not differ, but both groups had significantly lower scores than the clinical group on the PSPS subscales. Among the relational health and quality variables, the hypotheses were primarily not supported with the exception of the significant difference found between the subclinical and clinical groups on the RHI-Friend scale.

### *Asymptomatic Group*

It was hypothesized that the asymptomatic group would have significantly lower scores on the maladaptive perfectionism measures of Discrepancy, Nondisplay, Nondisclosure, and depression than both of the other groups. Again, Discrepancy and depression were the only variables that separated all three groups and the asymptomatic group did, as hypothesized, have the lowest mean scores. As noted in the subclinical group results, the asymptomatic and subclinical groups did not have any mean differences on the PSPS variables but both scored significantly lower than the clinical group on all of the PSPS subscales.

Prior research (Hewitt et al., 2003) found an association between social self-esteem and Perfectionistic Self-Promotion, indicating that PSPS Perfectionistic Self-Promotion scale may measure an adaptive perfectionism trait. Therefore, it was predicted that the asymptomatic group would score significantly higher than clinical and subclinical samples on Promotion, in addition to having higher scores on the other adaptive perfectionism dimensions, High Standards and Order, than these 2 groups. The difference already reported between the asymptomatic and clinical groups on the PSPS Perfectionistic Self-Promotion scale was not in the predicted direction, suggesting that the PSPS Self-Promotion scale does not measure adaptive perfectionism. No differences were found for the asymptomatic group on High Standards or Order.

The asymptomatic group was hypothesized to have significantly higher mean scores than both other groups on the relational health and quality variables. Only QRI Support, QRI Depth and RHI-Friend had significant effects across the groups, and on all 3 significant relational variables the asymptomatic group had significantly higher scores than the clinical group only,

and did not differ from the subclinical group. Therefore, the hypotheses regarding differences between this group and the other 2 groups on the relational variables received mixed support.

### *Summary*

The most robust results are in the differences found on the maladaptive perfectionism variables. The APS-R Discrepancy and CES-Depression scores differentiated all 3 groups with a moderate effect size. On the Perfectionistic Self-Presentation Scale subscales, the asymptomatic and subclinical group scores did not differ from each other but across all subscales these groups scored significantly lower than the clinical group.

The relational health and quality variables showed a much more questionable set of differences with very small effect sizes. Significant differences were found for the QRI Depth and Support subscales, on which the asymptomatic group scored significantly higher than the clinical group, and for the RHI-Friend scale on which both asymptomatic and subclinical groups scored higher than the clinical group. It is worth noting that for the RHI-Mentor scale, a full 15% of the sample indicated that they did not have a mentor so did not complete that portion of the questionnaire, suggesting that this construct is problematic.



## CHAPTER 5

### Discussion

The findings of the data analyses reported in Chapter 4 will be discussed in this chapter. Clinical implications of the findings will be briefly discussed as will limitations of this study and directions for future research.

#### *Multidimensional Perfectionism and Depression*

##### *Maladaptive Perfectionism*

The present results support the strong association of maladaptive perfectionism with eating disorder severity, and are consistent with the existing literature examining this relationship. The Almost Perfect Scale-revised (APS-R) Discrepancy scores for the asymptomatic group were comparable to those reported by Rice and Ashby (2007) in a sample of 1,071 college women. The Perfectionistic Self-Presentation Scale (PSPS) subscales means for the asymptomatic group were comparable to those found by Cockell et al. (2002) in a sample of 21 women serving as a control group in a study of perfectionistic self-presentation in women with anorexia. PSPS mean scores for the clinical group in this study were smaller than those reported by Cockell et al. for a group of 21 participants with anorexia nervosa. The group means in the Cockell et al. study were PSPS Self-promotion 58.8, PSPS Nondisclosure 38.8, and PSPS Nondisplay 59.7, in contrast to PSPS Self-promotion 52.05, PSPS Nondisclosure 29.88, and PSPS Nondisplay 50.43 in the current study. It is notable that the Cockell et al. study included only participants with anorexia. One possible interpretation of the mean differences between that study and this one is that perfectionistic self-presentation may be a more relevant variable for those with anorexia.

Effect sizes for all the maladaptive perfectionism variables range from small to medium (Cohen, 1992), and suggest that maladaptive perfectionism is a relevant variable to consider in eating disorder treatment and assessment. The effect size of .15 for the Nondisplay of Imperfection is modest, and findings for this subscale must be considered tentative.

The present findings, linking higher levels of maladaptive perfectionism with eating disorder and disordered eating severity, support and add to a broad body of previous research linking multidimensional perfectionism to eating disorders (Ashby, Kottman, & Schoen, 1998; Joiner, Heatherton, Rudd, & Schmidt, 1997; Minarik & Ahrens, 1996; Srinivasagam et al., 1995; Sutander-Pinnock, Woodside, Carter, Olmsted, and Kaplan, 2003). The finding that the 3 groups differ on the scores for Discrepancy, with greater eating disorder severity correlating with higher scores, suggests this intrapersonal dimension of perfectionism is highly relevant and sensitive to eating disorders. The results on the APS-R Discrepancy construct—the discrepancy between self-prescribed high standards and perceived performance—suggest that women with eating disorders experience a distressing gap between their self-perception and self-evaluation. These findings are consistent with the notion advanced by sociocultural and feminist theorists (Striegel-Moore, Silberstein, & Rodin, 1986; Twamley & Davis, 1999) that culturally-defined standards of body and beauty may be internalized and become a standard or a “goal” to be achieved, and that when this destructive standard is not met, or is not perceived to be met, it can be experienced as failure and cause significant distress.

The women in the group with clinical eating disorders scored higher than both of the other 2 groups on all 3 of the subscales of the Perfectionistic Self-Presentation Scale. This suggests that women with eating disorders not only experience a self-evaluative perfectionism, but they are also more likely to seek to present themselves as perfect to others (Perfectionistic

Self-Promotion), and to obscure or withhold aspects of themselves they judge to be imperfect (Nondisplay of Imperfection and Nondisclosure of Imperfection). It makes intuitive sense that another dimension of maladaptive perfectionism relevant to eating disorders would be perfectionistic self-presentation, and the results of this study are consistent with that sense. However, the hypothesis that the subclinical eating concerns group would score higher on the PSPS subscales than the asymptomatic group was not supported. Hewitt, Flett and Ediger (1995), in their study of 81 college women, found that the PSPS scales were significantly associated with measures of disordered eating and eating disorders, as well as body image concerns. The sample in that study was presumably a mix of subclinical, asymptomatic, and possibly undiagnosed or untreated clinical eating disorders (based on prevalence rates of eating disorders in the general population). These studies, taken together, indicate that dimensions of perfectionistic self-presentation may be associated with greater eating and body image pathology in a college sample but that they do not differ significantly between women with subclinical eating concerns when compared with an asymptomatic group.

The APS-R Discrepancy subscale was a more discriminating measure of maladaptive perfectionism differences between the asymptomatic and subclinical groups than the PSPS subscales. The relative scarcity of research with the subclinical population made it difficult to base the hypotheses for this group on a solid empirical foundation. Many studies associate mental health markers such as negative affect, low self-esteem and trait anxiety with increases in body image or eating concerns in populations considered asymptomatic (Halmi et al., 1991; Lewinsohn, Striegel-Moore, & Seeley, 2000; Mintz & Betz, 1988). However, there are few studies that specifically identify a subclinical population to study.

One of the exceptions is a study by Franko and Omori (1999), in which a sample of college women were grouped according to presence and severity of eating concerns. The authors found that eating disorder severity was associated with increases in depression and perfectionism but differences were not found between what would be considered the subclinical and asymptomatic groups. Differences between findings in the current study and the findings of Franko and Omori may be related to their use of the EDI-2 Perfectionism scale which is unidimensional and not as robust as the APS-R Discrepancy scale (Ashby et al., 1998; Franco-Paredes et al., 2005). The findings of the current study support the use of a multidimensional construct in measuring perfectionism in subclinical and clinical eating disorder groups. The different findings on depression may be related to the way the eating disorder categories are grouped (Franko & Omori designated probable bulimics, at-risk dieters, intensive dieters, casual dieters and non-dieters as their categories), and the results of the present study could provide support for the method of classification of eating disorder groups offered by the Q-EDD. It is certainly more consistent with the DSM-IV classifications which are, theoretically, born out of clinical practice as well as empirical support.

### *Depression*

The CES-D mean scores across the 3 eating disorder status groups mirrored the differences found with the APS-R Discrepancy subscale scores, with significant effects for the 3 groups. The Center for Epidemiologic Studies provides score ranges associated with probable major depression (>22), mild to moderate depression (15-21), and no depression (<15). The mean CES-D scores were in the major depression range for the clinical group (29.05), in the moderate range for the subclinical group (19.93), and outside of the depression range for the asymptomatic group (13.79). The effect size for depression was .26, indicating that eating

disorder status accounted for 26% of the variance in the depression scores. Based on Cohen's classification of effect sizes (Cohen, 1992), this would be considered a small to moderate effect; However, Cohen cautioned against using these cut-offs outside of the conceptual context of the variables they are reflecting. In this case, for reasons of both treatment and assessment, it is very important to be able to distinguish these 3 groups based on depression scores. The high comorbidity of depression and eating disorders is well documented (Halmi et al., 1991; Lewinsohn, Striegel-Moore, & Seeley, 2000), but the findings that depression and maladaptive perfectionism increase across all 3 groups provide a possible foundation for the development of a cognitive and affective model of eating disorders.

The current results support findings of Wonderlich et al. (2005), in their factor analysis of 3 clusters of bulimics. They found 1 cluster termed "low comorbidity cluster," with less psychiatric comorbidities; 1 cluster termed "affective/perfectionistic" with greater depression and anxiety; and 1 cluster termed "impulsive" with higher rates of impulsivity and substance abuse. The cluster termed the "affective/perfectionistic cluster" had the greatest severity of eating disorder symptoms of the 3 clusters, linking higher levels of depression and perfectionism with severity of eating disorder symptoms

### *Adaptive Perfectionism*

Although perfectionism is widely considered a negative trait, research has found adaptive perfectionism to be associated with positive traits such as self-efficacy, self-esteem and satisfaction with grade point average (Grzegorek, Slaney, Franz, & Rice, 2004; LoCicero & Ashby, 2000). The APS-R High Standards and APS-R Order subscales were the measures used to assess adaptive perfectionism in this study. It was predicted that the asymptomatic group would have higher scores on adaptive perfectionism measured by APS-R Standards and APS-R

Order. Additionally, there was a question as to whether Perfectionistic Self-Promotion might be higher in this group, because there is evidence of this factor correlating with other adaptive perfectionism measures as well as with maladaptive perfectionism measures in a series of validation studies (Hewitt et al., 2003). The asymptomatic group did not have significantly higher mean scores on the measures of adaptive perfectionism than the subclinical and clinical groups. The inclusion of Perfectionistic Self-Promotion as a measure of adaptive perfectionism in this group and of maladaptive perfectionism in the other 2 groups was based on the conflicting findings of Hewitt et al. (2003) in a series of validation studies. The group means for this factor were significantly higher in the clinical group, and Perfectionistic Self-Promotion was shown to have significant ( $p < .01$ ), though moderate, correlations with depression (.43) and APS-R Discrepancy (.49) and significant negative correlations with the Quality of Relationships Inventory Support subscale (-.20), the Relational Health Indices Friend subscale (-.24) suggesting that Perfectionistic Self-Promotion “acts like” a measure of maladaptive perfectionism.

Few studies have looked at links between adaptive perfectionism and eating disorders. Ashby et al. (1998) found no differences between an eating disordered and non-eating disordered sample on measures of adaptive perfectionism. Pearson and Gleaves (2006) found no significant associations between normal perfectionism and bulimic behaviors. Similarly, this study found no differences between the clinical group and the other groups on APS-R Standards and APS-R Order scales. These findings suggest that adaptive perfectionism,, as operationalized in this study, APSR High Standards and APS-R Order , is not a salient variable in differentiating clinical eating disorder, subclinical, and asymptomatic groups.

### *Relational Health and Quality of Relationships*

The predictions in this study regarding relational health and quality were based on a large body of research showing deficits in perceived and actual social support (Grissett & Norvell, 1992; Rorty et al., 1999; Striegel-Moore et al., 1986; Wonderlich et al., 2001) and disturbed attachment styles and patterns (Cole-Detke & Kobak, 1996) among women with eating concerns. These hypotheses were also drawn, in part, from predictions about how perfectionistic self-presentation would “translate” into an experience of interpersonal authenticity and engagement. The measures used were selected to target a very specific kind of interpersonal experience—the sense that one can be authentic with and understood by others.

There were statistically significant differences for 3 of the measures of relational health and quality; the QRI Support subscale, the QRI Depth subscale, and the RHI-Friend subscale. For QRI Support and QRI Depth, the differences in the mean scores for the asymptomatic and clinical groups were statistically significant. On the RHI-Friend, both the asymptomatic and subclinical group means were significantly different from the clinical group with the latter group scoring lower than the other 2 groups. The effect sizes for all three variables, however, were small (Cohen, 1992), accounting for only 3-4 percent of the variance, and rendered these differences questionable at best.

The minimal effect sizes are somewhat surprising given that there is a strong literature associating other measures of interpersonal support and attachment with eating disorders. One possible explanation may lie in the Relational Health Indices, which have had very limited use. It is possible that the conceptualization used in this study of relational health as being about engagement and authenticity did not capture the areas of interpersonal experience in which the clinical groups may be experiencing deficits. It may be that perceived and actual social support

and attachment styles do differ in people with eating disorders (Rorty et al., 1999; Tiller et al., 1995), but the self-reported experiences of authenticity, engagement, support, depth, and conflict measured by the RHI and QRI, respectively, do not. Holt and Espelage (2002) used the QRI Conflict subscale with a group of asymptomatic women and a group of women with subclinical eating disturbances and also found no significant differences. Grissett and Norvell (1992) did find differences between a group with bulimia and an asymptomatic group using the QRI, but the differences were on the QRI Conflict subscale only, indicating that the meaningful variable was not a lack of support, engagement, depth or authenticity, but instead the presence of conflict. Notably, Grissett and Norvell's findings were with a full clinical eating disorder group, not a subclinical group.

Nakash et al. (2004) used the RHI to explore associations between body image and relational health in college women and found no significant association. Body image is a different construct from the eating disordered behaviors measured in this study, but they are commonly linked. It may be that relational health is not a salient interpersonal construct to reliably differentiate groups based on eating disorder severity.

Another possible explanation for the minimal findings on relational health and quality is that, if people with eating disorders are more likely to present themselves in a perfectionistic way or to refrain from disclosing or displaying imperfection as the PSPS results suggest, they may tend to present their relationships in an idealized manner as well. This would make it difficult to endorse experiences of disconnectedness, disengagement, anger or conflict related to a close friendship, and could interfere with accurate or valid findings. Further, it would make self-report a less than ideal choice of assessment.



On the variables of relational health and quality of relationships, the findings indicate that there may be small differences between the clinical group and the asymptomatic group on levels of interpersonal support and depth. However, the current conceptualization of interpersonal variables seems to have missed the mark and make it impossible to draw firm conclusions regarding differences among the groups.

#### *Study Strengths and Clinical Implications*

Several studies have found that both unidimensional and multidimensional perfectionism are associated with eating disorders (Ashby, Kottman, & Schoen, 1998; Bastiani, Rao, Weltzin, & Kaye, 1995; Bourke, Taylor, & Crisp, 1985; Caspar, 1990; Cooper, Cooper, & Fairburn, 1985; Garner, Olmstead, & Polivy, 1983; Joiner, Katz, & Heatherton, 2000; Sutander-Pinnock et al., 2003). This study is an addition to that broad literature and adds some new dimensions. The study finding that the APS-R Discrepancy subscale and the CES-D depression scale scores increased significantly across the groups as eating disorder severity increased is a modest contribution to the eating disorder literature. It is consistent with findings of Ashby, Kottman, and Schoen (1998) and with Pearson and Gleaves (2006). Both sets of researchers used the APS-R in combination with other measures of perfectionism and found higher levels of Discrepancy in the participants with eating disorders. The findings add a greater understanding of the intrapsychic correlates of the range of eating disorder behaviors, and this knowledge can help inform eating disorder treatment, assessment, and prevention. The findings of differences on maladaptive perfectionism and depression in the subclinical group give us a starting point in looking at the unique features of this understudied group.

The finding that the scores on the subscales of the PSPS (Self-Promotion, Nondisplay, and Nondisclosure) were significantly higher in the clinical group than in the other groups is a

contribution as well. The results suggest that perfectionistic self-presentation is a feature of the more severe eating disorders but that it is less likely to be significantly higher than the norm in those with subclinical disturbances. This suggests that perfectionistic self-presentation could be seen as a warning sign for increased severity of eating disorder symptoms and could be a focal point for treatment.

Clinically, the strong indicators in the current study that depression and discrepancy between high standards and perceived performance occur in subclinical as well as clinical populations suggest that this should be an area of assessment and possible clinical focus for those entering psychotherapy for treatment of eating disorders. Although as Grzegorek et al. note, “there is scant evidence that clients come to therapy saying that they wish to address their perfectionism,” (p. 199), there are many clients who do seek therapy related to eating disturbances, and to deal with pressures associated with concerns about academic performance. These results provide empirical encouragement for development of psychotherapy methods or exercises to challenge beliefs about one’s performance, and to re-align high standards so that they can serve rather than debilitate the client.

The use of the Q-EDD to distinguish clinical, subclinical, and asymptomatic groupings provides fresh data on the subclinical grouping in particular. A review of the literature indicates that this is the only study to date measuring maladaptive perfectionism across all 3 groups. This is a contribution to a relatively small literature studying personality and social correlates of subclinical eating concerns. The findings of the current study on maladaptive perfectionism and depression in the subclinical group provide some support for the continuum theoretical construct of eating disorders (Tyrka et al., 2002) because the scores on depression and perfectionism increased in a consistent manner with the severity of eating disordered behavior. The current

results indicate that maladaptive perfectionism and depression are likely some of the personality dimensions that can be considered along a continuum parallel with the behavioral symptoms continuum.

The findings on the relationship variables suggest that the current formulation of interpersonal support is a less relevant one for differentiating across eating disorder severity. However, there were some very small effects on these variables that leave open the question of whether a different conceptualization of interpersonal deficits and strengths would be more useful.

#### *Study Weaknesses*

The use of only self-report measures presents a limitation in this study. The self-presentational bias of self-report instruments may be even greater in the clinical and subclinical population as suggested by their higher scores on Perfectionistic Self-Presentation. The homogeneity of the sample in this study also presents a limitation. The sample was not diverse with 81.6% Caucasian participants, and the majority (91%) of the sample ranging in age from 18 to 23 years. Unfortunately this continues a pattern in eating disorder research in which mostly Caucasian, college-aged women are surveyed. Clearly, this limits the generalizability of the findings to other cultural and age populations.

The RHI is a relatively new instrument so the use of the 3 subscales was experimental. The categories of mentor and community seem conceptually promising but the measure may not yet be developed enough to capture those domains effectively. To this effect, a significant number (15%) of participants in this sample did not have someone they considered a mentor. This relational domain may need to be articulated differently. Notably, one third of the respondents who were in treatment at the time they answered the question considered the

treatment group their most meaningful community, while many others chose religious groups, church, sororities, etc. This raises the question of whether this RHI-Community measure can be effective across such a conceptually wide range of communities.

The number of participants was adequate, with the smallest of the 3 groups, the clinical group, consisting of 42 participants. This did allow for adequate statistical power but it could be helpful to have a larger number of participants, and definitely to have a clinical sample that is more diverse in age, culture and ethnicity.

The inclusion of a measure of positive self-concept, positive affect, self-esteem, or self-efficacy could have provided a balance to the information that the inclusion of depression yielded.

#### *Future research*

The subclinical group was differentiated from both of the other groups by depression scores and the APS-R Discrepancy subscale scores. This may suggest that depression and negative self-evaluations combined with high standards could put women at risk for development of eating disorders. Longitudinal studies measuring adaptive and maladaptive perfectionism and eating behaviors and attitudes through early and mid-adolescence are an important direction for future research.

There is a scarcity of research on the subclinical group, and the present findings are a promising start to learning more about what differentiates this group. Further research is needed about this group to help us to understand some early warning signs of, and risk factors for, eating disorders. The finding that Discrepancy differed across the 3 groups suggests that prevention and treatment efforts could work to educate young women about the ways in which they evaluate themselves, set goals or standards for themselves, and how they internalize cultural messages.

Hilde Bruch wrote about her eating disordered patients; “True prevention requires that their pleasing superperfection is recognized as an early sign of inner misery,” (Bruch, 1978; p.59) and this could be interpreted as a call to focus prevention efforts on challenging—or transforming—maladaptive perfectionism. . The exclusion of men from this study was intentional to control for the differences in cultural conditioning experienced by men and women. However, there is a great need for research about eating disorders, perfectionism, and interpersonal concerns in men. This research could help us to understand differences associated with gender roles.

Based on findings of Blatt et al. (1998) that perfectionism and interpersonal deficits were associated with poor outcome to treatment of depression, it is important to see if a similar process is occurring in eating disorder treatment. The effects of maladaptive perfectionism and depression on treatment outcome and the therapeutic relationship in eating disorder treatment is a rich area for future research. We also need to better understand how relational factors are affecting adherence to treatment, the therapeutic bond, and recovery from eating disorders.

Although adaptive perfectionism did not result in significant findings in this study, it is possible that another variable with a positive valence such as self-esteem or self-efficacy, would result in significant differences. This is a direction that future research could address.

### *Summary*

This study investigated multidimensional perfectionism and relational health and quality across severity of eating pathology. Perfectionism and interpersonal difficulties are identified as core features, or maintaining mechanisms, of the most chronic and treatment-resistant eating disorders (Fairburn et al., 2003). The results of the study supported the ideas advanced by Fairburn et al. by demonstrating that maladaptive perfectionism is associated with severity of eating disorder symptoms, and expanded on those ideas by providing a more focused definition

of maladaptive perfectionism via the APS-R Discrepancy variable. The strong link found between depression and APS-R Discrepancy in those with eating disturbances raises the question of whether depression is an affective correlate of the cognitive processes of maladaptive perfectionism.

Higher levels of perfectionistic self-presentation were linked with clinical eating disorders, but this interpersonally-directed dimension of perfectionism did not differentiate the subclinical and asymptomatic groups. Findings regarding relational health were not robust but they do suggest that the most severe eating disorder symptoms may be associated with less relational support, depth, authenticity and engagement.

The imperative to better understand and treat clinical and subclinical eating disorders is underscored by some of the simple descriptive statistics from this study. Out of the sample of university students, 32.2% had subclinical eating disturbances, and 7.2% had clinical eating disorders. The fact that nearly 40% of a sample of college-aged women are dealing with some level of eating concern suggests that a high level of culturally-informed body dysphoria is the norm, at least in the university setting and more likely in the larger culture. The findings of this study challenge eating disorders professionals to help our clients to identify and make conscious the pursuit of standards at which they feel destined to fail and to facilitate their transformation into truly valued goals.

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APPENDIX A:  
QUESTIONNAIRES AND SCALES

## Instruments

**APS-R Short Form****Instructions**

The following items are designed to measure attitudes people have toward themselves, their performance, and toward others. There are no right or wrong answers. Please respond to all of the items. Use your first impression and do not spend too much time on individual items in responding.

Respond to each of the items using the scale below to describe your degree of agreement with each item. Fill in the appropriate number circle on the computer answer sheet that is provided.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Slightly Disagree	Neutral	Strongly Agree	Agree

1. I have high standards for my performance at work or at school.
2. I am an orderly person.
3. I often feel frustrated because I can't meet my goals.
4. Neatness is important to me.
5. If you don't expect much out of yourself, you will never succeed.
6. My best just never seems to be good enough for me.
7. I think things should be put away in their place
8. I have high expectations for myself.
9. I rarely live up to my high standards.
10. I like to always be organized and disciplined.
11. Doing my best never seems to be enough.
12. I set very high standards for myself.
13. I am never satisfied with my accomplishments.
14. I expect the best from myself.
15. I often worry about not measuring up to my own expectations.

16. My performance rarely measures up to my standards.
17. I am not satisfied even when I know I have done my best.
18. I try to do my best at everything I do.
19. I am seldom able to meet my own high standards of performance.
20. I am hardly ever satisfied with my performance.
21. I hardly ever feel that what I've done is good enough.
22. I have a strong need to strive for excellence.
23. I often feel disappointment after completing a task because I know I could  
have done better.

#### Scoring-APS-R Short Form

Standards = 1, 5, 8, 12, 14, 18, 22,

Order = 2, 4, 7, 10,

Discrepancy = 3, 6, 9, 11, 13, 15, 16, 17, 19, 20, 21, 23,

PSPS

Listed below are a group of statements. Please rate your agreement with each of the statements using the following scale. If you strongly agree, circle 7; if you disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided the midpoint is 4.

	1	2	3	4	5	6	7
	<b>Disagree Strongly</b>			<b>Neutral</b>			<b>Agree Strongly</b>
				<b>Disagree Strongly</b>		<b>Neutral</b>	<b>Agree Strongly</b>
1. It is okay to show others that I am not perfect.....	1	2	3	4	5	6	7
2. I judge myself based on the mistakes I make in front of other people.....	1	2	3	4	5	6	7
3. I will do almost anything to cover up a mistake.....	1	2	3	4	5	6	7
4. Errors are much worse if they are made in public rather than in private...	1	2	3	4	5	6	7
5. I try always to present a picture of perfection.....	1	2	3	4	5	6	7
6. It would be awful if I made a fool of myself in front of others.....	1	2	3	4	5	6	7
7. If I seem perfect, others will see me more positively.....	1	2	3	4	5	6	7
8. I brood over mistakes that I have made in front of others.....	1	2	3	4	5	6	7
9. I never let others know how hard I work on things.....	1	2	3	4	5	6	7
10. I would like to appear more competent than I really am.....	1	2	3	4	5	6	7
11. It doesn't matter if there is a flaw in my looks.....	1	2	3	4	5	6	7
12. I do not want people to see me do something unless I am very good at it.	1	2	3	4	5	6	7
13. I should always keep my problems to myself.....	1	2	3	4	5	6	7
14. I should solve my own problems rather than admit them to others.....	1	2	3	4	5	6	7
15. I must appear to be in control of my actions at all times.....	1	2	3	4	5	6	7
16. It is okay to admit mistakes to others.....	1	2	3	4	5	6	7
17. It is important to act perfectly in social situations.....	1	2	3	4	5	6	7
18. I don't really care about being perfectly groomed.....	1	2	3	4	5	6	7

19. Admitting failure to others is the worst possible thing.....	1	2	3	4	5	6	7
20. I hate to make errors in public.....	1	2	3	4	5	6	7
21. I try to keep my faults to myself.....	1	2	3	4	5	6	7
22. I do not care about making mistakes in public.....	1	2	3	4	5	6	7
23. I need to be seen as perfectly capable in everything I do.....	1	2	3	4	5	6	7
24. Failing at something is awful if other people know about it.....	1	2	3	4	5	6	7
25. It is very important that I always appear to be "on top of things".....	1	2	3	4	5	6	7
26. I must always appear to be perfect.....	1	2	3	4	5	6	7
27. I strive to look perfect to others.....	1	2	3	4	5	6	7

#### Scoring for the Perfectionistic Self-Presentation Scale

The Perfectionistic Self-Presentation Scale (PSPS) is a 27-item measure with three subscales measuring:

1. Perfectionistic Self-Promotion (i.e., the need to appear perfect)
2. Nondisplay of Imperfection (i.e., the need to avoid appearing imperfect)
3. Nondisclosure of Imperfection (i.e., the need to avoid public admission of Imperfection)

To score the PSPS, the following items are reversed:

**1, 11, 16, 18, 22**

The Perfectionistic Self-Promotion subscale is scored by summing:

**5, 7, 11, 15, 17, 18, 23, 25, 26, 27**

The Nondisplay of Imperfection subscale is scored by summing:

**2, 3, 4, 6, 8, 10, 12, 20, 22, 24**

The Nondisclosure of Imperfection subscale is scored by summing:

**1, 9, 13, 14, 16, 19, 21**

## RELATIONAL HEALTH INDICES

(Liang, Tracy, Williams, Taylor, Jordan, Miller, 2002)

**The following questions pertain to your relationships with "mentors" (other than your parents or whoever raised you) who you go to for support and guidance. A mentor is not a peer or romantic partner. By mentor we mean someone who often is older than you, has more experience than you, and is willing to listen, share her or his own experiences, and guide you through some area of your life (e.g., academic, social, athletic, religious).**

1. How many (if any) people currently in your life could be considered a mentor to you according to the above definition?

- 1 None
- 2 One
- 3 Two
- 4 Three
- 5 Four
- 6 Five or more

**If you have more than one mentor, please answer the following questions regarding the mentor who is most important to you.**

OPTIONAL: 2. Is this mentor a \_\_\_\_\_ (insert educational institution) faculty or staff member?

- 1 No
- 2 Yes

OPTIONAL: 3. Is this member:

- 1 Male
- 2 Female

OPTIONAL: 4. Describe a specific experience you had with your mentor that was especially meaningful to you (positive or negative):

**RHI-Mentor Scale**

**For each statement below, please indicate the number that best applies to your relationship with this mentor.**

1. I can be genuinely myself with my mentor.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

2. I believe my mentor values me as a whole person (e.g., professionally/academically and personally).

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

3. My mentor's commitment to and involvement in our relationship exceeds that required by his/her social/professional role.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

4. My mentor shares stories about his/her own experiences with me in a way that enhances my life.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

5. I feel as though I know myself better because of my mentor.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

6. My mentor gives me emotional support and encouragement.

- 1 Never
- 2 Seldom
- 3 Sometimes

- 4 Often
- 5 Always

7. I try to emulate the values of my mentor (such as social, academic, religious, physical/athletic).

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

8. I feel uplifted and energized by interactions with my mentor.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

9. My mentor tries hard to understand my feelings and goals (academic, personal, or whatever is relevant).

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

10. My relationship with my mentor inspires me to seek other relationships like this one.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

11. I feel comfortable expressing my deepest concerns to my mentor.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always



**RHI- Friend**

**The following questions pertain to your friendships with peers (excluding family members or a romantic partner). A close friend is someone whom you feel attached to through respect, affection and/or common interests, someone you can depend on for support and who depends on you. Please answer the next questions regarding just ONE of your closest friends. (Please do not select a family member or romantic partner).**

OPTIONAL: 1. Is this friend male or female? 1 Male 2 Female

**Next to each statement below, please indicate the number that best applies to your relationship with a close friend.**

2. Even when I have difficult things to say, I can be honest and real with my friend.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

3. After a conversation with my friend, I feel uplifted.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

4. The more time I spend with my friend, the closer I feel to him/her.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

5. I feel understood by my friend.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

6. It is important to us to make our friendship grow.

- 1 Never
- 2 Seldom

- 3 Sometimes
- 4 Often
- 5 Always

7. My friendship inspires me to seek other friendships like this one.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

8. I am uncomfortable sharing my deepest feelings and thoughts with my friend.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

9. I have a greater sense of self-worth through my relationship with my friend.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

10. I feel positively changed by my friend.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

11. I can tell my friend when he/she has hurt my feelings.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

12. My friendship causes me to grow in important ways.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often

5 Always

## RHI – COMMUNITY

**The following questions pertain to the most meaningful community or group with which you have been involved on a day to day basis for the past three months (i.e. academic, social, cultural, religious, etc.) Next to each statement below, please indicate the number that best applies to your relationship with or involvement in this community.**

**Please identify the type of community or group you have selected:**

---

1. I feel a sense of belonging to this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

2. I feel better about myself after my interactions with this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

3. If members of this community know something is bothering me, they ask me about it.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

4. Members of this community are not free to just be themselves.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

5. I feel understood by members of this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

6. I feel mobilized to personal action after meetings within this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

7. There are parts of myself I feel I must hide from this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

8. It seems as if people in this community really like me as a person.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

9. There is a lot of backbiting and gossiping in this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

10. Members of this community are very competitive with each other.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

11. I have a greater sense of self-worth through my connection with this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

12. My connections with this community are so inspiring that they motivate me to pursue relationships with other people outside this community.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

13. This community has shaped my identity in many ways.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

14. This community provides me with emotional support.

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

RHI Scoring:

High mean composite scores on each of these indices corresponds to a high degree of levels relational health (includes authenticity, engagement, and empowerment/zest) in the context of peer, mentor, and community relationships.

Peer Subscale Reversed Items: 8

Mentor Subscale Reversed Items: none

Community Subscale Reversed Items: 4, 7, 9, 10

### Quality of Relationships Inventory

Please use the scale below to answer the following questions regarding your relationship with a close friend who is not a parent or other family member.

The gender of the friend I am considering is (please circle one):      Male \_\_\_\_\_ Female \_\_\_\_\_

	-1- Not at all	-2- A little	-3- Quite a bit	-4- Very much				
1.					1	2	3	4
2.					1	2	3	4
3.					1	2	3	4
4.					1	2	3	4
5.								
					1	2	3	4
6.					1	2	3	4
7.					1	2	3	4
8.								
					1	2	3	4
9.					1	2	3	4
10.					1	2	3	4
11.					1	2	3	4
12.					1	2	3	4
13.								
					1	2	3	4
14.					1	2	3	4
15.								
					1	2	3	4
16.					1	2	3	4
17.					1	2	3	4
18.								
					1	2	3	4
19.					1	2	3	4
20.					1	2	3	4
21.					1	2	3	4
22.								
					1	2	3	4
23.					1	2	3	4
24.					1	2	3	4
25.					1	2	3	4

#### Scoring Instructions for the QRI:

The Quality of Relationships Inventory (QRI) yields three scores: (a) social support, (b) depth, and (c) conflict. The Social Support score is computed by averaging the following items:

1,3,5,8,15,18, 22. The Depth score is computed by averaging the following items: 10,11,12,13, 16,17. The Conflict score is computed by averaging the following items: 2,4,6,7,9,14,19,20,21,23,24,25.

## Questionnaire for Eating Disorder Diagnoses – Q-EDD

Please complete the following questions as honestly as possible. The questions refer to **current behaviors and beliefs**, meaning those that have occurred in the past three months.

**Sex:** (check one)       female       male      **Age:** \_\_\_\_\_

**School/Occupational Status:** (check one)

- Junior High School or Younger  
 High School Freshman  
 High School Sophomore  
 High School Junior  
 High School Senior  
 College Freshman  
 College Sophomore  
 College Junior  
 College Senior  
 Post-graduate  
 Not in School/Employed (please specify): \_\_\_\_\_

**Race/Ethnicity:** (check one)

- African-American/Black  
 American Indian  
 Asian American/Pacific Islander  
 Caucasian/White  
 Hispanic/Latino/Mexican-American  
 Other:(please specify) \_\_\_\_\_

**Present Height:** \_\_\_\_ feet \_\_\_\_ inches **Present Weight:** \_\_\_\_\_ pounds

**My body frame is:** \_\_\_\_ small    \_\_\_\_ medium    \_\_\_\_ large

**I would like to weigh:** \_\_\_\_\_ pounds.

- Do you experience recurrent episodes of binge eating, meaning eating in a discrete amount of time (e.g., within any 2 hour period) an amount of food that is definitely larger than most people would eat during a similar time period?

Yes                       No

**If yes:** Continue to answer the following questions.

**If no:** Skip to question #4 (on the next page).

- Do you have a sense of lack of control during the binge eating episodes (i.e., the feeling that you cannot stop eating or control what or how much you are eating)?

Yes                       No



3. Check the answers below that best fit for you:

On average, **I have had:**

1  2  3  4  5  6 or more binge episodes **a week**

**for at least:**

1 month  2 mos  3 mos  4 mos  5 mos  6-12 mos  more than 1 year

4. Please check the appropriate responses below concerning things you may do **currently** to prevent weight gain. If you answer yes to any question, please indicate how often on the average you do this and how long you have been doing this.

- a) Do you make yourself vomit to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

- b) Do you take laxatives to prevent weight gain: ?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

- c) Do you take diuretics (water pills) to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

- d) Do you fast (skip food for 24 hours or more) to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

- e) Do you chew food but spit it out to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

- f) Do you give yourself an enema to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

- g) Do you take appetite control pills to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

h) Do you diet strictly to prevent weight gain?  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

i) Do you exercise a lot:  Yes  No

*How often do you do this?*

Daily  Twice a week  Once a week  Once a month

*How long have you been doing this?(answers in months)*

1 month  2 mos  3 mos  4 mos  6-12 mos  more than 1 year

5. If you answered YES to “exercise a lot,” please answer questions 5a, 5b, 5c, and 5d. If you answered NO to “exercise a lot,” skip to question 6.

5a. I \_\_\_\_\_ (types of exercise, e.g., jog, swim)  
for an average of \_\_\_\_\_ hours at a time.

5b. My exercise sometimes significantly interferes with important activities:  Yes  No

5c. I exercise despite injury and/or medical complications:  Yes  No

5d. Is your primary reason for exercising to counteract the effects of binges  
or to prevent weight gain?  Yes  No

For the following questions, circle the response that best reflects your answer:

6. Does your weight and/or body shape influence how you feel about yourself?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Not at all	A little	A moderate amount	Very Much	
Extremely/Completely				

7. How afraid are you of becoming fat?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Not at all	A little	A moderate amount	Very Much	
Extremely/Completely				

8. How afraid are you of gaining weight?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Not at all	A little	A moderate amount	Very Much	
Extremely/Completely				

9. Do you consider yourself to be:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Grossly	Moderately	Overweight	Normal	Low	Severely
Obese	Obese		Weight	Weight	
Underweight					

For the following questions, please check yes or no.

10. Certain parts of my body (e.g., my abdomen, buttocks, thighs) are too fat.  Yes  No
11. I feel fat all over.  Yes  No
12. I believe that how little I weight is a serious problem.  Yes  No
13. I have missed at least 3 consecutive menstrual cycles  
(not including those missed during a pregnancy):  Yes  No

**How it is scored:** The Q-EDD places respondents into the six diagnostic categories with the use of a scoring manual with a set of decision rules.

## CES-D

Using the scale below, circle the number which best describes how often you felt or behaved this way -- **DURING THE PAST WEEK.**

1 = Rarely or none of the time (less than 1 day)

2 = Some or a little of the time (1-2 days)

3 = Occasionally or a moderate amount of time (3-4 days)

4 = Most or all of the time (5-7 days)

DURING THE PAST WEEK:	Rarely or none of the time	Some or a little of the time	Occasionally or a moderate amount of the time	Most or all of the time
1. I was bothered by things that usually don't bother me.....	1	2	3	4
2. I did not feel like eating; my appetite was poor.....	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family or friends.....	1	2	3	4
4. I felt that I was just as good as other people.....	1	2	3	4
5. I had trouble keeping my mind on what I was doing.....	1	2	3	4
6. I felt depressed.....	1	2	3	4
7. I felt that everything I did was an effort.....	1	2	3	4
8. I felt hopeful about the future.....	1	2	3	4
9. I thought my life had been a failure.....	1	2	3	4
10. I felt fearful.....	1	2	3	4
11. My sleep was restless.....	1	2	3	4
12. I was happy.....	1	2	3	4
13. I talked less than usual.....	1	2	3	4
14. I felt lonely.....	1	2	3	4
15. People were unfriendly.....	1	2	3	4
16. I enjoyed life.....	1	2	3	4
17. I had crying spells.....	1	2	3	4
18. I felt sad.....	1	2	3	4
19. I felt that people disliked me.....	1	2	3	4
20. I could not get "going".....	1	2	3	4

CES-D Scoring: A score of  $\geq 22$  indicates probable Major Depression; 15-21 Mild to Moderate Depression; and,  $< 15$  does not indicate depression.

P# \_\_\_\_\_

***Additional Information***

**Are you presently taking any medications to treat a psychological condition such as depression, anxiety, or an eating disorder?**      \_\_\_\_\_ Yes      \_\_\_\_\_ No

If yes, what is the name of the medication? \_\_\_\_\_

**Have you ever taken any medications to treat a psychological condition such as depression, anxiety, or an eating disorder?**      \_\_\_\_\_ Yes      \_\_\_\_\_ No

If yes, when was the medication taken? \_\_\_\_\_

If yes, what was the name of the medication? \_\_\_\_\_

**Are you currently in counseling or psychotherapy?**      \_\_\_\_\_ Yes      \_\_\_\_\_ No

If yes, what type of treatment are you involved in?

\_\_\_\_\_ outpatient therapy (1-2x a week, individual counseling)

\_\_\_\_\_ day treatment or partial hospitalization program (attending a treatment program several days a week for a few hours or all day)

\_\_\_\_\_ inpatient treatment (staying at a treatment center all day and through the night)

**Have you previously been in counseling or psychotherapy?**      \_\_\_\_\_ Yes      \_\_\_\_\_ No

If yes, when did this occur? \_\_\_\_\_

How long did this counseling last?

\_\_\_\_\_ 1-5 sessions

\_\_\_\_\_ 6-12 sessions

\_\_\_\_\_ more than 12 sessions

APPENDIX B:  
RECRUITMENT MATERIALS AND INFORMED CONSENT

Dear Potential Research Study Participant,

I would like to ask for your help in a study exploring eating patterns, interpersonal relationships, and personality style. The goal of the study is to contribute to the understanding of eating disorders and disordered eating. This, in turn can help develop better treatment of eating concerns. Gaining a better understanding of eating disorders has been difficult for researchers because those who struggle with these disorders represent a relatively small percentage of the population. This means it has been hard to find enough people dealing with eating concerns, who are willing to donate their time. It is just as important to find and involve people who are not dealing with these concerns. Because of this, your participation is extremely important.

There are several positive reasons to participate in this study:

- 1) You can play a small role in improving the understanding, treatment, and prevention of eating disorders.
- 2) You may find the questionnaires thought-provoking, and you may learn something about yourself. Some participants may want to further discuss some of the issues raised with counselors or with other supportive people. If you wish to pursue a referral to a mental health provider, a list of resources in your area is available with the study materials.
- 3) For each study participant, \$2 will be donated to the National Eating Disorders Association, a group that promotes education and prevention, access to treatment, and public policy advocacy. Please help make this a larger total donation!

If you decide to participate in this research, you would only be asked to fill out a packet of questionnaires. This would likely take you between 20 and 30 minutes. The responses you give would be kept confidential, and your name would never be used in connection with the study. The study is part of a doctoral dissertation being completed through the Pennsylvania State University Counseling Psychology Program. If you would like, a summary of the study findings could be made available to you once the study is completed.

For this study, I am only asking females to participate. This is due to differences in eating and body related attitudes between males and females. We can better understand these differences if we study males and females separately. The exclusion of males as participants in this study does *not* mean that males do not have concerns about body image, eating, or interpersonal relationships. Instead, it means that we can do better studies if we look at these groups one at a time. People under the age of 18 are also excluded. Although it can seem like an arbitrary cut-off point, people aged 18 and older are allowed to consent for their own health care and make other important decisions. I am using that as a guideline so that I am not collecting information from people who are still legally under the guardianship of their parents.



Please consider agreeing to participate in this research. If you have any questions about this, please contact me at (607) 229-2123 or at [rp234@cornell.edu](mailto:rp234@cornell.edu). Thank you.

Sincerely,  
Randy Patterson, Ed.M.  
Doctoral Candidate, Department of Counselor Education, Counseling Psychology &  
Rehabilitation Services  
The Pennsylvania State University

### SCRIPT for Presentation of Study to College Student Participants

My name is Randy Patterson and I am a doctoral student in Counseling Psychology here at Penn State. I am doing a study to understand how personality styles, eating patterns, and interpersonal relationships might interact in females. This study is for my doctoral dissertation. The goal of this is to develop better treatment and prevention of eating problems. Sometimes it is hard to do this type of research because it is difficult to find people willing to donate their time. For this reason, your participation is extremely valuable.

For this study, I am only asking female students to participate. This is due to differences in eating and body related attitudes between males and females. We can better understand these differences if we study males and females separately. The exclusion of males as participants from this study, does *not* mean that males do not have concerns about body image, eating, or interpersonal relationships. Instead, it means that we can do better studies if we look at these groups one at a time. People under the age of 18 are also excluded. Although it can seem like an arbitrary cut-off point, people aged 18 and older are allowed to consent for their own health care and make other important decisions. I am using that as a guideline so that I am not collecting information from people who are still legally under the guardianship of their parents.

There are some reasons to decide to participate. First, your professor has agreed to offer you 5 points of extra credit for your participation. Second, you can play a small role in helping us to understand how to prevent and treat eating disorders. Third, you may learn something about yourself by participating. Finally, for each person who volunteers to be part of this study, a donation of \$2 will be made to the National Eating Disorders Association, a group that promotes public awareness, treatment, and prevention of eating disorders.

If you are a male or are a female who does not want to volunteer but want an extra credit project, your professor has an equivalent opportunity available for you. The equitable alternative is to read an article on gender and disability and to provide written answers to a few questions about the article. The article and question sheet are available from your instructor. You will also receive 5 points of extra credit for reading the article and answering the questions.

If you decide to participate, you will be asked to complete a packet of questionnaires. This should take between 20 and 30 minutes. The packet also includes a form requesting you consent to participate. Be sure to read and sign this form. If you do not, we cannot use your responses. There is also a list of mental health resources in the packet. This is in case you find some of the questions thought provoking and want to follow up with a counselor.

I will pass out these packets today. Please bring them to the next class. I will be here to pick them up. If you cannot attend the next class but want to participate, please email me at [rep134@psu.edu](mailto:rep134@psu.edu) (also available on the consent form in the packet) and let me know this. We will make alternate arrangements. Thank you so much.



Informed Consent Form for Social Science Research  
The Pennsylvania State University

<p><b>ORP USE ONLY: IRB#26086 Doc. #1</b> The Pennsylvania State University Office for Research Protections Approval Date: 08-22-2007 DWM Expiration Date: 07-19-2008 DWM Social Science Institutional Review Board</p>
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**Title of Project:** *Interpersonal Relationships, Personality Styles, and Eating Patterns in Women*

**Principal Investigator:** **Randy Patterson, Ed.M.**  
7036 Perry City Road  
Trumansburg, NY 14886  
Email: [rep134@psu.edu](mailto:rep134@psu.edu)  
Phone: (607) 229-2123

**Advisor:** **Robert Slaney, Ph.D.**  
327 Cedar  
The Pennsylvania State University  
University Park, Pennsylvania 16802  
Email: [rslaney@psu.edu](mailto:rslaney@psu.edu)  
Phone: (814) 863-4594

1. **Purpose of the Study:** The purpose of this study is to explore how eating attitudes and behaviors are related to personality styles and interpersonal relationships. Two hundred and fifty females between the ages of 18 and 60 will participate in this research.
2. **Procedures to be followed:** You will be asked to complete a series of questionnaires.
3. **Discomforts and Risks:** There are no risks in participating in this research beyond those experienced in everyday life. Some of the questions are personal and might cause slight discomfort. If you wish to pursue a referral to a mental health provider, a list of resources in your area is attached to this form.
4. **Benefits:** The benefits to you may include an increased awareness of yourself, your personality style, and your relationships. On the societal level, this research could increase understanding of factors that contribute to the development of eating disorders.
5. **Duration/Time:** Completion of the questionnaires should take between 20 and 30 minutes. You will be asked to do this one time only.
6. **Statement of Confidentiality:** Your participation in this research is confidential. Each participant will be assigned a participant number and data will be identified by this number only. The data will be stored and secured at the office of the Principal Investigator in a locked file. Only the Principal Investigator will have access to this data. Penn State's Office for Research Protections, the Social Science Institutional Review Board and the Office for Human Research Protections in the Department of Health and Human Services may review records related to this research study. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.
7. **Right to Ask Questions:** Please contact Randy Patterson at (607) 229-2123 with questions, complaints or concerns about this research. You can also call this number if you feel this study has

harmed you. Questions about your rights as a research participant may be directed to Penn State University's Office for Research Protections at (814) 865-1775. You may also call this number if you cannot reach the research team or wish to talk to someone else.

**8. Payment for participation:**

For your participation in this study, 5 extra credit points will be awarded by your professor. Additionally, \$2 will be donated to the National Eating Disorders Association, an education and advocacy group for people with eating disorders.

This study is collecting information from female students only, due to differences in eating and body related attitudes between males and females. An equivalent extra credit assignment is available to those students who either do not wish to participate, or who are excluded from participation based on gender, i.e. males. The equivalent extra credit assignment is to read an article on gender and disability and to provide written answers to three questions about the article. *This assignment will also earn 5 extra credit points.* The article and question sheet can be obtained from your professor on the day that the study is presented in class. If you choose the alternative to the research study, you must turn in the completed question sheet within one week of the date that this study is presented to your class.

- 9. Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawal from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to consent to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this consent form for your records.

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Person Obtaining Consent

\_\_\_\_\_  
Date



Informed Consent Form for Social Science Research  
The Pennsylvania State University

<p><b>ORP USE ONLY: IRB#26086 Doc. #2</b> The Pennsylvania State University Office for Research Protections Approval Date: 08-22-2007 DWM Expiration Date: 07-19-2008 DWM Social Science Institutional Review Board</p>
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Phone: (607) 229-2123

**Advisor:** **Robert Slaney, Ph.D.**  
327 Cedar  
The Pennsylvania State University  
University Park, Pennsylvania 16802  
Email: [rslaney@psu.edu](mailto:rslaney@psu.edu)  
Phone: (814) 863-4594

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7. **Right to Ask Questions:** Please contact Randy Patterson at (607) 229-2123 with questions, complaints or concerns about this research. You can also call this number if you feel this study has harmed you. Questions about your rights as a research participant may be directed to Penn State University's Office for Research Protections at (814) 865-1775. You may also call this number if you cannot reach the research team or wish to talk to someone else.
8. **Payment for participation:** For your participation, \$2 will be donated to the National Eating Disorders Association, an education and advocacy group for people with eating disorders.
9. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawal from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to consent to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this consent form for your records.

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Person Obtaining Consent

\_\_\_\_\_  
Date

VITAE

**Randy E. Patterson**  
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*EDUCATION*

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**The Pennsylvania State University, University Park, PA**  
Ph.D. Candidate in Counseling Psychology, August 2008

**Harvard University, Cambridge, MA**  
Ed.M. in Counseling and Consulting Psychology May 1990

**Hampshire College, Amherst, MA**  
B.A. in Humanities May 1983

*EMPLOYMENT*

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**Cornell University, Ithaca, NY**  
Counseling and Psychological Services, Counselor/Therapist II, 2003-Present

**University of Rochester, Rochester, NY**  
University Counseling Services, Predoctoral Intern, 2002-2003

**The Pennsylvania State University, University Park, PA**  
Counseling and Psychological Services, Graduate Assistant, 2001-2002

**VA Greater Los Angeles Healthcare System, Los Angeles, CA**  
Research Coordinator 1998-1999

**The University of California, Los Angeles, CA**  
Division of Cancer Control and Prevention Research, Research Associate, 1996-1998

**Deaconess Waltham Hospital, Waltham, MA**  
Eating Disorders Program, Milieu Therapist, 1992-1996

*PROFESSIONAL AFFILIATIONS AND HONORS*

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Alumni Society Research Initiation Grant – College of Education, Penn State Univ. 2007  
Mae R. Shultz Scholarship in Education – College of Education, Penn State Univ. 2000, 2001  
Student Affiliate of the American Psychological Association & APA Division 17