MALADAPTIVE PERFECTIONISM AND DISORDERED EATING IN COLLEGE WOMEN: THE MEDIATING ROLE OF SELF-COMPASSION

By

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To my grandparents, for teaching me the value of compassion
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Disordered eating has been recognized as a concern on college campuses, particularly among college women. Maladaptive perfectionism has consistently been identified as a risk factor for disordered eating, and may present challenges to effective treatment and intervention. As a result, increased effort has gone into developing intervention strategies that reduce maladaptive aspects of perfectionism such as fear of evaluation, discrepancy between standards and performance, and harsh self-criticism. Self-compassion, a construct drawn from Buddhist psychology, has recently emerged as a healthy self-attitude that is negatively related to maladaptive perfectionism. Although self-compassion has been identified as a potential point of intervention in clinical settings, the relationship between self-compassion and disordered eating has not been examined.

This research uses two studies to investigate the role of self-compassion in explaining disordered eating in college women, as well as its potential integration into college counseling center outreach programming. Study 1 examined the relationships among maladaptive perfectionism, mindfulness, self-compassion, and disordered eating among 173 college students (105 women, 68 men). Study 2 employed a single group pretest posttest design to investigate the effects of a one hour outreach workshop on self-compassion in a sample of eight college women.
Consistent with predictions, self-compassion fully mediated the relationship between mindfulness and disordered eating and partially mediated the relationship between maladaptive perfectionism and disordered eating for college women. Furthermore, self-compassion scores increased significantly over the course of a one hour outreach workshop.
Disordered eating has been recognized as a serious concern in U.S. culture, and is particularly prevalent among young women. In fact, some studies have estimated that between 10% and 25% of women on a typical college campus experience some form of disordered eating (Kirk, Singh, & Getz; Meyer, 2005; Prouty, Protinsky, & Canady, 2002). Because of the complex constellation of processes that serve to maintain disordered eating symptoms, disordered eating can be notoriously challenging to treat (Baer, Fischer, & Huss, 2006; Kaplan & Garfinkel, 1999). As such, personnel on college campuses have increasingly turned to preventative programming in an effort to reduce the incidence and severity of disordered eating among college students.

Developing effective preventative programming has proven challenging for researchers and practitioners. Universal prevention programs (those presented to the entire student population) have shown mixed results. The psychoeducational emphasis of many of these programs, focused on recognizing signs of disordered eating and/or encouraging help-seeking, may not translate into significant attitude or behavioral change. Although results have been inconsistent, there is also concern that programs that rely heavily on information-giving and testimonials may increase participants’ focus on eating behavior, weight, and body image concerns, which may actually be harmful to those most at risk (Mann et al., 1997). In an effort to address these limitations, recent prevention efforts have focused on identifying individuals or subgroups who are more likely to develop disordered eating behavior, and have tailored activities toward reducing specific risk factors (Neumark-Sztainer, Levine, & Paxton, 2006; Wilksch, Durbridge, & Wade, 2008).
Perfectionism has been identified as a risk factor for disordered eating (Bastiani, Rao, Weltzin, & Kaye, 1995; Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006), and preliminary research suggests that it is a promising target for prevention efforts (Wilksch, et al., 2008). Maladaptive aspects of perfectionism such as self-criticism, fear of evaluation, and perceptions of discrepancy, may be particularly important to address (Ashby, Kottman, & Schoen, 1998). Individuals with elevated levels of maladaptive perfectionism have an increased incidence of disordered eating, are less likely to seek help (Meyer, 2005), and have a more difficult time making progress in therapy (Blatt, Quinlan, Pilkonis, & Shea, 1995; Goldner, Cockell, & Srikameswaran, 2002; Santonastaso, Friederici, & Favaro, 1999; Sutandar-Pinnock, Carter, Olmsted, & Kaplan, 2003). Higher levels of maladaptive perfectionism may make individuals more vulnerable to the influence of sociocultural risk factors (Brennan & Petrie, 2008). It seems to follow that addressing maladaptive aspects of perfectionism may foster resilience and decrease risk of developing disordered eating.

Buddhist psychology constructs may be particularly well-suited to cultivating resilience. Buddhist psychology has become increasingly influential in Western psychotherapy in recent years (Germer, 2005, p. 10). Some researchers have speculated that the inclusion of Buddhist psychology principles may lead to a more unified model of psychotherapy and aid in the integration of clinical theory, research, and practice (Germer, p. 11). Like Western psychotherapy, Buddhist psychology has as its purpose the alleviation of human suffering and perceives a great deal of human suffering to be rooted in psychological causes (Fulton & Siegel, 2005, p. 29). However, Buddhist psychology departs from Western psychotherapy in some important ways. Rather than viewing suffering as arising from symptoms or from circumstances, Buddhist psychology sees suffering as a result of our relationship with the realities of life (Fulton
Because some amount of pain is inevitable in life, Buddhist psychology seeks to cultivate a different relationship with painful realities, including an attitude of curiosity, acceptance, and a present-moment awareness of how things actually are. This approach is designed to allow freedom within pain rather than creating freedom from pain. One of the most significant points of departure relates to the nature of the “self.” Just as Western psychotherapy has as its goal the development of a healthy, well-individuated sense of self, Buddhist psychology seeks to foster insight into the insubstantiality and impermanence of the self (Fulton & Siegel, pp. 39-40). Whereas Western psychotherapists might encourage the development of “self-esteem,” or positive self-evaluation, someone practicing Buddhist psychology might seek to cultivate “self-compassion,” or a nonjudgmental attitude toward self in the context of a shared human experience (Neff, 2003b).

Principles drawn from Buddhist psychology such as mindfulness and, more recently, self-compassion, have been increasingly integrated into clinical practice (Baer, 2003; Neff, 2004). A number of promising interventions for disordered eating, such as Dialectical Behavior Therapy (DBT; Linehan, 1993), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), and Mindfulness-Based Eating Awareness Training (MB-EAT; Kristeller & Hallett, 1999), have Buddhist psychology principles at their core. In contrast to many standard interventions for disordered eating that target eating behavior and food-related thought processes directly (Garner, Vitousek, & Pike, 1997; Touyz & Beaumont, 1997; Wilson, Fairburn, & Agras, 1997), these approaches emphasize nonjudgmental acceptance over goal-directed striving.

Instead of targeting unwanted symptoms or their underlying cognitive distortions directly, Buddhist psychology has a more general goal of cultivating a clear perception of reality and an accepting, compassionate attitude toward self and experience. Such an approach may provide a
means of addressing maladaptive perfectionism and negative self-attitudes that underlie the
development of disordered eating behavior and thus may be a promising component of
prevention efforts as well. However, no study to date has examined the integration of Buddhist
psychology principles into eating disorders prevention.

The present study aims to examine the potential application of Buddhist psychology
constructs to eating disorders prevention with college women. To accomplish this, several
relationships will be explored. First, the study will examine the relationships between measures
of maladaptive perfectionism, self-compassion, mindfulness, and disordered eating in college
students. Maladaptive perfectionism and disordered eating have a strong and well-established
relationship, yet no study has examined their relationship from the perspective of Buddhist
psychology. Previous studies have established a moderately negative relationship between
mindfulness and some measures of disordered eating (Baer, Fischer, & Huss, 2005; Kristeller &
Hallett, 1999), and between self-compassion and maladaptive perfectionism (Neff, 2003a), but
no study to date has examined all of these constructs in combination. Understanding the
relationships among these constructs is an important first step in the development of theoretically
sound prevention efforts.

Next, a model will be examined in which mindfulness and self-compassion predict levels
of disordered eating in college women. It is expected that self-compassion will account for
mediate) the relationship between mindfulness and disordered eating. Mindfulness and self-
compassion are related but conceptually distinct constructs that have shown different degrees of
association with therapeutic outcomes such as alcohol use and other psychological symptoms
(Rendon, 2006). Mindfulness can be defined as awareness of the present moment with
acceptance and involves paying attention in a nonjudgmental way (Baer, 2003; Kabat-Zinn,
Self-compassion is somewhat broader than mindfulness and involves a balanced awareness of one’s own experience and a nonjudgmental kindness toward oneself (Neff, 2003b). Participation in a mindfulness-based intervention has been related to improvements in disordered eating symptoms in numerous studies, and this relationship has been explained using several theoretical models of eating disorder development. However, none of the existing studies have examined mechanisms that might explain this relationship. This study aims to begin closing this gap by examining self-compassion as a potential mediator. Rather than operationalizing mindfulness as participation in a mindfulness-based intervention, as was done in previous studies, the current study will measure mindfulness as a continuous variable using a self-report measure. As mindfulness-based interventions include not only mindfulness practice but also social support and therapeutic contact, it is unknown how much symptom change is actually attributable to mindfulness. Although this will not confirm causal pathways between mindfulness, self-compassion, and disordered eating symptoms, it is expected that this study will address some conceptual limitations of previous research and help identify more accessible targets of intervention and prevention efforts.

Next, the study aims to examine a proposed model in which the relationship between maladaptive perfectionism and disordered eating is mediated by levels of self-compassion. Recent literature on the relationship between perfectionism and disordered eating has suggested that maladaptive aspects of perfectionism (such as self-criticism and perceived discrepancy between standards and performance) may be particularly problematic in the development of disordered eating while adaptive aspects of perfectionism (such as setting high personal goals) do not necessarily lead to undesirable outcomes. As such, it is particularly important to identify ways of reducing maladaptive aspects of perfectionism without interfering with its adaptive
components. Self-compassion may be promising in this regard because of its established negative relationship with maladaptive perfectionism and non-relationship with adaptive perfectionism. However, no study to date has examined this relationship in the context of disordered eating.

Finally, the study aims to examine the effects of a one-hour preventative outreach intervention designed to increase self-compassion among college women. Previous efforts to increase self-compassion in a clinical setting have typically involved multi-session small group interventions (Gilbert & Procter, 2006; Shapiro, Astin, Bishop, & Cordova, 2005). Although the results of these interventions are promising, they are costly in terms of time and resources, and may require that individuals be in considerable distress before developing enough motivation to participate. As college counseling centers increasingly focus on prevention activities, it is important to identify efficient means of engaging students who are most at risk before they develop significant problems. The present study aims to address this limitation by examining whether self-compassion can be increased using a brief, easily-employed outreach format.

Thus, the overall aim of the current research is to explore the potential application of Buddhist psychology constructs (particularly self-compassion) to the prevention of disordered eating in college women, including the extent to which self-compassion can be cultivated in a single session outreach activity on a college campus. Chapter 2 will present a review of the relevant literature and outline specific research questions and hypotheses drawn from the existing literature. Chapter 3 will give an overview of study methodology, including the participants, measures, intervention descriptions, and data collection procedures. Chapter 4 will present the results of this study, and Chapter 5 will discuss study implications and limitations. Key terms used in this study are listed and defined in Appendix O.
Eating Disorders Overview

Eating disorders have received a great deal of attention in recent literature. Controversies abound over proper identification and optimal treatment, but most experts agree that these disorders stem from a complex etiology and pose unique challenges in therapeutic intervention (Kaplan & Garfinkel, 1999; Stein et al., 2001; Streigel-Moore & Cachelin, 2001). There are two primary categories of eating disorders that are currently recognized. Anorexia nervosa (AN) is characterized by a refusal to maintain a minimally normal body weight, an intense fear of gaining weight, and a disturbance in the experience of body weight or shape. Bulimia nervosa (BN) is characterized by recurrent episodes of binge eating followed by inappropriate or harmful compensatory behaviors (e.g., self-induced vomiting, laxative use, excessive exercise). Additionally, binge-eating disorder (BED), characterized by frequent binge eating without compensatory behaviors, and subthreshold presentations of all of these patterns are often treated under the category of “eating disorders not otherwise specified” (EDNOS). Because of difficulty with identification and because of frequently changing diagnostic criteria, prevalence estimates for these disorders vary widely. In general, prevalence estimates for eating disorders range from a lifetime prevalence of 0.5% for anorexia nervosa to 5% for binge eating disorder. When subthreshold presentations are included, it is estimated that 5-15% of women experience disordered eating at some point in their lifetime (Herzog, Keller, Lavori, & Sacks, 1991). Unfortunately, these disorders are notoriously difficult to treat and can result in a host of harmful physiological consequences (Baer et al., 2006; Kaplan & Garfinkel, 1999).
Eating Disorders on College Campuses

Disordered eating may be especially prevalent on college campuses. Although the proportion of college women meeting full diagnostic criteria for an eating disorder remains small, it is estimated that up to 61% of college women engage in some form of disordered eating behavior (Mintz & Betz, 1988). Proposed explanations for this phenomenon are abundant. Increased stress, discomfort with developmental bodily changes, increased freedom and control (including over diet) as a result of newfound independence, and exposure to peer groups that promote thin ideals have been cited as contributing factors. Consistent with this assertion, Striegel-Moore, Silberstein, Frensch, and Rodin (1989) surveyed 1040 undergraduate students at the beginning and end of their first year in college, and found that students were more likely to increase than decrease disordered eating behavior over the course of the year. One fourth of students began dieting for the first time during that year, and 15% of women began binge eating for the first time. In their study, increases in disordered eating behavior were associated with an increased sense of ineffectiveness, increased negative feelings about weight, and high levels of perceived stress. Numerous studies assert that prevalence is especially high in certain subgroups of college women, including elite athletes, dancers, and sorority members. It may be that the same challenges that increase risk for college students in general (such as social pressure and desire for competence and self-definition) may be magnified by the instrumental role of weight, shape, and body image for these students (Alexander, 1998; Allison & Park, 2004; Garner, Garfinkel, Rockert, & Olmsted, 1987; Sigall, 1999).

Eating Disorders Prevention

Because college students are particularly susceptible to the development of eating disorders, and because these disorders are often difficult and costly to treat, college campuses are increasingly turning to preventative programming to reduce the incidence and severity of
disordered eating in their students (Becker, Smith, & Ciao, 2005). However, empirical studies of such programs have identified numerous obstacles to effective prevention, the first of which may be identifying the appropriate target audience (Mann et al., 1997). Most campus programs focus on either the entire student population, including those with no identified risk factors (primary prevention), or small subsets of students who endorse one or more specific risk factors for eating disorders, such as body dissatisfaction or repeated dieting (secondary intervention).

Primary prevention programs, which are designed to prevent students without eating disorder symptoms from ever developing symptoms, are typically psychoeducational in nature. They often focus on giving information about signs and symptoms, risks associated with disordered eating behavior, and strategies for seeking help or referring someone for help. Numerous studies indicate that such interventions increase knowledge in the general population. However, evidence does not conclusively indicate that these strategies result in behavioral change (Franko; 1998; Stice & Shaw, 2004). This may be because significant behavior change is unlikely in individuals who were at low risk to begin with (Fingeret, Warren, Cepeda-Benito, & Gleaves, 2006). There is some evidence indicating that these programs are unhelpful (and may even be harmful) to students already exhibiting eating disorder symptoms (Carter, 1997).

Secondary prevention programs, on the other hand, seek to identify people who are at increased risk for developing eating disorders, or who are perhaps already experiencing early stages of the disorders, and intervene early in the process. To accomplish this, these programs typically select individuals who exhibit specific risk factors, such as body image concerns or dieting behavior, and attempt to modify these risk factors. Secondary prevention programs may also normalize disordered eating as a response to sociocultural factors and attempt to reduce stigma associated with seeking help. Several secondary prevention programs have been utilized
effectively with high risk college populations (Becker et al., 2005; Hotelling, 1999; Sigall, 1999; Stice, Chase, Stormer, & Appel, 2000; Stice, Orjado, & Tristan, 2006). However, such programs may actually increase the incidence of disordered eating in low risk individuals because harmful behaviors are normalized (Mann et al., 1997). Furthermore, it is difficult to reliably identify individuals who exhibit eating-disorder-specific risk factors at an early enough stage to implement prevention activities. This is made even more difficult by the relative lack of consensus on the etiology of disordered eating (Streigel-Moore & Cachelin, 2001).

Although many researchers conceptualize prevention as falling into one of two categories (primary vs. secondary prevention), an alternative lens differentiates between disease-specific vs. non-specific prevention. Unlike eating disorders prevention programs that focus almost exclusively on the strongest proximal correlates of disordered eating (most of which are explicitly related to food and body issues), non-specific prevention focuses on decreasing general vulnerability and increasing resilience. For instance, the non-specific vulnerability stress model (NSVS; Levine & Smolak, 2001) posits that there are generic sources of stress and vulnerability that are part of the pathways to multiple disorders. This is supported by the co-occurrence of many mental health concerns (such as eating disorders and anxiety or mood disorders) and the link between environmental stressors and a range of undesirable behavioral outcomes (Durlak, 1997; Kaplan & Garfinkel, 1999). Consistent with this model, some researchers have suggested that prevention efforts should first identify subgroups of the population that may have more psychological vulnerability because of personal or social characteristics, and then address the source of vulnerability (Franko & Orosan-Weine, 1998). In addition to decreasing the risk of eating disorders in particular, this approach is expected to enhance wellness in the larger community (Levine & Smolak, 2006).
In order to address sources of underlying psychological vulnerability, it becomes important for prevention efforts to extend beyond information giving. Irving (1999) encourages a decreased emphasis on the pathology of eating disorders, and an increased focus on enhancing human resiliency. For instance, prevention programming could include skill development, personal empowerment, and self-esteem enhancement. Although these elements are sometimes built into primary prevention programs, particularly at the elementary or middle school level, a minority of university counseling centers integrate skill development or a resiliency focus into eating disorders prevention outreach (dos Santos, 2004). Because of this, there are few available models and little is known about the effectiveness of such an approach.

**Eating Disorders and Perfectionism**

Although eating disorders can be variously categorized based on symptomatic features, it is thought that they share crucial underlying psychological characteristics that transcend food- and weight-related behavior. According to nonspecific models of eating disorders prevention, these processes provide an appropriate focus for prevention efforts (Levine & Smolak, 2006). Fairburn, Cooper, & Shafran (2003) proposed a transdiagnostic theory of eating disorders in which seemingly disparate clinical features are initiated and maintained by similar psychological processes. One of these processes is thought to be perfectionism, or the setting of high (sometimes impossibly high) standards accompanied by self-evaluation based on the meeting of these standards. Perfectionism is so commonly associated with eating disorders that these disorders have been summarily described as the relentless pursuit of an ideal (body, shape, diet) followed by intense feelings of shame when this ideal is not reached. Researchers have noted that, across diagnostic categories, the core features of eating disorders “appear to be inherently perfectionistic in nature” (Goldner et al., 2002). A growing number of empirical studies support this relationship and indicate that the link between perfectionism and eating disorders is strong.
Perfectionism has been implicated as a substantial risk factor in the development of disordered eating. In addition to being notably elevated in individuals with eating disorders diagnoses compared with non-diagnosed individuals (Bastiani et al., 1995; Lilenfeld et al., 2006), there is evidence that perfectionism temporally precedes the onset of disordered eating symptoms (Fairburn, Cooper, Doll, & Welch, 1999). Additionally, levels of perfectionism tend to remain elevated even after disordered eating improves, suggesting that perfectionism is a more stable underlying trait and not the result of disordered eating behavior (Bardone-Cone et al., 2007; Bastiani et al., 1995). Levels of perfectionism differ minimally across eating disorders diagnoses. At the same time, there is evidence that perfectionism is higher in individuals with eating disorder diagnoses than in individuals with either mood or anxiety disorders (Bardone-Cone et al.).

Although many studies linking perfectionism with disordered eating emphasize the harmful nature of perfectionism, some researchers conceptualize perfectionism as a multidimensional construct with both adaptive and maladaptive elements (Davis, 1997; Suddarth & Slaney, 2001; Terry-Short, Owens, Slade, & Dewey, 1995). Adaptive components of perfectionism include the setting of high personal standards, the pursuit of positive reinforcement, and striving to reach high goals. Maladaptive components include fear of evaluation by others, harsh self-criticism, and the perception of discrepancy between goals and performance (Rice & Ashby, 2007; Terry-Short et al., 1995). Adaptive components of perfectionism have been associated with largely desirable characteristics and outcomes such as self-esteem, self-efficacy, secure relationship attachments, and academic integration (Grzegorek,
At the same time, maladaptive aspects of perfectionism have been associated with more problematic outcomes, including depressive symptoms, bulimic symptoms, and general psychological distress (Aldea & Rice, 2006; Bardone-Cone, Weishuhn, & Boyd, 2009; Rice & Ashby, 2007).

When approached from this perspective, the relationship between perfectionism and disordered eating symptoms becomes more complex. Although several studies have suggested that individuals with eating disorders have elevated levels of both adaptive and maladaptive perfectionism, others have suggested a unique role for maladaptive perfectionism. For instance, Ashby, et al. (1998) reported that participants diagnosed with eating disorders showed higher levels of maladaptive perfectionism than participants without eating disorders, but scored comparably on a scale measuring adaptive perfectionism. Pearson and Gleaves (2006) reported that adaptive aspects of perfectionism correlated positively with body satisfaction and had virtually no relationship with bulimic behavior, while a maladaptive dimension of perfectionism was related to lower self-esteem, higher body dissatisfaction, and increased bulimic behavior. Similarly, Bardone-Cone and colleagues (2009) found that maladaptive perfectionism, but not adaptive perfectionism, moderated the relationship between perceived weight status and bulimic symptoms in a group of African-American college women. Still other researchers have suggested that adaptive and maladaptive dimensions of perfectionism are interconnected factors. Davis (1997) reported an interaction between adaptive and maladaptive perfectionism in which adaptive perfectionism was related to higher body esteem but only when maladaptive perfectionism was low. When maladaptive perfectionism was high, the relationship actually reversed. Taken together, these results could indicate that adaptive aspects of perfectionism (such as high personal standards and perfectionistic strivings) are not in themselves problematic,
but create an increased risk when they are accompanied by maladaptive aspects of perfectionism such as self-criticism and concerns over evaluation. These maladaptive aspects of perfectionism in turn may leave individuals more vulnerable to other sources of eating disorders risk, such as perceived weight status and body dissatisfaction (Bardone-Cone et al., 2009; Brannen & Petrie, 2008).

Perfectionism and Eating Disorders Intervention

In addition to serving as a setting condition for the development of disordered eating, perfectionism has been indicated as a complicating factor in eating disorders treatment. A growing body of literature has linked perfectionism with negative therapeutic outcomes (premature termination, higher rates of relapse) across psychological disorders and treatment modalities (Blatt et al., 1995). It is therefore not surprising that perfectionism has been implicated a contributing factor to the challenge of treating individuals with eating disorders (Kaplan & Garfinkel, 1999). Several studies have examined perfectionism as it relates to eating disorders treatment in particular, and have suggested that higher pre-treatment levels of perfectionism are predictive of more problematic treatment outcomes. This seems to be particularly true in individuals diagnosed with anorexia nervosa, but has also been shown in a mixed clinical sample of individuals with eating disorders (Santonastaso et al., 1999; Sutandar-Pinnock et al., 2003). Goldner et al. (2002) have described several possible explanations for this relationship. Because of high levels of self-criticism and an inner sense of not being “good enough,” individuals with high levels of perfectionism may be particularly averse to discussing problems as these might be construed as personal failures. As a result, it may be difficult for these individuals to form a trusting therapeutic relationship. At the same time, these individuals may be extremely self-critical of their own progress in therapy, quickly becoming dissatisfied with the imperfect nature of the process. Hence, high levels of perfectionism may both impede
the therapeutic process and lead to premature termination. The challenges posed by perfectionism may be particularly pronounced in the treatment of disordered eating because the symptoms at the focus of treatment are so intimately connected with the quest for perfection. Any attempt by the therapist to support weight gain or reduce striving may be interpreted as being supportive of failure (Goldner et al.).

Because of the well-established role of perfectionism in the development and maintenance of disordered eating, perfectionism stands out as an important target of intervention. Unfortunately, there has been little exploration of approaches specifically designed to address maladaptive aspects of perfectionism in individuals with eating disorders (Goldner et al., 2002). While some existing interventions target cognitive processes such as high standards and the need for order (Garner et al., 1997; Stein et al., 1991), perfectionistic individuals may be reluctant to give up strategies from which they derive benefits. Furthermore, these aspects of perfectionism may be adaptive and less significant in the development of disordered eating (Ashby et al., 1998). Therefore, it may be more effective to focus on the reduction of maladaptive aspects of perfectionism such as self-criticism and anxiety about performance. As a result, further study is needed on approaches designed not to challenge individuals’ high standards but to increase acceptance of self and experience.

Perfectionism, Eating Disorders, and the “Self”

According to some conceptualizations, the link between perfectionism and eating disorders exists so strongly because both represent attempts to cover up inner “self” deficits or compensate for a deep sense of ineffectiveness (Bruch, 1973, 1978; Goodtsitt, 1997). From the perspective of self psychology (Kohut, 1971), both maladaptive perfectionism and disordered eating can be understood as the result of disruptions in self-development (Bachar, Latzer, Kritler, & Berry, 1999; Rice & Dellwo, 2002). According to self psychology, disorders of the self result
when early caregivers are chronically unresponsive to a child’s early developmental needs for mirroring and idealization. Small lapses in parental empathy are expected and can facilitate the development of a well-defined, individuated “self.” However, a traumatic or pervasive lack of parental empathy results in a sense of self that is unclear, unstable, and highly susceptible to change based on external events. According to Sorotzkin (1985), perfectionistic strivings sometimes arise as an attempt to maintain a stable sense of self. Similarly, Goodsitt (1997) described symptoms of disordered eating as an individual’s “emergency” measures to restore a sense of vitalization, wholeness, or effectiveness. The meticulous control inherent in disordered eating functions by providing the individual with a temporary feeling of strength and effectiveness to cover up the underlying feelings of weakness, shame, and inadequacy (Goodsitt, p. 210). In addition to providing escape from the emotional experience of painful self-states, the disordered eating may provide a compensatory sense of selfhood or identity that enables a person to feel that they have a significant role in the world.

In contrast to psychoanalytic conceptualizations, which emphasize the relative intactness of the self, a number of recent conceptualizations (e.g. CBT) treat both perfectionism and disordered eating as attempts to escape something aversive (Heatherton & Baumeister, 1991). These conceptualizations emphasize the role of unhealthy self-attitudes such as self-criticism, low self-esteem, and negative self awareness (Fairburn, 1997; Wilson et al., 1997). For instance, Beebe (1994) built on a model of binge eating as escape from aversive awareness (Heatherton & Baumeister, 1991) and extended it to include dieting and restrictive eating behavior. According to Beebe’s model, the failure to meet excessively high perfectionistic standards leads to negative self-awareness. This awareness leads to dieting behavior which is likely to fail. The act of dieting leads to increased vigilance and awareness of shortcomings, while also leading to
negative affect when dieting attempts are not successful. Individuals may increase dieting behavior in a continued attempt to meet failed goals. Alternatively, they may become more susceptible to binge eating in order to escape the negative affect. In this model, perfectionism creates the initial dissatisfaction necessary for the rest of the cycle to unfold, while also helping to perpetuate it as individuals continually attempt to meet their unrealistic goals.

More recently, Fairburn et al. (2003) have integrated these concepts with a cognitive behavioral approach to propose a transdiagnostic treatment for eating disorders. Building on a traditional cognitive behavioral approach to eating disorders that emphasizes the individual’s cognitions related to shape, weight, and food and the relative importance placed on these in a person’s life, Fairburn et al. proposed a number of broader cognitive patterns that may interact with food-specific beliefs to perpetuate eating disorder symptoms. Among these were “core low self-esteem,” or the tendency to negatively evaluate oneself regardless of performance, and perfectionism. According to this view, some individuals hold themselves to excessively high standards and consistently judge themselves harshly. Thus, they are more likely to perceive failure in their efforts. This perception, combined with other maintenance factors (such as difficult interpersonal relationships) leads to uncomfortable mood states and a need to escape or dull these states through disordered eating.

Although these explanations differ significantly from each other and from earlier psychoanalytic models, they share important commonalities. These commonalities may be important to consider in the development of effective treatments. In all of these models, perfectionism has an important role in the development of eating disorders. Just as self psychologists view disordered eating as a specific manifestation of a more general perfectionistic attempt to maintain a cohesive self, cognitive-behavioral models have indicated a more active
role for perfectionism in which it leads to negative self-attitudes, and in turn arises in order to ameliorate these self-attitudes. Common in these models is the idea that striving for outward perfection is related to an underlying sense of something being “wrong” or flawed either deep within the person or in the context of life goals. Something about the person’s experience feels unacceptable and must be covered up, fixed, or escaped. These models indicate that perfectionism and disordered eating are closely related processes, each designed to fulfill this function.

**Perspectives from Buddhist Psychology**

Increasingly, concepts drawn from Buddhist psychology have been integrated into Western psychotherapy to inform the understanding of psychological suffering and to improve psychotherapeutic practice (Epstein, 1995; Fulton & Siegel, 2005, p. 28). Like Western traditions, Buddhist psychology seeks to alleviate human suffering and sees much suffering as arising from psychological causes (Fulton & Siegel, p. 29). However, it is important to note that these perspectives stem from entirely different worldviews and therefore differ on some fundamental understandings (Kabat-Zinn, 2003).

One important point of departure between Buddhist psychology and Western psychotherapy involves the understanding of the “self.” Western thought emphasizes the importance of a healthy, well-individuated self and views an individual as a distinct unit. As a result, psychotherapy typically focuses on restoring individuals’ sense of autonomy, by means of self-esteem, self-efficacy, and clear boundaries between self and others. Buddhist psychology, by contrast, is based around the concept of “no-self,” and seeks to illuminate the insubstantiality of the self (Fulton & Siegel, 2005, p. 40). Rather than regarding low self-esteem or self-judgment as a symptom that should be the focus of treatment, Buddhist psychology sees the problem as lying in the initial belief of the self as a separate entity. Within this framework,
individuals move closer to enlightenment as they begin to realize the transient nature of experience and develop insight into self as a process (Fulton & Siegel, p. 41). In light of this, Buddhist psychology typically seeks to diffuse boundaries between individuals (which are viewed as arbitrary) rather than enhance them, and increase a person’s sense of compassion and interconnectedness.

**Self-Compassion**

This view of the self (or “no-self”) is reflected in the recently introduced concept of self-compassion (Neff, 2003b). An important concept in Buddhist thought (Bennett-Goleman, 2001; Hanh, 1997), self-compassion can be defined as the ability to be open to one’s own suffering, not avoiding or disconnecting from it, while generating the desire to alleviate one’s suffering and to heal oneself with kindness (Neff, 2003). It has been described as an open-hearted way of relating to negative aspects of oneself and one’s experience (Neff & Lamb, 2009). It is conceptualized to have three interconnected components: self-kindness rather than harsh judgment and self-criticism, emphasis on common humanity rather than on separation and isolation, and mindfulness toward one’s painful thoughts and feelings rather than over-identification with them. Just as compassion for others involves an attitude of nonjudgmental understanding toward others’ suffering, self-compassion involves offering nonjudgmental understanding to one’s own experiences, including personal inadequacies and failures. Consistent with the Buddhist notion of “no-self,” self-compassion involves de-emphasizing ego boundaries and seeing one’s experience as part of the larger human experience.

Self-compassion has been put forth as an alternative conceptualization of a healthy attitude toward self (Neff, 2003b) and as such, may serve as a useful intervention point for individuals with unhealthy self-attitudes (self-criticism, self-judgment, etc.) Self-compassion is theorized to be more stable than feelings of self-esteem and less contingent on particular
outcomes. Furthermore, it has emerged as a significant predictor of happiness, optimism, and positive affect, explaining additional variance after global self-esteem was accounted for (Neff & Vonk, 2009). Unlike self-esteem, which has been associated with some undesirable outcomes such as self-absorption, aggression, and distortions in self-knowledge (Baumeister, Smart, & Boden, 1996; Crocker, Thompson, McGraw, & Ingerman, 1987), self-compassion encourages a kind and understanding attitude toward self while countering attitudes of egocentrism and emphasizing interconnectedness. Because of its emphasis on interconnectedness and shared experience, self-compassion is thought to soften, rather than enhance, ego-defensive boundaries. As would be expected, it has been shown to have a negative association with social comparison, public self-consciousness, and self-rumination (Neff & Vonk).

Though empirical research on self-compassion is relatively new, already some relationships have emerged with various aspects of psychological functioning. Scale development studies indicated that self-compassion correlated negatively with depression, anxiety, and maladaptive perfectionism and positively with life satisfaction (Neff, 2003a). In other studies, increases in self-compassion have been linked to increases in psychological well-being (Neff, Kirkpatrick, & Rude, 2007) and lower levels of perceived stress (Shapiro et al., 2005). Approaching difficulties in a self-compassionate manner has been linked to higher levels of happiness, optimism, personal initiative, and reflective wisdom. These relationships remained after five major dimensions of personality were accounted for (Neff, Rude, & Kirkpatrick, 2007).

Self-compassion may be particularly beneficial in the case of unpleasant self-relevant events. For instance, Neff, Hsieh, & Dejitterat (2005) found that students’ levels of self-compassion was related more strongly to mastery goals rather than performance goals, and translated into greater resilience in the face of academic setbacks. Students high in self-
compassion perceived themselves as competent and exhibited less fear of failure than students low in self-compassion. Leary, Tate, Adams, Allen, and Hancock (2007) conducted five studies examining reactions to unpleasant life events, and found that self-compassion buffered participants against emotional distress and negative self-feelings in the case of potentially distressing events. Interestingly, self-compassion was associated with lower levels of negative affect in the event of negative feedback, while self-esteem had no such buffering effect. In addition, self-compassion seemed especially important when self-esteem was low. Although low self-esteem was generally related to emotional distress following negative feedback, high levels of self-compassion attenuated this relationship. Furthermore, unlike self-esteem, self-compassion was related to an ability to perceive one’s performance accurately. In light of findings such as these, self-compassion has been proposed as an effective means to counter negative self-attitudes (Neff, 2003b).

**Mindfulness and Psychotherapy**

Mindfulness, a concept at the heart of Buddhist psychology, involves bringing one’s full attention to the present moment. It can be defined as “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 1994, p. 4) and is said to involve an affectionate, friendly sense of presence and interest (Kabat-Zinn, 2003). Mindfulness meditation, one of the core practices of the Buddhist tradition, has been described both as a set of techniques or skills and as a way of being (Kabat-Zinn, 2005, p. 64). It has been called “the method of no method.” In essence, it is becoming aware of the present reality and resting in what is already there (Kabat-Zinn, p. 65). It is a state that occurs naturally (although, possibly infrequently) in everyday life and requires practice to maintain (Germer, 2005, p. 13).

Recently, mindfulness has been largely separated from its religious context and infused into a growing number of therapeutic practices (Baer, 2003; Roemer & Orsillo, 2003). One of
the earliest systematic uses of therapeutic mindfulness was conducted by Kabat-Zinn (1982) and was designed for chronic pain patients. This approach, dubbed “mindfulness-based stress reduction” (MBSR) has become a widely used therapeutic intervention and has been modified and applied to a number of client populations and problems. Mindfulness is also a core component of several more recently developed therapies including mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), acceptance and commitment therapy (ACT; Hayes et al., 1999), dialectical behavior therapy (DBT; Linehan, 1993), and mindfulness-based eating awareness training (MB-EAT; Kristeller & Hallett, 1999). These approaches differ in the way mindfulness is integrated into treatment. However, mindfulness-based therapeutic approaches share some common features. Typically, they encourage an individual to become aware of and attentive to internal experiences such as thoughts and emotions, and to observe these using a de-centered, nonjudgmental stance (Baer, 2003). In many approaches, some aspects of formal mindfulness training (sitting meditation, hatha yoga, body scan, mindful eating, etc.) are used to facilitate this awareness. These practices involve a shared set of key attitudes, including nonjudgment, non-striving, and “beginner’s mind,” or the ability to encounter present experience as if seeing it for the first time (Kabat-Zinn, 1990). Through practice, individuals become more familiar with the transient nature of thoughts and experience and are more able to encounter their moment-to-moment experience without getting caught up in it. This way of thinking allows more flexibility in perception and allows the mind to open to new possibilities. This set of attitudes is thought to free participants from the pressure of making “progress” and help them experience themselves as already “okay” (Kabat-Zinn, p. 37).

The earliest empirical studies of mindfulness-based therapy involved pain management with medical populations. These early studies demonstrated that mindfulness practice might
help reduce the physical and mental impact of conditions such as chronic pain, fibromyalgia, and cancer (Kabat-Zinn, Lipworth, & Burney, 1985; Kaplan, Goldenberg, & Galvin, 1993; Speca, Carlson, Goodey, & Angel, 2000). Most early studies had substantial methodological limitations such as single group designs, they established that patients who took part in mindfulness interventions experienced a decrease in pain, improved medical symptoms, and general psychological improvements (Baer, 2003). More recent studies have begun to incorporate greater experimental control, and have continued to show promising results. For instance, Kabat-Zinn et al. (1998) randomized 37 psoriasis patients receiving light therapy to either a treatment-as-usual group or a treatment-as-usual plus mindfulness group. The patients who received mindfulness training as part of their treatment experienced a significantly faster improvement in psoriasis symptoms compared to the patients who received only light therapy. In order to further examine the physiological effects of mindfulness, Davidson et al. (2003) assigned 41 participants to either an eight week mindfulness-based stress reduction (MBSR) group or a wait-list control group and measured brain activation and immune functioning before and after the intervention, as well as four months later. The mindfulness participants showed a changed pattern of brain activation consistent in parts of the brain associated with positive affect as well as increased immune functioning.

In recent years, mindfulness has been related to a broad range of psychotherapeutic outcomes. Kutz et al. (1985) investigated the use of an adjunctive 10-week MBSR program with a group of 20 psychotherapy patients. Although it is difficult to draw specific conclusions from this study because of the single group design, participants reported an improvement in psychological symptoms and less interference in their daily functioning. Mindfulness-based approaches have also fared well when tailored to a specific clinical problem. For instance,
Kabat-Zinn et al. (1992) surveyed 22 individuals diagnosed with generalized anxiety and panic disorders, and found significant improvements in anxiety and depression after participation in an eight week MBSR program. It is impossible to estimate whether this approach was more effective than standard treatment, but a three-year follow-up study of the same individuals indicates that gains were meaningful and long-lasting (Miller, Fletcher, & Kabat-Zinn, 1995). Teasdale et al. (2000) examined the effects of an eight week mindfulness-based cognitive therapy (MBCT) program for individuals diagnosed with major depressive disorder. They found that the mindfulness-based approach was more effective in preventing relapse (compared to treatment-as-usual) for individuals with a history of three or more major depressive episodes.

In addition to improving a broad range of targeted symptoms, mindfulness-based interventions have been linked to improved physical, emotional, spiritual, and interpersonal functioning in non-clinical populations (Astin, 1997; Shapiro et al., 2005; Shapiro, Schwartz, & Bonner, 1998). Volunteers from student and community populations have reported changes such as decreased perceived stress, decreased job burnout (Shapiro et al., 2005), increased empathy and improved interpersonal relationships (Carson, Carson, Gil, & Baucom, 2004), greater satisfaction with life, and greater spiritual well-being (Astin, 1997). Self-perceived changes have included increased openness to change, increased self-control, personal growth, spirituality, and the sense of a shared experience (Mackenzie, Carlson, Munoz, & Speca, 2007). Not surprisingly, mindfulness practice has increasingly been associated with improved well-being and quality of life (Brown & Ryan, 2003).

Given the wide array of physiological and psychological outcomes associated with mindfulness practice, researchers have put forth a number of theories regarding the mechanisms of change in mindfulness-based interventions. One frequently cited mechanism involves
exposure to unpleasant physical or emotional experiences (Kabat-Zinn, 1982; Linehan, 1993). Similar to desensitization, the opportunity to observe the transient nature of painful experiences may help alleviate excessive emotional reactivity typically elicited by primary symptoms. This is similar to the notion of “acceptance” commonly discussed in the psychotherapy literature (Hayes, 1994) and becomes especially relevant in instances in which physical or emotional sensations are thought to trigger other aspects of suffering such as panic disorder (Kabat-Zinn et al., 1992), binge eating disorder (Telch, Agras, & Linehan, 2000), and borderline personality disorder (Linehan, 1993). Another potential mechanism involves changes in cognition. Cognitive changes induced through mindfulness differ from those achieved through CBT in that the content of thoughts does not necessarily change (Baer, 2003). Instead, the individual’s attitudes about the thoughts changes and they are regarded as “just thoughts” instead of absolute reality. This is particularly applicable in cases in which ruminative or self-defeating cognitions are thought to play a causal role such as binge eating disorder (Kristeller & Hallett, 1999) and major depressive disorder (Teasdale, Segal, & Williams, 1995). More generally, it is thought that mindfulness-based approaches may lead to change through improvements in self-management that occur when individuals are more aware of their sensations and experiences (Baer, 2003; Kabat-Zinn, 1982). Early recognition of cognitive and emotional patterns may enable individuals to respond, rather than react, to stressors (Dobkin, 2008). This heightened awareness allows time to more consciously choose a coping strategy and may be particularly relevant for individuals who engage in impulsive behaviors (Linehan; Teasdale et al.).

Mindfulness and Self-Compassion

While many proposed mechanisms of action in mindfulness practice can be closely analogized to cognitive or behavioral constructs, some practitioners have noted that mindfulness also has the potential to change a person’s sense of self and their sense of themselves in the
world. For instance, one of the most unique healing aspects of mindfulness has been said to be the sense of “wholeness” that comes from seeing through the distortions created by old patterns of thinking (Kabat-Zinn, 1990, p. 160). In addition to a sense of wholeness and connectedness within oneself, mindfulness can create a sense of interconnectedness and a realization of being part of a larger whole (Kabat-Zinn, p. 164). In light of this, it is not surprising that some researchers have nominated self-compassion as a mechanism through which mindfulness effects therapeutic change (Shapiro et al., 2005). As is evident from the conceptualization of self-compassion articulated by Neff (2003b; 2004), self-compassion is closely related to yet distinct from the construct of mindfulness. Self-compassion cannot be reduced to mindfulness, but requires mindfulness in order to develop. Self-compassion requires an attitude of kindness toward one’s experience, and it is the mindful awareness of moment-to-moment experience that creates enough mental space for this observation to occur (Neff, 2004).

Shapiro, Brown, and Biegal (2007) measured mindfulness, self-compassion, and a number of mental health outcomes in a group of counseling psychology students participating in an eight week mindfulness-based stress reduction program. As expected, the students participating in the program experienced greater gains in mindfulness and self-compassion and greater reduction in psychological symptoms than students participating in an alternative intervention. Even more interestingly, changes in mindfulness from the beginning to the end of the study significantly predicted gains in self-compassion. This emphasizes the highly interrelated nature of these constructs, and suggests that self-compassion can be cultivated using a mindfulness-based intervention (Neff & Vonk, 2009). Although researchers have only recently begun systematically studying this construct, there is evidence that self-compassion may at least partially account for changes in psychological symptoms and improvements in well-being that
occur during mindfulness-based interventions (Neff & Lamb, 2009). For instance, in a study of health care professionals, increases in self-compassion significantly predicted changes in perceived stress after participation in a mindfulness intervention (Shapiro et al., 2005).

**Mindfulness and Disordered Eating**

In an attempt to target some of the underlying processes that initiate and maintain disordered eating behavior, mindfulness-based approaches have increasingly been incorporated into eating disorders treatment (Kristeller, Baer, & Quillian-Wolever, 2006). This makes theoretical sense given the close match between many of the core philosophies of mindfulness and some of the processes thought to be at the root of disordered eating. For instance, an increased ability to observe one’s thoughts and experiences without reacting may decrease the tendency to escape from aversive self-awareness. Furthermore, a nonjudgmental stance toward experience may directly address the self-critical aspects of perfectionism that are so closely linked with disordered eating.

Much of the work linking mindfulness and disordered eating has related to binge eating disorder (BED). Kristeller and Hallett (1999) examined the use of a six week MBSR group (dubbed “mindfulness based eating awareness training”, or MB-EAT) for 18 women with BED. The intervention used both general meditation instructions and instructions specific to eating behavior. Post-test and follow up assessment indicated that the women experienced a decreased frequency and severity of binging and improved scores on other mental health measures. Telch et al. (2000) also noted the applicability of mindfulness skills in their adaptation of DBT for women with BED. Within the 20-week manualized treatment, participants were taught to observe the ebb and flow of their moment-to-moment experiencing and become familiar with the transient nature of their emotional reactions. In an uncontrolled trial with eleven women, the authors found that most (82%) had ceased binging by the end of the treatment, and this
improvement remained at follow-up. Participants also demonstrated an improvement in emotional regulation. More recently, Baer et al. (2005) adapted mindfulness-based cognitive therapy for women with BED. This approach involved teaching a body scan, mindful stretching and walking, mindful eating, and sitting meditation in addition to cognitive exercises to encourage an accepting and nonreactive attitude toward cognitions. In a pilot study with ten women, the authors found that a ten session intervention led to improvements in terms of the number of binges and eating-related concerns. The authors also noted the increase of mindfulness skills and an increased sensitivity to bodily sensations, including the ability to discern hunger from other sensations.

Recently, researchers have examined the relevance of mindfulness-based approaches for women with anorexia nervosa (AN) and bulimia nervosa (BN). Safer, Telch, and Agras (2001) built on earlier work relating DBT and BED, and examined the use of a 20-week DBT intervention with women with bulimia nervosa. Using a randomized pre-post-follow up design, the authors found that participants in the DBT group experienced significantly fewer binges than participants in the wait list control group. In contrast to the high dropout rate noted in some treatments for bulimia (Agras, Fairburn, Walsh, Wilson, & Kraemer, 2000) none of the participants in the DBT group dropped out of treatment. Although very few empirical studies have examined application of mindfulness-based interventions to anorexia nervosa, Heffner, Sperry, Eifert, & Detweiler (2002) reported a case study in which they employed acceptance and commitment therapy (ACT) with an anorexic 15-year-old girl. In this adaptation of ACT, a mindful approach is applied to body-related thoughts. Rather than fighting against unwanted cognitions, clients practice accepting them and letting them pass. The authors described the
treatment as successful but also noted that the mindfulness elements were combined with other standard techniques.

Although mindfulness-based approaches have shown considerable promise in the reduction of eating disorder symptoms, there is relatively little agreement as to the processes underlying these changes. Researchers have connected mindfulness with disordered eating based on one of several existing eating disorders theories. For instance, within the experiential avoidance model of disordered eating (Heatherton & Baumeister, 1991), mindfulness may reduce symptoms through exposure to and acceptance of unpleasant emotional stimuli (Linehan, 1993). This exposure reduces the need to use food-related behaviors to avoid distress. Cognitive behavioral models relate mindfulness to disordered eating at the level of cognition. According to the cognitive behavioral model of bulimia nervosa, for instance, distorted cognitions both about the importance of weight and shape and the interpretation of failure play a crucial role in the maintenance of disordered eating (Wilston et al., 1997). Within this model, mindfulness may be helpful because it enables a person to disengage from their thoughts and recognize them as “just thoughts.” Instead of challenging the distortions directly, mindfulness acts by changing a person’s relationship with these cognitions. This creates a space for a person to choose how to act, rather than being driven entirely by their beliefs and cognitions.

Goldner et al. (2002, p. 332) have created an integrated model of perfectionism and disordered eating that may be helpful in understanding the role of mindfulness in the treatment of disordered eating. According to this integrated model, perfectionism creates “aversive self-awareness,” or the awareness that the individual is not meeting self-imposed standards. At this point, an individual may make attempts at self-improvement through restrictive dieting, or attempt to escape from this aversive self-awareness through binging. Because of the self-
criticism inherent in perfectionism, either action leads to intensified feelings of failure and reduced self-worth, which in turn intensifies the need to either eliminate the discrepancy (through dieting) or escape awareness (through binging). In this way, the development of disordered eating involves a feedback loop where unrealistically high standards lead to inevitable failure. The resultant self-criticism eventually leads to even more compulsive attempts to set and meet impossibly high standards. It is important to note that these mechanisms operate within a framework informed by sociocultural influences and temperamental factors. For instance, the influence of perfectionism on eating behavior is strengthened when, through sociocultural influences, shape or weight becomes a substantial contributor to self-esteem. Although mindfulness has not been examined in the context of this model, this framework points to several mechanisms through which mindfulness could be helpful. Perhaps most obviously, mindfulness may interrupt the cycle by fostering compassionate self-attitudes in place of self-criticism. If that is the case, perfectionism may still lead to a noticeable discrepancy between performance and standards, but an individual may be less likely to perceive it as a personal failure and will be less likely to use harsh self-criticism. Because the discrepancy does not severely impact feelings of self-worth, there would be less need to improve or escape. Similarly, mindfulness may operate by increasing an individual’s ability to tolerate unpleasant emotional experiences. In this case, even if an individual observes a discrepancy and feels uncomfortable with it, the need to eliminate the feeling is less urgent. In short, the self-compassionate attitudes fostered by mindfulness training may interrupt the process fueled by self-criticism, and may weaken the relationship between perfectionism and disordered eating behavior.
There are several limitations in the existing literature linking Buddhist psychology constructs (both mindfulness and self-compassion) with perfectionism and disordered eating. These constructs have been most frequently studied in the context of mindfulness-based interventions, and existing studies have investigated a range of interventions which vary widely in the degree to which they incorporate mindfulness into treatment. In many cases, “mindfulness” is operationalized as participation in the treatment. Whereas some interventions, such as MBSR (Kabat-Zinn, 1982) use mindfulness meditation as a core component of treatment, others such as ACT (Hayes et al., 1999) and DBT (Linehan, 1993) incorporate mindfulness principles but place less emphasis on mindfulness practice. As a result, it is unclear whether and to what extent the benefits resulting from these therapies can attributed to mindfulness. Similarly, although mindfulness researchers give anecdotal accounts of changes in participants’ attitudes toward themselves and their suffering, questions remain about the mechanisms by which mindfulness might lead to reductions in disordered eating behavior. Several mechanisms have been proposed based on existing models, but few studies have specifically examined whether these proposed mechanisms mediated the relationship between mindfulness and disordered eating.

**Present Research**

Several questions have emerged that inform this investigation. In the midst of the increasing literature on the use of mindfulness interventions to target eating disorders symptoms, it has become necessary to better understand the mechanisms by which mindfulness fosters improvements in disordered eating. Doing so may lead to more powerful strategies for both prevention and treatment. This approach complements an existing theme in the eating disorders prevention literature in which researchers have attempted to identify personal qualities and skills that may increase resilience and reduce vulnerability both to disordered eating and a range of
other social and psychological difficulties (Irving, 1999; Levine & Smolak, 2006). Such skills may be particularly important to individuals who are somewhat vulnerable because of underlying psychological characteristics such as perfectionism. The present study consists of two parts, and was designed to help address these issues by investigating self-compassion as a possible mechanism by which mindfulness relates to lower levels of symptomatology, as a possible link between maladaptive perfectionism and disordered eating, and as a possible component of eating disorders prevention.

**Rationale for Study 1**

The first study in the current research is designed to investigate the relationships among mindfulness, self-compassion, perfectionism, and disordered eating within a sample of university students. While some of these relationships are well-established (i.e. the relationship between perfectionism and disordered eating), no study to date has looked simultaneously at all of these constructs. Establishing the direction and strength of the relationships among these constructs may provide important guidance for the development of eating disorders prevention programming. Similarly, this study aims to investigate self-compassion as a possible mechanism through which mindfulness may be related to disordered eating, and as a mediator in the relationship between maladaptive perfectionism and disordered eating.

**Hypotheses for Study 1**

1. Mindfulness will be positively correlated with self-compassion and negatively correlated with maladaptive perfectionism and with disordered eating.
2. Self-compassion will mediate the relationship between mindfulness and disordered eating. Specifically, mindfulness will be related to higher levels of self-compassion, which will be related to lower levels of disordered eating.
3. Self-compassion will mediate the relationship between maladaptive perfectionism and disordered eating. Maladaptive perfectionism will be related to lower levels of self-compassion, which will be related to higher levels of disordered eating.
4. The mediation model involving maladaptive perfectionism, self-compassion, and disordered eating will be moderated by gender. Specifically, it is expected that self-compassion will be more strongly related to disordered eating for women than for men.

5. The strength of this relationship will also be moderated by body image investment such that self-compassion will be more strongly related to disordered eating when individuals report a high level of body image investment.

Exploratory Analyses:

If hypothesis # 3 is supported and self-compassion mediates the relationship between maladaptive perfectionism and disordered eating, a multiple mediation model will be examined to determine whether self-compassion continues to account for a significant indirect effect when self-esteem is also examined. This is based on research indicating that self-compassion is a related but distinct construct from self-esteem and may constitute a healthier self-stance (Neff & Vonk, 2009). Self-esteem will also be examined as a possible moderator in this model, as self-compassion has been theorized to be most relevant when self-esteem is low.

**Rationale for Study 2**

Study two is designed to investigate the integration of self-compassion into eating disorders prevention programming. Specifically, this study aims to determine whether a one hour self-compassion workshop can significantly increase self-compassion in college women who may be vulnerable to developing eating disorders. To date, many studies measuring self-compassion have investigated the construct within the context of longer term interventions such as Mindfulness Based Stress Reduction or Compassionate Mind Training. These approaches have proven effective but have some notable limitations. First, these interventions require a significant time commitment both to clinicians and participants. This can make it difficult to reach large numbers of students, both because of limitations of staff resources and because students may be reluctant to commit to a long term intervention unless they are already in considerable distress. As many university counseling centers utilize primarily short term
(including single session) outreach models for prevention programming (i.e. Mann et al., 1997), the present study seeks to integrate self-compassion into an outreach format that might be easily utilized in a university counseling center.

**Hypothesis for Part 2**

Self-compassion scores are expected to be significantly higher after a one hour self-compassion workshop than before. This is based on previous studies that have successfully modified levels of self-compassion (Shapiro et al., 2005; Shapiro et al., 2007). It is important to note that these studies have measured self-compassion scores before and after an 8-week mindfulness-based intervention. Because of the differences in intervention formats, it is difficult to extrapolate the expected magnitude of effect from previous research. It could reasonably be expected that effect sizes would be relatively small, given the briefer nature of the intervention. However, it is also possible that effect sizes would be larger than in past research, as this intervention is directly targeted at self-compassion rather than indirectly affecting self-compassion through mindfulness practice. Effect size estimates, as well as patterns of change for individual participants, were therefore included as exploratory analyses.
CHAPTER 3
METHODS AND MATERIALS

The current chapter describes two studies investigating the role of self-compassion in college student mental health. The first study examines the relationships among self-compassion, mindfulness, maladaptive perfectionism, and disordered eating in a sample of undergraduate women, including the possible mediating role of self-compassion in the relationship between maladaptive perfectionism and disordered eating. The second study was designed to investigate the use of a single session self-compassion workshop that can be implemented in a university counseling center.

Study 1

Participants

Participants were undergraduate students attending a large, public university in the southeastern United States. Participants were recruited through various courses in the psychology department and were offered course credit for their participation in this study. Participants were provided with a link to a website containing an informed consent form and a brief description of the study. Participants indicated their consent by checking a box electronically and typing their name. Participants’ names were recorded only for the purpose of course credit and were deleted from the dataset prior to analysis.

One hundred eighty one students consented to the study. Eight participants were missing more than 25% of responses and were excluded from further analysis. The final sample for this study included 173 participants (105 women, 68 men), ranging in age from 18 to 27 (M = 19.09; SD = 1.56). Most participants were in their first (46.8%) or second (28.9%) of undergraduate studies. The racial/ethnic breakdown of the sample was as follows: 11.6% African American, 12.1% Asian-Americans, 59% Caucasian, 12.7% Hispanic/Latino, .6% Native American, 4%
“multiracial.” This breakdown is similar to that of the overall full-time undergraduate student population at the university these students attended. Approximately 10% of participants reported that they had sought treatment for “eating, weight, or body image concerns” at some point in the past, and four of these participants (2.3%) indicated that they were currently in treatment. All participants were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 2002).

Measures

Perfectionism: The Almost Perfect Scale-Revised (APS-R) was used to assess perfectionism. The APS-R was developed by Slaney et al. (2001) and consists of 24 items across three subscales: High Standards, Discrepancy, and Order. Individuals respond to items using a 7-point Likert scale ranging from 1 “strongly disagree” to 7 “strongly agree.” The APS-R has shown evidence of high internal consistency in a college student sample, with Cronbach’s alphas ranging from .82 for the High Standards subscale to .92 for the Discrepancy subscale (Slaney et al.). The subscales relate in expected directions with other measures of perfectionism. The Discrepancy subscale, of particular interest to this study, was designed to measure the perceived discrepancy between an individuals’ expectations and performance. Example items include “I am not satisfied even when I know I have done my best,” and “I often feel frustrated because I can’t meet my goals.” It has been shown to tap into aspects of perfectionism described as “maladaptive.” For instance, Discrepancy scores have been negatively related to self-esteem and positively related to depression (Rice, Ashby, & Slaney, 1998). According to a classification system created and validated by Rice and Ashby (2007), elevated scores on the High Standards subscale can be used to classify an individual as a perfectionist, while elevated scores on both the High Standards and Discrepancy subscales are indicative of maladaptive perfectionism.
**Disordered Eating:** The Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) was used to assess disordered eating. The EAT was originally developed to detect symptoms of anorexia nervosa and consisted of 40 self-report items. After further examination, the authors concluded that 14 of the original items yielded redundant information and created a shortened version of the scale (EAT-26) that retained many of the psychometric properties of the original measure (Garner, Ohlmstead, Bohr, & Garfinkel, 1982) and consisted of three subscales: dieting behavior, oral control, food preoccupation. The EAT-26 is now one of the most widely used self-report eating disorder measures (Mintz & O'Halloran, 2000). Each subscale has shown adequate internal consistency in a sample of college women ($\alpha = .60$ to $\alpha = .88$; Tylka & Wilcox, 2006), and the full measure has demonstrated three week test-retest reliability of $r = .80$ (Mazzeo, 1999).

Although the instrument was originally developed exclusively for the detection of anorexia nervosa, diagnostic criteria and nomenclature have changed significantly since its development. Evidence now suggests that the EAT-26 may now be most appropriately used to distinguish individuals with any diagnosable DSM-IV eating disorder from individuals without any disorder (Mintz & Holloran). For instance, while scores cannot reliably distinguish between individuals with anorexia nervosa and bulimia nervosa, scores can distinguish individuals with either disorder from healthy controls (Garfinkel & Newman, 2001). Scores on the EAT-26 have also been used to differentiate among individuals with varying levels of eating disorder symptomatology (e.g., full vs. partial syndrome), suggesting that the EAT-26 may be useful as a continuous measure of disordered eating. In addition to approximating the severity of an existing set of eating disorder symptoms, scores on the EAT-26 have been used to predict weight maintenance following recovery from an eating disorder while high scores have been
significantly related to later rehospitalization (Orbitello et al., 2006). Although it was designed to contain three subscales, the total score is most commonly used in the literature. Items are rated on a six-point Likert scale ranging from “never” to “always.” Example items include “I avoid eating when I’m hungry,” and “I am preoccupied by a desire to be thinner.” In scoring the instrument, responses of “never,” “rarely,” and “sometimes” receive a score of zero, while responses of “often,” “usually,” and “always” receive scores of one, two, and three respectively. A cutoff score of 20 is generally thought to indicate the presence of an eating disorder.

**Mindfulness:** Mindfulness was measured using the short form of the Freiburg Mindfulness Inventory (FMI; Buchheld et al., 2001). The FMI was initially designed to measure “mindfulness as either a target variable of clinical interventions, as a moderating variable . . . or as a personality trait” (Buchheld et al). The original instrument contained 30 items measuring a unidimensional mindfulness construct, and was developed for use with experienced meditators. The authors later developed a short form of 14 items that was appropriate for use with the general population (those without meditation experience) and with clinical samples. The short form has shown evidence of high internal consistency ($\alpha = .86$) and of retaining its psychometric properties across diverse samples of individuals with and without meditation experience (Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006). This scale was based on a conceptualization of mindfulness as made up a cognitive component, a process component, a component related to the acceptance of experience, and one that relates to a nonjudgmental stance. Unlike some representations of the mindfulness construct that involve distinct facets, these components are thought to be intimately interrelated, such that the most appropriate way to view mindfulness is holistically. Example items include “I feel connected to my experience in the here-and-now” and “I accept unpleasant experiences.” Items are rated on a 4-point Likert-
type scale from 1 “rarely” to 4 “almost always.” Higher scores are indicative of higher levels of mindfulness. Scores on this instrument have been shown to increase significantly over the course of a mindfulness retreat and to distinguish meditating from non-meditating populations (Walach et al., 2006). Scores on this instrument correlate positively with measures of self-awareness and negatively with measures of psychological distress.

**Self-Compassion:** Self-Compassion was measured using the Self-Compassion Scale (SCS; Neff, 2003a). The SCS was designed to measure an individual’s tendency to be kind to oneself in instances of pain or failure, to perceive one’s experience as part of the larger human experience, and to hold thoughts and emotions in balanced awareness. The 26 items of this scale compose six interrelated factors. Responses to each item range from 1 “almost never” to 5 “almost always.” Subscale means are calculated for each factor, and these six means are summed to create a total score. Higher scores are indicative of higher levels of self-compassion. The SCS has shown evidence of adequate internal consistency in a college student sample ($\alpha = .92$; Neff) and evidence of good construct validity, including discriminate validity with other measures of self-attitudes. Scores remained relatively stable over a three week time period, with test-retest reliability of $r = .93$. As would be expected, scores on this measure are moderately correlated with but distinct from self-esteem. Sample items include “When I’m going through a hard time, I give myself the caring and tenderness I need,” and “I’m tolerant of my own flaws and inadequacies.” Scores predict additional variance in outcome measures (such as self-rumination and anger) after self-esteem is accounted for (Neff & Vonk, 2009). Scores on this measure have been negatively related to measures of depression and anxiety and positively related to various aspects of positive functioning such as problem focused coping and life satisfaction (Neff, 2003a; Neff, Kirkpatrick, & Dejithirat, 2004).
**Body Image Investment:** The Self Evaluative Salience subscale of the Appearance Schemas Inventory-Revised (ASI-R; Cash et al., 2004) was used to assess participants’ investment in their appearance. The ASI-R consists of twenty items and contains two subscales: Self evaluative salience (SES), which assesses the extent to which individuals define themselves by their physical appearance, and motivational salience (MS), which assesses the extent to which individuals engage in appearance-management behaviors. High total scores are reflective of an individual who believes that the physical appearance is a centrally defining feature of the self. Example items include “When I see good looking people, I wonder about how my own looks measure up.” Participants respond to these items on a 5-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree.” Scores on this measure relate to greater internalization of thin ideal media messages and greater levels of body image disturbance (Ip & Jarry, 2007). The SES subscale tends to be more strongly related than the MS subscale to disturbance and psychopathology. Convergent validity has been established by strong positive correlations with body image disturbance, perfectionistic self-presentation, and disordered eating attitudes (Cash, 2003). Cash et al. (2004) reported adequate internal consistency for the entire measure ($\alpha = 0.88$), the SES subscale ($\alpha = .82$) and the MS subscale ($\alpha = .90$) in a sample of college women.

**Self-Esteem:** The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was used to measure self-esteem. The RSES consists of ten statements which participants rate on a scale ranging from 1 “strongly disagree” to 4 “strongly agree.” Total scores on this measure can range from 10 to 40, with higher scores are indicative of more favorable self-appraisals. Items include “On the whole, I am satisfied with myself;” and “I am able to do things as well as most other people.” The RSES has been assessed as a valid measure of “experienced self-esteem”
(Demo, 1985) and has shown evidence of reliability and validity in a college student population. For instance, Tylka and Subich (2004) reported an internal consistency reliability of $\alpha = .93$ in a sample of college women and Robinson and Shaver (1973) found a three week test-retest reliability of $r = .85$ in a sample of college students.

**Social Desirability:** Because this study used an exclusively self-report format, an abbreviated version of the Marlowe-Crowne Social Desirability Scale (MCSDS) was included in this study. The original MCSDS was developed by Crowne and Marlowe (1960) and uses a series of true/false items to detect the tendency to respond in a socially desirable manner. Items were derived from existing personality assessments, and were thought to reflect attributes that were socially desirable but unlikely to occur. As a result, high scores are sometimes thought to be indicative of “faking good” (Loo & Thorpe, 2000). Example items include “No matter who I’m talking to, I’m always a good listener,” and “I am always courteous, even to people who are disagreeable.” Reynolds (1982) developed a 13-item short version of the scale that is strongly correlated with the original version ($r = .93$) and has demonstrated adequate internal consistency ($\alpha = .76$) in a sample of college students.

**Procedure**

Participants accessed the study website through a link provided by course instructors or through an electronic listing of all studies available for course credit. Before completing any study questionnaires, participants were provided with an electronic informed consent form. After indicating their agreement and typing their name (for the sake of course credit), participants were directed to the first page of survey questions. The items were presented in the same order for all participants. In addition to the variables of interest, two additional measures were included to help disguise the purpose of this study. Measures were presented in the following order: Almost Perfect Scale Revised (APS-R), Rosenberg Self-Esteem Scale (RSES),
Psychological Well-Being Scales (PWBS; Ryff & Keyes, 1995), Freiburg Mindfulness Inventory (FMI), Self-Compassion Scale (SCS), Marlowe-Crowne Social Desirability Scale (MCSDS), Experiences in Close Relationships Questionnaire Revised (ECR-R; Fraley, Waller, & Brennan, 2000), Appearance Schemas Inventory Revised (ASI-R), Eating Attitudes Test (EAT-26). Demographics questions were included at the end of the survey. All questions were answered electronically, and answers were stored separately from participants’ identifying information so that responses to the scales could not be matched to individual participants. Surveys took approximately 30-45 minutes to complete. Participants were provided with contact information for mental health agencies on campus, in the event that they experienced any distress as a result of responding to survey questions.

**Study 2**

**Participants**

Participants for this study were female students attending a large, public university in the southwestern United States. Participants were recruited from two single-session self-compassion workshops conducted through the university counseling center. Workshops were offered for free and available to all current students. Students were not required to consent to the study in order to attend the workshops. While workshops were advertised broadly throughout the university student body, most workshop attendees reported being referred by a current clinician.

In all, eight female students attended one of two self-compassion workshops. All students who attended the workshops opted to participate in the study. Participants ranged in age from 18 to 27 (M = 21.5; SD = 3.38). Slightly more than half of participants were in their first (25%), second (25%), or third (12.5%) year of undergraduate studies and the remaining 37.5% of participants identified themselves as graduate or professional students. The racial/ethnic breakdown of the sample was as follows: 62.5% Caucasian, 25% Hispanic/Latino, 12.5% Native
American. The percentage of racial/ethnic minority students in this sample approximates the percentage of racial/ethnic minority students in the university the students attend. Two participants (25%) had previously sought treatment for “eating, weight, or body image concerns,” and one was still in treatment for related concerns.

**Procedure**

**Description of self-compassion workshop**

A one-hour workshop titled “Quiet Your Inner Critic” was created specifically for the second portion of this study. “Quiet Your Inner Critic” was designed to introduce students to the concept of self-compassion, provide an opportunity for students to explore the role of self-criticism and self-compassion in creating/maintaining suffering, and give students tools for fostering self-compassion in their everyday lives. The workshop consisted of the following components:

1. Introductory didactic material, including examples of critical and compassionate self-talk, myths and facts about the effects of self-compassion, and characteristics of a compassionate response (Neff, 2003b)

2. Two short writing exercises in which students first wrote about their affective response to a perceived failure or flaw and later returned and responded from the point of view of a perfectly compassionate friend. This exercise was adapted from the exercise described by Neff (2008) and is described in full in Appendix M.

3. Brief compassion meditation, in which participants first generate a feeling of compassion for someone else and then focus on themselves. This exercise was chosen because of the established link between mindfulness practice and self-compassion (Neff, 2008; Shapiro et al., 2007). Full text of the meditation used in the workshop can be found in Appendix N.

4. Processing and discussion

Participants were also provided with handouts designed to give them tools to further cultivate self-compassion. Handouts included a more detailed set of instructions for the compassionate writing exercise, instructions for the self-compassion meditation, and a list of resources for more information.
Advertising and recruitment

The workshop was offered twice during the spring semester, once at the university counseling center and once at the student union. Workshops were advertised along with other available therapy groups and workshops offered through the university counseling center. Additionally, fliers were distributed at the campus health center, at outreach events targeting Panhellenic organizations, and at Body Pride Week events. Clinicians at the counseling center were also able to refer current clients to the workshops as an adjunct to therapy, and were encouraged to refer any clients who struggle with perfectionism, self-criticism, or low self-esteem (rather than clients specifically exhibiting eating disorders symptoms). This recruitment strategy was designed to approximate typical strategies used to advertise counseling center workshops, while also targeting student populations that may be at increased risk for disordered eating attitudes.

Data collection

Workshop attendees were informed of the study at the beginning of the hour-long workshop. Students were informed that the investigator was collecting data designed to inform future preventative outreach programming, and that their participation in the study would not impact their ability to participate in the remainder of the workshop. Students were also informed that all responses would be kept confidential, that their informed consent would be kept separately from any survey responses, and that pre- and post- workshop responses would be linked to one another only through a code number. Workshop attendees were then provided with an informed consent form and a copy of pre-test measures, which included a demographic form, the SCS (Neff, 2003a), the APS-R (Slaney et al., 2001), the EAT-26 (Garner & Garfinkel, 1979), and the RSES (Rosenberg, 1965). Informed consent forms and pre-test measures were collected and kept separately for the duration of the workshop. Following the workshop, participants were
provided with a post-test survey. To minimize the burden on participants and maximize time spent in intervention, post-test data collection was limited to the SCS (Neff).
CHAPTER 4
RESULTS

Study 1

Descriptive Statistics and Preliminary Analyses

Means and standard deviations for all variables of interest are presented in Table 4-1. Internal consistency reliability coefficients were calculated for each variable and are included in Table 4-1. Of the measures used in this study, the Marlowe-Crowne Social Desirability Scale had the lowest internal consistency (KR-20 = .69). This result is similar to that found in other college student samples (see Barger, 2002 for a review). Cronbach’s coefficients alpha for other measures ranged from .81 (FMI) to .94 (APS-R Discrepancy), providing evidence of high internal consistency. Standardized skewness and kurtosis values were examined and were within acceptable limits ($z < 2.56$, $p < .01$) for all measures except the EAT-26. The EAT-26 distribution was significantly positively skewed ($z = 5.36$) and slightly kurtotic ($z = 2.84$). This is similar to distributions found in other studies using this measure, and is unsurprising given the scoring of the measure and the low base rate of the behaviors it measures. Recall that participants respond to items using a six point Likert scale, but the first three responses all receive scores of “zero.” This enables the measure to more accurately differentiate between normative behaviors and disordered eating, but results in a larger number of cases clustered at low values. In this sample, as would be expected, the vast majority of cases fell well below the clinical cutpoint of “20” for a total score (the median score in this sample was “8”), while a few students reported elevated levels of disordered eating behavior and received much higher scores. To determine whether this skew adversely affected study results, a square root transformation was used with this variable, and all models were run twice, once with raw scores and once with transformed scores. Relationships among variables remained consistent in direction and very
similar in strength, with the same mediating and moderating effects emerging as significant. In light of this consistency, raw scores were reported in this section, as these can be more easily interpreted based on familiar scoring and past research.

To further assess the normality of the distribution, data were examined for univariate outliers. One potential outlier was identified due to highly elevated scores on the EAT-26. Examination of other responses from this participant indicated that the high elevation was likely not an error, and instead represented the typical distribution of scores on that measure. After determining that relationships among scores were not noticeably different without this participants’ data, the data were retained in the analyses. The data were also examined for possible multivariate outliers using Mahalanobis’ distance. No participants’ scores exceeded the critical chi square for this model (20.52), so all participants remained in the analyses.

Because most study analyses were based on multiple regression, regression assumptions were examined on the variables in this study. In addition to requiring quantitative or categorical variables with nonzero variance, regression requires that predictor variables are not perfectly multicollinear. To examine this assumption, Pearson correlations, tolerance and VIF statistics were examined. Tolerance values were all above .4 (ranging from .49 to .61) and VIF statistics were all close to 1 (ranging from 1.6 to 2.0). It was determined that multicollinearity was not likely to be a problem for variables in this model. Visual inspection of residual scatterplots indicated that error terms were relatively normally distributed. A Durbin Watson test statistic close to 2.0 (1.89 in this model) indicated that error terms were not highly correlated with one another. These assumptions support the generalizability of the findings from regression models in this study.
Because of expected gender differences on many variables of interest, means and standard deviations were calculated separately for men and women in the study. A multivariate analysis of variance (MANOVA) was conducted to determine whether men and women responded differently in the current study. Follow up univariate ANOVAs were then conducted to further explore these differences. One relevant variable, Body Image Investment, violated the homogeneity of variance assumption. Welch’s $F$ is reported for this variable. Results confirmed significant gender differences on study variables, Wilks’ $\Lambda = .847, F(8, 163) = 3.674, p = .001$.

Univariate ANOVAs revealed that women scored significantly higher than men on Discrepancy, $F(1, 170) = 13.07, p < .001, d = .55$; Self-Compassion, $F(1, 170) = 8.088, p = .005, d = .42$; Body Image Investment, $F(1, 170) = 9.924, p = .002, d = .48$; and Disordered Eating, $F(1, 170) = 7.139, p = .008, d = .41$, while men scored significantly higher than women on Self-Esteem, $F(1, 170) = 5.61, p = .019, d = .36$. Effect size estimates indicate that these gender differences are in the medium to large range (Cohen, 1992).

Pearson correlations were calculated for all pairs of variables, and are presented in Table 4-2. Again, these correlations were calculated separately for men and women in the study. Correlations for the subscales of the APS-R were in expected directions and generally consistent with findings of past research. For example, both men and women had Discrepancy scores that showed large negative correlations with Self-Esteem scores ($r = -.74$ and $r = -.56$). As hypothesized, mindfulness was positively related to self-compassion for men ($r = .50$) and women ($r = .66$), demonstrating a large effect size for both. Mindfulness was negatively related to maladaptive perfectionism (measured by the APS-R Discrepancy scale; $r = -.34$) and disordered eating ($r = -.25$) in women, both with a medium effect size. However, both correlations were small and nonsignificant ($p > .05$) in men. It is notable that social desirability
(measured by the MCSDS) showed a small to medium significant relationship with all measured variables in women (ranging from $r = .21$ for Discrepancy to $r = .38$ for Body Image Investment). Relationships with study variables were generally weaker and nonsignificant in men, with the exception of a medium significant relationship with Body Image Investment ($r = .34$). Because social desirability was significantly correlated with several other measured variables, the MCSDS total score was entered as a covariate in all models in this study\(^1\).

**Self-Compassion as Mediator**

Previous research has focused on self-compassion as a mechanism through which mindfulness-based interventions work. To determine whether this conceptualization was supported by current data, a mediation model was examined with self-compassion as the mediator of the relationship between mindfulness and disordered eating. Results are presented in Table 4-3. In this model, mindfulness explained significant variance in disordered eating, $B = -.242$, $t(169) = -2.13$, $p = .035$, and in self-compassion, $B = .250$, $t(169) = 9.40$, $p < .001$. Self-compassion also explained significant variance in disordered eating, $B = -.772$, $t(169) = -2.38$, $p = .019$. When both self-compassion and mindfulness were entered into the model, the relationship between mindfulness and disordered eating was reduced to nonsignificance, $B = -.048$, $t(169) = -.349$, $p = .727$. Bootstrapping was used to confirm the presence of an indirect effect. This technique is preferred by many (Preacher & Hayes, 2004; Shrout & Bolger, 2002) when examining mediation models because it takes into account the actual distribution of indirect effects. Other commonly used tests of mediation (such as Sobel’s test) assume a normal distribution of indirect effects, and may have less power to detect an

\(^1\)Some researchers recommend against this practice on statistical and conceptual grounds (see Barger, 2002 for discussion), yet it remains common practice in self-report research. To account for this, analyses were run both with and without a covariate, yielding comparable results. Results calculated without a covariate are available upon request.
effect. In this study, 1000 bootstrap samples were created, yielding a 95% confidence interval of -.3563 to -.0655 around the indirect effect. As this interval did not include “0,” results indicated the presence of a significant indirect effect.

**Maladaptive perfectionism, self-compassion, and disordered eating**

To examine the role of self-compassion in the relationship between maladaptive perfectionism and disordered eating, a simple mediation model was first examined. Results indicated that maladaptive perfectionism (measured by the APS-R Discrepancy subscale) explained significant variance in disordered eating, $B = .168, t(169) = 3.52, p < .001$, and in self-compassion, $B = -.091, t(169) = 7.43, p < .001$. However, self-compassion failed to account for significant variance in disordered eating, $B = .508, t(169) = -1.70, p = .090$. When both self-compassion and maladaptive perfectionism were entered into the model, the relationship between maladaptive perfectionism and disordered eating remained significant, $B = .122, t(169) = 2.22, p = .028$. However, bootstrapping using 1000 bootstrap samples resulted in a 95% confidence interval of .015 to .120 around the indirect effect. This indicates that although full mediation was not supported, a significant amount of the variance shared by maladaptive perfectionism and disordered eating was explained by self-compassion. This provides evidence for partial mediation, indicating that the effect of maladaptive perfectionism on disordered eating may occur in part through a direct route and in part through the effect of self-compassion. To further explore conditions that may influence the presence of an indirect effect, several moderated mediation models were examined.

**Moderated mediation: Gender**

Because of the established gender differences in both self-compassion and disordered eating (see Tables 4-1 and 4-2), a moderated mediation model was examined to determine whether the indirect effect through self-compassion was moderated by participants’ gender.
(coded as “0” for males and “1” for females in this analysis). Moderated mediation is useful in determining whether an established mediation effect remains constant across groups or at different levels of a variable. The path from the independent variable to the mediator, from the mediator to the dependent variable, or both, may be influenced by the level of a fourth variable. Variables were entered into an SPSS macro created by Preacher, Rucker, and Hayes (2007), designed to detect conditional indirect effects. This macro allows the researcher to indicate which path(s) may be affected by the moderating variable. In this case, it was hypothesized that some of the effect of maladaptive perfectionism would be carried through self-compassion, but that the extent to which this would in turn influence disordered eating would differ based on gender. This hypothesis was based on research and theory indicating that sociocultural factors may predispose women to eating disorders more than men (Mussell, Binford, & Fulkerson, 2000). To test the moderated mediation hypothesis, a moderation effect is first tested to determine whether the interaction between the mediator and proposed moderator explains additional variance in the dependent variable. Next, the strength and significance of the indirect effect (the amount of variance that is carried through the mediating variable) is tested at different levels of the moderating variable. Results indicated the product term created by self-compassion and gender did not explain significant additional variance in the model, $B = -0.477$, $t(169) = -0.90$, $p = .368$. To determine whether the indirect effect (the effect of maladaptive perfectionism on disordered eating through self-compassion) was moderated by gender, the strength of the indirect effect was examined at both possible levels of the moderator. For males in this sample, normal theory tests indicated that the indirect effect through self-compassion was clearly nonsignificant ($p = .634$). However, when gender was set to “female,” normal theory tests indicated that the indirect effect through self-compassion approached significance ($p = .065$).
To further probe this result, a simple mediation model was run on only females in the sample. This analysis supported the existence of an indirect effect for female participants. In this model, maladaptive perfectionism accounted for significant variance in self-compassion, $B = -.090, t(169) = -5.42, p < .001$ and marginally significant variance in disordered eating, $B = .126, t(169) = 1.97, p = .052$. Additionally, self-compassion accounted for marginally significant variance in disordered eating, $B = -.726, t(169) = -1.89, p = .061$. When both self-compassion and maladaptive perfectionism were entered into the model, the relationship between maladaptive perfectionism and disordered eating was reduced to nonsignificance, $B = .061, t(169) = .851, p = .397$. Bootstrapping results confirmed the significance of the indirect effect. One thousand bootstrap samples produced a 95% confidence interval of .0119 to .1481 around the indirect effect. This indicates that, for female participants there was a significant indirect effect of maladaptive perfectionism on disordered eating through self-compassion.

**Moderated mediation: Body image investment**

To determine whether the indirect effect for female participants was moderated by levels of body image investment, another moderated mediation model was examined. In this model, body image investment was hypothesized as the moderator, such that the indirect effect through self-compassion was expected to be larger for women at higher levels of body image investment. To examine this model, scores on maladaptive perfectionism, self-compassion, disordered eating, and body image investment, for female participants only, were entered into the SPSS macro described above. Results indicated that the product term created by self-compassion and body image investment did not account for additional variance in the model, $B = -.528, t(101) = -1.189, p = .237$. In examining the strength of the indirect effect at various levels of the moderator, the indirect effect remained nonsignificant at mean levels of body image investment.
(p = .292) as well as one standard deviation above (p = .213) and below (p = .929). The hypothesis that body image investment would moderate the indirect effect was not supported.

**Exploratory Analyses: Self-Compassion vs. Self-Esteem**

**Multiple mediation**

Previous research on perfectionism and undesirable mental health outcomes has focused on the mediating effects of self-esteem (i.e. Rice et al., 1998). In order to determine whether the indirect effect through self-compassion found in the preceding analyses could be better accounted for by self-esteem, a multiple mediation model was entered into an SPSS macro created by Preacher and Hayes (2008) that was designed to simultaneously investigate the multiple mediators. This model examined the indirect effect of maladaptive perfectionism on disordered eating through both self-compassion and self-esteem. Consistent with the bivariate correlations calculated previously (Table 4-2), maladaptive perfectionism accounted for significant variance in both self-esteem, \( B = -.188, t(101) = -6.168, p < .001 \), and self-compassion, \( B = .090, t(101) = -5.424, p < .001 \), as well as marginally significant variance in disordered eating, \( B = .126, t(101) = 1.971, p = .052 \). However, when both variables were entered as potential mediators, neither one alone accounted for significant variance in disordered eating, self-compassion: \( B = -.615, t(100) = -1.521, p = .132 \); self-esteem: \( B = -.190, t(100) = -.866, p = .389 \), but the direct effect from maladaptive perfectionism was reduced to nonsignificance, \( B = .036, t(100) = .456, p = .650 \). Bootstrapping with 1000 bootstrapped samples was used to create confidence intervals around each indirect effect. Bootstrapping techniques resulted in a 95% confidence interval of -.032 to .124 around the indirect effect for self-esteem, and a 95% confidence interval of .003 to .132 around the indirect effect for self-compassion. Put simply, this indicates that when both variables are examined simultaneously as mediators, self-compassion continues to account for a significant indirect effect, while self-
esteem does not. These results are consistent with the proposition that self-compassion better accounts for the relationship between maladaptive perfectionism and disordered eating in women than self-esteem.

**Moderated mediation: self-esteem as moderator**

The final set of analyses for this study examined whether self-esteem moderated the indirect effect of maladaptive perfectionism on disordered eating through self-compassion. Previous literature has suggested that self-compassion may be especially relevant when self-esteem is low (Leary et al., 2007). Accordingly, it was hypothesized that the indirect effect of maladaptive perfectionism on disordered eating through self-compassion would be stronger in participants who scored lower on measures of self-esteem. To explore this hypothesis, a moderated mediation model was analyzed. Results indicated that the interaction between self-esteem and self-compassion did not account for significant additional variance in disordered eating, $B = .081, t(101) = 1.570, p = .120$. However, the strength of the indirect effect did differ at varying levels of the moderator. Conditional indirect effects were calculated at mean levels of the self-esteem, as well as one standard deviation above and below the mean. Results indicated that the indirect effect through self-compassion is significant when self-esteem is one standard deviation below the mean ($p = .042$), marginally significant when it is at the mean ($p = .057$), and nonsignificant when self-esteem is one standard deviation above the mean ($p = .466$). In general, the indirect effect through self-compassion was weaker at higher levels of self-esteem, to the point of being nonsignificant at high levels of self-esteem. This lends support to the hypothesis that self-compassion is more relevant when self-esteem is low.

In summary, the results of Study 1 confirmed many of the research hypotheses. Bivariate correlations revealed that mindfulness was positively related to self-compassion and negatively related to both maladaptive perfectionism and disordered eating. Two simple mediation models
indicated that self-compassion acted as a mediator between maladaptive perfectionism and disordered eating, and a partial mediator between maladaptive perfectionism and disordered eating. This partial mediation model was moderated by gender, in that there was a significant indirect effect for women but not for men. However, the mediation model was not moderated by body image investment. A multiple mediation model further supported the importance of self-compassion, as it remained a significant mediator even when self-esteem was included in the model. The final moderated mediation model indicated that, for women, self-compassion partially mediated the relationship between maladaptive perfectionism and disordered eating, with a stronger indirect effect emerging for women with low self-esteem.

Study 2

Descriptive Statistics and Preliminary Analyses

Means and standard deviations were calculated for all pretest variables and are displayed in Table 4-4. Visual inspection of scale means revealed that pretest scale means approximated those found in the larger (Study 1) sample. To confirm this, the eight participants from Study 2 were compared to a sample from Study 1 matched approximately on age, race, and sexual orientation. Because of the small sample size in the following analyses, nonparametric statistics were used to assess differences between samples. Nonparametric tests are preferred when parametric assumptions (such as normality of data and homogeneity of variance) are in question (Field, 2005). In this case, a series of Mann-Whitney U tests indicated that the matched samples did not differ from one another on SCS, \( U = 24, p = .40 \); RSES, \( U = 31, p = .92 \); EAT-26, \( U = 25, p = .46 \); or the Discrepancy subscale of the APS-R, \( U = 19, p = .17 \). Internal consistency reliability was calculated for all measures and can be found in Table 4-4. Internal consistency was fairly low for the EAT-26, though comparable to other college student samples (\( \alpha = .57 \)) and high for the SCS (\( \alpha = .91 \)), RSES (\( \alpha = .86 \)), and Discrepancy scale of the APS-R (\( \alpha = .97 \)).
Treatment Effects

It was hypothesized that participants would experience a significant increase in levels of self-compassion from the pre- to posttest. A Wilcoxon signed-rank test was used to determine whether participants’ levels of self-compassion changed significantly over the course of the workshop. Results indicated that the hypothesis was supported in that participants scored significantly higher on self-compassion after the workshop ($Mdn = 16.475$) than before the workshop, ($Mdn = 16.05$), $z = 2.033$, $p < .05$. Effect size estimates indicate that the magnitude of this difference was large ($r = .51$). Because this statistical analysis was based on relative ranks rather than exact scores, a large effect in this case indicates that most individual participants scored higher after the workshop than before. Individual participants’ pre- and posttest scores are plotted in Figure 4-1.
Table 4-1. Internal Consistency, Means, and Standard Deviations of Study 1 Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>α</th>
<th>M (n = 68)</th>
<th>SD</th>
<th>M (n = 105)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS-R Discrepancy*</td>
<td>.94</td>
<td>36.29</td>
<td>13.32</td>
<td>44.07</td>
<td>14.79</td>
</tr>
<tr>
<td>FMI</td>
<td>.81</td>
<td>38.81</td>
<td>5.77</td>
<td>38.48</td>
<td>6.75</td>
</tr>
<tr>
<td>SCS*</td>
<td>.92</td>
<td>14.03</td>
<td>2.55</td>
<td>12.89</td>
<td>2.85</td>
</tr>
<tr>
<td>RSES*</td>
<td>.90</td>
<td>32.58</td>
<td>5.14</td>
<td>30.67</td>
<td>5.46</td>
</tr>
<tr>
<td>ASI (SES subscale)*</td>
<td>.84</td>
<td>3.11</td>
<td>0.54</td>
<td>3.41</td>
<td>0.68</td>
</tr>
<tr>
<td>EAT-26*</td>
<td>.87</td>
<td>7.14</td>
<td>8.79</td>
<td>10.92</td>
<td>9.60</td>
</tr>
<tr>
<td>MCSDS</td>
<td>.69</td>
<td>5.60</td>
<td>2.54</td>
<td>5.61</td>
<td>3.03</td>
</tr>
</tbody>
</table>

* Indicates differences between men and women are significant \( p < .05 \).
### Table 4-2. Pearson Correlations Between Study 1 Variables

<table>
<thead>
<tr>
<th></th>
<th>HS</th>
<th>ORDER</th>
<th>DISC</th>
<th>FMI</th>
<th>SCS</th>
<th>RSES</th>
<th>ASI(SES)</th>
<th>EAT-26</th>
<th>MCSDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS</td>
<td>1</td>
<td>.384*</td>
<td>.090</td>
<td>.192*</td>
<td>.005</td>
<td>.346*</td>
<td>.044</td>
<td>.008</td>
<td>.139</td>
</tr>
<tr>
<td>ORDER</td>
<td>.537*</td>
<td>1</td>
<td>.044</td>
<td>.197*</td>
<td>.039</td>
<td>.188</td>
<td>-.055</td>
<td>.014</td>
<td>.266*</td>
</tr>
<tr>
<td>DISC</td>
<td>-.227</td>
<td>-.209</td>
<td>1</td>
<td>-.336*</td>
<td>-.510*</td>
<td>-.561*</td>
<td>.444*</td>
<td>.246*</td>
<td>-.213*</td>
</tr>
<tr>
<td>FMI</td>
<td>.280*</td>
<td>.165</td>
<td>-.424</td>
<td>1</td>
<td>.663*</td>
<td>.537*</td>
<td>-.433*</td>
<td>-.247*</td>
<td>.250*</td>
</tr>
<tr>
<td>SCS</td>
<td>.212</td>
<td>.234</td>
<td>-.445*</td>
<td>.500*</td>
<td>1</td>
<td>.541*</td>
<td>-.476*</td>
<td>-.308*</td>
<td>.327*</td>
</tr>
<tr>
<td>RSES</td>
<td>.458*</td>
<td>.354*</td>
<td>-.739*</td>
<td>.503*</td>
<td>.647*</td>
<td>1</td>
<td>-.426*</td>
<td>-.285*</td>
<td>.349*</td>
</tr>
<tr>
<td>ASI (SES)</td>
<td>.224</td>
<td>.161</td>
<td>.106</td>
<td>.063</td>
<td>-.306*</td>
<td>-.120</td>
<td>1</td>
<td>.450*</td>
<td>-.385*</td>
</tr>
<tr>
<td>EAT-26</td>
<td>-.178</td>
<td>.036</td>
<td>.259*</td>
<td>-.095</td>
<td>-.143</td>
<td>-.285*</td>
<td>.251*</td>
<td>1</td>
<td>-.218*</td>
</tr>
<tr>
<td>MCSDS</td>
<td>.048</td>
<td>.133</td>
<td>-.048</td>
<td>.037</td>
<td>.280</td>
<td>.113</td>
<td>-.344*</td>
<td>-.126</td>
<td>1</td>
</tr>
</tbody>
</table>

Correlations above the diagonal = women; Correlations below the diagonal = men

* Indicates significant correlation (p<.05)
Table 4-3. Self-Compassion as Mediator Between Mindfulness and Disordered Eating

<table>
<thead>
<tr>
<th>Path</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMI to EAT-26 (c path)</td>
<td>-.242</td>
<td>.114</td>
<td>-.163</td>
<td>.035</td>
</tr>
<tr>
<td>FMI to SCS</td>
<td>.250</td>
<td>.027</td>
<td>.571</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>SCS to EAT-26</td>
<td>-.772</td>
<td>.325</td>
<td>-.228</td>
<td>.019</td>
</tr>
<tr>
<td>FMI to EAT-26 (c’ path)</td>
<td>-.048</td>
<td>.138</td>
<td>-.032</td>
<td>.167</td>
</tr>
</tbody>
</table>

Note: FMI = Freiburg Mindfulness Inventory; SCS = Self-Compassion Scale
Path coefficients were calculated with social desirability scores as covariates.
Table 4-4. Self-Compassion as Mediator Between Perfectionism and Disordered Eating in Men 
(n = 68)

<table>
<thead>
<tr>
<th>Path</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISC to EAT-26 (c path)</td>
<td>.167</td>
<td>.079</td>
<td>.254</td>
<td>.037</td>
</tr>
<tr>
<td>DISC to SCS</td>
<td>-.083</td>
<td>-.020</td>
<td>.433</td>
<td>&lt;.020</td>
</tr>
<tr>
<td>SCS to EAT-26</td>
<td>.005</td>
<td>.481</td>
<td>.001</td>
<td>.992</td>
</tr>
<tr>
<td>DISC to EAT-26 (c’ path)</td>
<td>.167</td>
<td>.089</td>
<td>.254</td>
<td>.063</td>
</tr>
</tbody>
</table>

Note: DISC = APS Discrepancy; SCS = Self-Compassion Scale
Path coefficients were calculated with social desirability scores as covariates
Table 4-5. Self-Compassion as Mediator Between Perfectionism and Disordered Eating in Women (n = 103)

<table>
<thead>
<tr>
<th>Path</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISC to EAT-26 (c path)</td>
<td>.126</td>
<td>.064</td>
<td>.194</td>
<td>.051</td>
</tr>
<tr>
<td>DISC to SCS</td>
<td>-.090</td>
<td>-.017</td>
<td>-.467</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>SCS to EAT-26</td>
<td>-.726</td>
<td>-.383</td>
<td>-.216</td>
<td>.061</td>
</tr>
<tr>
<td>DISC to EAT-26 (c’ path)</td>
<td>.061</td>
<td>.072</td>
<td>.094</td>
<td>.397</td>
</tr>
</tbody>
</table>

Note: DISC = APS Discrepancy; SCS = Self-Compassion Scale
Path coefficients were calculated with social desirability scores as covariates.
Table 4-6. Internal Consistency, Means, and Standard Deviations of Study 2 Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>α</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS-R Discrepancy</td>
<td>.97</td>
<td>37.13</td>
<td>17.89</td>
</tr>
<tr>
<td>SCS</td>
<td>.91</td>
<td>14.94</td>
<td>3.30</td>
</tr>
<tr>
<td>RSES</td>
<td>.86</td>
<td>32.63</td>
<td>10.21</td>
</tr>
<tr>
<td>EAT-26</td>
<td>.57</td>
<td>9.13</td>
<td>4.52</td>
</tr>
</tbody>
</table>

Note: SCS = Self-Compassion Scale (pretest score); RSES = Rosenberg Self-Esteem Scale
Figure 4-1. Change in Self-Compassion for Workshop Attendees
CHAPTER 5
DISCUSSION

The purpose of this research was to examine the application of Buddhist psychology constructs (particularly self-compassion) to eating disorders prevention with college women. To accomplish this, two studies were conducted. The first study was correlational in nature and examined the basic relationships among relevant constructs as well as the role of self-compassion in several mediation models involving disordered eating. The second study aimed to determine the extent to which self-compassion could be increased through a one-hour outreach workshop on a university campus.

**Study 1**

This study was designed to investigate the relationships among mindfulness, self-compassion, perfectionism, and disordered eating within a sample of university students. Self-compassion was explored both as a mechanism by which mindfulness may be related to disordered eating, and a mediator in the relationship between maladaptive perfectionism and disordered eating. Exploratory analyses investigated the role of self-esteem as both a mediator and a moderator in the latter model. Preliminary analyses indicated that gender moderated the relationships among these constructs in that relationships among these constructs were generally stronger in women than in men. Because of this, and because eating disorders prevention efforts most often focus on women (Franko & Orosan-Weine, 1998, Mann et al., 1997), only women were included in major analyses.

As hypothesized, self-compassion emerged as a potential mediator in the relationship between mindfulness and disordered eating. Although causal mechanisms (and therefore, the mediating role of self-compassion) cannot be confirmed with data collected at one time point, results indicated that self-compassion accounted for most of the variance shared by mindfulness
and disordered eating. Past research has nominated self-compassion as a potential mechanism through which mindfulness-based interventions induce change, and have shown that self-compassion increases through participation in a mindfulness group (Shapiro et al., 2005; Shapiro et al., 2007). The findings of the current study are consistent with the conceptualization of self-compassion as a mediating mechanism, and help to extend past research to address the roles of mindfulness and self-compassion in disordered eating.

Self-compassion also emerged as a partial mediator in the relationship between maladaptive perfectionism and disordered eating. This is consistent with past research indicating that maladaptive (more than adaptive) aspects of perfectionism are associated with disordered eating concerns (Davis, 1997; Pearson & Gleaves, 2006), and that self-compassion is negatively associated with maladaptive perfectionism (Neff, 2003a). It is important to note that while some of the relationship between maladaptive perfectionism and disordered eating can be attributed to self-compassion, there remains a significant direct relationship between maladaptive perfectionism and disordered eating that cannot be explained in terms of self-compassion.

Contrary to expectations, the indirect effect through self-compassion was not moderated by participants’ body image investment. Though unexpected, this finding is consistent with a study by McGee, Hewitt, Sherry, Parkin, and Flett (2005), who found that body image evaluation, but not body image investment, moderated the relationship between perfectionistic self-presentation and eating disorder symptoms. The authors explained this in terms of a diathesis-stress model, stating that ego involvement alone (the importance of body image to a person’s sense of self) may not be enough to strengthen the relationship between perfectionism and eating disorder symptoms. Rather, perfectionism becomes a stronger predictor of eating disorder symptoms only when a person evaluates their body image negatively. In terms of the
current study, it was expected that the indirect effect of perfectionism through self-compassion would demonstrate a stronger relationship with disordered eating symptoms when an individual placed a high degree of importance on their appearance. It may be that this moderation relationship was not supported for similar reasons: investment in one’s appearance may strengthen this relationship only when body image is also evaluated negatively. Further research examining other dimensions of body image could help further explain this unexpected result.

This study highlights the importance of self-compassion as an appropriate conceptualization of a healthy self-attitude in college women. Although negative self-attitudes have previously been examined as risk factors for the development of disordered eating (Stice, 2002; Vohs et al., 1999), one unique aspect of this study is the focus on self-compassion rather than self-esteem. Because of the conceptual distinctions between self-compassion and self-esteem (Neff & Vonk, 2009), and because some researchers have suggested that self-compassion might be a more appropriate target for intervention (Leary et al., 2007), exploratory analyses were conducted to explore the role of self-esteem in the mediation model. When both self-compassion and self-esteem were included as potential mediators between maladaptive perfectionism and disordered eating, only self-compassion remained a significant mediator. When self-esteem was included as a moderator in the model, it was found that the indirect effect through self-compassion was stronger when levels of self-esteem were low. This is consistent with the premise that self-compassion may serve to buffer individuals against the potential negative effects of low self-esteem (Leary et al.). While self-esteem is the result of an evaluative process (and therefore requires a person to either change themselves or ignore inadequacies in order to have high self-esteem), self-compassion is a way of treating oneself that is characterized by kindness and nonjudgment (Neff, 2003b). Self-compassion may be most applicable when
“times get tough.” For instance, when failure or a perceived flaw results in a decrease in self-esteem, a nonjudgmental attitude toward self and a perception of common humanity can attenuate the possible negative outcomes. Because self-compassion involves an honest yet caring attitude toward self, it can motivate an individual to change in ways that are healthy rather than punitive.

**Clinical Implications**

The results of this study have important clinical implications. Although further study is required to confirm the direction of causation, this study presents mediation models that may help clinicians develop more powerful interventions to prevent or ameliorate symptoms of disordered eating. Perhaps most significantly, self-compassion emerged as a relevant construct in the prevention of disordered eating, making it a potential focus of clinical attention.

This concept could be especially useful for clinicians working with perfectionistic individuals. Results of this study suggest that levels of self-compassion may explain some of the link between maladaptive perfectionism and disordered eating in college women. Both researchers and clinicians have suggested that maladaptive aspects of perfectionism, such as self-criticism, fear of evaluation, and perceived discrepancy between standards and performance, are important to address in order to reduce vulnerability to eating disorders and other problems (Ashby et al., 1998). However, addressing perfectionism directly can be difficult when individuals perceive their perfectionism as having positive rewards. Furthermore, perfectionistic clients may have difficulty addressing concerns that may be perceived as failures or flaws and hence may be reluctant to seek professional help (Goldner et al., 2002). Self-compassion may provide an alternate point of intervention that is more acceptable to clients and is still related to positive outcomes. Interventions designed to increase self-compassion may be met with less resistance by perfectionistic clients, as they do not require clients to abandon the high personal
standards that are experienced as helpful and necessary. The focus on increasing a healthy attitude, rather than focusing on perceived problems, may also make such interventions less threatening. Individuals would not have to self-identify as having a “flaw” in order to benefit from an increase in self-compassion.

A focus on self-compassion could also be helpful for clinicians who take a mindfulness-based approach. As researchers have studied the application of mindfulness to a growing array of clinical problems, clinicians are increasingly incorporating mindfulness into their work (Toneatto & Nguyen, 2007). However, mindfulness-based interventions may not be appropriate for all clients. Although mindfulness has largely been divorced from its cultural and religious context as it is infused into clinical interventions (Baer, 2003), some clients may continue to feel uncomfortable with an explicit focus on mindfulness practice because of cultural or religious issues (Kristeller et al., 2006). Furthermore, many clinicians have asserted that mindfulness should not be incorporated into treatment unless the clinician also has a personal mindfulness practice to serve as a reference point (Kristeller et al., 2006; Murphy, 2006). This understandably limits the practical application of mindfulness-based interventions. As self-compassion explained the majority of the relationship between mindfulness and disordered eating in the present study, it is possible that a focus on self-compassion, separate from mindfulness practice, could have similar therapeutic value. This could be especially helpful when viewing clinical problems through a preventative lens. Though it is likely that the practice of mindfulness increases resilience and decreases individuals’ vulnerability to mental health problems (Brown & Ryan, 2003), the cultivation of mindfulness is a long term endeavor. Self-compassion may be more easily changed than mindfulness, and thus may present fewer practical obstacles. Before putting this principle into clinical practice, however, further research should
first confirm the direction of causality proposed in this study and investigate whether a focus on self-compassion alone is indeed as helpful as a mindfulness-based intervention.

Results of this study also serve to draw clinicians’ attention to the distinction between self-compassion and self-esteem. A great deal of clinical attention goes into improving individuals’ self-attitudes, and self-esteem is an important component of several universal prevention programs (Neff, 2008). However, efforts to increase self-esteem can be problematic. Because self-esteem is inherently evaluative, it is difficult to increase an individual’s self-esteem without changing other aspects of the person. The potential pitfalls of self-esteem are evident in conceptualizations of some clinical problems, in which individuals engage in maladaptive behaviors as a means of maintaining self-esteem (Crocker & Park, 2004). Alternatively, individuals may maintain globally high self-esteem by overlooking legitimate weaknesses, as evidenced by the association between high self-esteem and narcissism (Baumeister et al., 1996; Neff, 2008). Self-compassion appears to have many of the same benefits of self-esteem, a trend that was borne out in the present research. Because it is free from an evaluative component, it can be modified independently. This may be helpful for clinicians who seek to modify client’s self-attitudes, as well those developing outreach and prevention efforts aimed at fostering resilience.

Limitations and Future Directions

There are several limitations to the present study that should inform the interpretation of results. Perhaps most importantly, data for this study were collected at one time point. The models examined here are based on a presumption of temporal sequencing that is based on previous literature. For example, perfectionism has been found to precede the onset of disordered eating symptoms (Fairburn et al., 1999), and changes in mindfulness have been found to predict changes in self-compassion (Shapiro et al., 2005). However, there is no way to rule
out alternative explanations for the relationships found in these data. For instance, a struggle with disordered eating could lead an individual to be more self-critical or reduce their self-esteem. Though the results of this study suggest potential causal mechanisms explaining disordered eating, further research using data collected at multiple time points (and, ideally, experimental manipulation) would be needed to confirm the direction of causality.

When interpreting the relationships among constructs in this study, it is also important to consider that all data were collected through self-report. This method was chosen because, for many of the variables of interest (especially those related to self-attitudes) there is no other reliable method of assessment. Some limitations of self-report, such as the tendency to respond in a socially desirable manner, were minimized through study design and statistical analysis. However, the measured variables in this study also share method variance which cannot be parcelled out without multiple forms of measurement. While this is common and sometimes unavoidable in psychological research, results of this study should be interpreted in light of this limitation.

It may be especially important to consider the operationalization of the (presumed) outcome variable when interpreting this study. Although the dependent variable consists of a largely behavioral outcome, it is measured entirely by self-report. The EAT-26 has been judged to be a valid indicator of disordered eating concerns. However, inclusion of other data (interview data, diagnostic checklists, behavioral reports) may have strengthened the claims made in this study. The psychometric properties of the EAT-26 may also be cause for concern. The low internal consistency of this measure is not surprising in this sample given the process of scale construction. The EAT-26 was designed to measure three separate dimensions of disordered eating, though popular use has trended toward the use of a total score. Furthermore,
the EAT-26 was designed to detect cases of anorexia nervosa or related disorders, and has evidenced higher reliability in clinical samples (Garner et al., 1982). Nevertheless, it is possible that low internal consistency artificially suppressed relationships between predictors and the outcome variable. Higher reliability may have been achieved through use of a sample with higher incidence of disordered eating attitudes. Future research may also improve on this design by including multiple measures of the outcome variable.

There are several important considerations regarding sample characteristics that should inform inferences about the generalizability of this study. In this study, participants were undergraduate college students who approximated the race/ethnicity makeup of the university they attended. In many ways, recruiting from this population is potentially useful in that college students are typically the recipients of eating disorder prevention efforts. However, it is unknown if the results obtained in this study would apply to non-student populations (such as adolescents or clinical populations). Participants for this study were recruited from undergraduate classes, and were not necessarily experiencing problems with perfectionism or disordered eating. It is reasonable to assume that these students would be different from individuals who would normally be recipients of interventions to reduce disordered eating. Replication of this study in clinical samples could inform whether and how these results could be applied in treatment.

Several findings emerged through this study that warrant further investigation. For instance, the initial mediation model in which self-compassion mediated the relationship between maladaptive perfectionism and disordered eating was supported in women but not in men. Because of the relatively small numbers of men in this sample ($n = 68$), this finding was not explored further. However, given the recent increased attention to eating disorders in college
men (Petrie & Rogers, 2001), this presents a promising avenue for future research. It is possible that the pathways to disordered eating are different for men and women, which could have important implications for intervention. Further research using larger groups of college men would be needed to confirm or further explain this finding. Similarly, even with significant regression coefficients, there was a large proportion of variance (close to 90%) in disordered eating that was not accounted for by the models presented here. This is not surprising, given that disordered eating is known to be a complex phenomenon with multiple determinants (Tylka & Subich, 2004). Several models of eating disorder development emphasize predictors that were not measured in this study, including sociocultural and relational variables. Many of these variables, such as internalization of thin ideal, have been identified as appropriate targets for intervention. It is unknown whether self-compassion would explain additional variance in disordered eating when other known risk factors are accounted for. Conceptual definitions of self-compassion would presume that it would remain relevant, possibly acting as a moderator to buffer the effects of other risk factors. Future research could examine the role of self-compassion within a more complete multidimensional model of disordered eating to determine if this is the case.

**Study 2**

Results of Study 1 indicated that self-compassion may be an important mechanism in the relationship between maladaptive perfectionism and disordered eating, particularly in college women. Study 2 aimed to build on this result by examining whether self-compassion could be increased through a one hour self-compassion workshop developed for college women. In order to identify women who may be vulnerable to developing eating disorders, the workshop was targeted toward students who identified as struggling with self-criticism and negative attitudes toward themselves, as these characteristics have been suggested as psychological risk factors for
the development of disordered eating (Vohs et al., 1999). Additionally, the workshop was advertised through agencies thought to interact with women who may be at increased risk (Panhellenic Council, Campus Health Services, Wellness and Health Promotion, Counseling and Consultation).

Eight women (both undergraduate and graduate students) attended these workshops and completed pre- and posttest questionnaires. Two of these women indicated past concerns with “eating, weight, or body image,” but none of them currently scored above the cutoff of “20” on the EAT-26. This supports the notion that workshop participants were either free from disordered eating concerns, or evidenced subclinical levels of such concerns. This distinction is important, as this workshop was characterized as “prevention.” These women’s scores on the disordered eating measure were consistent with this characterization. Consistent with expectations, these women scored higher on the self-compassion scale after the workshop than before the workshop. This change was large in magnitude, which was fairly surprising given the brief nature of the intervention. This result is consistent with the idea that self-compassion is an appropriate target for intervention and perhaps more easily modified than other self-attitudes (Neff, 2008). Importantly, inspection of pre- and posttest scores for individual participants indicated that scores either remained fairly stable or increased over time. There was no evidence that the workshop had a detrimental effect on any of the participants.

**Implications**

Results of this study offer initial support for the integration of self-compassion into preventative outreach efforts with college women. Consistent with past intervention research, results indicated that self-compassion could be modified with direct instruction and practice (Adams & Leary, 2007; Gilbert & Procter, 2006; Shapiro et al., 2005). However, this study extends past research by utilizing a workshop format commonly used in university counseling.
center work (Boyd et al., 2003; Guinee & Ness, 2000). This increases the external validity of research findings, and reflects an intervention strategy that could be easily replicated. University counseling centers are increasingly focusing on outreach programming as an efficient way to reach out to students, particularly those students who would not otherwise pursue formal counseling (Marks & Laughlin, 2005). In the context of eating disorders prevention, this strategy would enable clinicians to reach a larger number of students than can be reached through individual therapy, while still focusing resources on students with elevated risk.

A focus on self-compassion may help overcome some common problems that emerge in eating disorders prevention. For instance, one complicating factor in designing effective outreach is that the audience is often composed of both women who are symptom-free and women who have subclinical eating or weight concerns (Mann et al., 1997). Statistics indicate that a portion of the latter group may also be in the early stages of developing a full syndrome eating disorder (Striegel-Moore et al., 1989). Prevention programs that focus on giving information about eating disorders, or featuring testimonies of recovered individuals, may alternatively be stigmatizing or triggering for women who are already experiencing some level of concern (Carter, 1997). However, targeting prevention efforts toward higher risk populations (who are likely already experiencing some level of concern) can also be problematic, as individuals may be reluctant to self-identify as having these concerns. A focus on self-compassion bypasses some of these difficulties by addressing an issue that may elevate a person’s eating disorders risk, but one with which women will be more willing to self-identify. Furthermore, because the focus of the workshop content is unrelated to eating or body image, this strategy does not run the risk of influencing participants’ attitudes in a way that increases maladaptive behavior or decreases the likelihood of help-seeking.
The focus of this workshop on a self-attitude rather than on eating or weight concern also lends itself to outreach efforts beyond eating disorders prevention. As self-compassion is thought to be related both to health-promoting behaviors and resilience in the face of difficulty (Neff et al., 2005), training in self-compassion fits well with the emphasis on wellness promotion found in many universities (Hermon & Davis, 2004). Consistent with the nonspecific vulnerability-stressor model (NSVS; Levine & Smolak, 2001), decreasing psychological vulnerability may result in decreased risk for numerous behavioral health problems. As such, a focus on self-compassion could have important implications for other campus initiatives such as suicide prevention or drug abuse prevention.

Limitations and Future Directions

Though this study offers preliminary support for the inclusion of self-compassion in preventative outreach interventions with college women, there are several limitations to consider. The sample, though reasonably diverse, was quite small and may differ in important ways from the larger population of university women. Concerns about this are somewhat reduced by the similarities between this sample and the Study 1 sample. However, the small sample undoubtedly reduced variability in measures and may not have captured the full range of characteristics likely to be found in a larger sample. For instance, participants represented just a few racial/ethnic groups and included fewer young (age 18 and 19) undergraduate students. As these students are often major target populations for outreach interventions (Brinson & Kottler, 1995), future research may intentionally seek to increase representation from these groups. Interestingly, EAT-26 scores for this group were all below the clinical cutoff indicative of disordered eating. This was interpreted as a strength, as preventative programming would ideally focus on individuals who have not yet developed a given disorder. However, given the prevalence of disordered eating among college women, it is likely that a larger sample would
have included a broader range of disordered eating scores, including some representing clinical levels of distress. It would be interesting to learn whether this workshop was more or less helpful (or harmful) for women already experiencing disordered eating symptoms.

In all research designs, there is a tradeoff between internal and external validity. In this study, the aim was to incorporate self-compassion into an outreach activity that could be easily replicated in college counseling centers. Choices involving study design were made favoring external validity. It was important that the participants be “real” workshop attendees participating in a “real” outreach activity. However, this limited the amount of control that could be exercised over study conditions. This tradeoff is evident in the single group pre-post design, which somewhat limits the conclusions that can be drawn from this study. Because there was no control group, it is possible that participants would have increased in self-compassion even without an intervention and it is impossible to conclusively rule out alternative explanations for this change, such as regression toward the mean. Though it seems unlikely that regression toward the mean would account for all of the change observed in these participants, as scores increased even for individuals whose pretest scores were higher than average, future research involving a control group would increase confidence in these results. The collection of data at only two time points also means there is limited information about the trend over time. Data was not collected at follow up in this study because of institutional concerns about privacy and desire not to increase the burden on counseling center clients. However, future research using data collected at three or more time points could help determine whether these gains are maintained over time.

It is also important to recognize that this study did not actually measure changes in disordered eating following the workshop. The decision of which measures to include at each
time point was influenced largely by the limited time available for both content presentation and survey administration (limited to one hour total), and by a desire not to overly burden workshop participants. This decision was also influenced by considering which variables would be likely to show immediate change. As self-compassion was hypothesized as a mediating mechanism and was the focus of workshop content, it made most sense to measure changes in this variable. Disordered eating, on the other hand, is thought to develop over time as a result of numerous factors. Certain behavioral questions on the EAT-26 even specify a reference period of “the past six months.” It therefore seems illogical to assume that responses to these items would change immediately following a one hour intervention. Nevertheless, the characterization of this workshop as “eating disorders prevention” is speculative at this point. Future research should include a measure of disordered eating at follow up in order to determine whether changes in self-compassion actually translate into changes in disordered eating.

**Conclusion**

The two studies described in this research make an important contribution to the literature on the prevention of disordered eating in college women. Although perfectionism has long been known to relate to disordered eating, identifying ways of addressing maladaptive perfectionism in clinical work has been a continued challenge. Results of this study identified self-compassion as an important mechanism linking maladaptive perfectionism and disordered eating and a potential target for intervention. Intervening at the level of self-compassion may have several important benefits over attempts to directly modify perfectionism, and increased levels of self-compassion may relate to lower levels of disordered eating. This may be particularly true in women with low self-esteem. Furthermore, preliminary results indicate that self-compassion can be addressed effectively through an outreach workshop. This highlights self-compassion as a promising focus for future preventative outreach efforts with college women.
APPENDIX A
STUDY 1 INFORMED CONSENT

Purpose of the research study:
The purpose of this study is to examine the experiences, attitudes, and behaviors of college students and how these relate to psychological health.

What you will be asked to do in the study:
If you agree to participate in the study, you will be asked to complete a series of questionnaires related to your attitudes, feelings, and behavior. These questionnaires will be administered online and will take approximately 30-45 minutes to complete.

Time required:
45 minutes

Risks and Benefits:
If you agree to participate in this research, you may experience some minor emotional discomfort in responding to some of the questionnaire items. If your participation in this study raises concerns that you would like to discuss further, please contact the University of Florida Counseling Center at (352) 392-1575 or Student Mental Health Services at (352) 392-1171. It is unlikely that you will benefit directly as a result of your participation in this study. However, the results of this study will be used to better understand college students’ attitudes and behaviors and to develop more effective ways of contributing to college students’ psychological health.

Compensation:
You will not be compensated for participation in this study.

Confidentiality:
Your participation in this research is confidential. Only the principal investigator will have access to your identity and will not maintain any link between you and your responses. If any portion of this research is published, no personally identifying information will be disclosed. To make sure your participation is confidential, only a code number will be included on your survey responses. Your survey results will not influence your academic standing or any university services available to you.

Voluntary participation:
Your participation in this study is completely voluntary. There is no penalty for not participating. Your choice of whether or not to participate will in no way affect your academic standing.

Right to withdraw from the study:
You have the right to withdraw from the study at anytime without consequence. Additionally, you have the right to choose not to answer any of the survey questions.

Whom to contact if you have questions about the study:
Jennifer Stuart, Graduate Student, Department of Psychology, PO Box 112250, University of Florida, Gainesville, FL 32611; phone (727) 204-9070
Kenneth G. Rice, PhD, Department of Psychology, PO Box 112250, University of Florida, Gainesville, FL 32611; phone (352) 273-2119.

**Whom to contact about your rights as a research participant in the study:**
IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 392-0433.

**Agreement:**
I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: ___________________________ Date: ________________

Principal Investigator: ______________________ Date: ________________
Please provide some basic information about yourself by responding to the following items:

1. Please indicate your ethnic/racial background.
   ___ African American/Black
   ___ Asian American/Pacific Islander
   ___ Caucasian/White
   ___ Hispanic/Latino/a
   ___ Native American
   ___ Biracial/Multiracial
   ___ International Student
   ___ Other
   Please describe: _____________________

2. Please indicate your gender.
   ___ Male
   ___ Female
   ___ Transgender

3. Please indicate your sexual orientation.
   ___ Lesbian
   ___ Gay
   ___ Bisexual
   ___ Heterosexual
   ___ Unsure
   ___ Other
   Please describe: _____________________

4. Please choose the phrase that best describes your academic standing.
   ___ First year undergraduate (college freshman)
   ___ Second year undergraduate
   ___ Third year undergraduate
   ___ Fourth year or beyond undergraduate
   ___ Graduate/professional student

5. What is your major or intended major? ____________________________

6. Please indicate your age. _____

7. What is your current height? _____ feet. _____ inches

8. What is your current weight, in pounds? _____ pounds

9. What was your highest adult weight, excluding pregnancy? _____ pounds
10. What would be your ideal weight? ____ pounds

11. Compared to other people your age, how would you rate your level of physical health?
   ___ Very unhealthy (less healthy than most of your peers)
   ___ Somewhat unhealthy
   ___ Average
   ___ Fairly healthy
   ___ Very healthy (one of the healthiest people you know)

12. When was your last visit to a healthcare provider?
   Month: _______ Year: _______

13. Are you a member of an intercollegiate athletic team? ___ yes ___ no

14. Are you a member of a campus Greek organization? ___ yes ___ no

15. Have you ever sought or received treatment for concerns related to eating, weight, or body image? ___ yes ___ no

16. If you responded “yes” to question #13, are you currently receiving treatment for these concerns? ___ yes ___ no

17. What are some characteristics people might use to describe you if they knew you well?

   ___________________     ___________________   ___________________

18. What are some things you feel you do really well?

   ___________________     ___________________   ___________________
**APPENDIX C**
**EATING ATTITUDES TEST - 26**

Please choose one response by checking one response to the right for each of the following statements:

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>ALWAYS</th>
<th>USUALLY</th>
<th>OFTEN</th>
<th>SOMETIMES</th>
<th>RARELY</th>
<th>NEVER</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Am terrified about being overweight.</td>
<td></td>
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<td>2</td>
<td>Avoid eating when I’m hungry</td>
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<td>3</td>
<td>Find myself preoccupied with food</td>
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<td>4</td>
<td>Have gone on eating binges where I feel that I may not be able to stop</td>
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<td>5</td>
<td>Cut my food into small pieces</td>
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<td>6</td>
<td>Aware of the calorie content of the foods that I eat</td>
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<td>7</td>
<td>Particularly avoid food with high carbohydrate content (i.e. bread, rice,</td>
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<td></td>
<td>potatoes, etc.)</td>
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<td>8</td>
<td>Feel that others would prefer if I ate more</td>
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<td>9</td>
<td>Vomit after I have eaten</td>
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<tr>
<td>10</td>
<td>Feel extremely guilty after eating</td>
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<td>11</td>
<td>Am preoccupied with a desire to be thinner</td>
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<td>12</td>
<td>Think about burning up calories when I exercise</td>
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<tr>
<td>13</td>
<td>Other people think that I am too thin</td>
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<td>14</td>
<td>Am preoccupied with the thought of having fat on my body</td>
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<td>15</td>
<td>Take longer than others to eat my meals</td>
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<td>16</td>
<td>Avoid foods with sugar in them</td>
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<td>17</td>
<td>Eat diet foods</td>
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<tr>
<td>Question</td>
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<td>18. Feel that food controls my life</td>
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<td>19. Display self-control around food</td>
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<td>20. Feel that others pressure me to eat</td>
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<td>21. Give too much time and thought to food</td>
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<td>22. Feel uncomfortable after eating sweets</td>
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<td>23. Engage in dieting behavior</td>
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<td>24. Like my stomach to be empty</td>
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<td>25. Have the impulse to vomit after meals</td>
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<td>26. Enjoy trying rich new foods</td>
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In the past six months have you:  

A. Gone on eating binges here you feel you may not be able to stop?   
   (Eating much more than most people would eat under the same circumstances)  
   If you answered yes, how often during the worst week? ________

B. Ever made yourself sick (vomited) to control your weight or shape?  
   If you answered yes, how often during the worst week? ________

C. Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?  
   If you answered yes, how often during the worst week? ________

D. Ever been treated for an eating disorder?  
   If yes, when? __________
APPENDIX D
ALMOST PERFECT SCALE-REVISED

The following items are designed to measure certain attitudes people have toward themselves, their performance, and toward others. It is important that your answers be true and accurate for you. In the space next to the statement, please enter a number from 1 (“strongly disagree”) to 7 (“strongly agree”) to describe your degree of agreement with each item.

<table>
<thead>
<tr>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>SLIGHTLY DISAGREE</th>
<th>NEUTRAL</th>
<th>SLIGHTLY AGREE</th>
<th>AGREE</th>
<th>STRONGLY AGREE</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
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</table>

_____ 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.
_____ 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 am seldom able to meet my own high standards for performance.
_____ 19. I try to do my best at everything I do.
_____ 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.
_____ 24. Using the scale above, please rate the degree to which you agree that you are perfectionistic.
APPENDIX E
SELF-COMPASSION SCALE

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never 1 2 3 4 5 Almost always

1. I’m disapproving and judgmental about my own flaws and inadequacies.
2. When I’m feeling down I tend to obsess and fixate on everything that’s wrong.
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
5. I try to be loving towards myself when I’m feeling emotional pain.
6. When I fail at something important to me I become consumed by feelings of inadequacy.
7. When I’m down and out, I remind myself that there are lots of other people in the world feeling like I am.
8. When times are really difficult, I tend to be tough on myself.
9. When something upsets me I try to keep my emotions in balance.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I’m intolerant and impatient towards those aspects of my personality I don’t like.
12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

14. When something painful happens I try to take a balanced view of the situation.

15. I try to see my failings as part of the human condition.

16. When I see aspects of myself that I don’t like, I get down on myself.

17. When I fail at something important to me I try to keep things in perspective.

18. When I’m really struggling, I tend to feel like other people must be having an easier time of it.

19. I’m kind to myself when I’m experiencing suffering.

20. When something upsets me I get carried away with my feelings.

21. I can be a bit cold-hearted towards myself when I’m experiencing suffering.

22. When I'm feeling down I try to approach my feelings with curiosity and openness.

23. I’m tolerant of my own flaws and inadequacies.

24. When something painful happens I tend to blow the incident out of proportion.

25. When I fail at something that's important to me, I tend to feel alone in my failure.

26. I try to be understanding and patient towards those aspects of my personality I don't like.
APPENDIX F
FREIBURG MINDFULNESS INVENTORY

<table>
<thead>
<tr>
<th>Rarely</th>
<th>Occasionally</th>
<th>Fairly Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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1. ____ I am open to the experience of the present moment.
2. ____ I sense my body, whether eating, cooking, cleaning or talking.
3. ____ When I notice an absence of mind, I gently return to the experience of the here and now.
4. ____ I am able to appreciate myself.
5. ____ I pay attention to what’s behind my actions.
6. ____ I see my mistakes and difficulties without judging them.
7. ____ I feel connected to my experience in the here-and-now.
8. ____ I accept unpleasant experiences.
9. ____ I am friendly to myself when things go wrong.
10. ____ I watch my feelings without getting lost in them.
11. ____ In difficult situations, I can pause without immediately reacting.
12. ____ I experience moments of inner peace and ease, even when things get hectic and stressful.
13. ____ I am impatient with myself and with others.
14. ____ I am able to smile when I notice how I sometimes make life difficult.
APPENDIX G
APPEARANCE SCHEMAS INVENTORY - REVISED

The statements below are beliefs that people may or may not have about their physical appearance and its influence on life. Decide on the extent to which you personally disagree or agree with each statement and enter a number from 1 to 5 in the space on the left. There are no right or wrong answers. Just be truthful about your personal beliefs.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Mostly Disagree</td>
<td>Neither Agree nor Disagree</td>
<td>Mostly Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>1</td>
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   1. I spend little time on my physical appearance.
   2. When I see good-looking people, I wonder about how my own looks measure up.
   3. I try to be as physically attractive as I can be.
   4. I have never paid much attention to what I look like.
   5. I seldom compare my appearance to that of other people I see.
   6. I often check my appearance in a mirror just to make sure I look okay.
   7. When something makes me feel good or bad about my looks, I tend to dwell on it.
   8. If I like how I look on a given day, it’s easy to feel happy about other things.
   9. If somebody had a negative reaction to what I look like, it wouldn’t bother me.
  10. When it comes to my physical appearance, I have high standards.
  11. My physical appearance has had little influence on my life.
  12. Dressing well is not a priority for me.
  13. When I meet people for the first time, I wonder what they think about how I look.
  15. If I dislike how I look on a given day, it’s hard to feel happy about other things.
  16. I fantasize about what it would be like to be better looking than I am.
  17. Before going out, I make sure that I look as good as I possibly can.
  18. What I look like is an important part of who I am.
  19. By controlling my appearance, I can control many of the social and emotional events in my life.
  20. My appearance is responsible for much of what’s happened to me in my life.
Circle the appropriate number for each statement depending on whether you strongly agree, agree, disagree, or strongly disagree with it.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On the whole, I am satisfied with myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. At times I think I am no good at all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I feel that I have a number of good qualities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I feel I do not have much to be proud of.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I certainly feel useless at times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I feel that I’m a person of worth, at least on an equal plane with others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I wish I could have more respect for myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. All in all, I am inclined to feel that I am a failure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I take a positive attitude toward myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is *true* or *false* as it pertains to you personally.

**Circle T if this item is *true* as it pertains to you or F if it is *false* as it pertains to you.**

1. It is sometimes hard for me to go on with my work if I am not encouraged. T F
2. I sometimes feel resentful when I don’t get my way. T F
3. On a few occasions, I have given up doing something because I thought too little of my ability. T F
4. There have been times when I felt like rebelling against people in authority even though I knew they were right. T F
5. No matter who I’m talking to, I’m always a good listener. T F
6. There have been occasions when I took advantage of someone. T F
7. I’m always willing to admit it when I make a mistake. T F
8. I sometimes try to get even rather than forgive and forget. T F
9. I am always courteous, even to people who are disagreeable. T F
10. I have never been irked when people expressed ideas very different from my own. T F
11. There have been times when I was quite jealous of the good fortune of others. T F
12. I am sometimes irritated by people who ask favors of me. T F
13. I have never deliberately said something that hurt someone’s feelings. T F
APPENDIX J
STUDY 2 INFORMED CONSENT

Purpose of the research study:
The purpose of this study is to learn more about students’ attitudes toward themselves.

What you will be asked to do in the study:
If you agree to participate in the study, you will be asked to complete two questionnaires related to your attitudes, feelings, and behavior. One series will be provided now. A second questionnaire will be available at the end of the workshop.

Time required:
10 minutes for each set of questionnaires
20 minutes total

Risks and Benefits:
If you agree to participate in this research, you may experience some minor emotional discomfort in responding to some of the questionnaire items. If your participation in this study raises concerns that you would like to discuss further, please contact Counseling and Consultation at (480) 965-6146.
It is unlikely that you will benefit directly as a result of your participation in this study. However, the results of this study will be used to better understand college students’ attitudes and behaviors and to develop more effective ways of contributing to college students’ psychological health.

Compensation:
You will not be compensated for participation in this study.

Confidentiality:
Your participation in this research is confidential. Only the principal investigator will have access to your identity and will not maintain any link between you and your responses. If any portion of this research is published, no personally identifying information will be disclosed. To make sure your participation is confidential, only a code number will be included on your survey responses. Your survey results will not influence your academic standing or any university services available to you. To protect your privacy, your survey answers will be examined separately from any identifying information, and none of your survey responses will be entered until after the completion of the workshop.

Voluntary participation:
Your participation in this study is completely voluntary. There is no penalty for not participating. Your choice of whether or not to participate will in no way affect your academic standing or your eligibility for services from Counseling and Consultation. Though the study is designed to evaluate the effects of a workshop, your decision whether to participate in the study will not affect your eligibility to participate in the workshop.
Right to withdraw from the study:
You have the right to withdraw from the study at anytime without consequence. Additionally, you have the right to choose not to answer any of the survey questions.

Whom to contact if you have questions about the study:
Jennifer Stuart, Psychology Intern, Counseling and Consultation, PO Box 871012, Arizona State University, Tempe, AZ 85287; phone (727) 204-9070
Kenneth G. Rice, PhD, Department of Psychology, PO Box 112250, University of Florida, Gainesville, FL 32611; phone (352) 273-2119.

Whom to contact about your rights as a research participant in the study:
IRB02 Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 392-0433.

Agreement:
I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.
Participant: ________________________________ Date: ________________
Principal Investigator: ______________________________ Date: ________________
APPENDIX K
STUDY 2 DEMOGRAPHIC QUESTIONNAIRE

We would like to know more about the students who are participating in this study. Please provide some basic information about yourself by responding to the following items:

1. Please indicate your ethnic/racial background.
   ___ African American/Black
   ___ Asian American/Pacific Islander
   ___ Caucasian/White
   ___ Hispanic/Latino/a
   ___ Native American
   ___ Biracial/Multiracial
   ___ Other
   Please describe: ______________________

2. Are you an international student? ______

3. Please indicate your gender.
   ___ Male
   ___ Female
   ___ Transgender

4. Please indicate your sexual orientation.
   ___ Lesbian
   ___ Gay
   ___ Bisexual
   ___ Heterosexual
   ___ Unsure
   ___ Other
   Please describe: ______________________

5. Please choose the phrase that best describes your academic standing.
   ___ First year undergraduate (college freshman)
   ___ Second year undergraduate
   ___ Third year undergraduate
   ___ Fourth year or beyond undergraduate
   ___ Graduate/professional student

6. What is your major or intended major? ____________________________

7. Please indicate your age. ____

8. Compared to other people your age, how would you rate your level of physical health?
   ___ Very unhealthy (less healthy than most of your peers)
   ___ Somewhat unhealthy
___ Average
___ Fairly healthy
___ Very healthy (one of the healthiest people you know)

9. When was your last visit to a healthcare provider?
   Month: _______ Year: _______

10. Are you a member of the honors college? ___ yes ___ no

11. Are you a member of an intercollegiate athletic team? ___ yes ___ no

12. Are you a member of a club sports team? ___ yes ___ no

13. Are you a member of a campus Greek organization? ___ yes ___ no

14. Have you ever sought or received treatment for concerns related to eating, weight, or body image? ___ yes ___ no

15. If you responded “yes” to question #14, are you currently receiving treatment for these concerns? ___ yes ___ no

16. What are some characteristics people might use to describe you if they knew you well?

   ___________________   ___________________   ___________________

16. What are some things you feel you do really well?

   ___________________   ___________________   ___________________
Self-compassion has been linked with happiness, well-being, and an increased ability to cope with stress. Yet most of us are harder on ourselves than we are on others! In this workshop, participants will explore some ways self-criticism keeps them from being as healthy and happy as they would like to be. Participants will learn valuable tools for fostering self-compassion in their everyday lives and quieting that self-critical voice. This workshop is designed to help you build a healthier and more compassionate relationship with yourself.

For more information, please contact: Counseling and Consultation (480) 965-6146
APPENDIX M
SELF-COMPASSION WRITING EXERCISE INSTRUCTIONS

Exercise 1: Identifying Your Inner Critic

- Take a few minutes to write about an issue you have that tends to make you feel inadequate or bad about yourself. Try to focus on just one issue.
- What is it about yourself that you often criticize?
- How does this aspect of yourself make you feel (scared, sad, insecure, angry)?
- What are some things you say to yourself?
- Be honest. No one is going to read this but you.

Exercise 2: Replacing Your Inner Critic

Revisit the issue you wrote about in Exercise 1. Write a paragraph to yourself about this issue, this time from the perspective of a perfectly compassionate, caring friend.

- What would this friend say about your flaw?
- How would your friend convey their caring and compassion to you?
- How would they help you put this in perspective?
- Would they suggest any possible changes? How would they phrase this?
APPENDIX N

SELF COMPASSION MEDITATION INSTRUCTIONS

1. Find a comfortable seated position. Close your eyes. Allow your body to be held by the chair. Notice the bodily sensation of contact with the chair.

2. Relax your abdomen. Notice that your breath is already moving on its own. Follow the breath for a few moments. If other thoughts enter your mind (which they will), just let them pass through.

3. Bring to mind a visual image or a felt sense of someone who embodies the quality of lovingkindness. This can be anyone whom you have unconditional empathy and love for . . . a best friend, a child, or a pet often works well. Imagine that this person is sitting across from you.

4. Now imagine that you are emanating feelings of gratitude and love toward this person. Imagine the emotional connection that exists between you. Maybe try emanating the following wishes on their behalf*:

   May you be safe and free from danger.
   May you be healthy and free from physical suffering.
   May you be happy and free from mental suffering.
   May you live a life of peace and contentment.

5. When your attention wanders, simply return to this image or felt sense of the person and begin again.

*This exercise can be repeated as needed, having participants substitute an image of themselves.

**Notes and Special Instructions:**
When you first begin meditating, generating a feeling of compassion may be difficult. This is why we start with someone you naturally have warm, empathic feelings for. Focusing your breath on your chest, abdomen, and the area around your heart can sometimes help you tune in to your emotions. Once you have practiced this technique using the image of a warm, positive relationship, try also substituting the image of other people – those you have no strong feelings for. Eventually substitute the image of yourself, and practice cultivating empathy and acceptance for your own experience. With repeated practice, it becomes easier to generate these feelings during difficult times.

Adapted from:
APPENDIX O
LIST OF DEFINITIONS AND TERMS

**Disordered Eating:** This term refers to a range of problematic attitudes and behaviors related to food and weight. These attitudes and behaviors exist along a continuum ranging from preoccupation with food, body image, or dieting to full syndrome Anorexia Nervosa, Bulimia Nervosa, or Eating Disorder NOS. For the purpose of this study, disordered eating will be operationalized as elevations on the Eating Attitudes Test (EAT-26; Garner and Garfinkel, 1979). Due to the diagnostic terminology used in much of the existing literature, the terms “eating disorders” and “disordered eating” will be used interchangeably throughout the literature review and discussion.

**Self-compassion:** This term refers to a way of relating to oneself and one’s experience that is characterized by openness and acceptance, as well as a desire to alleviate suffering through self-kindness. For the purpose of this study, self-compassion will be operationalized as scores on the Self-Compassion Scale (SCS; Neff, 2003).

**Mindfulness:** This term refers to a person’s ability to attend to the present moment in a nonjudgmental fashion. Mindfulness, as measured in this study, is thought to consist of interrelated cognitive, process, and attitudinal components. For the purpose of this study, mindfulness will be measured by scores on the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001).

**Maladaptive Perfectionism:** This term refers to components of perfectionism, including harsh self-criticism and perceived discrepancy between standards and performance, that are typically related to problematic outcomes. For the purpose of this study, maladaptive perfectionism will be operationalized as elevations on the “Discrepancy” scale of the Almost Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001).

**Body Image Investment:** This term refers to the relative importance an individual places on body image in self-evaluation. For the purpose of this study, body image investment will be indicated by scores on the Self-Evaluative Salience subscale of the Appearance Schemas Inventory-Revised (ASI-R; Cash, Melnyk, & Herbosky, 2004).
**SELF-ESTEEM:** This term refers to an individual’s evaluation of self. Although some researchers conceptualize self-esteem as a multidimensional construct, in this study self-esteem will refer to global self-appraisals. For the purpose of this study, scores on the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) will be referred to as “self-esteem.”

**SOCIAL DESIRABILITY:** This term refers to a person’s tendency to portray themselves in a favorable fashion, as evidenced by a socially desirable response set. For the purpose of this study, social desirability will refer to scores on an abbreviated form of the Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960; Reynolds, 1982).
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

Jennifer Stuart was born in Springfield, Massachusetts. She completed her bachelor’s degree at Florida Southern College with majors in psychology and special education. She then began graduate coursework at the University of Florida, earning her master’s degree in psychology in 2006. She is currently completing a pre-doctoral internship at Arizona State University’s Counseling and Consultation, and plans to complete her doctoral degree in August 2009. After completing her degree, Jennifer plans to return to Florida and begin working as a postdoctoral associate at the University of Florida Counseling Center. She hopes to contribute to college student mental health and wellness throughout her career.