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THE RELATIONSHIP BETWEEN EATING DISORDER SYMPTOMOLOGY, BODY
IMAGE CONCERNS, AND EARLY MALADAPTIVE SCHEMAS

by
Stephanie D'Angelo

A Thesis

Submitted in partial fulfillment of the requirements of the
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of
The Graduate School
at
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Approved by _____
Jim A. Haugh, Ph.D.

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ABSTRACT

Stephanie D'Angelo

THE RELATIONSHIP BETWEEN EATING DISORDER SYMPTOMOLOGY, BODY
IMAGE CONCERNS, AND EARLY MALADAPTIVE SCHEMAS

2008/09

Dr. Jim A. Haugh

Master of Arts in Mental Health Counseling and Applied Psychology

This study examined the relationship between eating disorder symptomology, body image concerns, and early maladaptive schemas. The specific eating disorder symptoms were bingeing, purging and restricting. Participants were undergraduate college women. Eating disorder symptomology was measured along a continuum so that the sample encompassed individuals with eating disorder pathology ranging from asymptomatic to severe symptoms. Multiple regression analyses indicated that body image concerns predicted a significant proportion of variance in bingeing, purging and restrictive behaviors. Specifically, shape concerns predicted significant unique variance in restrictive behaviors. Early maladaptive schemas were found to account for a significant proportion of variance among restrictive behaviors only. Specific early maladaptive schemas that accounted for significant unique variance included unrelenting standards and admiration seeking. Findings offer continued support for the importance of body image concerns in the development and maintenance of eating disorder symptomology. In contrast, findings suggest that the relationship between early maladaptive schemas and eating disorder symptomology is less clear and may only be significant to restrictive behaviors.

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CHAPTER I

Importance of the Problem and Overview of the Project

According to the Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revision (DSM-IV-TR), there are three specific eating disorder diagnoses: anorexia nervosa; bulimia nervosa; and eating disorders not otherwise specified (EDNOS). Also included in the DSM-IV-TR is a provisional diagnostic category termed “binge eating disorder,” (American Psychiatric Association, 2000).

The essential features of anorexia nervosa include extremely low body weight, an intense fear of gaining weight, a distorted view of body image and self-starvation, while bulimia nervosa is characterized by recurrent episodes of binge eating, followed by the use of inappropriate compensatory behaviors referred to as "purging" (i.e., vomiting, laxative/diuretic abuse, excessive exercise). Lastly, binge eating disorder is characterized by recurrent episodes of binge eating and the absence of the regular use of inappropriate compensatory behaviors. The term EDNOS is used to code disorders that meet partial diagnostic criteria for either anorexia or bulimia nervosa. For example, a woman may be diagnosed with EDNOS if she meets all of the criteria for anorexia nervosa but still has regular menses (American Psychiatric Association, 2000).

The non-profit National Eating Disorders Association estimates that as many as 10 million women are affected by such disorders (Trickey, 2006). In young women, those aged 14-25, the risk of developing anorexia and bulimia is 0.5 to 1% and 2 to 5%, respectively (Pritis & Susman, 2003). While studies have not calculated the risk of young women developing binge eating disorder, it is reported to occur in at least 1% of

the United States population, with females being 1.5 times more likely to develop this disorder than males (American Psychiatric Association, 2000; Carter, Hudson, Lalonde, Pindyck, Mcelroy & Pope, 2003; Hoek & van Hoeken, 2003). These statistics do not take into account individuals likely to develop eating disorders not otherwise specified, a prevalence which may be double that of both anorexia and bulimia (Pritis & Susman, 2003).

Given the high prevalence of eating disorders, it is important to understand those factors likely to influence the development and maintenance of eating disorder symptomology. This understanding will not only aid clinicians in better treating those suffering from an eating disorder, but will also benefit sufferers in recovery as they may be better aware of their trigger points and those factors likely to prompt a relapse.

The aim of this paper is to discuss those factors likely to influence the development and maintenance of eating disorder symptomology as well as gain a better understanding of several of these factors, specifically body image concerns and early maladaptive schemas. The paper begins with a review of the etiology of eating disorders focusing on a multifactorial explanation that encompasses both external and internal influences. Included in external factors are familial, peer and media influences, while internal factors consist of cognitive factors. These cognitive factors can be further broken down into both nonspecific beliefs and beliefs related to eating disorder symptomology, specifically body image concerns. Following an in-depth look at these factors, the rationale for the current study as well as an explanation of how we plan to better understand and expand upon previous studies will be presented.

CHAPTER II

Etiology of Eating Disorders

Historical research shows that eating disorder symptomology has existed since ancient times (Polivy & Herman, 2002). During the Renaissance, for example, fasting was done mainly for religious or purification reasons and sometimes as a form of protest. It was not uncommon to see women starve themselves, often to death, in hopes of attaining communion with Christ (Bemporad, 1996). Even today, it is common practice for people to fast for religious reasons, usually during specific holy days. However, the frequency and severity of such behaviors have since increased and the reasons for them have changed. Despite this increase in the prevalence of anorexia and bulimia nervosa, as well as binge eating disorder and eating disorders not otherwise specified, much continues to remain unknown, or at least uncertain, as to the etiology of these disorders.

Research suggests that the cause of eating disorders is multifactorial. Several studies uphold theories that include family, peers and the mass media as influential factors in the development and maintenance of eating disorder symptomology; placing emphasis on external factors likely to influence the development of disordered eating. More recently, however, researchers have focused on the relationship between internal factors, such as schemas and levels of body image dissatisfaction, and their ability to predict such pathology. However, this area of research is neither comprehensive, nor conclusive.

External Factors Related to the Development of Eating Disorders

Family Dynamics

Researchers have found that family dynamics play a part in both the perpetuation and development of eating disorders (Moorey, 1991). There are four ways in which family dynamics have been studied in relation to the development of eating disorders. These are through family interaction styles, family systems, parental comments regarding shape and weight, and mothers who have suffered from an eating disorder.

The first way in which family dynamics have been studied is by focusing on the interaction styles frequently seen in families in which an individual has been diagnosed with an eating disorder. One family interaction style that has been shown to be unique to individuals with anorexia is one that demands perfectionism, or at the very least emphasizes the importance of it (Moorey, 1991; Polivy & Herman, 2002). In young women, this perfectionist attitude is often exhibited through academics, work, and the pursuit of thinness. For example, Pike, Hilbert, Wilfley, Fairburn, Dohm, Walsh & Striegel-Moore (2008) found that women with anorexia reported greater levels and significantly higher rates of perfectionism and parental demands than women with other psychiatric disorders.

In contrast to women with anorexia, families of women with bulimia tend to be characterized by envious, nosier, and more intrusive parents (Rorty, Yager, Rossotto & Buckwalter, 2000). To explore the differences in parental intrusiveness, Rorty et al. (2000) compared women with a lifetime history of bulimia to a nonclinical comparison group. Using the Parental Intrusiveness Rating Scale (PIRS) researchers found evidence that women with a lifetime history of bulimia nervosa reported higher levels of “intrusive

and inadequately boundaried parental behaviors” during adolescence than comparison women. More specifically, the mothers were described as relating to their children in a competitive and jealous nature and being overly concerned in regards to their children’s eating, weight and shape. These dynamics were reported to have started in adolescence, a time period in which research suggests individuals may be most susceptible to developing disordered eating.

A second way in which family dynamics have been studied in relation to the development of eating disorders is through the examination of family systems. Both Maria Selvini Palazolli and Salvatore Minuchin claim that it is “possible to identify specific characteristics of families with an anorexic member and that these family contexts, or systems, create and sustain the symptoms of anorexia” (as cited in Moorey, 1991, pp. 53). One characteristic found by both Palazolli and Minuchin is a “lack of conflict resolution,” in which, instead of solving problems, or even acknowledging them, families ignore conflicts and conceal them with a façade of unity and politeness. Using the Family Aggression Scale, Shugar & Krueger (1995) found similar findings. Specifically they reported that families of anorexic individuals had dysfunctional patterns of aggression and hostility suppression, while lacking experiences of overt confrontation. This tendency to avoid conflict is congruent with research stating that patients with anorexia nervosa and bulimia nervosa make more use of avoidance coping strategies and are less likely to respond by actively attempting to solve or rethink the problem or change the situation (Blocs, van Furth, Callewaert & Hoek, 2004). Specifically, it has been found that bulimic symptomology serves the function of behavioral avoidance where by the individual engages in escape behaviors, namely bingeing and purging. Research has

suggested that bingeing serves more of an affect regulation, where as vomiting tends to serve the function of reducing awareness of aversive cognitions (Spranger & Waller, 2001; Waller & Ohanian, 2000).

A third way in which family dynamics have been studied in relation to the development of eating disorders is through the examination of parental comments concerning eating, weight and shape. Research suggests that increased exposure to such comments is associated with an increased risk of developing eating disorder symptomology. Notably, maternal comments regarding the daughter's appearance have been associated with the development of anorexia, bulimia and binge eating disorder (Polivy & Herman, 2002). In extreme cases, mothers will express concern or dissatisfaction about their daughter's weight and appearance as early as age two (Agras & Hammer, 1999). By age five these children are at a serious risk for developing an eating disorder later on in life (Agras & Hammer, 1999).

A final way in which family dynamics have been studied in relation to the development of eating disorders is through the examination of mothers who have or have had an eating disorder themselves. It is not uncommon to see such mothers project their disordered lifestyle onto their daughters through a variety of means (Polivy & Herman, 2002). A number of case studies suggest that such mothers may influence their offspring's development from infancy, perhaps setting the stage for the emergence of an eating disorder during adolescence (Agras & Hammer, 1999). Fahy and Treasure's study (as cited in Agras & Hammer, 1999) reported that mothers currently engaging in bulimic symptomology experienced considerable difficulty feeding their children, often had no food in the house, and that one mother locked her child in her room while she was

binge eating and purging. In addition, mothers with a history of eating disorder pathology have been found to feed their children irregularly or use food for other purposes besides nutrition. For example, sometimes food, or lack thereof, is used as a reward or punishment in such households (Polivy & Herman, 2002). In other instances food is used as a way to escape from feelings. It is also not uncommon to see a family use eating as an activity to fill free time when bored (Moorey, 1991). Being exposed to this disordered eating-lifestyle, as well as the aforementioned family dynamics, leaves children at a greater risk for developing eating disorder symptomology in the future (Polivy & Herman, 2002).

Influence of Peers

Another factor that has been studied as an external, causal factor related to eating disorders is one's interactions with peers. Of particular importance has been the direct impact of peers on the internalization of attitudes and behaviors related to eating disorder symptomology. These attitudes and behaviors often stem from unhealthy beliefs and behaviors regarding appearance and weight (Polivy & Herman, 2002). For example, adolescent girls who perceived higher peer influence in regards to the importance of such factors reported greater body image dissatisfaction, more frequent use of weight management techniques, and an increase in pathological beliefs about eating (Thompson & Heinberg, 1999).

These attitudes and behaviors, particularly weight management techniques (i.e., strict dieting, exercising, purging behaviors) are often learned through modeling and maintained through encouragement. In terms of peer modeling, researchers found that having friends who were dieting to lose weight was associated with a greater use of

unhealthy weight-control behaviors (Thompson & Rodriguez, 2007). While such behaviors frequently evoke concern from parents, teachers and doctors, peers often praise one another for their self-control and achieved thinness. In extreme cases, peers do more than teach and praise the attitudes and behaviors relevant to eating disorder symptomology; they compete with one another to see who can exhibit the most self-control and lose the most weight. Many times the ultimate goal for these individuals-sometimes called “eating disorder buddies”- is to see who can be the better bulimic or anorexic (Moorey, 1991). This competition is unhealthy and sometimes even deadly.

Mass Media

A third external factor that has been studied as an external, causal factor related to eating disorders is the mass media. Media images that help to create cultural definitions of beauty and attractiveness are often acknowledged as being among those factors contributing to the rise of eating disorders. Images and messages emphasizing the idea that to be happy, successful and most of all beautiful, one must be thin are everywhere. Through everyday activities such as reading a magazine, watching television, or even just shopping at the mall, individuals are bombarded with messages telling them that fat is bad.

Messages emphasizing the importance of thinness and physical attractiveness do not discriminate among age, race or gender. However, studies have found that they are geared more towards women than men, and often target a younger segment of the population (Polivy & Herman, 2002). Women are consistently taught from an early age that their self-worth is largely dependent on how they look (Thompson & Heinberg, 1999). Girls as young as 9 are bombarded with messages stating that visual attention

gained through an ideal body and physical attractiveness is to be both desired and worked toward (Moorey, 1991). In addition, they are sent the message that one's body dictates more than just physical makeup. They are, in fact, told that the body dictates one's personality (Moorey, 1991; Harrison, 2000). Posavac & Posavac found that not only the frequency of exposure to such media, but the internalization of its ideals as well puts women at greater risk for developing body image dissatisfaction and eating disorder symptomology. These symptoms include fasting, dieting, purging, restricting, and bingeing and are even more likely to occur with women who are already dissatisfied with their appearance.

However, it is irrational for most people to compare themselves to the images in magazines, television, and films because most people do not spend two hours getting their hair and makeup done by professionals before being seen by the world. Airbrushing, systematically placed lights that accentuate only one's best features, and constant touchups are not a part of the average person's everyday life (Thompson & Heinberg, 1999). Regardless, many women, both young and old, obsess over conforming to the media's ideals; ideals that, for the majority of women, are unattainable without going to extreme measures such as developing an eating disorder (Thompson & Heinberg, 1999).

Internal Factors Related to the Development of Eating Disorders

Body Image

The first internal factor examined in relation to the development of eating disorder symptomology is body image. A person's body image is how he or she perceives his or her exterior to look, and in many cases can be dramatically different from how that

individual actually appears to others. Such a discrepancy is often a sign of body image disturbance, or the misinterpretation of the size of one's body. This is frequently seen in individuals with eating disorders such as anorexia and bulimia nervosa and often coincides with body image dissatisfaction where the individual has become unhappy with either certain parts, or the totality, of one's body (Altabe & Thompson, 1992).

Although body dissatisfaction has been reported to occur at higher levels in individuals who have eating disorders, it is also seen in a large percentage of the United States population not suffering from such disorders. In fact, it is reported to occur often enough that it has been dubbed "normative discontent;" meaning that it is not pathological and does not warrant treatment (Farrell, Shafran & Lee, 2006). A recent national survey reported that nearly half of American women viewed their appearance negatively and were preoccupied with their weight (Cash & Henry, 1995). Yet, not half of all American women suffer from disordered eating, whether it is of a clinical or subclinical variety. Research has indicated that what separates pathological from non-pathological body image dissatisfaction are both the degree of the body image concerns and the effect it has on one's well-being.

One group in which the influence of body image concerns on pathology has been examined is individuals with binge eating disorder. For example, Mond, Hay, Rodgers & Owen (2007) examined the level of body image concerns among 110 probable cases of binge eating disorder using the Eating Disorder Examination Questionnaire (EDE-Q). Results indicated that there were significantly higher levels of eating disorder psychopathology among cases of binge eating disorder where extreme body image concerns were reported. Specifically, scores on the Eating, Weight and Shape Concern

subscales of the EDE-Q were significantly higher among recurrent binge eaters who reported such concerns, relative to those of obese non-binge eaters. In addition, results indicated that binge eaters who reported extreme body image disturbances also reported higher levels of eating disorder pathology and greater functional impairment.

Goldfein & Walsh (2000) also examined body image concerns, but in this instance in an effort to compare bulimic, anorexic, and normal controls. One hundred and twenty bulimic patients, 27 restrained eaters and 28 normal controls were assessed for body image concerns using the Eating Disorders Examination, Body Shape Questionnaire and Three-Factor Eating Questionnaire. Results indicated that body image concerns successfully discriminated the bulimic sample from normal controls, but not from restrained eaters. This suggests that body image concerns might be common to both bulimic and anorexic subtypes.

In contrast to the above studies which focused on differentiating between diagnostic groups, Hrabosky, Masheb, White & Grilo (2007) attempted to explore the relation between body image concerns and the types and severity of eating disordered behavior. They used the Eating Disorder Examination and the Body Shape Questionnaire to assess body image concerns. Their sample consisted of 399 adults meeting the criteria for binge eating disorder. Results indicated that body image concerns were only weakly related to binge eating frequency. However, body image concerns were strongly associated with all other measures of eating-related psychopathology, including the levels of restriction.

In summary, while these studies attempt to explain the differences in body image concerns between individuals with binge eating and bulimic diagnoses, results are not

conclusive. In addition, research has focused mainly on the relationship between body image concerns and eating disorder diagnoses. In contrast, few studies have attempted to explain the differences in body image concerns among individuals displaying different levels of disordered eating, specifically bingeing, purging and restricting.

Schemas

A second internal factor that has been studied in relation to the development and maintenance of eating disorder symptomology are schemas. Schemas are defined as important beliefs about oneself and the environment which the individual accepts without question. They are often formed in early childhood as a result of life experiences including, but not limited to, trauma, successes, and familial and peer experiences (Muris, 2006; Waller, Meyer & Ohanian, 2001; Wright, Basco & Thase, 2006). People use schemas to organize current knowledge and provide a framework for future understanding. In the best case scenario, one's schemas allow him or her to better adapt to life. However, in some cases schemas can become maladaptive as time passes and situations change (Muris, 2006; Waller et al., 2001; Wright et al., 2006).

Young (2003) has developed Schema Theory which suggests that there are 18 specific maladaptive schemas that people might develop. He organized these schemas into 5 broad schema domains, which represent a collection of schemas that might develop out of specific developmental challenges. The schema domains and the early maladaptive schemas are displayed in Table 1.

Since the introduction of Schema Theory, the relationships between early maladaptive schemas and eating disorders have been examined in a number of studies. This is typically done using the Young Schema Questionnaire (YSQ) (Young, Klosko &

Weishaar, 2003). Using this questionnaire, for example, Muris (2006) found that eating disorder symptomology was associated with higher scores on the social isolation and unrelenting standards schemas.

Dingemans, Spinhoven and Furth (2006) found that individuals with binge eating disorder scored higher on the failure to achieve, dependence/incompetence, and entitlement schemas compared to individuals with bulimia. These results, along with others, suggest that individuals with different eating disorder diagnoses differ in the type of schemas that they might possess.

In contrast to the studies which focused on differentiating between diagnostic groups, Waller, Ohanian, Meyer and Osman (2000) attempted to explore the relation between early maladaptive schemas and the types and severity of eating disordered behavior. These authors examined the level of bulimic behavior, namely bingeing and purging, and its ability to be explained by early maladaptive schemas. Participants included 28 females diagnosed with bulimia nervosa, 12 diagnosed with anorexia nervosa of the bulimic subtype and 10 diagnosed with binge eating disorder. Each participant kept a diary of her eating behavior to record the frequency of bingeing and purging, Results indicated that the frequency of both bingeing and purging was reliably predicted by schemas; specifically emotional inhibition and defectiveness/shame, respectively. In other words “bulimic women bingeed more often if they saw emotional expression as unsafe or unacceptable, and were more likely to vomit if they saw themselves as fundamentally flawed or defective.”

A second study by Waller, Dickson & Ohanian (2002) yielded results similar to those of his 2000 study. Using the Eating Disorder Inventory-2 (EDI-2) and YSQ, the

authors examined the early maladaptive schemas of 75 women with bulimic disorders. The diagnoses included bulimia nervosa, anorexia nervosa of the bulimic subtype and binge eating disorder. Results indicated an association between early maladaptive schemas and eating behaviors. Specifically, it was found that women presenting with less healthy schemas regarding dependence and emotional inhibition reported higher levels of restriction. Higher levels of restriction were also associated with low levels of entitlement. In contrast, an increase in social isolation, insufficient self-control and emotional deprivation was associated with an increase in bulimic attitudes and behaviors (i.e., purging).

An additional study by Waller (2003) examined the relationship between symptom severity and schemas in samples of bulimic, binge eating and nonclinical women. Results indicated that women suffering from bulimia nervosa had higher levels of negative schemas regardless of the severity of their disorder. The opposite was true, however, for those suffering from binge eating disorder. In such cases, greater levels of unhealthy schemas were associated with greater bingeing severity. Schemas specific to this association were social isolation, vulnerability to harm, dependence/incompetence, enmeshment and unrelenting standards. This then suggests that the level of bingeing behaviors may only be associated with schemas in the context of binge eating disorder.

In a final study by Waller, Meyer & Ohanian (2001), the clinical utility of the short and long forms of the YSQ was tested by examining the ability of the scales to predict bingeing and purging (vomiting). Both the YSQ-L and YSQ-S were examined to compare the ability of the two scales to predict levels of bulimic behaviors among women with bulimia. The participants were 60 bulimic women and 60 comparison women with

no known clinical disorder. Each bulimic woman kept a diary of her eating behaviors for 2 weeks after that initial assessment, from which their mean weekly frequencies of bingeing and vomiting were calculated. Their results indicated that the YSQ-S had similar predictive power as the YSQ-L in terms of its ability to predict the frequency of bingeing. Specifically, both scales accounted for approximately 32% of the variance in bingeing, with emotional inhibition being a significant and unique predictor of the variance in both equations. In terms of frequency of vomiting, both the YSQ-L and YSQ-S predicted significant variance in the frequency of vomiting. However, different YSQ scales emerged as significant predictors of vomiting according to the version used. When the YSQ-L was examined, defectiveness/shame and subjugation beliefs were central, while the emotional inhibition, vulnerability to harm and failure to achieve scales were more predictive when the YSQ-S was examined.

Finally, Dingemans, Spinhoven & van Furth (2006), examined the relationship between early maladaptive schemas and purging behaviors. Schemas were measured using the Dutch version of the Young Schema Questionnaire and purging was measured using the Bulimic Investigatory Test, Edinburgh (BITE). However, instead of using the 18 specific early maladaptive schemas, these authors examined the 5 schema domain scores. Participants were 106 patients with a DSM-IV eating disorder and 27 healthy female controls. Results indicated that the frequency of compensatory behaviors (vomiting, laxative abuse and fasting) was positively associated with all 4 of the 5 schema domains (disconnection, impaired autonomy, impaired limits and overcontrol). However, the results failed to support an association between the frequency of binge eating and any of the 5 schema domains.

Overall, the results of these studies support the hypothesized relationship between schemas and eating disorders. This relationship has been supported in research that examines differences between diagnostic groups and in research examining the ability to predict specific symptomology. Despite some of these encouraging initial findings, there remains a fair amount of contradictory and confusing information in the literature.

One of the confusing aspects in the literature is related to how schemas have been assessed and measured. The most typical way to measure schemas is using a version of the YSQ. However, some authors have used the long version of this scale, others have used the short version, and still others have used the domain scores versus the schema scores. As the results of at least one of these studies indicates, the different forms of the scale might result in differences in the findings of the study.

A second confusing aspect of the literature is that different schemas have been found to predict different types of eating disorder pathology across studies. For example, while several studies did agree that the frequency of both bingeing and purging could be reliably predicted by YSQ scales, the specific schema scales differed, as did their ability to predict behaviors among the different eating disorder diagnoses.

A final confusing aspect of the literature is that these studies have focused on the relationship between early maladaptive schemas and the frequency of specific eating disorder pathology, namely bingeing, purging and restricting, but have done so only within the context of clinical and asymptomatic groups. Therefore, we are unaware of how this relationship relates to females outside of these groups. In other words, are early maladaptive schemas predictive of bingeing, purging and restricting only within clinical populations, or are they predictive of these behaviors in subclinical populations as well?

CHAPTER III

Summary and Rationale for the Current Study

Research of the relationships between eating disorder symptomology and both body image concerns and early maladaptive schemas is scarce, especially in regards to the anorectic or restrictive population. In addition, that research which does exist compares mainly clinical and asymptomatic groups (Waller, 2003; Waller & Ohanian, 2000). One goal of the current study is to change that by measuring eating disorder symptomology, namely bingeing, purging and restricting, along a continuum so that our sample population encompasses individuals with eating disorder pathology ranging from asymptomatic to clinical. By doing so, the study will be looking at a correlational or predictive model as opposed to between group comparisons.

A second goal of the present study is to look at the underlying schemas and body image concerns of young, adult women to examine their relationship with eating disorder symptomology. Participants will be measured on a continuum in regards to not only eating disorder symptomology but early maladaptive schemas and body image concerns as well. For the purpose of this study eating disorder symptomology will be limited to restricting, bingeing and purging, whereas restricting is defined as restricting food or caloric intake, or both, with the intention of controlling body size and weight; bingeing is defined as eating a large quantity of food in a short period of time and can be associated with feelings of being out of control; and purging is defined as recurrent inappropriate compensatory behaviors in order to prevent weight gain (i.e., vomiting, over exercising, laxative and/or diuretic use). The study has been limited to these behaviors not only

because they are core features of eating disorder symptomology, but because previous research offers support towards a relationship between these behaviors and both body image concerns and early maladaptive schemas; relationships that it is hoped will be expanded upon in this study.

Given the currently literature, it is hypothesized that body image will predict disordered eating (Goldfein & Walsh, 2000; Mond et al., 2007). Specifically, it is hypothesized that individuals experiencing disordered eating, specifically bingeing, purging and restricting, will be more likely to exhibit a higher degree of body image concerns than their asymptomatic peers. To be consistent with previous literature, body image concerns will be assessed using scores on the Shape Concern and Weight Concern scales of the Eating Disorder Examination Questionnaire.

A second hypothesis is that eating disorder pathology will be predicted by underlying early maladaptive schemas. Specifically, it is hypothesized that certain early maladaptive schemas will be associated with specific eating disorder symptomology, specifically bingeing, purging and restricting. Based on previous research, it is specifically hypothesized that defectiveness/shame, social isolation, insufficient self-control and failure to achieve schemas will be more predictive of purging; emotional inhibition, dependence/incompetence and entitlement will be more predictive of binge eating behaviors; and dependence/incompetence, emotional inhibition, and entitlement schemas will predict restrictive behaviors. We expect to see a direct effect of these early maladaptive schemas on their respective symptomology.

CHAPTER IV

Methods

Participants

Sixty undergraduate women at a public university in the northeast participated in the study. To enhance the variability of the sample, we solicited participants from two sources – the psychology department subject pool ($n = 35$) and the Epsilon Mu chapter of Sigma Sigma Sigma sorority located at Rowan University ($n = 25$). Participants from the undergraduate psychology subject pool received class credit for completing the study. Participants from Sigma Sigma Sigma participated on a voluntary basis during a weekly sorority meeting.

Participants in the combined sample ranged in age from 18 to 27 ($M = 20.1$, $SD = 1.6$). Eighty-three percent of participants identified themselves as Caucasian, while significantly less identified themselves as Hispanic/Latin/Mexican (7%), Bi-Racial (3%), “other” (3%), African American (2%) and American-Indian (2%). Almost one third of participants were first-year students (32%), approximately one quarter both sophomores (25%) and seniors (23%) and the remainder were juniors (17%) and fifth-year seniors (3%).

Measures

Eating disorder symptomology. The Binge Eating Scale (BES) is a 16-item self-report measure that assesses the extent of binge eating problems. Participants are given a set of 3 or 4 statements and asked to choose that which best describes the way he or she

feels about his or her problems controlling eating behavior. An example is as follows: (1) I usually am able to stop eating when I want to. I know when “enough is enough;” (2) Every so often, I experience a compulsion to eat which I can’t seem to control; (3) Frequently, I experience strong urges to eat which I seem unable to control, but at other times I can control my eating urges; and (4) I feel incapable of controlling urges to eat. I have a fear of not being able to stop eating voluntarily. The BES examines not only the behaviors associated with binge eating but the cognitions that follow as well. It has been found to discriminate between participants with bulimia nervosa and normal controls as well as individuals who have no, moderate or severe binge eating problems. BES scores range from 0-46 with scores greater than 27 suggesting the presence of severe binge eating and scores less than 17 suggesting mild or no binge eating (Celio, Wilfley, Crow, Mitchell & Walsh, 2004). Studies have also found the BES to have good internal consistency and test-retest reliability ($r = .87, p < .001$) (Celio et al., 2004). The BES has been found to discriminate between participants with bulimia nervosa and normal controls as well as between individuals who have no, moderate or severe binge eating problems (Wilson, 1993).

The 5th edition of the Eating Disorder Examination Questionnaire (EDE-Q) is a self-report version of the Eating Disorder Examination (EDE), a frequently used semistructured interview for the assessment of eating disorder symptomology (Fairburn & Cooper, 1993). Both the EDE and EDE-Q yield information focusing on both the frequency of key behavioral features of eating disorders as well the severity of aspects of the psychopathology of eating disorder. For the purpose of this study, the EDE-Q was used to assess for purging and restricting behaviors. The EDE-Q consists of 28 self-

report items focusing on symptoms during the past 28 days. Twenty-two of the 28 items are rated on a Likert Scale from 0 to 6, with higher scores reflecting greater frequency or severity. These items are used to assess the severity of four categories of symptoms associated with eating disorders: 1.) Restraint (i.e., on how many days out of the past 28 days have you been consciously trying to restrict the amount of food you eat to influence your shape or weight?); 2.) Eating Concern (i.e., on how many days out of the past 28 days has thinking about food or its calorie content interfered significantly with your ability to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?); 3.) Weight Concern (i.e., on how many days out of the past 28 days have you had a strong desire to lose weight?); and 4.) Shape Concern (i.e., on how many days out of the past 28 days have you felt fat?). Both a global score and subscale scores of these four categories are derived from the 28 items. The remaining 6 items assess the frequency of behaviors associated with eating disorders (i.e., bingeing, purging, excessive exercise). Such behaviors are assessed in terms of the number of episodes occurring throughout the past four weeks and do not contribute to either the global or subscale scores (Fairburn & Beglin, 1994).

The EDE-Q has shown excellent test-retest reliability and internal consistency for the four subscales of the EDEQ with reliability coefficients ranging from 0.81 to 0.94 across the subscales (Luce & Crowther, 1999). Mond, Hay, Rodgers & Owen (2006), also found the EDE-Q to have acceptable internal consistency (.78-.93 for subscales among a female college sample). The EDE-Q has been found to have a high level of agreement with the EDE when assessing the core attitudinal features of eating disorder pathology in the general population and in clinical samples of both bulimia nervosa and

binge eating disorder. With respect to convergent validity, research reports “moderate to high correlations between the Restraint, Shape Concern and Weight Concern subscales in community and patient samples and all four subscales in adolescent and adult patients with eating disorders” (Luce, Crowther & Pole, 2008).

Body image concerns. The Weight Concern and Shape Concern subscale scores of the aforementioned EDE-Q were used to assess body image concerns.

Schemas. The Young Schema Questionnaire (YSQ) is a self-report measure used to assess for early maladaptive schemas. The YSQ has both a long form, consisting of 205 self-report items, and a short form which, in its third edition, contains only 90 of these items. These items consist of statements such as “I do not feel capable of getting by on my own in everyday life,” “I’m incompetent when it comes to achievement,” and “Sometimes I am so worried about people leaving me that I drive them away.” Each item is answered on a 6-point Likert scale, ranging from 1, “completely untrue of me” to 6, “describes me perfectly”. Item mean scores are calculated for each of the 18 schemas with higher scores indicating a more dysfunctional level of that schema (Dingemans, Spinhoven & van Furth, 2006). In addition, each item of the YSQ-S3 is summed to obtain a total score.

Limited research exists on the psychometric properties of the YSQ-S. However, in a study examining the psychometric properties of the long and short version of the young schema questionnaire among bulimic and comparison women, Waller and his colleagues (2001) found the YSQ-S to have a Cronbach’s alpha level of .96 and .92 when completed by participants diagnosed with bulimia and their asymptomatic peers, respectively. Each subscale was found to have an alpha > .8. Because it is above .7, it

suggests internal consistency (Oei & Baranoff, 2007). Waller et al. (2001) also found both the long and short forms of the YSQ to have similar levels of discriminant validity. Specifically, results indicated that the YSQ subscales significantly discriminated women experiencing symptoms of bingeing and purging from those who did not experience such symptoms, $F(2,91) = 75.5, p = .0001$. These findings support the use of the YSQ-S in both research and clinical settings; particularly in regards to an eating disorder population (Waller, Meyer & Ohanian, 2001).

Procedure

This study was approved by the university Institutional Review Board and conformed to the ethical codes of the American Psychological Association. Upon approval, participants from the psychology department subject pool arrived in the designated classroom at their allotted time. Participants were seated with enough distance between each other to ensure that their answers would be kept confidential. They then received informed consent forms describing the study at hand. Upon signing the informed consent, participants were given packets containing the demographic questionnaire, BES, EDE-Q and the YSQ-S3 and they were allowed 1 hour to complete the surveys. Upon completion, each participant was debriefed.

For the participants in the Sigma Sigma Sigma sorority, the measures and informed consents were distributed at one of their weekly meetings. Members were given one week to complete the packets if they wished to do so. Members of the sorority were not required to participate in the study and their choice of whether or not to participate did not have any influence upon their standing in the sorority. Thus, their participation was completely voluntary. After one week, completed measure packets and

informed consent forms were collected. To protect confidentiality, those members who participated were asked to place their informed consents in one pile and their completed measures in another. Following data collection, debriefing statements were given out.

CHAPTER V

Results

Correlational Analyses

In order to examine the relationship between body image concerns, early maladaptive schemas and eating disorder symptoms, a series of correlational analyses were conducted.

The first series of analyses examined the relationship between body image concerns and the three types of eating disorder symptoms. Results indicated that both shape and weight concerns were significantly and positively related to bingeing ($r = .69, p < .01$) and ($r = .70, p < .01$), respectively. Shape and weight concerns were also significantly positively associated with purging ($r = .44, p < .01$) and ($r = .46, p < .01$), respectively. Finally, shape and weight concerns were also positively associated with restricting, ($r = .72, p < .01$) and ($r = .68, p < .01$), respectively.

The second series of analyses examined the relationship between early maladaptive schemas and eating disorder symptomology. Eleven out of the 18 schemas were significantly and positively associated with bingeing behaviors. These results are displayed in Table 2. However, no schemas were associated with purging behaviors and only 1 schema, unrelenting standards, was positively associated with restrictive behaviors ($r = .33, p = .01$).

Regression Analyses

Three separate hierarchical multiple regression analyses were conducted in order to investigate the ability of both body image concerns and early maladaptive schemas

to predict eating disorder symptomology. In each analysis, the order of entry for the predictor variables was established based on the theoretical temporal relationship between eating disorder symptomology, body image concerns and early maladaptive schemas. More specifically, body image concerns are believed to develop closer in time to the onset of eating disorder symptomology, whereas early maladaptive schemas are formed in early childhood and are more constant throughout the lifespan. Given such, for each analysis body image concerns were entered on the first step followed by early maladaptive schemas which were entered on the second step. The criterion variables were bingeing, purging and restricting, respectively. Results of analysis one indicated that the total model, both body image concerns and early maladaptive schemas, accounted for 65% of the variance in bingeing behaviors. Body image concerns accounted for 50% of the variance in bingeing behaviors ($F_{\text{change}} [2,57] = 28.32, p = .000$) whereas early maladaptive schemas accounted for an additional 15% of the variance in bingeing behaviors. However, the early maladaptive schemas did not add significant, unique variance to the equation ($F_{\text{change}} [18,39] = .89, p = .59$). Neither shape nor weight predicted significant, unique variance in the criterion variable.

Results of analysis two indicated that the total model, both body image concerns and early maladaptive schemas accounted for 44% of the variance in purging behaviors. Body image concerns accounted for 21% of the variance in purging behaviors ($F_{\text{change}} [2,57] = 7.62, p = .001$), whereas early maladaptive schemas accounted for 23% of the variance in purging behaviors. However, the early maladaptive schemas did not add significant, unique variance to the equation ($F_{\text{change}} [18,39] = .91, p = .57$). Neither shape nor weight predicted significant, unique variance in the criterion variable.

Results of analysis three indicated that the total model, both body image concerns and early maladaptive schemas accounted for 75% of the variance in restrictive behaviors. Body image concerns accounted for 52% of the variance in restrictive behaviors, ($F_{\text{change}} [2,57] = 30.26, p = .000$). Early maladaptive schemas accounted for 24% of the variance in restrictive behaviors, ($F_{\text{change}} [18, 39] = 2.04, p = .031$). Specific body image variables which predicted significant and unique variance in restrictive behavior included shape concerns ($\beta = .62, p = .013$). Specific early maladaptive schemas which predicted significant and unique variance in restrictive behavior included unrelenting standards ($\beta = .37, p = .014$) and admiration seeking ($\beta = -.27, p = .045$).

CHAPTER VI

Discussion

The first hypothesis examined in the current study was that body image concerns would significantly predict disordered eating. Consistent with previous research, the results of the current study support the relationship between body image concerns and eating disorder symptomology. While such concerns accounted for a significant percentage of variability in bingeing, purging and restricting, neither shape or weight concerns contributed significant unique variance to the prediction of bingeing or purging. Shape concerns did, however, contribute significant unique variance to the development of restrictive behaviors. In other words, women who reported greater concerns regarding their shape were more likely to engage in restrictive behaviors.

While the results of this correlational study support the relationship between eating disorder symptomology and body image concerns, they do not speak to whether such concerns develop prior to, or as a result of disordered eating. In binge eating disorder, for example, it can be argued that body image concerns develop after the binge eating has begun and the person consequently gains weight. Whereas an initial concern in body image is likely to prompt an individual to restrict food or caloric intake in order to influence her shape or weight, as is seen in anorexia nervosa. Future longitudinal research should be conducted to further explore the longitudinal relationship between these variables and more clearly address the question of causality in the model.

A second hypothesis examined in the current study was that eating disorder pathology would be predicted by underlying early maladaptive schemas. The results of the current study failed to support this hypothesis for bingeing and purging behaviors. However, early maladaptive schemas did add significant variance to the predictive model for restrictive behavior, and both the unrelenting standards and approval seeking schemas added significant unique variance to the model. It is important to note that the direction of these relationships varied. Unrelenting standards was positively related to restrictive behaviors, whereas approval seeking was negatively related to such behaviors. In other words, women were more like to restrict food and/or caloric intake if they believed they must strive to meet very high internalized standards of behavior and performance and if they placed excessive emphasis on avoiding approval, recognition or attention from other people. While this was consistent with previous research indicating a relationship between early maladaptive schemas and restrictive behaviors, the actual schemas that were found to be significant differed from previous research.

Based on previous findings, we had originally expected restrictive behaviors to be associated with early maladaptive schemas of emotional inhibition, dependence/incompetence and entitlement (Waller, 2003; Waller, Meyer & Ohanian, 2001; Waller, Ohanian, Meyer & Osman, 2000). Differences between studies can be attributed, in part, to the sample populations used. Waller and his colleagues examined this relationship among groups of women diagnosed with an eating disorder of clinical severity compared to a group of asymptomatic peers. Unlike the current study, none of Waller's studies consisted of women with eating disorder symptomology of subclinical severity. It is possible that early maladaptive schemas are more prominent in women

with eating disorders of a clinical severity than of a subclinical severity. It is also possible that early maladaptive schemas differ as the severity of the disorder progresses.

While the results of the current study are important, a number of limitations of the current study must be taken into consideration when interpreting the findings. The first limitation of the current study is that the sample was relatively small. With a small sample size, the probability of making a Type I error is greater. Thus, the current results, although interpreted conservatively, must be considered tentative. In addition, these results should be replicated with larger sample sizes.

The second limitation of the current study was that the degree of eating disorder symptomology experienced varied considerably. More specifically, the pathology in the current sample ranged from little or no eating disorder symptomology to eating disorder symptomology of clinical severity. However, the more moderate to severe levels of pathology were underrepresented in the current sample and the majority of the sample consisted of women with mild eating disorder symptoms. Thus, the current findings might be most applicable to individuals experiencing mild eating disorder symptomology. Future research should be conducted such that an equal sample of participants in each severity level is represented.

A final limitation of the current study was that only females were recruited for participation in the study. Although this was done intentionally in order to replicate previous research, it also limits the applicability of these findings to women. Future research with male participants is needed to understand the relationship between these constructs in males.

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Appendix/ces

APPENDIX A

Table 1. Early Maladaptive Schemas and Defining Characteristics

Domain	Schema	Defining characteristics/beliefs of schema
Disconnection & Rejection		
	Abandonment/instability	Perceived instability of those available for support
	Mistrust/abuse	Expectation that others will abuse, humiliate, or take advantage of the person
	Emotional deprivation	Expectation that emotional support will not be provided by others
	Defectiveness/shame	Belief that one is defective, bad, or unwanted
	Social isolation	Belief that one is different from others and isolated
Impaired Autonomy & Performance		
	Dependence/incompetence	Belief that one is helpless and unable to handle everyday responsibilities without help
	Vulnerability to harm or illness	Belief that unpreventable catastrophes will happen at any time
	Enmeshment/undeveloped self	Excessive emotional closeness with others at the expense of individual development
	Failure	Belief that a person is fundamentally inadequate
Impaired Limits		
	Entitlement/grandiosity	Belief that one is superior to other people and entitled to rights and privileges
	Insufficient self-control/self-discipline	Lack of self control

Other-Directedness	
Subjugation	Surrendering of control to others in order to avoid anger, abandonment, or retaliation
Self-sacrifice	Focus on routinely meeting the needs of others at the expense of personal gratification
Approval seeking/recognition seeking	Emphasis on gaining approval, recognition, or attention from others
Overvigilance & Inhibition	
Negativity/pessimism	Focus on the negative, such as pain and disappointment, while ignoring the positive
Emotional inhibition	Regulation of spontaneous actions in order to avoid disapproval, shame, or a loss of control
Unrelenting standards/hypercriticalness	Striving to meet very high personal standards of behavior in order to avoid criticism
Punitiveness	Belief that people should be harshly punished for making mistakes

APPENDIX B

Table 2. Correlations between Eating Disorder Symptomology and both Body Image Concerns and Early Maladaptive Schemas

	Binging	Purging	Restricting
Shape Concerns	.69**	.44**	.72**
Weight Concerns	.70**	.46**	.68**
Emotional Deprivation	.27*	-.03	.01
Abandonment	.24	-.05	.04
Mistrust/Abuse	.41**	.10	.17
Social Isolation	.29*	-.00	.10
Defectiveness/Shame	.41**	.08	.18
Failure to Achieve	.41**	.14	.18
Dependence/Incompetence	.19	.10	.07
Vulnerability to Harm	.13	-.02	.06
Enmeshment	.19	.16	.09
Subjugation	.33**	.11	.15
Self-Sacrifice	.27*	.09	.15
Emotional Inhibition	.44*	.06	.06
Unrelenting Standards	.15	.11	.33*
Entitlement	.08	-.06	-.05
Insufficient Self-Control	.36**	-.13	-.06
Admiration Seeking	.44**	-.01	.07
Pessimism/Negativity	.41**	.04	.13
Punitiveness	.17	-.02	.03

Note. * $p < 0.05$, ** $p < 0.01$

APPENDIX C

Demographic Questionnaire

Demographic Questionnaire

1.) What is your sex? (please circle one)

- a. Male b. Female

2.) What is your age?

- a. _____ yrs. Old

3.) What is your race/ethnicity? (please circle one)

- a. Caucasian/White
b. African-American/Black
c. Hispanic/Latino/Mexican American
d. American Indian
e. Asian American/Pacific Islander
f. Bi-racial _____
g. Other _____

4.) What year in college are you? (please circle one)

- a. Freshman
b. Sophomore
c. Junior
d. Senior
e. 5th Year

5.) What is your current height?

- a. _____ feet _____ inches

6.) What is your current weight?

- a. _____ pounds