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Integration of Mindfulness-Based Approaches in the Treatment of Eating Disorders: A Review of the Literature

Kimberly Hubinger
Florida School of Professional Psychology

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Integration of Mindfulness-Based Approaches in the Treatment of Eating Disorders: A
Review of the Literature

Kimberly Hubinger

Florida School of Professional Psychology at National Louis University

Kathie Bates, Ph.D.
Chair

Elizabeth Lane, Ph.D.
Member

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Florida School of Professional Psychology
at National Louis University

CERTIFICATE OF APPROVAL

Clinical Research Project

This is to certify that the Clinical Research Project of

Kimberly Hubinger

has been approved by the
CRP Committee on May 8, 2019
as satisfactory for the CRP requirement
for the Doctorate of Psychology degree
with a major in Clinical Psychology

Examining Committee:

Kathie Bates, Ph.D.

Committee Chair: Kathie, Bates, Ph.D.

Elizabeth Lane, PhD

Member: Elizabeth, Lane, Ph.D.

Abstract

In this literature review, mindfulness-based approaches and the effects mindfulness-based approaches have on the treatment of eating disorders was discussed. Professionals are continually seeking ways to enhance the treatment and improve outcomes when working with individuals suffering from eating disorders, and this literature review could help enhance the understanding of incorporating mindfulness techniques. The findings of this paper are meant to benefit clinicians working with patients diagnosed or struggling with an eating disorder.

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CHAPTER I

It is crucial that mental health professionals search for ways to improve mental health treatment and outcomes, which can especially be true when it comes to working with individuals suffering from eating disorders. The need to examine this area was because there is currently no “go-to” treatment that has been established as effective enough in treating these disorders (Kaye, Bulik, Thornton, Barbarich, & Masters, 2004). Eating disorders are currently described as severe disturbances in eating behavior and include specific disorders listed in the *Diagnostic and Statistical Manual, Fifth Edition (DSM-5; American Psychiatric Association, 2013)*. The spectrum of eating problems ranges from mildly abnormal eating habits to life-threatening chronic diseases. According to the *DSM-5 (2013)*, an eating disorder is characterized by two primary categories: anorexia nervosa and bulimia nervosa. Patients who present with anorexia generally have significant weight loss and maintenance of very low body weight by restricting or purging. Patients who present with bulimia generally exhibit episodes of bingeing and purging. There is also a category of binge eating disorder, which can be primarily described as bingeing without the purging. The development of eating disorders is generally predisposed by developmental, social, and biological processes (Garner, 1993; Treasure & Campbell, 1994). It is imperative that eating disorders receive the proper attention and treatment because compared to other psychiatric illnesses, eating disorders have high levels of mortality, with anorexia having the highest mortality rate of any psychiatric disorder (Sansone, Levitt, & Sansone, 2004).

When comparing individuals with eating disorders versus those without, research has shown a number of deleterious and pervasive psychological trends, including strained interpersonal relationships (Ringer & Crittenden, 2007), difficulty regulating emotions (Whiteside et al., 2007), higher incidence of despondency and anxiety (Doyle, Le Grange,

Goldschmidt, & Wilfley, 2001), and decreases in occupational functioning (McElroy et al., 2011).

According to the National Institute of Mental Health (2014), eating disorders are very complex and generally require a multidisciplinary approach to treatment for the best outcomes. Ideally, the treatment team should consist of a medical doctor, a psychiatrist, a dietitian, and a therapist (Sansone et al., 2004). Both anorexia and bulimia show a peak age of onset during adolescence (Mitchell & Groat, 1984). Anorexia generally occurs at a younger age than bulimia (Madden, Morris, Zurynski, Kohn, & Elliot, 2009). Therefore, a multidisciplinary approach to the treatment of adolescent eating disorders is essential. However, care coordination places a high demand on providers, and limited research on the effects of care coordination on treatment outcomes exists (Madden, Morris, Zurynski, Kohn, & Elliot, 2009).

Gould and Hendrickson (2016) compared weight gain in the first 4 months of outpatient treatment for 171 adolescents (Mean age = 14.54 years) diagnosed with restrictive eating disorders. A full multidisciplinary team treated adolescents either at a single clinic or at multiple locations. Adolescents who received treatment at a single clinic demonstrated more significant weight gain than those treated at multiple locations within the first 4 months of care. These differential outcomes suggest that closer coordination of care enhances early treatment outcomes for adolescents with eating disorders.

As mentioned, an emphasis on the complexity of eating disorders is crucial when considering the highest standard of care. However, many studies on diagnostic comorbidity have involved an insufficient number of subjects, and therefore, have lacked sufficient research to illustrate comorbidity patterns (Kaye et al., 2004). As mental health professionals, it is essential to be aware of the complexity of eating disorders, as they generally do not present as the sole

form of psychopathology (de Graaf, Bijl, Smit, Vollebergh, & Spijker, 2002). Overall, research has suggested that supplementary mental health disorders are underlying variables in eating disorders. Therefore, if an individual is not receiving treatment for the underlying disorders, then the likelihood of receiving treatment for an eating disorder becomes low.

Clients with eating disorders are often vulnerable to developing co-occurring psychiatric conditions, including anxiety disorders such as social phobia and obsessive-compulsive disorder (Kaye et al., 2004) and major depressive disorder (O'Brien & Vincent, 2003). Related to comorbidity between eating disorders and mood and anxiety disorders, more than 50% of patients with eating disorders present with a mood disorder, most often major depression (de Graaf et al., 2002). Research indicated that among all co-occurring psychiatric disorders, major depressive disorder is not only the most prevalent with eating disorders, but is also highly associated with suicidal gestures and attempts (Arcelus, Mitchell, Wales, & Nielson, 2011; Bulik et al., 2008; Godart et al., 2007; Mischoulon et al., 2011; O'Brien & Vincent, 2003).

Forrest, Zuromski, Dodd, and Smith (2017) examined suicidality in 10,123 adolescents and 2,980 adults from two nationally representative surveys. The individuals were administered diagnostic interviews assessing psychopathology and suicidality, as well as retrospectively reported ages of onset. The study found that among adults and adolescents, binge eating disorder was associated with elevated levels of suicidal content including ideation, plans, and attempts, but was not associated with elevated levels of suicidality when adjusted for comorbid psychopathology. Therefore, it is suggested that binge eating disorder, comorbid disorders, and suicidality share common factors and interrelations, and individuals with binge eating disorders and comorbid disorders may be at unusually high risk for suicidal outcomes. Thus, the presence of binge eating disorder in adolescence may serve as a marker for more severe symptomatology

that precedes the occurrence of suicidality (Forrest et al., 2017). Similarly, in a study by Bulik et al. (2008) of 432 people with current or lifetime anorexia (410 female and 22 male), 17% reported at least one suicide attempt. This rate was highest among subjects with the binge eating subtype (29%) and lowest among those with the restricting subtype (7%; Bulik et al., 2008). Results from Bulik et al. were supported by a recent study that found that binge eating disorder was associated with an elevated risk of suicide attempts in a national sample. The high comorbidity and suicide risk indicate severity and complexity associated with binge eating disorder (Welch et al., 2016).

Consistently, studies have found significant comorbidity between eating disorders and anxiety disorders (de Graaf et al., 2002). According to Kaye et al. (2004), the majority of people with anorexia nervosa and bulimia nervosa experience one or more anxiety disorders. Additionally, over one-third of eating disordered patients present with a co-occurring anxiety disorder, with obsessive-compulsive disorder being the most prevalent (de Graaf et al., 2002). Earlier intervention before the onset of comorbidity may reduce the complexity of treatment (de Graaf et al., 2002). King-Kallimanis, Gum, and Kohn (2009) also consistently found significant comorbidity between eating disorders and mood and anxiety disorders in a nationally representative U.S. community sample. They suggested that eating disorders and mood and anxiety disorders have shared pathology (King-Kallimanis et al., 2009).

Although similar underlying pathological elements may explain the presence of the comorbidity of eating disorders and mood and anxiety disorders (Weich et al., 2002), eating problems may also present as symptoms of mood and anxiety disorders, and the eating disorder may be more hidden. They can also present as separate mental disorders or co-occur with other mental disorders. In addition, psychiatric medications may also have an effect by causing or

aggravating eating problems (e.g., Bacaltchuk & Hay, 2003; Hay & Claudino, 2011). Welch et al. (2016) found that individuals diagnosed with binge eating disorder struggled with other eating disorders, major depressive disorder, bipolar disorder, anxiety disorder, and post-traumatic stress disorder over time. Many other comorbid patterns within eating disorders have been found. For example, Dellava, Kendler, and Neale (2011) found that generalized anxiety disorder and anorexia nervosa shared genetic and environmental elements, which may contribute to their high comorbidity. McElroy et al. (2011) found that eating disorders were common among bipolar patients and were related to earlier onset and severity of the bipolar disease. Fornaro et al. (2010) also concluded that bipolar spectrum disorders were associated with eating disorders. Furthermore, treating co-existing personality disorders, which may occur in up to 35% of patients with eating disorders (Sansone et al., 2004), is often necessary for recovery.

To treat co-occurring disorders effectively, it is critical to have nutritional rehabilitation for the eating disorder (Bacaltchuk & Hay, 2003). Although weight gain can account for some benefit, a patient will continue to present with physiologic and cognitive changes for months after achieving goal weight. Therefore, even after goal weight is reached, treatment should continue for at least 3 to 6 months, preferably until there is a continuation of menstrual periods, normalization of caloric needs, and satisfactory remission of pathologic eating and body image distortions (Bacaltchuk & Hay, 2003).

Psychotherapy is focused on long-term results. Fornari and Dancyger (2014) found that 50% of anorexic patients can be treated and successfully recover when treated with traditional psychotherapy as outpatients. Although some pharmacological treatments have been found to aid with short-term weight gain in anorexic patients temporarily, no medications alone were found to have any benefit in long-term follow-ups. Psychotherapy alone is more successful than

medications alone in treating patients with anorexia (Fornari & Dancyger, 2014).

Pharmacological treatments for eating disorders have reliably shown small to moderate effects, whereas evidence-based psychological treatments have demonstrated significant effects.

Combining medication with psychotherapy interventions fails to significantly enhance outcomes (Flament, Bissada, & Spettigue, 2012; Grilo, Reas, & Mitchell, 2016; McElroy, Guerdjikova, Mori, & Keck, 2015). The American Psychological Association guidelines state that psychotropic medications should not be used as the primary treatment for anorexia nervosa, but they can be considered for the prevention of relapse in weight-restored patients or to treat the underlying depression or obsessive-compulsive disorder (APA, 2013).

Brown, Harris, and Eales (1996) studied 404 women living with at least one child in an inner-city area in north London and found that those with eating problems had more unmet mental health needs than those with mood disorders. Although there were some differences in risk factors between eating problems and mood and anxiety disorders, there were many similarities. Based on results, similar basic interventions may be effective against different mood and anxiety disorders as well as eating disorders (Brown et al., 1996).

Kaplan and Noble (2007) noted that the frequency of eating disorder episodes is positively associated with several medical consequences, including bone density loss, gastrointestinal complications, cardiovascular impairment, and chronic pain. Additionally, individuals experiencing health complications related to eating disorders reported frequent hospitalization and requisite outpatient care (Kaplan & Noble, 2007).

There is a contemporary trend for counseling practitioners to demonstrate that interventions with clients are either evidence-based or supported by outcome data. Lenz (2013) noted that the spread of interventions supported by empirical evidence has positive implications

related to well-being and economic status of clients. In an effort to contain costs while providing suitable care to clients, third-party payers are progressively moving toward business models that exclusively reimburse counselors trained in outcome-based interventions. Counselors providing interventions to individuals with co-occurring depression and an eating disorder have reported that the shared symptomology might provide a challenge for encouraging desired therapeutic change across treatment settings (Mischoulon et al., 2011; O'Brien & Vincent, 2003).

The prevalence of associated consequences of eating disorders makes it crucial to evaluate what interventions are associated with desirable treatment outcomes. Cooper and Bailey-Straebler (2015), Fairburn and Wilson (2013), and Lilienfeld et al. (2013) found that when individuals with eating disorders do receive care, most do not receive evidence-based psychotherapy intervention. The number of eating disorder specialist clinicians who report adhering to evidence-based protocols is 6 to 35%, with the majority of clinicians reporting using an eclectic mix of techniques derived from evidence-based psychotherapy interventions as well as other techniques (Waller, 2016). For example, clinicians using an evidence-based psychotherapy intervention for eating disorders, such as cognitive behavioral therapy or family-based treatment, often omit crucial elements of those approaches (Kosmerly, Waller, & Lafrance Robinson, 2015; von Ranson, Wallace, & Stevenson, 2013).

According to Schoenwald, McHugh, and Barlow (2012), there is currently a gap in research and practice resulting in a treatment gap. There are a number of reasons to believe that translation from research to practice and distribution of evidence-based psychotherapy interventions in the field of eating disorders is necessary. Although a substantial body of research supports the idea that differences in outcomes between psychological treatments are minimal and that they all work through common processes (Wampold, Ollendick, & King, 2006), many

randomized control trials have also demonstrated specificity of effects for specific psychological treatments for eating disorder (Kass, Kolko, & Wilfley, 2013; Lock, 2015).

According to the National Comorbidity Survey Replication in the United States, from the World Health Organization, over 9000 individuals answered questions about their treatment including questions about service providers and type of treatment (Demyttenaere et al., 2004). Overall, in this sample, only 32.7% received minimally adequate treatment, which was defined as receiving an intervention that followed evidence-based guidelines for the specific disorder (Demyttenaere et al., 2004). Surveys of over 60,000 adults in 14 countries and found that the proportion of respondents who received treatment for emotional and substance use disorders during the previous 12 months ranged from 0.8% (Nigeria) to 15.3% (United States). These percentages refer to those who received treatment among those in need. “Receiving services” was based on whether respondents had ever seen anyone from a long list of caregivers as outpatient or inpatient for problems with emotions, nerves, mental health, or alcohol and drug use; service and duration were not identified, therefore “received treatment” was vague and could imply minimal contact with someone who has had no training in mental health (Demyttenaere et al., 2004).

Eating disorders are still not considered severe mental illness in some states and countries (Klump, Bulik, Kaye, Treasure, & Tyson, 2009), which further limits access to treatment. Forrest, Smith, and Swanson (2017) found that the majority of persons with eating disorders do not seek eating disorder treatment. Currently, little is known about treatment-seeking barriers or facilitators. Eisenberg, Nicklett, Roeder, and Kirz (2011) found that in eating disorders, about 20% or less of those affected reports receiving treatment. It is essential not only to improve the quality of treatment received by the 20% but also important to make some type of treatment

available to the 80% who are currently receiving nothing. Forrest et al. (2017) examined data from a nationally representative cross-sectional study of 281 U.S. adolescents ages 13-18 who met criteria for lifetime eating disorders. Results suggested that only 20% of adolescents sought eating disorder treatment, with females being 2.2 times more likely to seek treatment than males. Of note, adolescents who met criteria for anorexia nervosa or bulimia nervosa were 2.4 times more likely to seek treatment than adolescents who met criteria for binge eating disorder.

Refinement of the field's knowledge of etiology, prevalence, treatment, and prevention has the potential to facilitate adequate treatment for those suffering from eating disorders (Forrest, Smith, et al., 2017). Drawing from broader psychiatric literature, treatment-seeking barriers often include low mental health literacy, not recognizing symptoms as problematic, shame, and fear of being stigmatized (Forrest, Smith, et al., 2017).

Problem Statement

There is a need for effective treatment of eating disorders, and one area not researched is the area of mindfulness. There is a history of using empirically validated mindfulness-based interventions in clinical settings for the relief of chronic pain, as well as the support of effective emotional regulation (Kabat-Zinn, 2011). However, as it is applied to the prevention and treatment of eating disorders, mindfulness is an emerging area (Kabat-Zinn, 2011). Although the evidence supporting mindfulness techniques in the treatment of eating disorders is not fully established, preliminary estimation of treatment efficacy may inform the research and training practices of mental health professionals and assist them when making clinical judgments.

There has always been a divide between mind and body in Western cultures. However, Western cultures are now beginning to recognize the complex relationship between mind and

body. Mindfulness-based interventions address the unity of the mind and body, and therefore, meet the needs of those suffering from eating disorders (Kabat-Zinn, 2011).

Purpose Statement

Research is needed regarding the use of mindfulness techniques as a way to reduce problematic eating behavior and anxious thoughts in people with eating disorders. Traditionally used therapies for treating eating disorders, such as cognitive behavioral therapy and interpersonal therapy, emphasize thought-based focus and verbal understanding. Mindfulness-based therapy promotes awareness of body-based processes, such as the experience of emotions and physical sensations. Mindfulness therapies likely help individuals recognize the development, manifestation, and treatment of eating disorders.

Mindfulness can be explained as meeting the present moment with full, nonjudgmental attention to one's thoughts, feelings, behavior, and body (Kabat-Zinn, 2003). Although there are many assumed benefits of incorporating mindfulness into therapy, mindfulness has not been researched extensively, and there are many areas for further exploration. One of the most beneficial aspects of mindfulness is that it is one of the least restrictive tools to use in therapy, with few limitations, as most people can carry out mindfulness techniques and benefit from them.

In addition, using mindfulness related to the presence of problematic eating behavior and anxious thoughts in people presenting with eating disorders is an area that needs to be further studied because eating disorders generally do not present as the sole form of psychopathology. Treating the eating disorder without treating the anxiety disorder, mood disorder, or substance abuse makes the treatment of the eating disturbance virtually impossible.

Significance of Literature Review Findings

Professionals are continually seeking ways to enhance treatment and improve outcomes when working with individuals suffering from eating disorders. A literature review can help enhance the understanding of incorporating mindfulness techniques into the treatment of eating disorders. The findings gathered from this literature review would benefit clinicians working with patients diagnosed or struggling with an eating disorder.

Research Questions

- Do mindfulness interventions show promise in the reduction of problematic eating behavior in people with eating disorders?
- Do mindfulness interventions show promise in the reduction of comorbid symptoms of anxiety and depression in people with eating disorders?

CHAPTER II: ETIOLOGY

Anorexia, Bulimia, and Binge Eating Disorder

Ten million Americans struggle with anorexia and bulimia; however, this number is an estimate due to the secretiveness of the disorder (National Eating Disorders Association, n.d.). Instances of eating disorders are steadily increasing. Previously known to affect mainly affluent, young, white females, eating disorders now increasingly affect females and males of all ages, ethnicities, and socioeconomic groups. The majority of individuals with eating disorders do not receive adequate care (National Eating Disorders Association, n.d.).

Approximately 13% of youth will experience at least one eating disorder by age 20 (Stice, Marti, & Rhode, 2013), and a large proportion of youths endorse significantly disordered eating cognitions and behaviors (Culbert, Burt, McGue, Iacono, & Klump, 2009; Jones, Bennett, Olmsted, Lawson, & Rodin, 2001). Also, subthreshold eating disorder syndromes are associated with similar levels of functional impairment and emotional distress as threshold eating disorders (Keel, Brown, Holm-Denoma, & Bodell, 2011; Stice, Marti, & Rhode, 2013).

Eating disorders are severe psychiatric disorders with a complex etiology involving transactions among sociocultural, psychological, and biological influences (Culbert, Racine, & Klump, 2015). Eating disorders are associated with numerous adverse outcomes, including medical complications and disruptions in cognitive, emotional, and social functioning according to the American Psychiatric Association (APA, 2013). Understanding the causes of eating disorders is essential for child and adolescent psychologists and psychiatrists given that mid-to-late adolescence is a peak period of risk for eating disorders and their component symptoms (Abebe, Lien, & von Soest, 2012; Stice, Marti, & Rhode, 2013).

Anorexia nervosa is a life-threatening disorder characterized by symptoms of significant fear of gaining weight, extreme self-evaluation based on weight or shape, distorted body image, and amenorrhea (Kotler & Walsh, 2000). Anorexia has a negative effect on emotional, behavioral, and physical growth and development. The first onset of anorexia is typically in adolescence, and without intervention, it is common for the disorder to be fatal (Kotler & Walsh, 2000).

In comparison, bulimia nervosa is characterized by recurrent episodes of binge eating followed by inappropriate compensatory measures to prevent weight gain (Sharan & Sundar, 2015). Binge eating can be described as a lack of control over eating that results in consuming abnormally large amounts of food in any 2-hour period. Compensatory measures can be described as vomiting, fasting, exercising excessively, and/or abusing laxatives and weight-loss medications. Sociocultural, psychological, biologic, and familial factors contribute to the development of bulimia nervosa. Individuals with bulimia typically possess a self-image that is unduly influenced by body shape and weight (Sharan & Sundar, 2015).

Furthermore, binge eating disorder is characterized by recurrent episodes of binge eating in the absence of regular compensatory behavior such as vomiting or laxative abuse (Sharan & Sundar, 2015). Related features include eating until uncomfortably full, eating when not physically hungry, eating alone, and feelings of depression or guilt. Although it is not limited to obese individuals, it is most common in this group, and those who seek help do so for treatment of being overweight rather than for binge eating.

Although the three aforementioned categories of eating disorders have distinct identifying features, of note, several component symptoms such as weight/shape concerns, dietary restriction, binge eating, and compensatory behaviors are shared across diagnoses (Culbert et al.,

2015). Additionally, binge eating is a defining feature of bulimia nervosa and is a common feature of anorexia nervosa as well (APA, 2013).

Several clinical studies have examined binge eating as a response to hunger, negative affect (i.e., stress, anxiety, and low self-esteem), or a need to dissociate (Fuller-Tyszkiewicz & Mussap, 2008). Other studies have positioned binge eating within a larger cycle of emotional mediation, wherein the binge episode is preceded by negative mood, and the eventual purge functions as an emotional “regulator.” While these studies offer differing hypotheses on binge eating, all suggest that binge eating is emotionally, physiologically, or socially “functional,” facilitating a temporary transition from negative to positive states (Alpers & Tuschén-Caffier, 2001; Lynch, Lazarus, & Cheavens, 2000).

Risk Factors for Eating Disorders

Research highlights the needs to identify factors that contribute to risk for eating pathology and the necessity for early prevention and intervention (Culbert et al., 2015). Current research is limited in determining causes of eating disorders and can most commonly conclude that most factors are correlates of disordered eating and eating disorders, rather than direct causes (Culbert et al., 2015). General variables that are acknowledged as risk factors for the development of disordered eating symptoms include sociocultural influences and personality characteristics. Several physiological and cognitive factors have been identified as correlates of disordered eating symptoms such as estradiol, progesterone, cognitive flexibility, inhibitory control, serotonin disturbances, and currently for anorexia only, dopamine disturbances (Culbert et al., 2015).

Research highlights that although emotions are known to be an influential factor in eating functions, food selection, and amount of food consumption, a clear relationship about what

affects eating behavior has not yet been demonstrated. Emotional eating can be explained as a tendency that occurs in response to some emotion (Sevincer & Konuk, 2013). Signs of physical hunger and emotional hunger are not the same, as emotional eating tends to occur suddenly and does not show the usual physical signs. People tend to eat whatever they find and mostly prefer high-energy foods (Sevincer & Konuk, 2013).

The link between emotions and eating behaviors. Psychosomatic theory assesses eating behavior and emotions, and couples excessive eating with a mistaken awareness of hunger (Canetti, Bachar, & Berry, 2002). Individuals misunderstand their hunger or a feeling of fullness as they eat in response to their emotions. These individuals need various external signals to understand when and how much they should eat because they struggle with correct internal programming stimuli about hunger awareness (Canetti et al., 2002).

Neuropsychological mechanisms between eating and emotions. Among other variables, eating behavior is also regulated by neuropsychological substances such as hormones, neurotransmitters, and metabolic pathways, and hedonic systems that maintain hemostasis (Braet, Claus, Goossens, Moens, et al., 2008). Saper, Chou, and Elmquist (2002) argued that eating systems are regulated by two different systems, homeostasis, and hedonic systems, and that all people would be at their ideal weight if nutrition were regulated only by the homeostatic systems (Nauta, Hospers, & Jansen, 2001).

More specifically, hedonic eating is displayed when a person has an irresistible desire for delicious meals and eats these meals as a result of having great pleasure in eating (Lutter & Nestler, 2009). For those with this eating behavior, enough food and balanced energy and nutrients are not primary reasons for preference. Food preference in people having a tendency for

hedonic eating is generally a response to what appeals to their taste buds and provides pleasure (Johnson, Boles, & Burger, 2014).

It has been argued that people who are dependent on a particular substance or nutritive substance may characteristically suffer from inadequacy of dopamine (Wang, Volkow, & Fowlers, 2002). People with inadequate dopamine tend to make up this deficiency externally to feel happiness, and they tend to be dependent (Yakovenko, Speidel, Chapman, & Dess, 2011). The food preferences of people showing sensitivity to rewards include high-fat foods and desserts. Lutter and Nestler (2009) similarly conducted animal studies that have supported this result. The characteristic of these studies is that the brain's reward system is activated as a result of consuming certain meals (sucrose- and glucose-rich; Adam & Epel, 2007; Gulec Oyekcin & Deveci, 2012). Consuming fat- and sugar-rich mixtures is an eating behavior mechanism that increases secretion of dopamine and opioids (Tan & Chow, 2014).

The effects of emotions on eating behavior. Positive emotional states are generally related to the satisfaction of basic personal needs (e.g., safety, love, social belonging), an effective emotional management (i.e., personal needs and communication skills), increasing accumulation of knowledge, openness to new experiences, showing interest and participating in entertaining activities, adaptability to environmental skills (i.e., human relations, positive attitudes, and behaviors). The positive emotions category includes states such as happiness, gratitude, pleasure, enthusiasm, pride, optimism, a healthy life, and the ability to expressing feelings. Conversely, negative emotions are related to unmet needs, obstacles to achieving goals (disappointment), insufficient emotional management, having a low capacity for being in touch with personal needs and emotions, dysfunctional cognitions (negative thinking), unpleasant situations perceived as threatening (real or imagined danger), losses, traumatic events, penalties,

and limitations. The negative emotions category includes emotional states such as sadness, discouragement, disappointment, anger, unhappiness, depression, regret, despair, loneliness, sense of guilt, sorrow, embarrassment, disgust, envy, fear, anxiety, worry, agitation, stress, and panic (Andries, 2011).

There are various opinions on how emotions affect eating behavior. Disordered eating patterns, such as restricting, compensatory behaviors, or binge eating, are ways of coping with adverse mood states (Fairburn, Cooper, & Shafran, 2003). Binge eating is thought to act as a soothing mechanism in times of distress (Ritvo, & Henderson, 2013).

For example, a study examining to what extent negative emotional states are related to high food intake determined that sad emotional states trigger more intake compared to happy emotional states (Evers, Adriaanse, de Ridder, & de Witt Huberts, 2013). Another study on healthy people with healthy body weight found that positive emotions have an effect that triggers food intake (Racine et al., 2013). Thus, emotional eating is considered to be a source of psychological support in coping with negative emotions. Moreover, having difficulty in describing or perceiving emotions may trigger binge eating attacks (Taitz & Safer, 2012; Whiteside et al., 2007). While people feel their emotions intensely, if they have difficulty in determining what their emotions mean in reality, they may think that they could not cope with their present emotional state. For example, the phrase “I feel myself to be bad” is a more general statement, whereas the sentence “I feel anxious and feel ashamed” expresses feelings in more detail. If people have difficulty in expressing their feelings, they may display avoidance behavior by distracting their attention from an unsettling situation by consuming foods (Taitz & Safer, 2012; Whiteside, Chen, Neighbors, Hunter, et al., 2007).

Another study by Tan & Chow (2014) not only emphasized the role of the hormone cortisol and the reward system of the brain in high-energy food intake but also emphasized the neurological mechanisms on the relationship between stress and eating should be lessened. Moreover, it has also been discussed that the reward system may play a key role in increasing stress-related food intake (Tan & Chow, 2014). A study conducted with 345 young adults without a balanced eating habit found that stress reduces the response-making ability of individuals to hunger-fullness signals and causes a tendency to enhanced emotional eating behavior (van Strien, Cebolla, Etchemendy, Gutierrez-Maldonado, et al., 2013). The disguising hypothesis is another approach to explaining the effect of stress on emotional eating, as it argues that eating can cover negative emotions because it is easier to cope with dissatisfaction caused by being excessively full than to overcome the stress arising from more severe problems (Polivy & Herman, 1999).

Sociocultural and biological risk factors. In general, eating disorders have been found to represent struggles surrounding body image and self-esteem. Cultural norms, family attitudes, and traumatic experiences contribute to body image-related concerns (National Eating Disorders Association, n.d.). Dieting and excessive focus on body image to meet sociocultural pressures serve as a gateway to eating disorders in more than one-third of dieters (National Eating Disorders Association, n.d.).

Krug et al. (2008) suggested that dysfunctional family eating patterns during childhood (i.e., parental preoccupation with food and control) were predictive of eating disorders later in life in a group of 879 individuals referred for assessment of eating disorders, compared with 785 healthy controls. Another study found that in girls younger than 14, maternal history of an eating disorder was associated with a risk of weekly purging at least three times higher than their peers.

For boys, fathers' negative comments about their sons' weight were predictive of the onset of bingeing (Field et al., 2008). Furthermore, in a retrospective study by Taylor, Bryson, Celio Doyle, and Wilfley (2006), family criticism regarding weight, figure, or eating had long-lasting adverse effects in 455 college women with high weight and figure concerns. Wade et al. (2008) supported the hypothesis that anorexia nervosa may represent a family predisposition for a temperament that emphasizes perfectionism, a need for order, and sensitivity to praise and reward.

In terms of additional predictors and comorbidity of eating disorders, surveys of girls in ninth through 12th grade ($N = 4163$) found that those who had been abused by a dating partner were at higher risk for eating disorders, suicidality, and other severe health risk behaviors (Silverman, Raj, Mucci, & Hathaway, 2001). The prevalence of obsessive-compulsive disorder is much higher among patients with eating disorders than the general population (41% versus 2-3%) and appears to precede the onset of eating disorders (Kaye et al., 2004). A similar pattern was found for social phobia (Kaye et al., 2004). Obsessive-compulsive disorder also predicts a tendency for compulsive exercising to control weight and physique (Dalle Grave, Calugi, & Marchesini, 2008).

Of note, Bruch (1982) understood that patients with anorexia were not suffering from loss of appetite, but that these youths were frantically preoccupied with food and eating. She described their need for thinness as a prominent symptom. She saw the eating disorder as an effort to solve personality difficulties and problems of living (Bruch, 1982). Food restriction was viewed as a means to gain control of the self by providing a false sense of security (Ritvo & Henderson, 2013). Bruch (1982) furthermore advocated for separation-individuation and the development of the self in an attempt to help the adolescent with an eating disorder. She also

advocated for establishing a collaborative atmosphere between therapist and patient (Bruch, 1982).

Although research has indicated that the need for thinness may act as a facilitator of eating disorders, overall data suggest that these sociocultural messages regarding the importance of being thin are not internalized by all individuals (Culbert et al., 2015). Individual differences in thin-ideal internalization are due to both genetic and environmental factors. Data also links neural and behavioral plasticity to sociocultural influences. Additionally, personality traits and neurocognitive processes are partially rooted in one's genes and neural circuitry and share etiologic influences with eating pathology. For example, a heritability factor of 50% has been attributed to eating disorders (Wade et al., 2008). Finally, genetic and environmental/nongenetic influences on eating disorders do not operate in isolation. Indeed, environmental experiences (i.e., abuse history) and developmental changes appear to interact with and influence the expression of genetic risk on eating disorders in studies of gene-environment interplay (Culbert et al., 2015). It can be suggested that genetic and neurobiological factors, such as dopamine and serotonin, not only increase risk for features specific to eating disorders such as appetite, eating, and weight, but are more generally associated with high levels of maladaptive personality traits or deficits in neurocognitive processing (Culbert et al., 2015).

CHAPTER III: MINDFULNESS

The goals of treatment for eating disorders are to provide nutrition education, motivate patients to participate in treatment and utilize healthy eating patterns, replace patients' negative thoughts with positive thoughts and feelings about eating, restore patients to their healthy weight, and to treat or detect any mood disorders leading to an eating disorder. One of the main goals of treatment is to prevent long-term relapse (American Psychiatric Association, 2013).

Mindfulness has been traditionally defined as “an understanding of what is occurring before or beyond conceptual and emotional classification about what is or has taken place” (Chiesa, 2013, p. 256). The Buddhist context views the development of mindfulness as not the goal itself, but as a means of reducing suffering and promoting psychological well-being (Chiesa, 2013). Mindfulness is described by meditation practices and can be divided into three types. Focused attention uses a specific attentional object (often the breath) to develop mental stability. Clients are encouraged to return awareness of this attentional object after distractions. Open monitoring practice promotes general awareness of experience without attachment to cognitive or emotional events and reduces habitual or reactive responding. Having kindness and compassion engages emotional systems combined with cognitive systems (Vago & Silbersweig, 2012). Mindfulness can be thought of as purposeful and nonjudgmental attention (Kabat-Zinn, 2003). As Kabat-Zinn (2011) explained, mindfulness is “what arises when you pay attention, on purpose, in the present moment, nonjudgmentally . . . and what arises is nothing more than the awareness itself” (p. 17). Thus, mindfulness involves developing an intentional awareness that is open and accepting, allowing oneself to respond rather than react to situations (Jon Kabat-Zinn, 2011).

Mindfulness-based therapy strengthens the ability to sustain and monitor attention. Studies have found that mindfulness improves executive functioning components such as attention, working memory, and cognitive control (Soamya & Singh, 2014). Mindfulness has also been found to support self-care and enhance resiliency (Chiesa & Serretti, 2009).

There is a growing emphasis on the role of mindfulness as a common factor across the various modalities of psychotherapy (Stewart, 2014). Martin (1997) suggested the role of mindfulness as a common factor in psychotherapy modalities and can be seen as a crucial part specifically in psychoanalysis, cognitive behavior therapy, and person-centered therapy. As integration has become an increased goal of psychotherapy, mindfulness has surfaced as a meeting point that is common to many, if not all, therapies (Stewart, 2014).

For instance, Wachtel (2011) recently pointed out that the goals of psychoanalytic psychotherapy have moved away from insight and expression of unconscious fantasy to the achievement of enhanced awareness of, comfort with, and acceptance of one's complete range of thoughts, emotions, and memories. This shift suggests that the reason mindfulness has emerged as an area of such interest for psychotherapists is that the objectives of mindfulness are, in fact, identical with those goals just mentioned (Stewart, 2014). Mindfulness is considered to be a meeting point or foundation upon which integrative models of therapy can be built (Stewart, 2014).

Given that mindfulness and acceptance are central change processes, an essential component in creating improved psychotherapy would be the incorporation of methods drawn from mindfulness-based and functional contextual models (Stewart, 2014). Mindfulness has demonstrated improved clinical outcomes in diverse patient populations, including healthy persons. Traditionally, cognitive behavior therapy (CBT) has been a popular modality in the

treatment of eating disorders because there is more research promoting this technique. However, there has been increasing interest in the use of mindfulness and acceptance-based therapies in treatment (e.g., Baer, Fischer, & Huss, 2005; Kabat-Zinn, 2003). Mindfulness facilitates observing the body nonjudgmentally and promotes acceptance (Stewart, 2004). Additionally, increasing mindfulness promotes acceptance of the self as an individual and improvements in self-worth and self-compassion. In addition, self-compassion is generalized to common humanity. Common humanity involves viewing personally painful experiences as common human experiences (Stewart, 2004).

Mindfulness and Eating Disorders

Research supports the use of mindfulness-based treatments for eating disorders (Baer et al., 2005), as mindfulness-based therapies have been found useful in the treatment of eating disorder symptoms because they bring awareness to the situation, refocusing the client to respond in a different way to distress (Baer et al., 2005, p. 288).

Specifically, in terms of practicing mindfulness in the form of eating, mindful eating is food consumption driven by appropriate cues for eating. It involves high levels of inhibition related to overeating, awareness of personal eating behavior, and awareness of external cues to eat as well as low emotional responses to eating and lack of engagement in distractive activities while eating (Framson et al., 2009). According to Albers (2011), a mindful eater is one who is “so closely in touch with what is going on inside that you know the exact moment you are satisfied rather than stuffed or starving by learning the why, what, when and how you eat” (Albers, 2011, p. 74).

Other studies have examined the relationships between characteristics of mindfulness and eating disorder symptoms in non-clinical populations. Prowse, Bore, and Dyer (2013)

investigated the relationship between mindfulness and eating disorder symptoms. Several self-report questionnaires were administered online to 411 first-year psychology students from an Australian university. Three hundred nine females and 98 males participated (4 unidentified), ranging in age from 17-57 years with a mean age of 22.5 years. Sixty-eight percent of participants were full-time students, and 4.1% were part-time students. The students participated voluntarily in exchange for course credit and were recruited online via a website used by the university to recruit participants for research projects. They selected the current study from a series of research projects operating concurrently.

The researchers looked at underlying factors including body image, sense of self, identity, and quality of life in college students. The Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) was administered to measure eating disorder symptomatology, and the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004) was administered to measure the participants' self-reported capacity to be mindful. Self-control was assessed with the Self-Control Scale (Tangney, Baumeister, & Boone, 2004) and the Personal Wellbeing Index (PWI, 4th ed.) was utilized to assess personal well-being or quality of life (International Wellbeing Group, 2013). First-year psychology students completed the battery of nine self-report questionnaires ranging from 9 to 36 items designed to take approximately 1 hour to complete. The questionnaires were completed online via the research participation website used.

Results found a relationship between mindfulness skills and acceptance of body image. The results suggested that “observing,” as a mindfulness skill, was related to higher reported eating disorder symptoms. However, the mindfulness skills, “acceptance without judgment” and “action with awareness,” were associated with lower eating disorder symptoms. The study

suggests that those with more eating disorder symptoms were less likely to “act with awareness” and “accept without judgment.” The opposite was also found in the study in that those who were more accepting of their body image performed better on all mindfulness skills, except “observing” (Prowse et al., 2013).

Many of the efforts to improve body image and address disordered eating have focused on increasing body esteem or reducing adherence to thin-ideal standards of beauty through social media literacy. Other approaches attempt to increase body awareness (Breines, Toole, Tu, & Chen, 2014). Psychologist Jean Kristeller developed the mindfulness-based eating awareness training (MB-EAT) program (Kristeller & Hallett, 1999). The MB-EAT program is based on the mindfulness meditation principles applied by Jon Kabat-Zinn. In the MB-EAT program, mindfulness exercises help participants with binge eating disorders and weight issues to become aware of hunger and satiety cues. In a pilot study of the MB-EAT program involving 18 obese women, Kristeller and Hallett (1999) found that a mindfulness approach reduced the number and severity of binge eating episodes, as well as other emotional symptoms.

The average age of participants in the Kristeller and Hallett (1999) study was 46.5 years with a range from 25 to 62. All but one of the participants were white, and they all had graduated high school. Six participants had a bachelor’s degree or higher. The average weight before treatment was 238.94 lbs. ($SD = 34.10$; range: 151-302 lbs.), and an average BMI of 40.33 (range: 28 to 52). None of the participants had previous experience with meditation. Participants were selected from among approximately 50 who responded to advertisements offering a treatment study for women who were overweight and had problems with binge eating. Women were accepted for the study who met criteria for the diagnosis of BED, were not currently in a weight loss program or psychotherapy, and did not have a comorbid disorder

(such as a personality or psychotic disorder). Women taking medication related to weight loss were requested to either discontinue use or to maintain the dose during the study period.

Participants were first screened using the Questionnaire of Eating and Weight Patterns-Revised (QEWP-R; Yanovski, 1993), which assesses the primary characteristics of BED. Participants were weighed and measured to calculate their body mass index (BMI), as a BMI above 27 was required for participation. The Symptom Check List 90-Revised (SCL-90R; Derogatis, 1983) was used to screen for symptoms of psychiatric comorbidity. These measures were collected at the initial screening prior to the group, on the first day of the group, prior to the fourth session of the group, on the last day of the group, and at the 3-week follow-up. The Binge Eating Scale (BES; Gormally, et al., 1982), The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), and the Beck Anxiety Inventory (BAI; Beck, et al., 1988) were used to measure severity of depression and anxiety.

During the study, three treatment groups varied from three to nine participants. Seven sessions were conducted over 6 weeks, with two sessions in the first week that built group cohesion and reinforced meditation practice. The primary focus of treatment was the use of mindfulness meditation in three forms: general mindfulness meditation, eating meditation, and mini-meditations. The primary goal of general mindfulness meditation was to develop focused attention and awareness of the object of that attention, in this case, the breath. The instructions were to simply take note of whatever thoughts, emotions, or bodily sensations arose, returning attention to the breath when the mind wandered from focused attention. This practice teaches individuals to observe the contents of the mind and sensations of the body without judgment and to learn detached awareness (Kabat-Zinn, 1990). Eating meditations applied focused attention more specifically toward the behaviors, beliefs, and emotions associated with food

intake, using guided imagery, but with an emphasis on attaining detached awareness. For mini-meditations, instructions were to take a few moments to stop and become aware of thoughts and feelings at times such as prior to meals or when binge urges occurred. For about 20 minutes at the start of each session, participants discussed progress and difficulties experienced during the previous week.

Overall, considerable changes in behavior and emotional state were observed among the participants in the treatment group. Specifically, the number of reported binges, their intensity, and attitudes toward eating (as measured by the BES) were improved, and depression and anxiety decreased. Although the length of follow-up was quite limited, the reduction in bingeing remained stable over the following 3 weeks. Participants also reported a significant improvement in a sense of mindfulness, perceived control of eating, and awareness of hunger and satiety cues. Furthermore, the pattern of correlations suggests that mindfulness and increased awareness of satiety cues may be particularly important as mediating variables. Bingeing is inherently more a dysfunction of failure to terminate eating than one of initiating eating too frequently, although both may occur. Therefore, becoming more sensitive to satiety signals may be particularly useful for increasing control with binge eating. Participants reported emotional improvement as the pre-treatment levels of anxiety and depression fell from mild to moderate levels to non-clinical levels, on average (Kristeller & Hallett, 1999).

In general, it would be helpful to conduct a similar study with a randomized design, a larger sample, and a longer follow-up. The authors should attempt to assess the benefits of mediation more fully, in a way that separates the formal medication elements from more common treatment aspects such as the standard cognitive-behavioral intervention (Kristeller & Hallett, 1999).

Self-Compassion

Self-compassion can be considered an additional component of mindfulness. Self-compassion is operationally defined as being open to one's perception of failures and inadequacies leading to suffering and responding to them with common humanity (i.e., recognizing that failure is part of being human rather than feeling like the only one with problems), mindful awareness (i.e., taking a balanced perspective on negative events and emotions rather than over-identifying with them), and self-kindness, (i.e., treating oneself kindly rather than being overly judgmental; Neff, 2003a). Higher self-compassion is related to greater body acceptance and appreciation and lower levels of body preoccupation, food and body-related concerns, and body dissatisfaction (Neff, 2003a).

To demonstrate the role of self-compassion, Ferreira, Pinto-Gouveia, and Duarte (2013) examined self-compassion as well as shame and body image dissatisfaction in a study comprised of two samples, individuals with eating disorders (EDs group) and women from the general population. Specifically, the study explored the relationships between self-compassion and central aspects of eating psychopathology, such as shame, body image dissatisfaction, and drive for thinness in women with and without an eating disorder. Participants included 102 female patients with eating disorders with a mean age of 23.62 ($SD = 7.42$) who had 12.49 ($SD = 3.01$) years of education. Their BMI values ranged from 13.32 to 47.33 kg/m^2 ($M = 21.15$; $SD = 6.93$). The specific eating disorders were subdivided as follows: 32.4% of patients presented with anorexia nervosa, 30.4% presented with bulimia nervosa, and 37.2% presented with eating disorder not otherwise specified. The general population sample involved 123 women with a mean age of 23.54 ($SD = 6.89$) who had 12.63 ($SD = 2.55$) years of education, and a mean of

21.95 ($SD = 3.19$) regarding BMI. The two samples did not have significant differences in age, years of education, or BMI.

Self-report measures were used in the study to assess various components related to self-compassion in the face of shame and body-image dissatisfaction. The Self-Compassion Scale (SCS; Neff, 2003b) was used to assess self-compassion (using the subscales self-kindness, common humanity, and mindfulness) and self-critical judgment (comprising the subscales self-judgment, isolation, and over-identification). The Other as Shamer Scale (OAS; Allan et al., 1994) measures external shame, that is, evaluating the perception that others negatively judge the self. The Depression, Anxiety and Stress Scales (DASS-42; Lovibond & Lovibond, 1995) assess depression, anxiety, and stress. The Eating Disorder Inventory (EDI; Garner 2004) assesses weight, shape, eating-related attitudes and behaviors, and psychological characteristics common in eating disordered patients. Finally, the Eating Disorder Examination 16.0D (EDE 16.0D; Fairburn et al., 2008) was also used. All measures were translated into Portuguese versions of the scales. The general population participants voluntarily completed the self-report measures in educational and corporate settings with each institution board's approval. The patients with eating disorders were recruited in Portuguese hospitals after giving their informed consent and after approval by the ethics committee.

Overall, results revealed that higher levels of self-compassion were linked to lower levels of body image dissatisfaction and lower engagement in disordered eating patterns for both groups. On the contrary, a harsh critical attitude toward the self was positively associated with disordered eating and body image dissatisfaction for both groups. The associations were stronger in the eating disorder patient sample in comparison to the general population sample. It was found that feeling inferior by comparison with others was linked to external shame and insecure

striving. Furthermore, these components were linked to higher levels of self-criticism and decreased self-compassion. Self-criticism was positively linked to feeling dissatisfied with one's own body and with a drive for thinness. These findings suggest that having a lower ability to be compassionate toward one's life experiences and suffering is linked to a stronger experience of the self as living negatively in the mind of others and is linked with increased general psychopathology and disordered eating symptomatology. These patterns appear to be even more pronounced for individuals suffering from eating disorder symptoms.

Additionally, results indicated that in patients with eating disorders, the lack of contentment and self-kindness partially explained the link between feelings of dissatisfaction with one's body and the tendency to control it via dieting. In general, lower self-compassion was associated with a higher drive for thinness, dietary restraint, guilt associated with eating foods perceived as unhealthy, bulimic symptomatology, and binge eating (Ferreira et al., 2013). Of note, possible limitations of this study include the use of self-report instruments, which may limit the accuracy of the findings due to subjective reporting without other convergent sources of data. Furthermore, because high levels of anxiety and depression are common in patients with eating disorders and also are closely related to the constructs assessed, such as shame and competition, the absence of attempts to control for these associations is considered to be an important limitation of the study.

Taylor, Daiss, and Krietsch (2015) examined self-compassion and mindfulness and their relationship to eating disorder symptoms in 150 undergraduate college students between 18 and 25 years of age ($M = 19.23$). Eighty-five percent of the participants were females and 55% were first-year students. The average BMI in the sample was 23.02. Twenty-six percent of the sample was overweight or obese. Seventy-four percent of the participants were non-Hispanic White,

12% were Hispanic American, and the remaining participants identified with another racial or ethnic category. All participants had never married and currently lived in a nonfamilial environment.

Participants completed measures of self-compassion, mindful eating, and disordered eating and provided self-reported height and weight. Measures completed included the Self-Compassion Scale-Short Form (SCS-SF; Raes et al., 2011), Mindful Eating Questionnaire (MEQ; Framson et al., 2009), and the Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982). The results found that higher self-compassion predicted lower body mass index and eating disorder symptomatology. Also, higher self-compassion predicted higher mindful eating. The results support the idea that a healthy level of self-compassion may prevent individuals from engaging in disordered eating despite the presence of thoughts and emotional responses related to disordered eating or may reduce the occurrence of these thoughts and feelings. It may be that self-compassionate individuals are more aware of eating disordered thoughts and feelings, approach them with a patient, nonjudgmental attitude, and remind themselves that they are not alone in their suffering (Taylor et al., 2015). This approach may promote individuals' engagement in adaptive coping techniques in response to distressing thoughts and emotions including disordered eating thoughts and emotional responses. Adaptive coping techniques may include engaging in quality social interactions, engaging in various health behaviors, involvement in valued hobbies, and use of stress management strategies. Self-compassion likely promotes dietary flexibility rather than rigid dieting behavior. Self-compassion may also help individuals respond to perceived adverse eating events with nonjudgment, kindness, and future health behavior goal-setting rather than rigid thinking and subsequent self-deprivation motivated dieting. Overall, the findings of this study support the use

of self-compassion mindful eating (SC-ME) training programs on college campuses. These programs would be intended on improving body image, reducing eating disorder symptomatology, decreasing mindless eating, and preventing weight gain (Taylor et al., 2015).

Limitation in this study included the calculation of the BMI from self-reported height and weight, which limits the accuracy of the results. Also, there were an unequal number of females and males included in the study sample and a lack of assessment and control for potentially relevant variables, such as psychopathology, exposure to self-compassion, mindful eating, or other mindfulness-related concepts or training. Additionally, the current study's findings are only generalizable to traditional college students. It may be beneficial to replicate the study in younger or older age groups, in nontraditional college students, or in young adults who are not attending college. The relationships among the current study's variables should also be explored in more diverse samples (Taylor et al., 2015).

Similarly, Webb and Forman (2013) examined 215 undergraduate students aged 18-28 years ($M = 19.81$, $SD = 1.48$) from a large, private university in the Los Angeles, California metropolitan area. Students were recruited through informational flyers posted around campus as well as through the Psychology Department's subject pool. Seventy-eight percent of participants identified as female and approximately 40% of the sample was comprised of college sophomores. The ethnic representation of the sample was: 45.2% European American, 23.5% Latino American, 6.9% African American, 6% Asian American, 12% South Asian American, and 4.6% identifying as other. The mean level of maternal education attained was 15.3 years ($SD = 3.85$) and the median reported annual household income range was \$75,000-\$99,999. The purpose of the study was to test an indirect effect model of the impact of individual differences

in self-compassion on binge eating severity via both emotional tolerance and unconditional self-acceptance pathways.

The students completed self-report measures of the variables of interest. Self-report measures used included a standard demographic questionnaire, the Self-Compassion Scale (SCS; Neff, 2003b), the Emotional Tolerance Scale (ETS; Kenardy et al., 1996), the Emotional Eating Scale (EES; Arnow, Kenardy, & Agras, 1995), Unconditional Self-Acceptance Questionnaire (USAQ, Chamberlain & Haaga, 2001a), and the Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982). Body mass index was calculated from self-reported heights and weights. Results of the study found that both higher unconditional self-acceptance and higher emotional tolerance fully mediated the inverse relationship between self-compassion and binge eating severity in a primarily female nonclinical college student sample. Thus, greater unconditional self-acceptance and emotional distress tolerance explained the relationship between higher self-compassion and lower binge eating symptomatology (Webb & Forman, 2013).

Limitations of the study included the use of a convenience sample. Also, participants mostly represented higher income brackets and were attending a private university on the West coast. Thus, the generalizability of findings to undergraduates enrolling in more economically- and regionally-diverse public institutions warrants future study (Webb & Forman, 2013).

Finally, Adams and Leary (2007) examined self-compassion in 84 female undergraduate students who received experimental credit for an undergraduate psychology course. In a mass testing session, students completed the Revised Rigid Restraint Scale (RRRS; Herman & Polivy, 1980), which measures dietary restraint. Only women who indicated that they were not diabetic, did not have food allergies, and had not been diagnosed with or treated for a clinical eating

disorder within the past three years were selected for participation. Twenty-six women (31% of this sample) reported that they were currently on a diet to lose weight. Body mass indices (BMI) in this sample ranged from 17.8 to 41.1, with a mean of 23.1 ($SD = 3.84$). Participants were randomly assigned to one of three experimental conditions: the preload/self-compassion condition (preload/SC), preload/no self-compassion condition (preload/no-SC), or no preload control condition. Participants in the preload/SC and preload/no-SC conditions ate a set amount of food (preload), whereas participants in the no-preload control group received no food to eat. Later, all participants performed a taste test using candy (which was used as the measure of eating behavior) and completed self-report measures. The preload condition referred to food preload in which doughnuts were selected as the preload because they represent a “forbidden food” for rigidly restrained eaters and should induce guilt among people who feel guilty when eating unhealthily. Participants were asked to eat one doughnut and were given the choice of either a glazed cake (250 calories, 19 grams of fat) or chocolate glazed cake (290 calories, 16 grams of fat) doughnut.

In the study, restrictive eaters were identified as individuals who show a conscious effort to avoid certain “forbidden” foods. These individuals did not overeat following a preload, but they did fail to eat less following the preload. However, highly restrictive eaters who were preloaded and then induced to think self-compassionately about their eating by reacting with kindness and understanding toward oneself when experiencing negative events, ate less candy compared to highly restrictive eaters who were not preloaded. These patterns suggest that because the self-compassion induction reduced negative affect and helped highly restrictive eaters inhibit their food intake after the preload, self-criticism and negative affect related to

eating unhealthy food might be involved in the control, or lack of control, of eating for these people.

Furthermore, results suggest that the paradoxical cycle of rigid dieting and overeating might best be overcome in a paradoxical way (Adams & Leary, 2007). Essentially, helping people to control their eating in a less rigid manner and to react in more adaptive ways to diet failure might promote healthier eating overall. In general, people who treat themselves with compassion when they overeat might be more successful at regulating their eating because they are less motivated to eat as a way to cope with negative self-feelings, which might be particularly true of restrictive eaters. Ironically, people who treat themselves with compassion might be able to remain aware of their goals for healthy eating because they have a “clear head” that is not cluttered with unpleasant thoughts and feelings (Adams & Leary, 2007).

Overall, Adams and Leary (2007) noted that a self-compassion induction might serve as a shield against distress-related eating, such as restricting and body-related negative self-judgments. The authors concluded that using a self-compassion induction or self-compassion training with restrictive eaters may reduce distress-related eating and promote appropriate and adaptive eating behaviors. As with the other studies in this section, these results need to be validated with clinical populations. However, as a whole, studies point to a possible link between self-compassion and eating disorder symptoms.

The Role of Self-Compassion in the Development and Prevention of Eating Disorders

Self-compassion has been shown to predict many aspects of psychological well-being positively, but little research has examined the potential role of self-compassion in the development and prevention of disordered eating behaviors (Croll, Neumark-Sztainer, Story, & Ireland, 2002). Additionally, self-compassion is the most direct link between the treatment of

eating disorders and mindfulness. Self-compassion may represent a useful approach to promoting a healthier body image and eating behavior. It is associated with many positive health outcomes and may protect against various forms of psychopathology including eating disorder symptoms (Ferreira, Matos, Duarte, & Pinto-Gouveia, 2014; Ferreira et al., 2013; Tylka, Russell, & Neal, 2015; Webb & Forman, 2013).

Self-compassion has been conceptualized as an attitude of kindness and acceptance toward one's personal distress and disappointments as well as tending to respond to personal distress and shortcomings with courage, sensitivity, and a desire to alleviate one's suffering (Gilbert, 2005; Neff, 2003b). When individuals endure early experiences of abuse, criticism, or neglect, or have few encounters with warmth and support, they become much more prone toward self-criticism in times of distress, rather than self-compassion. According to Gilbert (1998), this pattern is partly because their threat systems are overactive, and their soothing systems are underactive.

Moreover, self-compassion involves taking an accepting and understanding attitude toward personal mistakes and shortcomings, rather than engaging in harsh self-criticism (Neff, 2003a). Self-compassion has been shown to predict various aspects of well-being and positive psychological functioning, such as increased happiness and optimism (Neff, Kirkpatrick, & Rude, 2007), decreased symptoms of anxiety and depression (Neff, 2003b), increased motivation to improve (Breines & Chen, 2012), and greater relationship satisfaction (Baker & McNulty, 2011).

Compared to self-esteem, a related construct, self-compassion is a stronger predictor of many aspects of adapting functioning, including more realistic self-appraisal, less social comparison, and lower narcissism (Leary, Tate, Adams, Allen, & Hancock, 2007; Neff, 2003b;

Neff et al., 2007; Neff & Vonk, 2009). Self-compassion does not involve making judgments about one's social attractiveness relative to others or relative to a given standard but instead involves embracing perceived imperfections as a part of being human (Neff, 2003a). Due to its emphasis on common humanity, self-compassion should reduce the distress associated with the common experience of failing to meet socially prescribed beauty standards. Prior research shows that self-compassion is negatively associated with two aspects of perfectionism, self-criticism and perceived discrepancy between performance and standard (Neff, 2003b), and reductions in shame have been demonstrated following self-compassion interventions (Gilbert & Procter, 2006).

On a correlational level, self-compassion has been shown to be associated with less appearance-contingent self-esteem (Neff & Vonk, 2009) and lower body concerns and lower eating guilt in college-aged women (Wasylikiw, MacKinnon, & Maclellan, 2012), lower social physique anxiety and objectified body consciousness in young female athletes (Mosewich, Kowalski, Sabiston, Sedgwick, & Tracy, 2011), and lower body image disturbance in breast cancer patients (Przedziecki et al., 2012).

As aforementioned, self-compassion, which involves treating oneself with kindness and understanding when faced with evaluative threats (Neff, 2003a), has been shown to predict multiple aspects of psychological well-being (Neff et al., 2007). However, less attention has been paid to its potential role in body image and eating behavior. In female college student samples, several researchers have found that, when controlling for self-esteem, self-compassion predicted less body and weight preoccupation, less guilt around eating, less binge eating, and a higher drive for thinness (Ferreira et al., 2013; Wasylikiw et al., 2012; Webb & Forman, 2013). Eating disorder patients with higher trait self-compassion also reported less severe eating disorder

pathology (Ferreira et al., 2013). Eating disorder patients might recognize from a logical standpoint that they would benefit from becoming more self-compassionate, but emotionally feel highly fearful of and resistant toward the possibility (Kelly, Vimalakanthan, & Carter, 2014). Exploring, validating, and working through these fears of compassion become central to compassion-focused therapy (Gilbert, 2005, 2010).

Recent empirical research suggested that a focus on helping clients overcome their fear of compassion and learn to relate to themselves more compassionately may be highly beneficial to individuals with eating disorders. Kelly, Carter, Zuroff, and Borairi (2014) measured self-compassion using the 12-item Self-Compassion Scale-Short Form (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011) and fear of self-compassion using the 15-item section of the Fear of Compassion Scale (Gilbert et al., 2012). The authors found that eating disordered patients who, at the start of day hospital or inpatient treatment, had lower levels of self-compassion coupled with higher levels of fear of self-compassion showed no improvements in shame or eating disorder symptoms over 12 weeks compared to individuals with higher levels of self-compassion. This finding suggested that individuals who present with initial deficits in self-compassion may derive less benefit from certain eating disorders treatment programs, especially if self-compassion and fears of compassion are not the specific therapeutic focus (Kelly et al., 2014).

Regarding the Kelly et al. (2014) study, a more desirable sample size would be helpful to examine different outcome variables such as whether participants who are fearful and lower in self-compassion are more likely to drop out of treatment prematurely or more likely to relapse. Also, it is difficult to determine whether fear of self-compassion causes poor treatment outcomes among low self-compassion patients. In a future experimental study, it would be interesting to

examine interventions designed to increase self-compassion and reduce the fear of self-compassion among individuals with eating disorders to examine the impact on eating disorder symptomatology and shame. Finally, these results do not address how fear of self-compassion and self-compassion interact to predict treatment response. Future studies should examine whether changes in shame are longitudinally coupled with changes in eating disorder symptoms over the course of treatment.

Breines et al. (2014) examined the hypothesis that self-compassion for adverse appearance-related events and perceived body flaws would predict healthier eating behavior in college-age women. Ninety-five female undergraduates, ranging in age from 18 to 28 ($M = 20.05$, $SD = 1.84$) participated in the four-day study for course credit. Fifty-two percent of participants were Asian American, 22% European American, 13% Latino American, 1% African American, and 12% identified with other ethnic groups. Participants were informed that the purpose of the study was to learn more about women's day-to-day feelings regarding their physical appearance. Participants received daily emails in the early evening including links to the online survey and were instructed to complete it at the very end of the day, reflecting on their thoughts, feelings, and behavior from that day. Because the total amount of time participants could spend on the study was limited by credit hour restrictions, the study could not exceed a length of 4 days, and therefore shortened versions of scales were used to decrease the amount of time participants would be required to spend on each of the surveys. The study noted that the abbreviation of scales is common in diary studies, as it reduces the burden on participants and the redundancy of similar items.

Daily self-compassion was assessed using an adapted version of the 26-item Self-Compassion Scale (SCS; Neff, 2003b), which asks participants to reflect on how they generally

behave toward themselves in difficult times and includes items capturing self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus overidentification. For the present study, the scale was shortened to 10 items and reworded to reflect feelings regarding negative appearance-related thoughts experienced that day. Daily self-esteem was measured with two items, “good about myself” and “proud,” in response to the prompt “indicate how much each of the following describes your general mood today.” These two items are similar to items from the commonly-used Rosenberg Self-Esteem measure. Disordered eating behaviors were assessed with a scale adapted from Eisenberg and Neumark-Sztainer (2010). The original 14-item scale was shortened and modified, resulting in five items assessing restricted eating and concern with weight gain and four items related to bingeing and purging behavior.

The results of this study suggested that on days when participants reported greater self-compassion, they also reported lower daily disordered eating. To ensure that this relationship was not driven by self-esteem, a second model was created to control for self-esteem. When controlling for self-esteem, self-compassion remained a significant predictor of disordered eating. Self-esteem was not a significant predictor of disordered eating.

In a second study, Breines et al. (2014) assessed appearance-related self-compassion in the context of a laboratory-based reflection on a perceived body flaw. Body shame, anticipated disordered eating, and laboratory-based restrained eating motives were assessed. The study consisted of laboratory-based restrained eating by allowing participants to eat chocolates during a neutral task privately. Participants who did not eat any chocolates or ate at least one chocolate but indicated that they ate less than they wanted then reported the degree to which their restraint was motivated by weight-gain concerns or self-punishment (as opposed to, for example, disliking chocolate).

One hundred fifty-eight female undergraduates ranging in age from 18 to 42 ($M \text{ 1/4} = 20.82$, $SD \text{ 1/4} = 3.86$) participated in the study for course credit. Fifty-seven percent of participants were Asian American, 26% European American, 9% Latino American, 2% African American, and 6% identified with other ethnic groups. Participants were informed that the purpose of the study was to learn more about women's feelings regarding their physical appearance. Sitting in private cubicles, they first identified what they considered to be their biggest appearance-related flaw. Specifically, they read the following instructions:

Please think about something you dislike about your physical body (not facial features). If possible, please try to choose the thing that you feel most badly about or that you consider to be your biggest flaw or source of insecurity (for example, it could be your weight, or the size/shape of a particular body part) (Breines et al., 2014, pg. 438).

Participants were asked to describe this aspect of their appearance and to “describe any experiences which you feel caused, or causes you, to feel negatively about this aspect of your body (e.g., teasing, comments from friends, family members or relationship partners, looking in the mirror, media images, etc.)” (Breines et al., 2014, pg. 438). After completing the body-flaw writing task, participants completed a series of questionnaires on the computer. These questionnaires assessed current appearance-related state self-compassion using the Self Compassion Scale (SCS; Neff, 2003b), and self-esteem using a single item, “I have high self-esteem” (SISE; Robins, Hendin, & Trzesniewski, 2001), in which participants were instructed to respond based on how they were feeling “right now.” Ratings were made on a 7-point scale (1 = *Strongly disagree*, 7 = *Strongly agree*). Body shame was assessed using the Body Shame subscale of McKinley and Hyde's (1996) Objectified Body Consciousness scale, and anticipated disordered eating was assessed using a scale adapted from Eisenberg and Neumark-Sztainer

(2010). Researchers shortened and modified the original 14-item scale, resulting in five items assessing restricted eating and concern with weight gain. Similar to the first study, participants were next allowed to privately consume chocolate candies while completing a neutral word search task. After this task, those who did not eat any of the chocolates or who ate at least one chocolate but indicated that they ate less than they wanted, filled out an additional questionnaire assessing their reasons for restrained eating. Anticipated disordered eating behaviors were assessed using the same scale as study one. This time, the instructions asked participants to predict how often they would behave in each of the following ways in the coming week:

avoided eating when you were hungry, dieted, felt preoccupied with your weight and/or body shape, or about gaining weight, tried to control your weight by eating little or no food, felt aware of the calorie content of foods you ate, rapidly ate a very large amount of food, used laxatives, diuretics [water pills], and/or other suppositories to help control your weight and to lose weight, exercised vigorously and for long periods of time to burn calories or to counteract the effect of eating, and intentionally vomited after eating
(Breines et al., 2014, pg. 436).

Ratings were made on a 5-point scale (1 = *Never*, 5 = *Always*). Toward the end of the study, participants were allowed to privately consume chocolate candies while completing a neutral word search task. The experimenter gave each participant a cup of chocolates, telling participants that the chocolate was to thank them for coming into the lab and that they were welcome to snack on the chocolate while working on a word search for 3 minutes. The purpose of the word search was to give participants time to eat the chocolates. Each cup was filled with 25 foil-wrapped chocolates. Participants were asked not to remove chocolates from the lab, which allowed the authors to ensure that all chocolates removed from the cup were actually consumed

during the session. Wrapped chocolates were used for sanitary purposes, and the particular type of foil used made little noise when opened, decreasing the likelihood that participants might inhibit their eating because they felt self-conscious about other participants or the experimenter hearing them. Experimenters counted the number of remaining chocolates after each session to determine the number of chocolates consumed. Next, as in the first study, participants who did not eat any chocolates or who ate at least one chocolate but indicated having eaten less than they wanted were instructed by the computer program to fill out an additional questionnaire assessing reasons for their restrained eating.

Results of study two suggested that participants who responded to a perceived body flaw in a self-compassionate way were significantly lower in subsequent self-reported body shame and anticipated disordered eating. Among those participants who exhibited restrained eating in a lab-based assessment, participants higher in self-compassion also reported lower weight-gain concern and self-punishment motives for their eating behavior. Body shame mediated the relationship between self-compassion and two measures of disordered eating, anticipated disordered eating and weight-gain concern motives for restrained eating. All results held when controlling for self-esteem (Breines et al., 2014).

Although the study has many strengths, there were several limitations. For instance, although the use of daily reporting reduced retrospective bias, it did not eliminate it because participants still reflected on their day rather than reporting immediate experiences. Additionally, participants completed reports on only four days, limiting the ability to observe within-participant fluctuations in primary measures. Despite the low within-participant variability, however, the authors were still able to observe a significant relationship between within-participant changes in self-compassion and disordered eating. Another limitation is that although

the authors accounted for the influence of a potentially confounding variable, self-esteem, the analyses do not permit causal inferences. Thus, it may be that engaging in disordered eating consequently decreases self-compassion (Breines et al., 2014).

Shame

Several studies have found that shame is one of the most common reasons patients tend not to disclose in therapy, and shame tends to be especially relevant to non-disclosure of psychiatric symptoms (Hook & Andrews, 2005; Swan & Andrews, 2003). Based on compassion-focused therapy (CFT), one would expect a warm, validating therapeutic stance to be especially important to help patients feel less ashamed in their early phase of treatment (Gilbert & Procter, 2006; Gilbert, 2007).

Several studies have established a link between shame and eating disorder symptoms, therefore, suggesting that body shame can be considered a significant contributor to disordered eating (McKinley & Hyde, 1996). More specifically, objectification theory (Fredrickson & Roberts, 1997) asserts that when individuals consistently compare themselves to internalized cultural body ideals that are difficult to attain, they experience emotional consequences such as shame (Monro & Huon, 2005).

Disturbances in body image have been shown to have significant adverse effects on an individual's physical and psychological health and well-being. Body image dissatisfaction has been associated with extreme weight control and eating disorder behaviors such as binge eating, purging, and excessive physical exercise (Stice Marti, Shaw, & O'Neil, 2002). Furthermore, body image dissatisfaction has been linked to depression, anxiety, marital dissatisfaction, and low self-esteem (Friedman, Dixon, Brownell, Whisman, & Wilfley, 1999; Johnson & Wardle, 2005). Consequently, body shame has been identified as one mechanism through which self-

objectification has negative effects and individuals are likely to differ in how they cope with this shame. Coping can be defined as the thoughts and behaviors that individuals use to manage the effects of stressful situations or threatening circumstances (Snyder & Dinoff, 1999).

Taylor and Stanton (2007) presented evidence that coping strategies can operate as both mediators and moderators. That is, coping might operate as a critical mediator between individual differences and situational factors, and psychological and physiological outcomes. Alternatively, coping could operate as a moderator, interacting with individual differences or situational factors to predict various outcomes. Importantly, whereas some types of coping strategies serve to ameliorate stress and support positive functioning (through mediation or moderation), other responses can be self-defeating or maladaptive (Taylor & Stanton, 2007).

Although a substantial body of research has explored the role of a wide range of coping styles and strategies concerning various outcomes, limited research has focused on coping with body image-related distress. According to Cash and colleagues (Cash, 2002; Cash, Santos, & Fleming Williams, 2005), stressful thoughts, feelings, and circumstances fostering body image-related stress can be managed through changes in self-compassion, fear of self-compassion, and shame.

Shame as Applied to Eating Disorders

Studies have found that eating disordered patients have higher levels of self-reported shame than healthy controls (Swan & Andrews, 2003). Additionally, shame has been found to predict eating disturbances among women with a history of an eating disorder (Troop, Allan, Serpell, & Treasure, 2008). Shame is known for its tendency to evoke a “hiding” action tendency, which means it is an emotion that tends to be expressed and shared less directly than others. Early decreases in shame have been shown to predict faster improvements in eating

disorder symptoms (Tangey & Dearing, 2002). Therefore, it may be necessary for therapists to be attuned to potential indicators of shame and to explore the foundation with patients compassionately.

Goss and Gilbert (2002) proposed that symptoms such as restrictive eating, excessive exercising, bingeing, and purging could be viewed as self-protective attempts to regulate underlying feelings of shame. They further suggest that eating disorder symptoms are generally effective at lowering shame in the short-term, but ultimately prolong these feelings (Gilbert, 2005; Goss & Allan, 2009). For example, among individuals with bulimia nervosa, binge-purge symptoms offer a momentary distraction from shame; however, these secretive behaviors ultimately perpetuate the belief that one is different, defective, and/or disgusting in some way (Goss & Allan, 2009; Goss & Gilbert, 2002). In anorexia nervosa, symptoms such as food restriction and excessive exercise yield temporary feelings of pride, which lower shame. However, shame tends to resurface quite quickly as the demands of the self-critical “eating disorder voice” escalate (Goss & Allan, 2009; Goss & Gilbert, 2002).

Essentially, rather than seeking out compassion during times of distress, vulnerable individuals generally hide their experiences from others, whom they expect will be critical; they also tend to attack rather than comfort themselves (Dunkley, Zuroff, & Blankstein, 2003; Mongrain, 1998). This hostile, critical self-to-self relating leads to profound feelings of shame. Eating disorder behaviors such as restricting and purging may arise as a way to self-punish, which perpetuates self-hatred (Gilbert, Clarke, Hempel, Miles, & Irons, 2004). These behaviors may also function to distract the individual from her feelings of shame; however, these associated feelings of relief tend to be temporary, and the nature of these symptoms ultimately amplifies feelings of shame (Goss & Gilbert, 2002; Goss & Allan, 2009).

To demonstrate, Kelly, Carter, and Borairi (2014) examined whether more substantial improvements in shame and self-compassion early in treatment would facilitate faster eating disorder symptom remission over 12 weeks. The study included a sample of 97 eating-disordered patients admitted to the Toronto General Hospital's inpatient or day hospital treatment program between September 2010 and August 2012. Participants were predominantly female (97%) and Caucasian (79.2%), with 4.5% of participants identifying themselves as East Asian, 1.4% as South Asian, 2.8% African-Canadian, 10.8% Latino, and 1.5% as mixed race. The mean age in the sample was 28 years ($SD = 9.6$), and participant ages ranged from 17 to 57 years. All participants were assessed using the Eating Disorder Examination (EDE; Fairburn et al., 2008), and met *DSM-IV-TR* criteria for an eating disorder. The diagnostic breakdown of the sample was 27.2% anorexia nervosa restricting type (AN-R), 18.5% anorexia nervosa binge-purge type (AN-BP), 29.6% bulimia nervosa, and 24.7% eating disorder not otherwise specified. The mean BMI in this sample was 21 ($SD = 5.5$) at admission, and ranged from 12.6 to 44. Of those patients who participated in the study, 27.8% were admitted to the inpatient unit, and 72.2% were admitted to the day hospital.

Both the inpatient and day hospital programs were group-therapy based. Groups in each program were ongoing, with patients entering and leaving at different times. A multidisciplinary team consisting of psychiatrists, psychologists, nurses, dieticians, social workers, and occupational therapists conducted the treatment programs. Treatment goals included medical stabilization, weight restoration in the case of underweight patients, nutritional rehabilitation, and normalized eating through staff-supported meals and snacks, and eradication of binge eating, purging, and excessive exercise. Although the underlying orientation of both programs was cognitive-behavioral, patients attended a variety of manual-based groups on psychoeducation,

relationships and sexuality, expressive arts, anxiety management, dialectical behavior therapy, and cognitive-behavioral therapy. Self-compassion was implicitly encouraged in some of the groups, but there was no group in either program devoted primarily to building self-compassion or reducing shame.

As noted above, the 36-item Eating Disorder Examination-Questionnaire (EDE-Q) was used as a measure of eating disorder symptoms, and the 25-item Experiences of Shame Scale (ESS; Andrews, Qian, & Valentine, 2002) was used to measure shame. Self-compassion was assessed with the 12-item Self-Compassion Scale-Short Form (SCS-SF; Raes et al., 2011).

Patients completed the EDE-Q, ESS, and SCS at intake, and again at weeks 3, 6, 9, and 12. Multilevel modeling revealed that patients who experienced more significant decreases in their level of shame in the first 4 weeks of treatment had faster decreases in their eating disorder symptoms over 12 weeks of treatment. Also, patients who had more significant increases in their level of self-compassion early in treatment had faster decreases in their feelings of shame over 12 weeks, even when controlling for their early change in eating disorder symptoms. The authors concluded that intervening with shame early in treatment and building patients' self-compassion may promote a better eating disorder treatment response and facilitate a more rapid recovery (Kelly, Carter, and Borairi, 2014).

Of note, the Kelly, Carter, and Borairi (2014) study was correlational, making it difficult to draw causal conclusions from the findings. An important next research step would be to manipulate shame and self-compassion in patients with eating disorders to determine the impact on eating disorder pathology. Also, the study investigated only 12 weeks of treatment. In future research, it would be important to determine whether the effects continue beyond this time period. Finally, it is difficult to generalize the results to all patients with eating disorders as the

study examined patients with eating disorders receiving intensive day hospital or inpatient treatment. Thus, participants represented a more severe subset of eating disorder sufferers. To conclude that shame and self-compassion influence treatment response in a less severe eating disorder population, it would be important to replicate results with patients attending weekly outpatient therapy.

In addition, Kelly and Tasca (2016) examined 78 patients with an eating disorder admitted to the Toronto General Hospital's day hospital (72.2%) or inpatient (27.8%) treatment program who completed the SCS, the ESS, and the EDE-Q every 3 weeks across 12 weeks of treatment. Results found that following periods of increased shame, a patient's eating pathology was more severe than usual. Results supported the theory that shame and eating pathology influence one another cyclically within patients over time and suggested that when increases in self-compassion occur this may interrupt the cycle. The authors concluded that assessing and intervening with increases in a patient's level of shame may help to reduce eating pathology, and improving a patient's level of self-compassion or eating disorder symptomology may lower subsequent experiences of shame (Kelly & Tasca, 2016).

Moreover, Kelly, Carter, and Borairi (2014) found that patients who had more substantial improvements in self-compassion in the first 3 weeks of treatment had faster improvements in shame and eating disorder symptoms over 12 weeks. This finding suggests that even when self-compassion is not a direct treatment target, the tendency for patients to become more self-compassionate early in eating disorder treatment may be associated with better outcomes (Kelly et al., 2014).

Shame and Self-Compassion

Several studies have established a link between shame and eating disorder symptoms, supporting Compassion Focused Therapy's hypothesis that shame contributes to the maintenance of psychopathology. Controlling for variables such as guilt, global negative affect, depressive symptoms, and BMI, shame has been found to predict eating disorder pathology in both community (Burney & Irwin, 2000; Hayaki, Friedman, & Brownell, 2002; Sanftner, Barlow, Marschall, & Tangey, 1995) and clinical samples (Kelly & Carter, 2013). By encouraging acceptance of imperfections and reducing body shame, self-compassion may be especially well-suited to counteract appearance-related social pressures that put girls and women at risk for health-damaging disordered eating behaviors.

Mindfulness Techniques for Co-occurring Anxiety and Depressive Disorders

Mindfulness-based therapies seek to decrease the experience of psychological problems such as anxiety, stress, or depression as well as physical problems such as pain (Vollestad, Nielsen, & Nielsen, 2012). Furthermore, the practice of mindfulness can include the use of silence, art, and thoughts (Brown, Marquis, & Guiffrida, 2013). These types of mindfulness activities can be useful in helping people deal with depression, anxiety, or physical problems such as pain and stress (Arkowitz & Lilienfeld, 2014).

One study examined the use of mindfulness behaviors for counselors in training, predicting that mindfulness would have positive effects on their psychological and physical well-being (Christopher et al., 2011). The study involved 16 graduate counseling students in a counseling program, exploring the benefits of training in mindfulness practices, which included meditation and yoga twice per week for 15 weeks. Participants were former masters-level graduate students in mental health counseling, school counseling, and marriage and family

counseling who had taken a course entitled “Mind/Body Medicine and the Art of Self-Care” within the past 2 to 6 years.

During the mind/body class, over 15 weeks, participants were first familiarized with mindfulness and contemplative practices and their relevance for the fields of counseling, psychotherapy, and behavioral medicine. Additionally, participants were provided with practical tools for self-care — approximately one-half of the total number of students in the counseling programs elected to take this course. The course was taught by a core faculty member of a counseling graduate program accredited by the CACREP. The instructor was a licensed counselor, a psychologist, and a certified yoga teacher who had practiced yoga and meditation for more than 25 years. The course included twice-weekly, in-class, 75-minute mindfulness practice using hatha yoga, sitting meditation, conscious relaxation techniques, and qigong (an ancient Chinese practice combining gentle physical movement with meditation). Students were required to practice some form of mindfulness outside of class for at least 45 minutes, 4 times per week. The course also included readings, journal writings, and research on empirical studies of the effects of mindfulness practices. Students were graded on attendance, participation, journal writing, and research presentations.

Sixteen participants were randomly selected from the pool of 54 students who had taken the course in the 5-year period. Data were collected over a 6-month period from 13 female and three male participants ranging in age from the mid-20s to mid-50s with the average length of time since taking the course being 4 years. Specifically, interventions utilized included yoga breathing exercises followed by silence. The students were surveyed pre- and post-semester with 5 open-ended questions designed to explore the following: (a) the impact of stress on counseling students, (b) counseling students' self-assessments of their ability to manage stress, (c) what

counseling students' current efforts were to manage stress, (d) the impact of stress on their practices of counseling, and (e) counseling students' concerns about burn-out (Christopher et al., 2011).

For the follow-up study, telephone interviews of 40 to 75 minutes were conducted with the 16 participants. A semi-structured interview guide was developed based on previous research that identified the type of life domains that were influenced by mindfulness training such as (a) causes of stress, (b) manifestations of stress, (c) importance of maintaining a present-moment orientation, (d) concern about burnout, and (e) hopefulness. At the beginning of the interview, the interviewer read an informed consent statement, and each participant gave verbal consent. All participants responded to the same set of questions in the same order in a telephone interview. The same interviewer conducted all interviews. Participants received no direction on how long their responses should be.

End-of-semester responses yielded the following themes: (a) awareness, (b) acceptance, (c) therapeutic relationship, (d) increased awareness of stress and burnout, and (e) self-compassion. Students reported feeling less anxious and more centered with an ability to relax, be more focused, and be calmer. Through qualitative analysis of students' perceptions of stress, results suggested that students benefited in the areas of personal development and self-care. The study showed that more mindful students were less anxious overall. The study further suggested that mindfulness practice could be beneficial in reducing anxiety (Christopher et al., 2011).

Sharma, Mao, and Sudhir (2012) examined the use of mindfulness-based CBT for the effectiveness in reducing cognitive and somatic anxiety in patients with anxiety disorders. For the study, five clients (four males and one female) with a diagnosis of anxiety disorder were recruited from the outpatient mental health services of National Institute of Mental Health and

Neurosciences with a diagnosis of generalized anxiety disorder and panic disorder. The therapeutic program consisted of approximately 23 sessions for each client over 4 to 6 weeks. The sessions were conducted individually. The specific components of the program were based on the mindfulness-based cognitive (MBCBT) program. They included self-monitoring of anxiety symptoms, education regarding the nature of anxiety and the different components of anxiety, relaxation training through mindfulness meditation, and cognitive restructuring for modifying dysfunctional beliefs. The participants were trained in sitting mindfulness meditation. In addition, specific strategies for handling negative automatic thoughts and worries, such as worry postponement and distraction, and cognitive strategies such as verbal challenging and reattribution were carried out. Each session lasted for approximately 60 minutes. Five sessions were spent on assessment at both starts and end periods, and 18 sessions were for therapy. The results found a significant improvement in pre-test to post-test symptoms of anxiety at the end of the 23 sessions. Anxiety was measured using the Cognitive Somatic Anxiety Questionnaire (CSAQ; Schwartz, Davidson, Goleman, 1978), the Hamilton Anxiety Rating Scale (HARS; Hamilton, 1959), the Penn State Worry Questionnaire (PSWQ; Meyer, et al., 1990), and the Dysfunctional Attitude Scale (DAS; Weismann, 1979). In general, the study provided support for mindfulness as a way to reduce anxiety symptoms (Sharma et al., 2012).

The small sample size is a significant limitation of the present study, as it does not allow for rigorous analysis of data and generalization of results. The inclusion of a control group would have strengthened the study. The absence of a follow-up study is another limitation, as it would provide information on the maintenance of treatment gains. Furthermore, the sample was heterogeneous concerning diagnosis, and a more homogenous sample would have been informative with regard to treatment. Future research should be conducted with larger samples

and follow-up to establish the efficacy of this program. The assessment of functioning and quality of life would further help in understanding the impact of the program on psychosocial outcomes (Sharma et al., 2012).

In support, research conducted at John Hopkins University indicated that daily meditation (20-30 minutes) results in an improvement of symptoms of anxiety and depression without the use of medication (Silverman et al., 2001). Research has also examined mindfulness activities in school settings. Results have found that engaging in mindfulness increases students' focus and lowers stress and anxiety (Holland, 2004). The practice of mindfulness, including techniques such as focusing on the breath, concentration, and cognitive control helps children learn how to regulate their emotions and reduce levels of stress and anxiety (Holland, 2004).

Additionally, Hjeltnes et al. (2017) examined mindfulness-based stress reduction in young adults with social anxiety disorder. The study was conducted on campus at the University of Bergen, Norway. Participants were recruited through self-referrals and referrals from the university mental health counseling center. Information about the study was distributed on posters and announcements on the university website. The students were initially pre-screened through telephone interviews and were subsequently invited to clinical intake interviews to assess suitability for the study. Inclusion criteria were age between 19-25 years, presenting the problem of social anxiety or social anxiety disorder, and motivation for treatment. Exclusion criteria were suicidality, substance dependence, severe mental disorder (i.e., current severe depression, bipolar disorder, or psychosis), self-injurious behavior, and severe trauma history. Treatment completion was defined by attending at least 6 of the 9 classes (8 weekly classes and a 1-day retreat) during the MBSR program, in which eligible patients were assigned to four 8-

week MBSR programs with up to 15 participants. The MSBR program was conducted following the same procedure over 1.5 years.

A total of 45 students completed the MBSR program. The sample consisted of 28 women and 17 men with a mean age of 23.1 years ($SD = 1.42$, range 19-25). Thirty-six students (80%) met Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) criteria for generalized social anxiety disorder, and 9 students (20%) met criteria for specific social anxiety disorder. At the time of participation, they were enrolled in bachelor's and master's programs in the natural sciences, social sciences, legal studies, and the humanities.

Interventions used in the MSBR program were mindfulness meditation, body scan, sitting meditation with awareness, and mindful body movement (e.g., hatha yoga). Social anxiety symptoms were measured using the Social Phobia Scale (SPS; Heimberg et al., 1992) and global psychological distress was measured using the GSI-index of the SCL90R (SLC-90-R; Derogatis, 2010). Additionally, mindfulness was measured using the Five Facet Mindfulness Questionnaire (FFMQ; Dundas et al., 2013), self-compassion was measured using the Self-Compassion Scale (SCS; Neff, 2003a), and self-esteem was measured using the Rosenberg Self-Esteem Scale (RSE; Bjørkvik et al., 2008; Rosenberg, 1965). These measures were assessed at pre-treatment (week 1), mid-treatment (week 5) and post-treatment (week 8). The results found reductions in social anxiety symptoms and global psychological distress in the participants, which were correlated with increases in mindfulness and self-compassion after the program. The results of this study indicated positive outcomes when mindfulness techniques were used as an intervention for young adults with social anxiety disorder (Hjeltnes et al., 2017).

Similarly, Fuchs et al. (2016) evaluated the use of an acceptance and mindfulness-based group for primary care patients with depression and anxiety ($N = 29$). Participants were adult

family medicine patients age 18 years or older, who were fluent in English, and scored greater than five on the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001) and/or Generalized Anxiety Disorder Scale-7 (GAD-7; Spitzer et al., 2006), consistent with minimal or greater depression and/or anxiety symptoms. Providers referred 50 adult family medicine patients to the group, and 29 patients (58% of those referred) attended at least one visit. Slightly more men than women attended the group, and group participants tended to be White and have Medicaid.

Results suggest that an acceptance and mindfulness-based open enrollment group for primary care patients with elevated depression and/or anxiety symptoms is feasible to implement in primary care. Many of the patients who attended the group were enrolled in Medicaid, suggesting that the group reached people who may have limited resources for accessing other services. Based on client report, those who attended more than one visit reported high satisfaction. (Fuchs et al., 2016).

Overall, the study found that depression and anxiety symptoms decreased significantly over the first four sessions attended as exhibited by clinically meaningful changes in the PHQ-9 and GAD-7. Many patients also found the skills presented in the group, such as mindfulness and emotion regulation, to be quite helpful (Fuchs et al., 2016).

Furthermore, Cho, Ryu, Noh, and Lee (2016) examined the effectiveness of daily mindful breathing practices on test anxiety of university students. Students ($N = 233$) who were taking psychology classes at the Yeungnam University in South Korea participated in this study. All participants were given a brief explanation about the study with a written consent form followed by a scale of test anxiety at the end of the class. The authors did not specify which scale was used. Information regarding a small compensation (gift coupon) for the study was provided at the

screening stage. Participants were also informed that the objective of the study was to investigate the relationship between test anxiety and daily mood. Thirty-six highly anxious individuals were invited to participate. Participants were screened using the upper 30th percentile of total scores of test anxiety as 20% to 40% of students suffered from examination-related anxiety. The mean age of participants was 20.1 ($SD = 1.47$) years, and 58.3% ($N = 21$) were female and 41.7% ($N = 15$) were male.

The study focused on three conditions: mindful breathing, cognitive reappraisal, and non-training. Participants completed a series of pre-training measures: Revised Test Anxiety (RTA; Benson & El-Zahhar, 1994) used to measure level of anxiety, the Automatic Thoughts Questionnaire-Positive (ATQ-P; Ingram & Wisnick, 1988) used to measure automatic thoughts, and The Positive And Negative Affect Schedule (PANAS; Watson et al., 1988) used to measure affect.

After completing baseline measures, participants of the MBP completed a mindfulness breathing session while those of the CRP had a cognitive reappraisal session. Each training technique was explained by the licensed clinical psychologist in the first session. The participants of both groups (MBP and CRP) were asked to perform 30 minutes of practice daily for the next week. They were also asked to complete their experiences during the session on the daily worksheet. The participants took a photo of a daily worksheet and sent it to the experimenter using a mobile phone. The experimenter provided feedback daily to encourage them to adhere to their routine. After completing seven sessions (one session at the experiment room and six sessions at home), participants of both groups visited the experiment room and completed post-training measures.

It was found that both mindfulness breathing and cognitive reappraisal practices were effective in reducing test anxiety for undergraduate students. Additionally, mindfulness breathing practice showed increased positive automatic thoughts over time, compared to the cognitive reappraisal practice and control group. As such, the results of the study showed that both mindful breathing practice and cognitive reappraisal practice were successful in reducing test anxiety. However, individuals in the mindful breathing condition scored significantly higher on positive thoughts than cognitive reappraisal (Cho et al., 2016).

Of note, the limitations of the study include a relatively small sample size, so the results of this study would be difficult to generalize to people with test anxiety. Also, the possibility of sampling bias exists because participants knew that some of the respondents could be recruited for an experimental study. Additionally, the recruitment and selection of study participants was largely dependent upon their self-reporting as a measure of test anxiety. In future studies, it will be important to obtain a larger sample size and utilize psychophysiological measures to improve objectivity. Finally, daily mindful practices were introduced to students with high test anxiety, which helped them reduce test anxiety in a potential evaluation environment, but the authors did not intervene in a real testing situation. Therefore, in the future, rigorous criteria should be used when recruiting participants who identify as having a history of test anxiety, and this intervention could be applied in a real test situation (Cho et al., 2016).

Azam et al. (2016) found positive cognitive-emotional outcomes when university students participated in mindfulness meditation. Participants included 71 undergraduate students (43 females, 28 males) from a large public urban university. Of note, this study included a non-clinical population who were not prescreened for symptoms. Individuals participated in weekly mindfulness meditation sessions through the fall and winter semesters of the 2012/2013

academic year. Recruitment was facilitated through in-class announcements and poster-print advertisement. Online and paper surveys elicited self-report data reflecting mental health profile baseline measures. The inclusion criteria for the study were minimal and included individuals currently enrolled in the university (part-time or full-time) who had computer access and/or smartphone access.

The intervention used trained students in “mindfulness of breathing.” Meditation tutorials were held on campus five times weekly and were led by a faculty member and graduate students who were trained and experienced mindfulness meditation practitioners. The tutorials were 1 hour in duration and typically involved 40-45 minutes of guided mindfulness meditation followed by a question-answer period based on participant experiences during and outside of the mindfulness meditation tutorials. Program participation required attendance at one tutorial per week, and participants were encouraged to conduct additional informal, independent mindfulness meditation practice.

Results of the study provided evidence for improvements in mood disturbance and anxiety sensitivity in university students through participation in a mindfulness meditation program. These improvements were measured using the Depressive Experiences Questionnaire (DEQ; Viglione et al., 1995), Profile of Mood States (POMS; Bourgeois, LeUnes, & Meyers, 2010), and the Anxiety Sensitivity Index (ASI; Reiss, Peterson, Gursky, & McNally, 1986). Essentially, the study found that students with high self-critical traits experienced more significant reductions of depressed mood when practicing mindfulness meditation, based on mood states that were measured from baseline to Time 4. Furthermore, the study found that mindfulness meditation practice specifically built on the ability to self-regulate one’s emotions.

The participants with high levels of self-critical tendencies experienced greater mindfulness meditation benefits through reductions in depressed mood (Azam et al., 2016).

In general, research suggests that high levels of trait mindfulness are associated with low levels of depressive symptoms and mood disturbance and high levels of satisfaction with life (Brown & Ryan, 2003; Carlson & Brown, 2005). Tamagawa et al. (2013) attempted to identify the relationship between trait mindfulness and repressive and suppressive emotional styles and to examine the effect of these traits on self-reported psychological health among women with breast cancer. The authors measured repression using the Weinberger Adjustment Inventory (WAI; Weinberger, 1997), suppression using the Courtauld Emotional Control Scale (CECS; Watson & Greer, 1983), mindfulness using the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), mood using the Profile of Mood States (POMS; McNair, Heuchert, & Shilony, 1971), and stress symptoms using the Calgary Symptoms of Stress Inventory (C-SOSI; Carlson & Thomas, 2007). The results suggested that individuals' innate ways to manage negative emotions were associated with the experience of symptoms and aversive moods.

The authors concluded that helping patients develop mindful insights and reduce conscious emotional inhibition may be of benefit for psycho-oncological treatments. In cancer patients with a history of suicidal depression, changes in mood can reactivate a suicidal form of processing, reflected in thoughts revolving around the core beliefs of not being loved, being helpless, and poor distress tolerance (Tamagawa et al., 2013).

Finally, Barnhofer et al. (2015) examined whether training in mindfulness, as a way for patients to “decenter” from negative thinking, could reduce the association between depressive symptoms and suicidal cognitions. The criteria for the trial were as follows: age between 18 and 70 years, a history of at least three previous episodes of depression, meeting *Diagnostic and*

Statistical Manual of Mental Disorders (4th ed., text rev.) criteria for depressive episodes (*DSM-IV-TR*; American Psychiatric Association, 2000), two of which must have occurred within the last 5 years and one within the last 2 years, and being in remission during the previous 8 weeks. Severity of depressive symptoms was measured using the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). Current levels of suicidal cognitions were measured using the Suicidal Cognitions Scale (SCS; Rudd et al., 2001).

The findings were based on data from a recent randomized controlled trial, in which previously suicidal patients were allocated to mindfulness-based cognitive therapy (MBCT), an active control treatment; cognitive psychoeducation (CPE), which did not include any meditation practice; or treatment as usual (TAU). After the end of the treatment phase, the authors compared the associations between depressive symptoms, as assessed through self-reports on the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), and suicidal thinking, as assessed through the Suicidal Cognitions Scale (Rudd et al., 2001). Results suggested that, in patients with a history of suicidal depression, training in mindfulness could help to reduce the association between depressive symptoms and suicidal thinking. These findings suggest that training in mindfulness can reduce susceptibility for relapse to suicidal depression. Furthermore, results found that the participants' suicidal cognitions were less likely to escalate in response to the presence of depressive symptoms following training in mindfulness. Overall, the results suggested that in terms of relapse prevention, mindfulness training could help separate the association between depressive symptoms and suicidal thoughts in individuals who were at risk for suicide (Barnhofer et al., 2015).

CHAPTER IV: CURRENT TREATMENT OF EATING DISORDERS

Some form of psychotherapy, with or without the use of antidepressant medications, is indicated in the treatment of eating disorders. Treatment should be focused on helping patients understand problems leading to the disorder and establish a healthier relationship with food. Examples include CFT, DBT, CBT in individual, group, or family counseling as well as support groups (McIntosh et al., 2007).

Psychotherapy

Compassion-focused therapy. CFT (Gilbert, 2005) can be explained as a transdiagnostic treatment approach focused on building self-compassion and reducing shame. CFT is based on the theory that feelings of shame contribute to the maintenance of psychopathology, whereas self-compassion contributes to the alleviation of shame and psychopathology.

Gilbert (2005) developed CFT for individuals who struggle with high levels of self-criticism and shame. The approach has proven effective at reducing these harmful processes in a wide range of clinical populations (Leaviss & Uttley, 2015). Shame and self-criticism are everyday struggles for individuals with eating disorders (Fennig et al., 2008; Goss & Allan, 2009; Murray & Waller, 2002; Kelly & Carter, 2013; Steele, O'Shea, Murdock, & Wade, 2011; Troop & Renshaw, 2012). CFT may complement and enhance eating disorder treatments (Gale, Gilbert, Read, & Goss, 2012; Goss & Allan, 2012).

Additionally, CFT grew out of research showing that connective relationships are necessary for healthy emotional regulation. Feeling cared about by others allows humans to feel soothed and connected in the face of complicated feelings and situations, and those feelings lessen the individual's sense of threat (Cacioppo, Berston, Sheridan, & McClintock, 2000; Depue & Morrone-Strupinsky, 2005). When individuals have consistent emotional memories of being

cared for and reassured by others, they develop the capacity to generate these caring feelings toward self, and to self-soothe when they are feeling threatened in some way (Gilbert, 2005, 2014). CFT seeks to help self-critical individuals understand the origins, functions, and consequences of their self-denigrating patterns, and to recognize the importance of relating to themselves from a more compassionate standpoint as a way to break these maladaptive cycles (Gilbert, 2005, 2009, 2010).

According to the CFT model, it is only by developing self-compassion that patients can break out of these maladaptive cycles, and take steps toward recovery (Goss & Allan, 2010). Several studies have suggested that interventions designed to build self-compassion may lower eating disorder pathology. Adams and Leary (2007) found that guilty and restrictive eaters who were asked to eat an unhealthy preload and then primed to think self-compassionately about their eating such as the thought that “everyone eats unhealthily sometimes,” had less subsequent disinhibited eating than those who did not receive this prime.

Kelly, Carter, and Borairi (2014) examined the relative contributions of self-compassion and fear of self-compassion to the eating disorder symptoms of 97 female eating-disordered patients and 155 college students. As previously discussed, the Eating Disorder Examination Questionnaire (EDE-Q), Self-Compassion Scale-Short Form (SCS-SF), Fears of Compassion Scale (FCS), and the Rosenberg Self-Esteem Scale (RSE) were used as measures in the study.

Overall, results of the study suggested that low self-compassion may be especially related to the eating disorder pathology of female college students, whereas high fear of self-compassion may be associated with more severe symptoms among individuals with an active eating disorder. Therefore, interventions that focus deficits in self-compassion and fear of self-compassion, such

as compassion-focused therapy and mindfulness-based approaches, may be beneficial in the prevention and treatment of eating disorders (Kelly et al., 2014).

In addition to the positive effects of self-compassion on eating disorders, Gale et al. (2012) tested the effects of introducing CFT into a CBT-based outpatient eating disorders program by integrating CFT into an established CBT group for eating disorders. The study examined 99 people who met the criteria for the eating disorders program and completed the treatment program at Coventry Eating Disorders Service between April 2002 and October 2009. The mean age of participants was 28.01 years ($SD = 8.67$; range = 17-62 years), and there were 95 females and four males. The majority were given a diagnosis of eating disorder not otherwise specified (54.5%, $n = 54$), 19.2% ($n = 19$) were given a primary diagnosis of anorexia nervosa, and 26.3% ($n = 26$) were given a primary diagnosis of bulimia nervosa.

Questionnaires were administered at five different points as part of the treatment program: time one, initial assessment; time two, pre-psychoeducation program, time three, post-psychoeducation/pre-recovery program, time four, at the end of session eight of the recovery program; and time five, at the end of the program. The Eating Disorder Examination Questionnaire (EDE-Q) and Stirling Eating Disorder Scale (SEDS) were designed to assess the cognitive and behavioral symptoms of eating disorders. The Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM) assessed psychological distress related to the past week.

Results of the study found that the combined treatment resulted in significant symptom improvement particularly among patients with bulimia nervosa based on improvements on all of the EDE-Q, SEDS and CORE-OM subscales during the treatment program. Based on the results,

the authors proposed that there is empirical evidence to support the CFT assumption that self-compassion might protect against both shame and eating disorder pathology (Gale et al., 2012).

Finally, Magnus, Kowalski, and McHugh (2010) examined 252 young adult women, ranging in age from 17 to 43 years. Participants were recruited from a fitness center and kinesiology and psychology undergraduate classrooms at a Midwest Canadian university. The average age of participants was 21.9 years of age ($SD = 4.2$). Two-hundred forty-three participants self-identified as White, six as Aboriginal, five as Chinese, two as Filipino, and two as “other.” To take part in this study, participants were required to be regular exercisers, defined as exercising on average for 30 minutes at least 3 times per week for the past 3 weeks. In this study, participants’ self-reported exercise was on average 60.1 minutes per session, 4.3 days per week, for at least 1 year.

The Self-Compassion Scale (SCS; Neff, 2003b), Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), Behavioral Regulations in Exercise Questionnaire (BREQ; Mullan, Markland, & Ingledew, 1997), Goal Orientations in Exercise Measure (GOEM; Petherick & Markland, 2008), Social Physique Anxiety Scale, 9-item version (SPAS; Martin, Rejeski, Leary, McAuley, and Bane, 1997), and Obligatory Exercise Questionnaire (OEQ; Pasman & Thompson, 1988) were used to measure self-compassion, self-esteem, self-determination, goal orientation, social physique anxiety, and obligatory exercise, respectively.

The study provided evidence that self-compassion was related to well-being in the exercise context. Specifically, self-compassion was linked with greater fundamental motivation and with lower levels of external motivation, ego goal orientation, social physique anxiety, and obligatory exercise. In addition, self-compassion explained differences beyond self-esteem in predicting lower levels of ego goal orientation, social physique anxiety, and obligatory exercise.

The authors proposed that the construct of self-compassion promotes a healthy conceptualization of the self for women exercisers. Essentially, the study found that controlling for self-esteem, female exercisers who were higher in self-compassion reported exercising for more genuine reasons such as fun and enjoyment and fewer reasons such as guilt or shame. Those with higher self-compassion also reported less anxiety about their physique and engaged in less compulsive “obligatory exercise.” Thus this study raised the possibility that the development of self-compassion may be potentially important for women who exercise (Magnus et al., 2010).

Emotion regulation. Although research is limited in the area of mindfulness practice in the treatment of eating disorders, dialectical behavior therapy (DBT) is a third-wave CBT that incorporates mindfulness techniques and has shown to be effective in the treatment of eating disorders (Shumlich, 2017). DBT is an intervention approach that integrates mindfulness and acceptance strategies associated with Zen traditions with traditional CBT (Linehan, 1987; Linehan et al., 1999). Given the significant role mood intolerance plays in the onset and maintenance of eating disorders, it is essential for intervention approaches to promote healthy mood tolerance. Therefore, treatment approaches that target mood intolerance, such as DBT, can be of benefit when used with eating disorder pathology (Fairburn et al., 2003).

Emotional regulation in DBT targets mood intolerance, which has been suggested to be a critical factor in the onset and maintenance of eating disorders (Baer et al., 2005). Emotional regulation, which can be facilitated with the use of mindfulness techniques, aids in decreasing mood intolerance in patients with eating disorders. Mood intolerance is described as difficulty managing intense emotional states and is an important factor in inducing the onset and maintenance of eating disorder pathology (Baer et al., 2005).

One model of binge eating suggests that binge eating serves to regulate affect (Polivy & Herman, 1999). The primary hypothesis is that individuals who binge eat have difficulty regulating negative emotions and try to cope with their emotional distress by binge eating. The binge eating temporarily relieves the aversive negative emotional states, thereby reinforcing binge eating. There is a considerable amount of research evidence in support of the affect regulation model of binge eating (Polivy & Herman, 1999). For example, two separate laboratory experiments demonstrated that inducing a negative mood in women with binge eating disorder led to binge eating and that led to a reduction in negative emotional arousal (Telch & Agras, 1996).

DBT practitioners conceptualize eating disorder episodes as attempts to moderate emotions when experiencing emotional dysregulation and nutritional vulnerability caused by caloric deprivation or indulgence (Bankoff, Karpel, Forbes, & Pantalone, 2012). When disordered eating fails to ease intense emotional experiences, these individuals may attempt to intensify this maladaptive strategy as a way to create a sense of homeostasis and the perception of control and belonging. Linehan (1987) suggested three factors that keep maladaptive behaviors, such as disordered eating, among the top of an individual's hierarchy of problem-solving strategies: (a) low distress tolerance, (b) inadequate functional coping resources, and (c) the belief that the maladaptive behavior itself is a viable problem-solving strategy. Counselors working within the DBT model generally view emotional dysregulation as being a result of genetic vulnerability to intense emotional experiences and shaping early experiences in invalidating environments, which tend to be regarded as the core characteristic deficits in an individual's mental health (Feigenbaum, 2007; Linehan, 1987; Linehan et al., 1999).

Generally, eating disorders and associated symptoms of depression are resistant to change and contextually reinforced. DBT counselors propose that through the development of a strong working alliance between counselors and clients characterized by acceptance of clients' current level of functioning and desire for change while learning adaptive coping skills can promote additional well-being and an adoption of a healthy, growth-fostering lifestyle (Feigenbaum, 2007; Linehan, 1987; Salsman & Linehan, 2006). Skills training within the DBT framework focuses on four core areas of coping that develop a client's ability to tolerate subjective distress, regulate emotional responses, increase interpersonal social skills, and increase an individual's capacity to engage in mindfulness practices (Bankoff et al., 2012; Linehan, 1983; Salsman & Linehan, 2006).

Moreover, Arcelus et al. (2011), Godart et al. (2007), and Mischoulon et al. (2011) suggested that when an eating disorder and comorbid depression are present among clients, the risk for suicidal gestures and attempts increases significantly. It may be possible that decreases in comorbid depression symptoms through the implementation of DBT may prevent self-injurious behaviors and lethality among individuals with an eating disorder. This finding is especially encouraging given findings by some researchers (Romano et al., 2002; Walsh et al., 2006) that traditional antidepressant medications may be only marginally effective in treating depression symptoms among individuals with an eating disorder.

Other therapies. Binge eating disorder is also central to bulimia nervosa, so treatment outcome research for binge eating disorder has similarity to that of bulimia nervosa. Specifically, CBT, interpersonal psychotherapy (IPT), and pharmacotherapy have been applied and tested in the treatment of binge eating disorder (Wilfley & Cohen, 1997). Generally, treatments have shown promise, but they do not appear to be effective for as many as half of individuals seeking

treatment. CBT has received the most research attention and is based on the theoretical model that chronic dieting to control weight promotes and maintains binge eating. Therefore, CBT focuses on healthy eating patterns in addition to combating maladaptive beliefs regarding eating and weight.

CBT educates the patient about the disorder, provides continual feedback on weight, caloric intake, and nutrition replaces negative thoughts about food and body image, teaches problem-solving techniques, and teaches replacement coping strategies (McIntosh et al., 2007). CBT involves teaching how to learn physiological cues of hunger and satiation rather than depending on stress-related or external cues. CBT involves self-monitoring of appetite, food intake, cues for problem eating, consequences of such behavior, associated thoughts, and progress in cognitive restructuring and behavior change (McIntosh et al., 2007).

Behavior therapy is better than most psychotherapies alone and has been found much more effective with anorexic patients than nutritional counseling (Pike, Walsh, Vitousek, Wilson, & Bauer, 2003). Behavior therapy sets specific goals and expectations that the patients follow, aiding them in successful weight gain and changing negative attitudes they have about eating (Pike et al., 2003). Patients are usually asked to keep journals of what they are eating and any negative and positive emotional or behavioral attachments to how they ate. Reinforcement is commonly used as a way to improve the rate at which patients are eating correctly and begin to gain weight. The combination of a behavioral program along with feedback resulted in the best outcome for individuals with anorexia (Pike et al., 2003). Yager (1994) found that behavior therapy required less hospitalization and was seen as a superior treatment compared to other psychotherapies studied.

Family psychotherapy. From a family therapy perspective, symptoms of an eating disorder represent an individual's perceived solutions to problems in a family (Yager, 1994). Family therapy is best for patients living at home because the disorder tends to displace stress on other individuals in the family (Yager, 1994). Older patients with anorexia have shown little benefit from family therapy because this therapy places a focus on control issues within the family (Yager, 1994).

A family therapist looks at control issues the anorexic is having with food intake as well as the family's hopelessness regarding facing problems of the disorder (Yager, 1994). Anorectic families tend to overlook marital conflict because attention is focused on the anorexic child, resulting in parents having a stronger tie to the child than each other. The family therapist helps to find a solution to the family problem and enhances family interactions by eliminating focus on anorexia (Killian, 1994).

Additional research by Robinson, Dolhanty, and Greenberg (2015) indicated that family-based therapy (FBT) is regarded as best practice for the treatment of eating disorders in children and adolescents. In FBT, parents play a vital role in bringing their child or adolescent to health. This form of therapy is influenced by strategic and structural family therapy principles and techniques. Parents are empowered to play a pivotal role in their child's recovery (Lock & Le Grange, 2005) while therapists act as consultants to help the family uncover their strengths to fight the eating disorder (Robinson et al., 2015).

This therapy model consists of three phases that span a period of 6 to 12 months (Robinson et al., 2015). The first phase of the treatment model is focused on supporting the parents to promote weight gain in their child, in addition to interrupting symptoms and normalizing eating patterns and food choices. Once the child's weight nears full restoration, the

second phase of treatment is initiated, and the therapist supports the family to return the control over eating to the adolescent. For example, the adolescent may be encouraged to make appropriate food choices more independently, and parents may begin to reduce supervision for one meal or snack at a time. This process continues until the adolescent reaches an age-appropriate level of autonomy around food choices and feeding. It is also in this phase that the therapist and family begin to explore previously suppressed adolescent and family issues outside of the illness. In the third and final phase of treatment, the focus shifts toward the development of adolescent identity, including the need for the family to adjust to the emerging independence of the adolescent (Robinson et al., 2015).

Although many adolescents and their families recover with FBT, a significant minority do not respond adequately to this treatment (Eisler et al., 1997; Lock et al., 2010; Treasure & Russell, 2011). In such cases, it has been found that what is needed is a family-based treatment model that targets emotion processing and emotion regulation skills as much as it does re-feeding and symptom interruption, especially in the early phases of treatment. Therefore, emotion-focused family therapy (EFFT) is a promising model of therapy for those families who require a more intense treatment to bring about recovery of an eating disorder (Eisler et al., 1997; Lock et al., 2010; Treasure & Russell, 2011). This model of treatment, with its strong emphasis on behavioral change, can be very effective in the treatment of children and adolescents with eating disorders (Loeb & Le Grange, 2009). For example, studies examining the outcomes of FBT have shown that between 50 and 75% of adolescents with anorexia are weight restored at the end of treatment. Long-term follow-up studies have also shown that 60-90% of adolescents have fully recovered 4 to 5 years later (Le Grange & Eisler, 2009).

In terms of bulimic presentations, adolescents treated with FBT have been found to have higher rates of abstinence from binge eating and purging at the end of treatment and at 6-month follow up when compared with adolescents treated with supportive psychotherapy (Le Grange, Crosby, Rathouz, & Leventhal, 2007). Recently, this approach has also been adapted to a day hospital program for adolescents with eating disorders and has yielded favorable outcomes (Girz, Lafrance Robinson, Foroughe, Jasper, & Boachie, 2012).

Group psychotherapy. Group therapies typically include a combination of psychotherapies such as psychoeducation and CBT (Yager, 1994). Groups are usually about an hour in length, meeting once per week for about six months to a year. Group members are encouraged to keep diaries of food intake, goals, and feedback. Approximately 70% of patients receiving group therapy complete the group therapy program and most of them report the group aided in their success of treatment for anorexia. Research suggests that for better outcomes in group settings, the patient should be younger, present with less chronic symptoms, be motivated to get better, and have a positive outlook on group therapy. Although studies have shown group therapies to be superior to no therapy for anorexic patients, the success rate varies greatly, and it cannot be concluded that group therapy is superior to other kinds of therapies (Yager, 1994).

Group treatment has particular value in countering the isolation and shame commonly reported among women with an eating disorder, particularly those with binge eating disorders. Women also benefit from a group's ability to increase self-awareness within a relational context that promotes mutual empathy (Yager, 1994). Furthermore, groups provide a unique dynamic interpersonal learning environment for the participants to explore shared concerns and strengthen self-efficacy while reinforcing motivation for change. This process, as explained by Yalom and

Leszcz (2005), allows individuals to challenge their interpersonal distortions and to improve self-awareness within the safety of the group dynamic.

The benefits of group interventions have been cited repeatedly for emotion regulation, body-image acceptance, eating awareness, and overall improved self-care. Both interpersonal psychotherapy (IPT) and cognitive behavioral therapy (CBT) have demonstrated moderate effectiveness for group treatment of binge eating disorder (Safer et al., 2001; Telch, Agras, & Linehan, 2001). Increasingly, studies now support the treatment of binge eating disorder that incorporates mindfulness skills for linking mind and body to improve self-regulation (Kristeller, Wolever, & Sheets, 2013).

Structured inpatient treatment/hospitalization. Inpatient treatments are best used for patients who have severe symptoms of anorexia (Latzer & Stein, 2012). Because patients are maintained in hospitalization for months, this treatment should be used for patients who need extreme weight restoration and are not likely to benefit from taking the responsibility into their own hands during treatment through psychosocial therapies (Latzer & Stein, 2012). The patient is hospitalized, usually for several months, in hopes of restoring the patient to a healthy weight and replacing any negative views of food with healthy eating patterns (Fornari & Dancyger, 2014). Patients' time spent at hospitals includes very structured schedules and strict goals (Latzer, & Stein, 2012).

Hospitalized patients are rewarded for good eating patterns and are regularly weighed in and given specific goals for weight gain (Fornari & Dancyger, 2014). For patients with mild forms of anorexia, studies show little benefit of hospitalization over other psychotherapies (Fornari & Dancyger, 2014).

Of note, Lievers et al. (2009) suggested that inpatient treatment of anorexia nervosa in adolescents did not significantly modify core anorexic thoughts and perceptions, which may explain the high relapse rates. Lievers et al. analyzed structured clinical charts of 300 consecutive hospitalizations for anorexia nervosa in a specialized eating disorder unit. The sample included patients ages from 12 to 22 years old. The factors related to the patient and events occurring during the stay were investigated as possible predictors of the individual's length of stay, with an average length of stay being 135 days. Overall, the study revealed that duration of anorexia nervosa at admission, use of tube feeding during the stay, and the accomplishment of therapeutic weight were significantly related to the length of stay (Lievers et al., 2009).

Additionally, changes in core beliefs may be crucial for recovery and prevention of relapse in anorexia nervosa at this critical age (Lievers et al., 2009), which implies the need for the development of better treatment strategies to focus on the gap between disturbed thoughts and distorted perceptions and reality. These gaps are generally considered to be among the core aspects of anorexia nervosa and likely impact physical recovery during and after the weight restoration phase.

Fennig et al. (2017) examined changes in patients' core perceptions and thoughts during the weight restoration phase of inpatient treatment for adolescents with anorexia nervosa. The study examined 44 adolescents with anorexia nervosa consecutively admitted from 2009-2012 to an inpatient pediatric-psychiatric unit specializing in eating disorders. The program consisted of a complete inpatient intervention combining weight restoration using structured, supervised meals with individual and group cognitive-behavioral therapy, parental training/family intervention, and educational activities. This program was then followed by a halfway day-

treatment, weight-stabilizing phase, and a progressive reintroduction to the community. The Fenning et al. study focused on changes from hospital admission to discharge in patients' responses to self-report questionnaires on eating disorder symptoms, depression, anxiety, and suicidal ideation using the Eating Disorder Inventory Version 2 (EDI-2; Garner, Olmsted, Polivy, 1983), Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Cooper 1993), Beck Depression Inventory, version IA (BDI-IA; Beck & Steer 1993), and the Screen for Child Anxiety-Related Emotional Disorders (SCARED; Birmaher, Khetarpal, Brent, et al., 1997).

Overall, there were no significant changes in core anorexic thoughts and perceptions as body dissatisfaction, drive for thinness, weight concern, and shape concern were noted.

However, a reduction in the general severity of eating disorder symptoms (including reduced restraint and eating concern) was observed, mainly related to the treatment structure. Levels of depression significantly decreased but continued to remain within the pathological range. The study also found a concerning increase in suicidal ideation that was not correlated with an associated increase in depressive symptomatology, but the authors did not discuss possible reasons for this increase. The study generally concluded that inpatient treatment of anorexia nervosa in adolescents did not significantly modify core anorexic thoughts and perceptions, which again, may explain the high relapse rates. Changes in core beliefs may be crucial for recovery and prevention of relapse in anorexia nervosa at this critical age (Fennig et al., 2017).

Support/self-help groups. Facilitated or self-help support groups can be a helpful psychosocial adjunct for coping with eating disorders or obesity issues (*"The Twelve Steps,"* 1990). Overeaters Anonymous (*"The Twelve Steps,"* 1990), which includes a 12-step approach involving a higher power, is another option for clients who are open to considering spiritual meaning in treatment.

Overeaters Anonymous is a self-help group program available to men and women who meet for treatment of compulsive eating (Overeaters Anonymous, 2001). The only requirement for membership is the desire to stop compulsive eating. The group does not consist of professional therapists but only help and support from a 12-step self-help group for compulsive eating, which is based on personal experience. The program was started in 1960 by members who failed in treatment for overeating, and it has thousands of members worldwide. Abstinence from overeating is the basic principle of Overeaters Anonymous and members admit their failure to control overeating and believe in the idea that a higher power can help the individual to eat healthily. The Overeaters Anonymous program supports the individual effort to deal with the physical and emotional problems associated with overeating, but it also encourages individuals to seek help from a physician or dietitian. The anonymity enables the group to handle itself by principles and not the personality of the facilitator, and members enjoy privacy and anonymity (Overeaters Anonymous, 2001). The OA program adopted the 12 steps used for the treatment of alcohol addiction. The program involves a weekly meeting and work with a personal sponsor with his or her own personal experience who follows up with the members and guides them. Contact with a sponsor is on a daily basis and involves dealing with personal crises, successes, and failures.

During the past 30 years, there has been an accumulation of knowledge on group treatment and processes, and group treatment is superior to individual treatment in some studies (Flores, 1997). Flores (1997) found that group therapy for dealing with compulsive eating improved the emotional problems of depression and anxiety that were associated with this disorder. This result is presumably due to the feeling that other people can help with depression and anxiety and one is not alone in the process. Members of the group reported that mutual help

and support increased their hope and optimism in the ability to handle this addiction and changed their outlook on life (Flores, 1997).

Weinstein, Zlatkas, and Gingis (2015) investigated a group of 60 women who participated in the Compulsive Eating Anonymous self-help group using the 12-step program to handle compulsive eating. The study examined the effects of a self-help group for compulsive eating on measures of anxiety, depression, self-efficacy, and food addiction in groups assessed at three-time points: the beginning of treatment, after 1 year, and after 5 years of treatment. Measures used included a demographic questionnaire, The Yale Food Addiction Scale (YFAS; Gearhardt et al., 2009), State Trait Anxiety Inventory, (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996), and a Self-Efficacy Questionnaire (SE; Ben-Sira, 1985).

The participants were recruited to the study by a research psychologist. Sixty women participated in this study and ranged in age from 40 years to 65 years old (average age = 52 years, 7 months; $SD = 7.61$ years). A third of the participants ($n = 21$) were at the beginning of the OA program, a third ($n = 17$) had been receiving treatment for 1 year, and a third ($n = 22$) had been receiving treatment for 5 years or more. Participants reported that they were not using drugs or alcohol nor were they diagnosed with psychiatric disorders according to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (American Psychiatric Association, 2013).

The results indicated that group support for dealing with compulsive eating improved the emotional problems of depression and anxiety that were associated with this disorder. This improvement in emotional problems of depression and anxiety is presumably due to the belief that other people can help with depression and anxiety and one is not alone in the process.

Results showed that measures of anxiety and depression were lower in participants at the end of the program compared with the beginning of the program. Members of the group reported that mutual help and support increased their hope and optimism in the ability to handle this addiction and changed their outlook on life. Self-efficacy also improved in the participants after 1 year of the program, but not in the group who had been in the program for 5 years. However, measures of food addiction and self-efficacy were not lower in participants after 1 year and 5 years of the program compared with the beginning of the program. This can be explained by the evidence that food addiction, like other behavioral and drug addictions, is a chronic relapsing condition. The everyday struggle to lose weight and maintain it somehow diminishes one's self-confidence and belief that he or she can control food intake and commit to being on a regular diet (Weinstein et al., 2015).

Internet treatment. A study examining participation in an Internet eating disorder prevention program ("Student Bodies"), which included an 8-week, cognitive-behavioral psychoeducational online program that focused on body image dissatisfaction in 209 college-age women (Manwaring et al., 2008). Participants were expected to review previously gathered content, read new material introduced weekly, and complete accompanying assignments, which included participating in the online discussion board, self-monitoring, and/or writing entries in their personal journal or body image journal. Participants received weekly emails and/or phone calls to reinforce participation, particularly for those who were not meeting expectations for study participation. Based on scores on the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994), the study found a significant reduction in predisposing beliefs and behaviors posttreatment, thus showing promise for reducing the development of eating disorders in high-risk groups (Manwaring et al., 2008).

McCormack and Coulson (2009) described the advantages and disadvantages in online treatment for patients with eating disorders. Advantages of computer-mediated support groups include 24/7 access at a time convenient for the individual without needing to consider work, travel time, or family commitments. The internet provides the advantages of not being confined to a limited period of time, which is often the case with face-to-face therapy. Additionally, only a small proportion of individuals in a crisis choose to participate in support groups. Reasons could include practical problems such as transportation to and from group or feeling unease in a group setting. As such, computer-mediated support groups have the potential to serve individuals who are unable or unwilling to participate in traditional face-to-face group settings. In particular, individuals with stigmatizing disorders or who wish to discuss sensitive or “taboo” issues may find computer-based groups more welcoming due to the anonymity they provide. These groups may also facilitate access to a more heterogeneous mix of people in terms of views, opinions, and experiences due to the unlimited number of participants and coverage across the globe. Furthermore, the pressure for immediate response is reduced, allowing reluctant members to gain support by reading messages without responding until they feel comfortable and can directly request and provide support (McCormack & Coulson, 2009).

Although internet treatment appears to have great benefits, it is important to note the disadvantages of engaging in this treatment. McCormack and Coulson (2009) noted the disadvantages of internet treatment to include requiring the individual to have access to a computer and the internet, and being able to read, write, and use a computer. Also, there is little control over who may participate in the group, because essentially anyone who has access to the internet can potentially participate and post messages. This anonymity leads to the possibility of members acting on inaccurate and potentially dangerous information, and messages may be

easily misinterpreted due to the absence of visual and aural cues. Practitioners, patients, and families should be aware that some Internet sites (e.g., pro-anorexia “communities”) reinforce the sociocultural messages that contribute to eating disorders by glamorizing body images of eating disordered patients (Taylor & Jones, 2007).

Nutritional Counseling

The primary goal of anorexia treatment is for the patient to restore a healthy weight, so nutritional counseling may be a superior treatment choice for patients with anorexia (Albers, 2011). Nutritional counseling generally works best with patients who are highly motivated to get treatment, who have good relationships with therapists and family, and who have very cooperating families (Albers, 2011). Because most individuals with anorexia are not usually willing to seek treatment, this type of therapy is successful in treating only a small portion of patients with anorexia (Albers, 2011).

To gain a better understanding of nutritional counseling, Hsu, Holben, and West (1992) described a nutritional counseling program that consists of 16 outpatient sessions conducted over a 14-week period. The program explained that in the first 2 weeks, the sessions were held two times per week. After that, the sessions were held weekly. Each session lasted about one hour and was conducted by a registered dietitian. Treatment was conducted according to a written manual, and each session was audiotaped to monitor “fidelity.” The patient was required to complete a daily food log during the 14 weeks of treatment. It was required that the patient record all intake, including those of a binge.

A dietitian reviewed the previous week’s food log at each session and gave suggestions for improvement in monitoring content and amount of intake. The patient was praised for efforts at monitoring intake. Weight was monitored at the 6th, 10th, and 14th weeks. Any deviation of

more than three pounds was discussed concerning the possible reasons, and strategies for adherence to meal plans were suggested. At each session, the patient was given one or more articles to read as her homework assignment. The dietitian then discussed these articles with her at each subsequent session.

In this program, the dietitian administers the Nutritional Achievement Test and Food Choice Inventory (National Dairy Council, 1985a) at week 1 and again at week 14. "Buying My Food" (pretest) (National Dairy Council, 1985a) is given at week 7 and "Buying My Food" (posttest) at week 9. Cognitive therapy was generally a separate treatment condition in the study; therefore, the dietitian did not use specific cognitive behavioral techniques in nutritional counseling, except to tell the patient to eat slowly and to avoid situations where binge foods were abundant. If the dietitian was asked by the patient for advice on how to avoid bingeing, all she was allowed to say was, "Well, we will work on your eating pattern so that you will eat enough and eat regularly. We believe that when a good eating pattern is established, your urges will decrease. Give it some time" (Hsu et al., 1992, pg. 58).

Based on examination of the program, Hsu et al. (1992) concluded that the success or failure of any treatment approach generally depends on many factors, but for nutritional counseling, two issues may significantly affect its outcome. First, patients often claim that they have enough nutritional knowledge and so do not see the need for more nutritional counseling. However, their nutritional knowledge is often related to how they can diet to lose weight rather than how they can maintain healthy eating behavior. Therefore, an educational approach reemphasizing the value of nutritional counseling may be helpful to resistant patients while focusing on their denial of nutritional needs. Overall they concluded that this approach tends to be met with a favorable response and good compliance with the program. In general,

improvement in eating behavior was usually accompanied by a marked improvement in mood, eating attitudes, and cognitive functioning as compared to pretest and posttest. Second, good nutritional knowledge may not automatically lead to healthy eating behavior. Therefore, Hsu et al. (1992) emphasized the practical aspects of day-to-day implementation of the program such as meal planning and food shopping, as well as implementation in more anxiety-provoking situations such as eating in restaurants. The reported improvement in mood, eating attitudes, and cognitive functioning indicated this approach was effective in bringing about a regular eating pattern and a decrease in bulimic behavior. Of note, the authors emphasized that improvement in eating behavior is usually accompanied by a marked improvement in mood, eating attitudes, and cognitive functioning (Hsu et al.,1992).

Pharmacological Treatments

Pollice, Kaye, Greeno, & Weltzin, (1997) compared depression, anxiety, obsessionality, and core eating disorder symptoms in patients with anorexia, when underweight, and again at several stages of weight restoration. A consistent pattern was found across all symptom areas in that depression, anxiety, and obsessive compulsiveness were most severe in the underweight stage. The symptoms were reduced after short term weight restoration and even more so after further weight restoration. Symptoms were assessed using the Hamilton Depression Rating Scale (HDRS; Hamilton, 1960) and Beck Depression Inventory (BDI; Beck et al., 1961) to assess depression, the Spielberger State-Trait Inventory (SSTI; Spielberger, Gorsuch, & Lushene, 1970) and Hamilton Anxiety Rating Scale (Hamilton, 1959) to assess anxiety, the Yale-Brown Obsessive Compulsive Scale (YBOCS; Goodman; et al., 1989) to assess obsessions and compulsions. In general, nutrition management is an essential component to be incorporated with medication treatment. However, focusing on nutrition is not enough and utilizing a

multidisciplinary treatment approach becomes essential. Most patients are able to gain weight in a structured eating disorder treatment program without the use of medication. Weight gain alone tends to reduce dysfunctional thoughts related to weight gain and mood difficulties in most patients (Pollice, Kaye, Greeno, & Weltzin, 1997).

As noted earlier, studies have suggested the similar underlying pathological elements may explain the presence of comorbidity of eating disorders and other psychological diagnoses (Bacaltchuk & Hay, 2003). However, eating disorders can also present as separate mental disorders or co-occur with other mental disorders. In addition, psychiatric medications may also cause or aggravate eating problems (Bacaltchuk & Hay, 2003).

Although there are many components to the treatment of anorexia, treatment in inpatient units, with or without medication, is successful in restoring the weight in the majority of underweight patients. However, relapse within one year of successful inpatient weight restoration is very common (Halmi, 1980). A challenge in the use of pharmacotherapy in anorexia is that usually medications are given in combination with other therapies, which makes it difficult to understand the benefit of using pharmacological treatment alone (Halmi, 1980). Another difficulty is that the primary measure for improvement is usually weight gain, not necessarily an improvement in the cognitive aspect of the disorder (Halmi, 1980).

Research has studied classes of drugs such as antipsychotics, mood stabilizers, appetite enhancers, antidepressants, pro-kinetic agents, and nutritional supplements in aiding with the effects of anorexia (Kotler & Walsh, 2000). Research has suggested that the symptoms of anorexia tend to be resistant to pharmacological treatments alone. Medications are more likely to be used as relapse prevention rather than the treatment itself for anorexia because there have

been no clear benefits found from using medications alone during the disorder (Kotler & Walsh, 2000).

Chlorpromazine. Research has indicated that chlorpromazine has been found beneficial in aiding anorexia nervosa and bulimia nervosa patients with short-term weight gain, but was accompanied by severe side effects such as increased purging behaviors and seizures (Kotler & Walsh, 2000). Specifically, the authors noted that Chlorpromazine, pimozide, and sulpiride have been examined in the treatment of patients with anorexia nervosa. Chlorpromazine led to short-term weight gain, but also produced significant side effects including seizures and increased purging behavior, and did not produce sustained weight gain on longer-term follow-up. Therefore, Chlorpromazine was helpful with short-term weight gain, however, had no effect on patients maintaining the weight on a later follow-up (Kotler & Walsh, 2000).

Pimozide and sulpiride. Studies of patients on pimozide and sulpiride have found pimozide to be successful in helping patients gain weight but did not affect patients' eating views and habits. Sulpiride is not superior to placebo in helping patients with anorexia in any way (Kotler & Walsh, 2000). It is important to note that in anorexia nervosa, it is thought that the patient likely becomes addicted to the fasting that he or she is experiencing with it (Luby, Marrazzi, & Kinzie, 1987). Using an opiate antagonist such as Pimozide or Sulpiride blocks the benefits people experience with the fasting.

Antidepressants. In bulimia, antidepressants can be helpful. Selective serotonin reuptake inhibitors are usually the first line of treatment, as they tend to be very effective with low risk of side effects. However, Wellbutrin increases the likelihood of convulsions. Although an anticonvulsant may be helpful, the side effects make adding this drug a poor choice (Luby et al., 1987).

Studies have suggested that tricyclic antidepressants also are effective (Hughes, Wells, Cunningham, & Ilstrup, 1986). Monoamine oxidase inhibitors were also found to be effective in decreasing the bingeing and vomiting in patients with bulimia nervosa (Hughes, Wells, Cunningham, & Ilstrup, 1986).

As mentioned previously, eating disorders almost always accompany other underlying difficulties (Reinblatt, Redgrave, & Guarda, 2008). Antidepressants, particularly selective serotonin reuptake inhibitors, are often prescribed to treat the accompanying depression, anxiety, or obsessive-compulsive symptoms. Selective serotonin reuptake inhibitors have been proven to be more effective in treating bulimia than anorexia. (Reinblatt et al., 2008). Studies have suggested the use of fluoxetine in the treatment of bulimia nervosa. Treatment with a low dose of fluoxetine has consistently resulted in a reduction in binge eating and vomiting compared with placebo. A higher dose of fluoxetine resulted in an even greater improvement with a reduction in binge eating and a reduction in vomiting (Bacaltchuk & Hay, 2003).

There is limited evidence that fluoxetine and possibly other serotonergic medications may help prevent relapse after weight stabilization (McElroy et al., 2003). Of the limited controlled trials, most have supported efficacy only for treating comorbid disorders such as depression and obsessive-compulsive disorder. Further, there is limited evidence that antidepressants may help maintain weight gain in successfully treated patients. However, research has suggested that treatment with olanzapine (Zyprexa) was used successfully in patients with severe anorexia nervosa for stimulating appetite and weight gain. Also, it may be helpful for patients to take anxiolytic medications before meals if they are experiencing anxiety before eating (McElroy et al., 2003).

Other medications. Buspirone is effective in decreasing bingeing and vomiting in patients with bulimia nervosa (Pope, Hudson, Jonas, & Yurgelun-Todd, 1983). Furthermore, the anticonvulsant topiramate has been shown to significantly reduce binge eating frequency and weight (Mitchell & Groat, 1984).

Other treatment options. Overall, as aforementioned, the treatment of eating disorders is very complex. Many studies had a very high dropout rate, and the conclusions that can be drawn from them can be difficult to understand accurately. Generally speaking, when it comes to anorexia alone, studies have suggested that about half of patients have good outcomes, a few have intermediate outcomes, and a few have poor outcomes (Steinhausen, 2002). Many outpatient psychosocial treatments are effective for treating patients with anorexia (Steinhausen, 2002). One of the general benefits of outpatient treatment is that the patient is still able to manage his or her daily life while receiving treatment. Psychosocial therapies teach patients how to incorporate a healthy lifestyle in their everyday life.

Chapter V: DISCUSSION

Summary of Findings

Professionals are continually seeking ways to enhance treatment and improve outcomes when working with individuals suffering from eating disorders. This literature review can help enhance the understanding of incorporating the potential benefits of mindfulness techniques. The conclusions of this paper are meant to benefit clinicians working with patients diagnosed or struggling with an eating disorder.

It is crucial to search for ways to improve mental health treatment and outcomes, as there is not currently a treatment that has been established as effective enough in treating eating disorders (Kaye et al., 2004). Furthermore, it is imperative that eating disorders receive the proper attention and treatment because, as previously noted, eating disorders have high levels of mortality, with anorexia having the highest mortality rate of any psychiatric disorder (Sansone et al., 2004).

According to the National Institute of Mental Health (2014), eating disorders are very complex, and as such, generally, require a multidisciplinary approach to treatment. Ideally, the treatment team should consist of a medical doctor, a psychiatrist, a dietitian, and a therapist (Sansone et al., 2004).

Related to the complexity of eating disorders, King-Kallimanis et al. (2009) suggested that eating disorders and mood and anxiety disorders have a shared pathology. Overall, accompanying mental health disorders are often underlying in eating disorders. If the underlying disorders are not addressed, then the likelihood of receiving treatment for an eating disorder is unlikely. In this paper, the current research was examined regarding whether mindfulness interventions show promise in the reduction of problematic eating behavior, anxious thoughts,

and depressive symptoms in people with eating disorders. Essentially, treating an eating disorder without treating the anxiety disorder, mood disorder, or substance abuse, makes the treatment of the eating disturbance virtually impossible.

When it comes to eating disorders, the goals of treatment are to provide nutrition education, motivate the patient to participate in treatment and utilize healthy eating patterns, replace patients' negative thoughts with positive thoughts and feelings about eating, restore patients to their healthy weight, and to treat or detect any mood disorders leading to an eating disorder. One of the main goals of treatment is to prevent long-term relapse (American Psychiatric Association, 2013).

Traditionally used therapies for treating eating disorders, such as CBT and interpersonal therapy, emphasize thought-based focus and verbal understanding. Mindfulness-based therapy promotes awareness of body-based processes, such as the experience of emotions and physical sensations. Mindfulness therapies likely help individuals recognize the development, manifestation, and treatment of eating disorders. Furthermore, one of the most beneficial aspects of mindfulness is that it is a less restrictive tool to use in therapy, with few limitations, as most people can carry out mindfulness techniques and benefit from them (Kabat-Zinn, 2011).

Interestingly, there is a history of using empirically validated mindfulness-based interventions in clinical settings for the relief of chronic pain, as well as the support of effective emotional regulation (Kabat-Zinn, 2011). However, as it is applied to the prevention and treatment of eating disorders, mindfulness is in an emerging area (Kabat-Zinn, 2011) as there has always been a divide between mind and body in Western cultures. However, Western culture is now beginning to recognize the complex relationship between mind and body. Mindfulness-

based interventions address the unity of the mind and body, and therefore, meet the needs of those suffering from eating disorders (Kabat-Zinn, 2011).

In general, disordered eating patterns such as restricting, compensatory behaviors, or binge eating are ways of coping with adverse mood states (Fairburn et al., 2003). Given the significant role mood intolerance plays in the onset and maintenance of eating disorders, it is essential for intervention approaches to promote healthy mood tolerance. Therefore, treatment approaches that target mood intolerance, such as DBT, can be of benefit when used with eating disorder pathology (Fairburn et al., 2003). Emotional regulation in DBT targets mood intolerance, which has been suggested to be a critical factor in the onset and maintenance of eating disorders (Baer et al., 2005). Emotional regulation, which can be done with the use of mindfulness techniques, aids to decrease mood intolerance in patients with eating disorders. Mood intolerance is described as difficulty dealing with intense emotional states and is an important factor in inducing the onset and maintenance of eating disorder pathology.

As noted, emotional regulation is an important aspect of eating disorders, and bingeing and related compensatory behaviors can help the self as self-soothing mechanisms. As such, DBT is effective for eating disorders (Baer et al., 2005) as it incorporates a mindfulness aspect to it as it is an intervention approach that integrates mindfulness and acceptance strategies associated with Zen traditions with traditional CBT. Within the DBT framework, eating disorder episodes as conceptualized as attempts to regulate emotions when experiencing distress. The individual expects the disordered eating to ease intense emotional experiences. Over time, these individuals may attempt to intensify this maladaptive strategy as a way to create a sense of homeostasis and the perception of control and belonging. Individuals follow the belief that maladaptive behavior itself is a viable problem-solving strategy (Baer et al., 2005).

DBT counselors believe that acceptance of a client's current level of functioning coupled with a desire for change can promote a healthy lifestyle (Bankoff et al., 2012; Linehan, 1983; Salsman & Linehan, 2006). Additionally, skills training within the DBT framework can aid in the development of a client's ability to tolerate subjective distress, regulate emotional responses, increase interpersonal social skills, and increase an individual's capacity to engage in mindfulness practices. Overall, it is thought that when an eating disorder and comorbid depression are present among clients, the risk for suicidal gestures and attempts increases significantly (Bankoff et al., 2012; Linehan, 1983; Salsman & Linehan, 2006). It may be possible that decreases in comorbid depression symptoms through the implementation of DBT may prevent self-injurious behaviors and lethality among individuals with an eating disorder. Given findings by some researchers that traditional antidepressant medications may be only marginally effective in treating depression symptoms among individuals with an eating disorder, the techniques above show more promising improvements (Romano et al., 2002; Walsh et al., 2006).

As mentioned previously, self-compassion provides the most direct link between the treatment of eating disorders and mindfulness (Gilbert, 2005; Neff, 2003b). Individuals become much more prone toward self-criticism in times of distress, rather than exhibiting self-compassion. As such, self-compassion may represent a useful approach to promoting healthier body image and eating behavior, as it involves taking an accepting and understanding attitude toward personal mistakes and shortcomings, rather than engaging in harsh self-criticism (Neff, 2003a).

Additionally, body shame is a significant contributor to disordered eating (McKinley & Hyde, 1996). As such, disturbances in body image have been shown to have a significant negative effect on an individual's physical and psychological health and well-being, and

individuals are likely to differ in how they cope with this shame (Stice Marti, Shaw, & O'Neil, 2002). Consequently, it has been found that eating disorder patients have higher levels of self-reported shame than healthy controls. Therefore, early decreases in shame predict faster improvements in eating disorder symptoms (Tangey & Dearing, 2002). As such, it may be important for therapists to be attuned to potential indicators of shame and to explore the foundation with patients compassionately. Of note, shame is a known risk factor for disordered eating, and the aforementioned self-compassion has a negative relationship with shame.

In terms of interventions, studies have suggested that interventions designed to build self-compassion may lower eating disorder pathology. When individuals feel cared about by others, they feel soothed and connected in the face of complicated feelings and situations, and those feelings lessen the individual's sense of threat. In general, when individuals have consistent emotional memories of being cared for and reassured by others, they develop the capacity to generate these caring feelings toward self, and to self-soothe when they are feeling threatened in some way. CFT has been shown to help self-critical individuals understand the origins, functions, and consequences of their self-denigrating patterns, and to recognize the importance of relating to themselves from a more compassionate standpoint as a way to break these maladaptive cycles. Overall, according to the CFT model, it is only by developing self-compassion that patients can break out of these maladaptive cycles, and take steps toward recovery (Gilbert, 2005).

In general, the current review demonstrates that mindfulness techniques are likely to be effective in reducing disordered eating behaviors. Emotional eating, or eating in response to psychological distress such as sadness or anxiety, is hypothesized to be a maladaptive coping mechanism for dealing with distressing mind states, which mindfulness and self-compassion

have been found to reduce. The overall findings provide further support for the use of mindfulness-based strategies for treating emotional eating (Romano et al., 2002; Walsh et al., 2006).

Clinical Implications

It is necessary that effective interventions for eating disorders are offered by healthcare professionals, even those who are not specialized, as a way to promote multidisciplinary care, especially in primary health care. Many patients with eating disorders do not receive appropriate treatment or seek intervention for weight loss, bulimia nervosa, binge eating disorder, and subclinical forms of eating disorders.

As explained previously, mindfulness practices can be an essential tool in addressing general health issues. This literature review has suggested that mindfulness training can enhance self-awareness, helping individuals to become more resilient to stress and more aware of their lifestyle choices. Therefore, an advantage of mindfulness training is that it assists people in making those lifestyle changes. Additionally, mindfulness aids individuals in the awareness to have the capacity for behavioral change. Mindfulness-based practices can help individuals cope with psychological stress and facilitate individuals' lifestyle changes.

Overall, this review may have clinical implications for the development of better treatment strategies to target the treatment gap by using mindfulness in interventions for those with eating disorders. As several researchers have noted, by increasing awareness in the present moment, existing patterns of behavior can be redirected, and individuals can make healthier choices as they become more self-aware. In general, practicing mindfulness skills throughout the day may lead to the possibility of a different relationship to any situation. With mindfulness, one

moves from an automatic thought pattern to be present and fully aware in every moment, thus becoming fully aware of maladaptive eating patterns.

Conclusions of Current Literature and Recommendations for Future Research

A potential limitation of the research on eating disorders is that the studies included generally described the cognitive behavior approach as the most effective modality of psychological intervention since other approaches have some support or need more research. It would be beneficial to include a broader range of effective outcomes to measure the significance mindfulness has over other approaches. Other interventions that showed effectiveness were dialectical behavioral therapy, interpersonal therapy, family-based interventions, and supportive therapies. Therefore, the effectiveness of psychosocial interventions for eating disorders may vary depending on the clinical features of patients, such as the level of chronicity and the biological and psychosocial comorbidities. There is an increasing number of interventions that include eating disorder symptoms related to body image, concern about appearance and weight and self-esteem, as well as anxiety and depression symptoms, which enhance the applicability of treatment in the clinical practice.

Considering the multifactorial etiology of eating disorders and the high prevalence of subclinical forms, the research has recently addressed interventions that attempt to prevent the development of these disorders by considering the individual, family, and social risk factors. Approaches that intend to build positive self-concept and self-image should continue to be advanced, as the potential link between these areas and Eating Disorders appears to be well supported.

Conclusions of the current literature review and recommendations for further research suggested that more studies are needed that include accurate reporting of data and demographics

and that use effective interventions with underrepresented populations, including men and individuals with diverse racial and ethnic identities. Research in the area of mindfulness in the treatment of eating disorders is limited. Current research areas needed primarily include mindfulness techniques, especially related to using these techniques as a way to reduce problematic eating behavior and anxious thoughts in people with eating disorders. The prevalence of eating disorders has apparent consequences for an individual's physical, social, occupational, and relational functioning. If untreated, individuals can experience several health complications and are at an elevated risk for suicidal gestures and attempts. Research has provided preliminary support for the integration of mindfulness into the treatment of eating disorders as a potentially effective strategy for the treatment of eating disorders and comorbid psychiatric illness concurrently.

Further studies about eating disorders are needed and should address intervention and prevention techniques, in addition to risk factors such as physical appearance, weight and eating concerns, as well as body image disturbance and internalization of media patterns. It is recommended that future studies include both sexes and all age groups, as the current research has focused on very few men and generally addressed older adolescents or young female adults.

Finally, for future research, it is essential to report on knowledge about intervention techniques and other psychosocial approaches to eating disorders for different professionals, in various settings, to foster a multidisciplinary approach. Further studies analyzing the cost-effectiveness of CBT and behavioral weight-loss therapy are necessary. Also, the effects of the media-driven body ideals should be investigated in future longitudinal studies, as the significance of this impact on various individuals is not clear.

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