BODY IMAGE DISSATISFACTION OF COLLEGE WOMEN: POTENTIAL RISK AND PROTECTIVE FACTORS

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The undersigned, appointed by the Dean of the Graduate School, have examined the dissertation entitled

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And hereby certify that in their opinion it is worthy of acceptance.

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Chapter 1

Introduction

Since the 1980s, prevalence research has shown that eating disturbance is common on college campuses (Drewnowski, Yee, & Krahn, 1988). As many as 64% of college females exhibit some form of problematic eating behavior (Mintz & Betz, 1988), and approximately 19% to 32% suffer from some eating disorders symptoms (Mulholland & Mintz, 2001). As suggested by the strikingly high incidence of eating problems in college women, it is not unreasonable to suspect that an even larger number of college women experience concerns about their appearance, especially their weight, size, and shape. Indeed, anxiety about weight, shape, and size is widespread in college females. As many as 82% college women want to lose weight (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997), and many perceive themselves fatter than they actually are (Galgan & Mable, 1986). In addition, body image dissatisfaction is certainly prevalent beyond college campuses. A poignant term, "normative discontent," has been coined to describe the experience that most females feel about their bodies in current society (Rodin, Silberstein, & Striegel-Moore, 1985).

Some characteristics of college life may lead women to become more prone to body image concerns. The intense pressures with regard to academics and social relations of campus life may place vulnerable individuals further at risk for psychological problems, including eating disturbance and body image dissatisfaction (Strigel-Moore, Silberstein, Frensch, & Rodin, 1989). In addition to these general pressures, college women are confronted with specific pressures toward thinness and attractiveness, as the social environments in colleges and universities tend to foster increased awareness of body image and to reinforce adherence to unrealistical thin-ideals (Low et al., 2003). Consequently, colleges and universities are considered the "breeding grounds" for body image concerns and eating problems (Strigel-Moore & Franko, 2002).

Although body image dissatisfaction may "just" be a "normative discontent" (Rodin, Silberstein, & Striegel-Moore, 1985) for most college women, its role in the formation of psychological disorders cannot be underestimated. Body image dissatisfaction has consistently been identified as a precursor for eating pathology in an extensive number of longitudinal studies (c.f. Fairburn et al., 2003), and is concluded to be "one of the most robust risk factors for eating disturbances" (Stice, 2001b, p. 55). Its adverse impact may reach other psychopathology, ranging from intense emotional distress (Thompson et al., 1999), elevated depressive symptoms

(Stice & Bearman, 2001), to the onset of major depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000). Finally, the effort and expenditure devoted in drastic means of modifying the body, such as unnecessary cosmetic surgery, due to body image dissatisfaction are startling (Striegel-Morre & Franko, 2002; Thompson et al., 1999).

Despite the pervasiveness of body image dissatisfaction and the evidence of its role in the formation of a range of psychopathological problems, little is known about what risk factors precipitate the development of body image dissatisfaction (Stice & Whitenton, 2002) and what factors may protect individuals from developing such dissatisfaction. Accordingly, the main goal of the present study was to investigate potential risk and protective factors for body image dissatisfaction in college women.

A risk factor is generally defined as a variable that increases the likelihood of the development of a pathological outcome (Thompson & Smolak, 2001), whereas a protective factor is defined as a variable that reduces the likelihood of occurrence or mitigates the detrimental effects of a risk factor (Stice, 2001b). Strictly speaking, risk and protective factors should be demonstrated to precede in time occurrence of the criterion variable (e.g., body image dissatisfaction); otherwise, they are more appropriately termed concurrences, correlates, or consequences of the pathology (Kazdin, Kraemer, Kessler, Kupfer, Offord, 1997). Given the correlational nature of the present study, it is impossible to demonstrate with certainty that the variables of

interest precede the criterion variable. However, for the sake of terminology convenience, the present study will still employ the terms “risk” and “protective” factors to refer to the positive and negative correlates of body image dissatisfaction, with the acknowledgement that no causal relationships can be drawn from this study. Although there are limitations with cross-sectional studies, Kazdin et al. (1997) maintain that these approaches are efficient first steps for identifying possible risk or protective factors for further investigation in other research designs, such as experimental or longitudinal studies.

Potential Risk Factors for Body Image Dissatisfaction

Theories that focus on risk factors for the development of body image dissatisfaction usually emphasize developmental factors and sociocultural factors (Heinberg, 1996). Developmental theories of body image dissatisfaction highlight the importance for the formation of late body image disturbance of childhood and adolescent developmental factors including, but not limited to, pubertal timing, being teased about appearance, childhood overweight, and early sexual abuse (Heinberg, 1996). In contrast, sociocultural theories of body image dissatisfaction address the influential roles of factors such as sociocultural ideals, influence of mass media, and gender-role socialization, in the developmental of body image concerns (Heinberg, 1996). Among the broad range of variables with the potential for negative influence,

the present study will explore the following subset of potential risk factors for body image dissatisfaction in college women: (a) developmental teasing, (b) a history of being overweight in childhood/adolescence, (c) current weight level or "body mass index" (BMI), and (d) perceived influence from the media regarding appearance ideals.

Research suggests that seemingly lighthearted teasing is detrimental to an individual when its target is some sensitive personal characteristics such as weight, shape, size, and general physical appearance (Thompson, Fabian, Moulton, Dunn, & Altabe, 1991). A history of being teased about appearance may have lasting effects. In a national survey, Cash, Winstead, and Janda (1986) found that adult women who reported being teased about their appearance during childhood were more likely to feel dissatisfied with their physical appearance during adulthood. Another study on college women indicated that as high as 72% of college women reported experiences of appearance-related teasing or criticism during their childhood or adolescence (Cash, 1995). Teasing history has been associated with body image dissatisfaction, eating disturbance, depression, and low self-esteem in college women (Thompson, Fabian, Moulton, Dunn, & Altabe, 1991). Several longitudinal studies of adolescent girls have identified appearance-related teasing as a risk factor for girls' body image dissatisfaction (e.g., Barker & Galambos, 2003; Cattarin & Thompson, 1994).

For many females in Western societies, being thin is a prerequisite for cotemporary beauty, whereas being overweight is highly stigmatized (Striegel-Moore & Franko, 2002). Overweight or obese individuals are likely to encounter social prejudice or discrimination (Crandall, 1994). When such societal dynamics emphasize thinness and physical attractiveness, females with higher body weight may be more likely to experience dissatisfaction with their bodies (Cash, et al., 1986). Indeed, a number of empirical studies have documented such a relationship between body weight and body image (e.g., Brodie & Slade, 1988; Cash et al., 1986; Cash & Hicks, 1990; Tsai, Hoerr, & Song, 1998). As such, having a larger body figure (i.e., higher BMI) may put college women at risk for developing body image dissatisfaction, especially when individuals buy into sociocultural ideals of beauty and thinness (Low et al., 2003).

The effects of overweight or obesity on body image can be longstanding. Although current weight status plays a significant role in one's body image, the vestigial influence from past weight history cannot be ignored (Cash, Counts, & Huffine, 1990). Weight reduction or current normal weight status may not completely ameliorate individuals' negative body image resulting from an overweight history during childhood or adolescence. Empirical studies have found that, despite currently normal weight, college women with an overweight history were more dissatisfied

with their bodies than those without such a history (Cash, Counts, & Huffine, 1990; McLauren and Gauvin; 2002).

However, body image dissatisfaction is not exclusively associated with being overweight or having a history of being overweight. Normal-weight women often develop dysfunctional dissatisfaction with their bodies (Heatherton, Mahamedi, Striepe, Field, & Keel, 1997). How a woman feels about her body is likely to be influenced by how physical attractiveness is defined in her culture, such as the ultra slender female figures portrayed in the Western media (Heinberg, 1996; Tiggemann, 2002). Numerous studies have indicated the negative impact that exposure to media thin-ideals has on women's body image (c.f. Stice & Shaw, 1994; Tiggemann & Slater, 2004), although some research reports that media exposure itself does not necessary lead to body image dissatisfaction (Stice, Spangler & Agras, 2001). Perhaps the impact of media exposure on body image is mediated through or moderated by thin-ideal internalization, which is the extent to which a person cognitively endorses socially prescribed ideals of attractiveness, and then attempts behaviorally to attain these ideals (Heinberg & Thompson, 1995; Thompson et al., 1999). Mounting evidence ranging from correlational studies, experimental designs, to longitudinal studies (e.g., Cattarin, Thompson, Thomas, & Williams, 2000; Cusumano & Thompson, 1997; Stice, Mazotti, Krebs, & Martin, 1998) have documented a

relationship between thin-ideal internalization and body image dissatisfaction and eating pathology. Some theorists have argued that thin-ideal internalization is a potent risk factor for the etiology and maintenance of body image and eating disturbances (Shisslak & Crago, 2001; Thompson & Stice, 2001). In addition, the extent to which individuals perceive pressure from the media regarding the need to pursue thinness has also been found to be associated with body image dissatisfaction (Thompson, Van den Berg, Roehrig, Guarda, & Heinberg, 2004).

Although most of the developmental or sociocultural factors discussed above have received increased investigation individually, relatively little is known about these variables collectively, and which ones may be relatively more important as etiological factor(s) for body dissatisfaction in college women. More studies are needed to evaluate competing theories, for example, the relative importance of developmental factors versus sociocultural factors, for body image dissatisfaction (Heinberg, 1996). One aim of the present study was to investigate, among the developmental and sociocultural factors of interest, which factor is the best predictor for body image dissatisfaction in college women.

However, it is very important to note that not every woman exposed to the same sociocultual ideals of thinness develops intense body dissatisfaction or extreme preoccupation with their shape and weight (Rodin, et al., 1985). Neither is it

inevitable that every individual confronted with developmental risks (e.g., childhood overweight, teasing history) develops body image dissatisfaction. It is important for researchers to understand why some women seem to be able to resist sociocultural messages regarding thinness, and seem to be free from the deleterious impact of developmental risk factors on body image development.

Potential Protective Factors for Body Image Satisfaction

Compared to the increasing amount of interest and effort in investigating risk factors, relatively little work has been done to identify protective factors in body image and eating disorders issues (Crago, Shisslak, & Ruble, 2001; Striegel-Moore & Cachelin, 1999). However, the importance and benefit of understanding factors that promote positive body image cannot be overstated. Identifying protective factors may inform effective prevention efforts as well as facilitate appropriate therapeutic strategies for treating body image and eating disturbances (Striegel-Moore & Cachelin, 1999). In keeping with this need in body image research, the current study examined the following protective factors that may promote college women's' resilience against body image dissatisfaction: (a) parental bonding, (b) adult romantic attachment, and (c) social support.

According to attachment theory, individuals who develop secure attachment in the early years of life are less prone to psychopathology and more interpersonally

competent than those with insecure attachment (Bowlby, 1973, Cassidy & Shaver, 1999; Lopez & Brennan, 2000). Individuals with good parental bonding are more likely to develop a sense of self-worth and emotional comfort, whereas individuals with poor parental attachment are more likely to develop a negative image of the self that may lead to the development of preoccupations with weight and shape (Sharpe, et al., 1998), as well as to the emergence of body image dissatisfaction and eating pathology (Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003). As attachment theory has become a useful modality to understanding interpersonal processes in individual and group psychotherapy (Mallinckrodt, 2000, 2001), further investigation into attachment issues in body image and eating problems may enable the application of more effective interventions in the prevention and treatment of body image and eating concerns (Sharpe, et al., 1998). Some studies have indicated that perceived parental care, and memories of parents as being warm and emotionally responsive versus cold and aloof, are associated with less body image dissatisfaction (Haudek, Rorty, & Henker, 1999; Panfilis et al., 2003).

One of the developmental tasks confronted by young women is the ability to develop intimacy and find fulfillments in relationships (Erikson, 1985); therefore, experiences with romantic partners may shape a college woman's body image. Some individuals may have fears of being negatively evaluated by their partners, whereas

others may feel rather comfortable with regard to how their partners may view their physical attractiveness (Thompson et al., 1999). Preliminary data have suggested that insecure adult attachment is associated with eating disorder symptoms (Gilchrist, 1995; Suldo & Sandberg, 2000), although a search of the literature located only one empirical study that explored adult attachment and body image dissatisfaction. Cash, Theriault and Annis (2004) found that anxious romantic attachment was associated with body image dissatisfaction. It is, however, reasonable to infer that college women with insecure romantic attachment may exhibit more preoccupation or concerns about their weigh, size, and appearance than those with secure attachment.

However, it may be argued that perhaps adult romantic attachment works with other risk variables in mediational, rather than moderational, relationships. Specifically, because adult attachment operates as an internal mental representation that guides one's behavior to seek comfort and maintain security in romantic relationships (Hazan & Shaver, 1987), individuals with high attachment anxiety may be more venerable to internalize appearance ideals prescribed by the media, perhaps as an effort to ensure relationship security. Such effort, however, may in turn increase a woman's susceptibility for body image dissatisfaction. In other word, instead of moderating the effect of media messages on body image, adult attachment anxiety may increase a person's vulnerability to negative media influence, which then may be

associated with body image concerns. Therefore, in addition to a main purpose of identifying protective factors, the current study also intended to explore whether mediational relationships exist among attachment anxiety, perceived media influence, and body image dissatisfaction.

For many college students, being in college involves developing an adjustment to being away from home and establishing a new support system. Theorists have maintained that perceptions of being supported and appreciated in one's social environment may promote positive body image, whereas a lack of social support may lead individuals to become susceptible to body image and eating disturbances (Stice, Presnell, & Spangler, 2002). Because college life may entail confronting intense academic and social stress as well as interpersonal appearance comparison (Strigel-Moore et al., 1989), it is important to examine whether perceived social support can protect individuals from developing body dissatisfaction. Some studies on adolescents have documented the adverse effects of a social support deficit on girls' body image and eating pathology (Stice et al., 2002; Stice & Whitenton, 2002). Thus far, only one study of college women could be found which indicated that college women who clustered in the positive body image group reported more social support than women clustered in other groups that reported body dissatisfaction (Williams, 2004).

Although researchers have just begun to recognize the importance of investigating protective factors in body image dissatisfaction or eating disorder symptoms, no studies of college women could be located that have included both risk and protective factors in their design, or examined interactions between the two set of factors. Accordingly, one goal of this study was to explore interactions among the potential risk and protective factors, with the hope of identifying factors that may protect young women from body image dissatisfaction.

The Present Study

The purpose of the present study is to identify potential risk and protective factors for body image dissatisfaction/satisfaction in college women. The study will examine four potential risk variables: (a) developmental teasing, (b) current BMI, (c) overweight history, and (d) perceived influence from media portrayals of appearance ideals; together with three potential protective variables: (a) parental emotional responsiveness, (b) adult attachment, and (c) social support. Specifically, the present study will examine the following hypotheses:

1. Hypothesized risk factors:

1-1. Developmental teasing, BMI, overweight history, and perceived media influence will predict body image dissatisfaction.

2. Hypothesized protective factors:

2-1. Parental care and social support will negatively predict body image dissatisfaction.

2-2. Adult attachment anxiety and adult attachment avoidance will positively predict body image dissatisfaction.

3. Moderating effects:

3-1. Parental care will moderate the effects of developmental teasing, overweight history, BMI, and perceived media influence, respectively, on body image dissatisfaction. In other words, individuals high in developmental teasing (or other risk variables) and high in parental care will demonstrate less body image dissatisfaction as compared to individuals with high developmental teasing (or with an overweight history) but low parental care.

3-2. Adult attachment avoidance will moderate the effects of developmental teasing, overweight history, current BMI, and perceived media influence, respectively, on body image dissatisfaction. In other words, individual with higher levels of developmental teasing (and other risk variables) and high levels of adult attachment avoidance will demonstrate *more* body image dissatisfaction as compared to individuals with higher levels of developmental teasing (and other risk variables) but low levels of adult attachment avoidance.

3-3. Adult attachment anxiety will moderate the effects of developmental teasing,

overweigh history, current BMI, and perceived media influence, respectively, on body image dissatisfaction. In other words, individual with higher levels of developmental teasing (and other risk variables) and high levels of adult attachment anxiety will demonstrate *more* body image dissatisfaction as compared to individuals with higher levels of developmental teasing (and other risk variables) but low levels of adult attachment anxiety.

3-4. Social support will moderate the effects of developmental teasing, overweight history, current BMI, and perceived media influence, respectively, on body image dissatisfaction. In other words, individual with higher levels of developmental teasing (and other risk variables) and high levels of social support will demonstrate less body image dissatisfaction as compared to individuals with higher levels of developmental teasing (and other risk variables) but low levels of social support.

4. Mediating effects:

4-1. Adult attachment anxiety will increase susceptibility to pursuit of media prescribed appearance ideals, which in turn will increase the likelihood of body image dissatisfaction.

Chapter 2

Literature Review

This literature review chapter will first present the prevalence of body image and eating concerns of college women. Key terms/phrases in this study will then be defined. Next, the relations between body image dissatisfaction and eating pathology will be reviewed. Theories of body image disturbance will then be introduced. Finally, critical developmental and sociocultural factors as well as potential protective factors will be reviewed.

Prevalence of Body Image Concerns

Body image concerns are epidemic in college women. In a longitudinal study, Heatherton, Mahamedi, Striepe, Field, and Keel (1997) found that 82% of the 509 college female students surveyed in 1982 wanted to lose weight, despite the fact that only 1.4% of them were overweight. Ten years later, in 1992, the follow up showed that 68% of those women still reported that they want to lose weight. Galgan and Mable (1986) asked a Candian sample of 75 college women to rate their satisfaction with specific body aspects on a Likert-type scale ranging from 1, indicative of "wish to change," to 5, indicative of "feel fortunate." Participants were also asked to indicate

their height, weight, body build, as well as their perception of the percentage that their bodies were overweight or underweight. Galgan and Mable found that these women were significantly more dissatisfied with their body size than with their facial features. The participants also perceived themselves to be about 15% fatter than they actually were.

To make the matter worse, concern about weight and body image is fueled by the "freshman 15" myth (Graham & Jones, 2002) that freshmen gain 15 pounds during their first year in college. Consequently, unhealthy eating practice is often employed by young women to approach body image concerns. Strigel-Moore, Silberstein, Frensch, and Rodin (1989) conducted a prospective study to examine the prevalence of disordered eating among undergraduate freshmen at the beginning and at the end of their first year in college. At baseline, there were 590 male and 450 female participants. Data of 546 men and 403 women were available at follow-up. Results indicated that although many of the participants had been on a diet (64.5% females and 19.4% males) and/or had a history of binge eating (43.4% females and 17% males) prior to college, many men and women (about 25%, respectively) had an onset of dieting behavior during their freshmen year, and that about 15% of the females had their first experience of binge eating during their freshmen year. For the female participants, worsening of disordered eating was related to increased negative

feelings about one's weight, decreased self-ratings of attractiveness, high level of perceived stress, increased dissatisfaction with weight, and increased negative self-evaluation and feelings of inadequacy.

Mintz and Betz (1988) conducted a prevalence study on the eating disordered behavior among 682 undergraduate college women. Among the 643 nonanorexic, nonobese participants, 61% of the women exhibited some form of disordered eating behavior, and another 3% were classified as bulimic. These results indicated that both dieting and bingeing behaviors were prevalent in college women. This study also found that disordered eating behavior was associated with low self-esteem, negative body image, a tendency to endorse sociocultural ideals regarding thinness, obsessive thoughts about one's appearance and weight, and interference with other life aspects resulting from weight and appearance concerns.

Mulholland and Mintz (2001) examined prevalence rates for eating disorders among 413 African American college women. Results demonstrated that no participants were classified as anorexic or bulimic, although 2% of the participants were classified as exhibiting an eating disorder not otherwise specified. In this study, 23% of the African American women were classified as symptomatic, which, as suggested by the authors, fell within the range obtained for comparative Caucasian samples in other studies (19—32%). The authors thus concluded that these findings

"would help dispel the persistent myth that eating disorders are Caucasian disorders" (p. 115).

In view of the high prevalence of body image and eating concerns on college campus, some researchers (Low et al., 2003) have argued that the high incidence may have to do with the social environments that many colleges, especially residential colleges, create; that is, college campus and social life tend to reinforce adherence to unrealistic appearance ideals and foster intense awareness of body image and concerns about eating. Since body image concerns are so commonly found in college women, researchers have considered colleges to be "breeding grounds" for body image disturbance and eating problems (Striegel-Moore & Franko, 2002). In fact, weight, shape, and appearance concerns have become so prevalent in females in Western societies that Rodin, Silberstein, and Striegel-Moore (1985) have coined the term "normative discontent" to convey the experience of most girls and women.

Definitions of Body Image Dissatisfaction

Many terms or phrases have emerged to define body image. Thompson, Heinberg, Altabe, and Tantleff-Dunn (1999) have proposed the use of an "umbrella term" to best encompass the different components (e.g., weight satisfaction, appearance orientation) and types (e.g., body esteem, body schema) of body image. The phrase *body image disturbance* is argued to capture appropriately the complexity

of the construct of body image, which is confined in this field only to the physical appearance-based definition. A specific body image disturbance may take the forms of affective, cognitive, behavioral, and/or perceptual disturbance (Thompson et al., 1999). *Body dissatisfaction*, also referred to as *body image dissatisfaction* (Garner & Garfinkel, 1981) is also a very widely used phrase in the area of body image research, because it captures well the essence of the subjective appraisal of one's physical appearance. As such, many researchers consider this component (i.e., body image dissatisfaction) of disturbance as the most global measure of body image distress, and it again can include affective, cognitive, and/or behavioral features (Thompson et al., 1999). The current project will employ the term *body image disturbance* when addressing multiple components or broader definitions of body image (e.g., theories of body image disturbance), but will use the term *body image dissatisfaction* or *body dissatisfaction* interchangeably.

Body Image Concerns and Eating Problems

Body image dissatisfaction has been found to predict the development of eating disturbances. A considerable number of prospective, longitudinal studies have found that body image dissatisfaction is a precursor of eating problems (Attie & Brooks-Gunn, 1989; Cattarin & Thompson, 1994; Fairburn et al., 2003; Field et al., 1999; Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Killen et al., 1996; Stice,

2001a; Stice & Agras, 1998; Stice, Mazotti, Krebs, Martin, 1998; Thompson, Coovert, Richards, Johnson, & Cattarin, 1995). For example, baseline body image dissatisfaction has been shown to be a predictor of subsequent eating disturbance (Attie &Brooks-Gunn, 1989; Stice, 2001a), pathological drive for thinness (Cattarin & Thompson, 1994), increase in dieting or restrictive eating (Stice, 2001a, Stice, et al., 1998; Thompson et al., 1995), onset of eating pathology (Field et al., 1999; Graber et al., 1994; Killen et al., 1996; Stice & Agras, 1998), as well as persistence and maintenance of bulimic symptoms (Fairburn et al., 2003; Stice & Agras, 1998). In an extensive meta-analysis, Cash and Deagle (1997) reported that body image dissatisfaction is an important risk factor for the etiology of anorexia nervosa. Indeed, Stice (2001b) argued that body image disturbance is "one of the most robust risk factors for eating disturbances" (p. 55).

The impact of body image disturbance may reach beyond eating problems (Striegel-Morre & Franko, 2002). For instance, body dissatisfaction was found to predict the onset of major depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000), and increases in depressive symptoms (Stice & Bearman, 2001). These findings have led researchers to conclude that, in addition to its precursor role in the formation of eating disturbances, body image disturbance is in and of itself deserve scientific investigation (Pruzinsky & Cash, 2002; Thompson, Heinberg, Altabe, &

Tantleff-Dunn, 1999) as well as clinical intervention (Butters & Cash, 1987; Grant & Cash, 1995; Cash & Grant, 1996).

Definitions of Risk and Protective Factors

Despite the pervasiveness of body image dissatisfaction and the evidence of its role in the formation of a range of psychopathological problems, little is known about what risk factors precipitate the development of body image dissatisfaction (Stice & Whitenton, 2002) and what factors may protect individuals from developing such dissatisfaction. Not only is identifying risk and protective factors important for the field of body image and eating disorders research, it may also nform effective prevention efforts as well as facilitate appropriate therapeutic strategies in treating body image and eating disturbances (Striegel-Moore & Cachelin, 1999).

Generally, risk factors can be defined as factors that increase the likelihood of the development of a pathological outcome (e.g., eating problem) in an individual, and protective factors refer to variables that decreases the chances that a negative outcome or problem will occur (Thompson & Smolak, 2001). However, Stice (2001) emphasized the moderator role of a protective factor. That is, a protective factor should be defined as a variable that mitigates the detrimental effects of a risk factor. According to Stice (2001), the fact that some researchers define protective factors as those that negatively related to the development of body dissatisfaction or eating

problem requires further discussion—because their definition is "conceptually unsatisfying" since very "often the only distinction between a risk factor and a protective factor is the way that it is coded" (Stice, 2001, p. 52). Moreover, risk and protective factors should be demonstrated to precede the criterion variable (e.g., body image disturbance); otherwise, they are more appropriately named as concomitants, correlates, or consequences of the pathology (Kazdin, Kraemer, Kessler, Kupfer, Offord, 1997). However, Kazdin et al. (1997) emphasized the importance of cross-sectional research and retrospective studies in risk and protective factor research. Although they contain certain limitations, these approaches are efficient first steps for identifying possible risk or protective factors which can be further examined in other research designs, such as experimental or longitudinal studies (Kazdin et al., 1997).

Theories of Body Image Disturbance

Theories of body image disturbance can generally be divided into (a) those that focus on the perceptual aspect of body image and (b) those that address the subjective aspect of body image (Heinberg, 1996). Perceptual theories of body image disturbance focus on how accurate a person's perception of body size matches her or his actual body size. For example, Thompson and Spana (1991) hypothesized that perception of body size has to do with visuospatial ability. Thus, the perceptual overestimation of body size in people with anorexia nervosa may actually be a deficit

in visuospatial ability (for a more detailed description of other perceptual theories, see Heinberg, 1996).

Subjective theories of body image disturbance address how people feel about their bodies or body parts, and are often tested in nonclinical populations (Heinberg, 1996). These theories can be categorized into developmental and sociocultural theories, although it is apparent that there can be interactions between the two categories of factors (Heinberg, 1996). Because the present study is interested how developmental and sociocultural factors contribute to body image dissatisfaction in a nonclinical college female sample, developmental and sociocultural factors will constitute the foci of the following literature review.

Developmental theories of body image disturbance examine the importance of childhood and adolescent developmental factors, including, but not limited to, pubertal timing, teasing, childhood obesity, early sexual abuse, in the formation of late body image disturbance (Heinberg, 1996). This current study is especially interested in the roles of developmental teasing and childhood/adolescent overweight history in college women's body image dissatisfaction, and thus will review literature concerning the two factors in detail. In addition, the role of current weight status (body mass index) in college women's body image will also be reviewed.

Critical Developmental Factors in Body Image Dissatisfaction

Teasing /Negative Verbal Commentary. Appearance-related teasing, or sometimes referred to as negative verbal commentary, has received a great deal of attention as a body image and eating disturbances risk factor (Furman & Thompson, 2002). Its negative impact on individuals' body image and eating behavior has been widely supported by empirical data (Thompson, et al., 1999). For example, in a large sample of 4,000 readers of *Psychology Today*, readers were asked to report their experience of being teased about their appearance. Garner (1997) reported that 44% of the women who responded indicated that the experience of being teased influenced their body image, and 35% of men also noted that teasing was a factor that affected their body image.

Cash (1995) asked 111 female college students to recall their experiences of appearance-related teasing/criticism. Results showed that 72% of participants reported such experiences, with median duration of 5 years, which often lasted from middle childhood to early adolescence. Among those that reported such experiences, 46% indicated that they had been the target of teasing or criticism moderately often (26%), often (14%), or very often (6%). In addition, 71% of participants indicated that these negative experiences had affected their current body image to some extent, and 70% noted that they think about these experiences sometimes (63%) or more often (7%). In

another sample of college women, Rieves and Cash (1996) found that the face and head (45%) and weight (36%) were the two most frequent targets of teasing or criticism. Peers in general were frequent perpetrators (62%) of appearance-related teasing/criticism, and friends were also ranked high (47%), although brother (79%) and father (24%) were also frequent teasers in the family. Moreover, when asked to pick their "worst" perpetrator, 33 % of the participants selected brother, 11% mother and 6% father.

Not only is teasing a prevalent issue encountered by many individuals throughout childhood and adolescence, its association with negative body image has been well established. A considerable number of survey or correlational studies have consistently found that being teased about one's appearance during childhood and/or adolescence is associated with current body image dissatisfaction in female college students (Cash,1995; Rieves & Cash, 1996; Thompson, et al., 1991; Thompson & Psaltis, 1988), adult women (Cash, Winstead, & Janda,1986), obese female adults (Grilo, Wilfley, Brownell, & Rodin, 1994), and adolescent girls (Fabian & Thompson, 1989). Teasing was also found to be related with eating disturbance (Fabian & Thompson, 1989; Thompson, et al., 1991), depression (Fabian & Thompson, 1989), low self-esteem (Fabian & Thompson, 1989), and overall psychological functioning (Thompson, et al., 1991).

Longitudinal studies and covariance structure modeling investigations also have confirmed these findings. In a 3-year longitudinal study of 87 girls beginning when the girls were aged between 10 and 15, Cattarin and Thompson (1994) found that being teased about weight and size predicted increase in weight and appearance dissatisfaction. Moreover, teasing mediated the effect of obesity on body image disturbance. Thompson, et al. (1995) used covariance structure modeling to investigate the relationships among teasing, weight, body image, eating dysfunction, and overall psychological functioning. Teasing history was found to directly predict body image dissatisfaction, eating disturbance, and overall psychological functioning. Also, teasing was found to mediate the impact of being overweight on body image. In addition to this potential mediator role, Heinberg (1996) suggested that, developmental factors such as teasing or negative verbal commentary may also serve as important moderators that lead individuals to be more vulnerable to sociocultural pressure of achieving beauty ideals.

Body Mass Index (BMI). Having a higher body mass index has been found to correlate with greater body image disturbance in adolescent girls (Field, Wolf, Herzog, Cheung, & Colditz, 1993; Wadden, Foster, Stunkard, & Linowitz, 1989). Field et al. (1993) found that BMI was positively related to weight and shape concerns in a sample of 548 girls in grades 5 to 12. In a sample of 363 girls at the age of 16,

Wadden et al. (1989) divided the participants into five groups according to their BMI. Results indicated that among the five groups, girls in the very overweight (i.e., most overweight) group reported most dissatisfaction with their weight and figure. The slightly overweight and average weight groups also reported more dissatisfaction than the slightly underweight and very underweight groups.

Similar findings have been reported in adult women in cross-sectional studies. In a sample of college women, Lyter (1998) found that an elevated BMI as well as higher scores on internalization of sociocultural ideals were most predictive of appearance dissatisfaction and dysfunctional weight management behaviors. Tsai, Hoerr, and Song (1998) conducted a retrospective comparison of eating and body concerns in 73 Asian women attending a US university and 247 US-born female students. In both the Asian and US females, BMI was significantly associated with body dissatisfaction. In a Spanish sample of 104 female college students, Raich, Claraso, and Giral (1997) found that BMI significantly predicted body image dissatisfaction. In a sample of 146 female college students, Drotts (1997) found that participants' self-categorization of themselves into heavier weight groups significantly predicted greater body image dissatisfaction.

High BMI may also be associated with additional risk factors for one's body image disturbance. For example, Cattarin and Thompson (1994) found that BMI

prospectively predicted weight-related teasing in adolescent girls. Likewise, Thompson et al. (1995) found that teasing mediated the relationship between BMI and body image. Level of overweight was not directly associated with body image; instead, the effect of BMI was mediated through teasing. In other words, not every overweight individual suffered negative body image, but only those who were overweight and teased about their weight developed body image disturbance. Low et al. (2003) investigated internalization of the thin ideal, weight and body image concerns in a sample of 70 undergraduate women. They found that BMI moderated the effect of thin-ideal internalization. Women who were overweight and high in internalization of sociocultural ideals reported the most body image disturbance. Low et al. (2003) concluded that having a figure that does not meet the sociocultural standards of attractiveness may put individuals at risk for body dissatisfaction when it coexists with a high internalization of the thin ideal. They also emphasized the possible moderator roles of BMI.

Childhood/Adolescent Overweight. Although many studies reviewed above have suggested that current weight level (body mass index) predicts one's body image, relatively very few studies have investigated the relationship between weight history and current body image. In their three-year longitudinal study, Cattarin and Thompson (1994), found that girls' time one body mass prospectively predicted their body image

dissatisfaction three years later. Another longitudinal study by Stice and Whitenton (2002) found that elevated BMI prospectively predicted increases in body dissatisfaction among adolescent girls. Cash, Counts, and Huffine (1990) examined vestigial and current effects of overweight in a sample of 84 college women. Sixty-four of the participants were categorized into three groups based on current weight level and a structured weight history questionnaire: (a) currently normal weight without an overweight history (NW), (b) currently normal weight with a former overweight history (FOW), and (c) current overweight (OW). Results showed that, compared to NW group, currently overweight participants demonstrated more weight-related anxieties, body image concerns, and recent and past-year dieting. The formerly overweight group, although currently normal weight, reported more body dissatisfaction, considered themselves fatter, and showed more anxiety about their weight than those women in the NW group.

Mertens and Vandereycken (1998) examined the relationship between current body dissatisfaction and a history of prepubertal overweight. In a sample of 257 high school girls at the ages of 16 to 17, 10% of the girls had a BMI above 26, which met the overweight criterion. Almost 25% of the participants obtained higher scores than the cutoff point on the Body Attitude Test, which put their body dissatisfaction within the pathological range. The researchers then analyzed participants' medical records at

their local student health center, where examinations were conducted every other year while students were between the ages of 8 and 14. Findings revealed that adolescent girls with elevated body image dissatisfaction had a higher BMI when they were at age 8, and that their body mass increased more in the following four years. Thus, it appears that being overweight in childhood may have contributed to adolescent body image disturbance.

McLauren and Gauvin (2002) studied the cumulative influence of being overweight on individuals' body esteem in a sample of 266 female college students. Participants were asked to self-report their weigh status history since the age of 5 years. The weight status history was divided into three year ranges, asking respondents to indicate whether, during each range, they had been 'underweight,' 'normal weight,' or 'overweight.' Participants also completed a measure of body esteem. Four groups with different weight history were categorized: (a) always overweight, (b) always normal/underweight, (c) increase in weight over time, and (d) decrease weight over time. Differences in current body esteem were examined between these four groups. Results indicated that although both the "always overweight" and the "increase in weight over time" groups were currently still overweight (according to the BMI reported), the "always overweight" group showed significantly lower body esteem than the latter.

Based on the studies reviewed above, it is reasonable to infer that other than current weight level, having a history of being overweight, and/or being teased as a child about weight or appearance has a significant impact on individuals' current body image dissatisfaction. However, many questions remain about these developmental risk factors in the area of body image dissatisfaction. The next section of this review of literature will focus on sociocultural factors that may influence body image dissatisfaction.

Critical Socilcultural Factors in Body Image Dissatisfaction

Sociocultural theories of body image disturbance address the influential roles of sociocultural ideals, mass media, and gender-role socialization in the developmental of body image disturbance (Heinberg, 1996). This paper will focus on how internalization of sociocultural ideals from the media influence body image disturbance.

Perceived Media Influence of Sociocultural Ideals. Many researchers have noted that sociocultural pressures to attain societal standards of beauty play an influential role in the promotion and maintenance of body image dissatisfaction and eating dysfunctions (Heinberg, 1996; Levine & Smolak, 1996; Stice, 2002; Striegel-Moore, Silberstein, & Rodin, 1986; Thompson, et al., 1999). Although these pressures may come from several sources (e.g., parents, peers, and partners), the mass

media are argued to be the most powerful and pervasive transmitters of sociocultural ideals (Heinberg, 1996; Stice & Shaw, 1994; Striegel-Moore et al., 1986; Thompson & Heinberg, 1999).

Evidence of mass media influences on body image disturbance has been revealed in a considerable body of research, including surveys, cross-sectional studies, and experimental studies. For example, Garner (1997) in the aforementioned *Psychology Today* survey, found that among the 3,452 women who responded, almost half of them reported negative media influence on their body image (e.g., making them feel insecure and want to lose weight). Specifically, 23% of the women indicated that their body image was influenced by television or movie celebrities, and 22% noted being influenced by fashion magazine models. To a slightly less degree, only 19% of men indicated being influenced by television or movie celebrities (13%) or fashion magazine models (6%) (Garner, 1997).

In a correlational study, Levin, Smolak and Hayden (1994) investigated the relationships between sociocultural factors and eating attidudes and behaviors in a sample 385 girls aged 10-15. The following variables were surveyed: eating behavior, body image satisfaction, concern with being thin or slender, and messages from magazines, parents, and peers regarding weight management and the importance of being slender. Results indicated a majority of the participants reported receiving clear

messages from fashion magazines and peers or family members that thinness is important and that it is attainable through dieting and other weight management methods. Results also demonstrated that reading magazines that emphasized weight management and body shape, and weight/shape-related teasing or criticism from family members were the two strong correlates of disturbed eating patterns and drive for thinness.

More forceful evidence of media influence on body dissatisfaction comes from experimental studies. In an experimental study on college women, Irving (1990) exposed participants of different degrees of self-reported bulimic symptomatology to slides of thin, average, and overweight models. Results indicated that, across all levels of bulimic symptomatology, participants exposed to slides of thinner models showed less satisfaction with their weight and lower self-esteem than those exposed to slides of larger-sized models. In a sample of 157 female college students, Stice and Shaw (1994) randomly exposed participants to magazine pictures of very-thin models, average-sized models, or no models. They find that only a 3-minute exposure to the thin-ideal led to an increase in body image dissatisfaction and other negative affect, including depression, guilt, stress, shame, and insecurity, in those women shown pictures of ultra-thin models. Hamilton and Mintz (in press) conducted an experimental study in which 93 college women were exposed to either

appearance-related magazine advertisements (i.e., experimental group) or neutral magazine advertisements (i.e., control group). Results indicated that participants in the experimental group demonstrated significantly more negative body image than did the control group. This study also found that body surveillance (i.e., viewing oneself as an object) and body shame prime women to be more vulnerable to the deleterious effect of exposure to media images of beauty deals.

Tiggemann and Slater (2004) found that detrimental impact of media exposure on body image does not limited to movies, TV, or magazines. Music television programs (MTV), a popular form of leisure entertainment among young people, can have negative effects on people's body image, too. In an Australian sample of 84 college females, Tiggemann and Slater (2004) found that exposure to music videos featuring slim and attractive females led to increased body image dissatisfaction and social comparison. In their meta-analysis of experimental studies that investigated the immediate impact of media exposure, Groesz, Levine, and Murnen (2002) concluded that exposure to thin-ideal images had a small but consistent negative impact on individuals' body image dissatisfaction, particularly for those more vulnerable persons, such as those with elevated thin-ideal internalization.

A tendency to internalize sociocultural beauty ideals, also usually referred to as thin-ideal internalization, from the media has been suggested to mediate and or

moderate the impact of media exposure on body image disturbance and eating pathology (Heinberg & Thompson, 1995; Thompson et al., 1999). Thin-ideal internalization is the extent to which a person cognitively endorses socially prescribed ideals of attractiveness, and behaviorally manages to attain these ideals (Thompson, et al., 1999). A number of studies have investigated the role of thin-ideal internalization. Using structural equation modeling, Stice, Schupak-Neuberg, Shaw, and Stein (1994), examined the directionality of relationships among media exposure, ideal-body stereotype internalization, gender role endorsement, body image dissatisfaction, and eating disordered symtomatology in a sample of college female students. They found that although media exposure directly led to eating-disordered symptoms, there was an indirect path that uncovered the mediating role of thin-ideal internalization. That is, media exposure led to thin-ideal internalization, which in turn led to body image dissatisfaction and eating pathology.

Heinberg, Thompson, and Stormer (1995), in order to better study thin-ideal internalization, developed the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ). This questionnaire consists of two scales: *internalization*, which measures the acceptance of or adherence to media and socially based standards of attractiveness and thinness; and *awareness*, which refers to the acknowledgement of the existence of such standards and pressures regarding appearance. Recently, a

newly revised version of the SATAQ was developed and called SATAQ-3 (Thompson et al., 2004) The SATAQ-3 has four factors: (a) *Internalization-General*, referring to a generic influence from the media (e.g., TV, magazines, and movies) regarding appearance ideals; (b) *Internalization-Athlete*, reflecting a tendency to internalize athletic ideals and sports figures from the media; (c) *Pressure*, indicating perceived media pressure regarding achieving certain appearance ideals; (d) *Information*, reflecting media as an informational source about fashion and attractiveness. The SATAQ-3 subscales have been found to be associated with body image concerns and eating dysfunction (Thompson et al., 2004).

Several studies (Cusumano & Thompson, 1997; Heinberg et al., 1995; Stormer & Thompson, 1996), using the SATAQ, have shown that internalization correlates significantly with body image dissatisfaction and eating dysfunction. Internalization has also been found to predict unique variance in body image and eating disturbances beyond other predictor variables, such as awareness of sociocultural pressures, and teasing. A recent study by Low and colleagues (Low et al., 2003) also found that thin-ideal internalization, but not awareness, was associated with weight and eating concerns in college women.

Experimental studies have also revealed the critical role of thin-ideal internalization. Heinberg and Thompson (1995) randomly assigned college women to

two groups, with one group viewing videotapes of commercials that stressed sociocultural ideals of being thin and attractive, the other group viewing neutral stimuli that were not related to appearance. Results indicated that women who were exposed to the videotapes that emphasized the importance of appearance ideals reported more anger, depression, and body dissatisfaction than women shown the neutral stimuli. More interestingly, Heinberg and Thompson (1995) found that participants who were high in their dispositional levels of thin-ideal internalization showed increases in body image dissatisfaction after exposure to the experimental stimuli, while participants with low dispositional level of internalization demonstrated decreases in body dissatisfaction following viewing the experimental tape. As to those in the neutral videotape group, all participants in this group showed decreases in body image dissatisfaction (Heinberg & Thompson, 1995). Another experimental study also found that dispositional levels of internalization of appearance ideals moderated the influence of media exposure on increased negative affect, including anger, anxiety, and depression (Cattarin, Thompson, Thomas, & Williams, 2000).

Prospective, longitudinal studies have also provided strong evidence of the negative effect of thin-ideal internalization on body image and eating behavior. Internalization of thin-ideals has been found to predict increased dieting (Stice, Mazotti, Krebs, & Martin, 1998), and the onset of bulimic symptoms among

adolescent girls with no initial bulimic symptomatology when the study began (Stice & Agras, 1998). Another prospective study also demonstrated that internalization of appearance ideals predicted subsequent increases in body image dissatisfaction, dieting behavior, and negative affect, which in turn, predicted later increases in bulimic symptoms (Stice, 2001a).

The rich evidence revealed in the above-mentioned studies has led researchers to conclude that internationalization of sociocultural body-image ideal (thin-ideal) is a potent risk factor for the etiology and maintenance of body image disturbance and eating pathology (Shisslak & Crago, 2001; Thompson & Stice, 2001). Future research needs to investigate factors that may promote internalization of thin ideals, as well as factors that may serve as moderators or mediators to buffer or influence the effects of thin-ideal internalization (Thompson & Stice, 2001). Heinberg (1996) pointed out that although sociocultural theories on body image disturbance is the most investigated and best supported model by available data, more empirical work should be directed to evaluate competing theories (e.g., the developmental theories versus the sociocultural theories) in order to "determine successfully which etiological factors are important for which individuals" (Heinberg, 1996, p. 40).

However, not every woman exposed to the same sociocultual thin-ideals develops intense body dissatisfaction or extreme preoccupation with their shape and

weight (Rodin, et al., 1985); neither is it likely that every individual confronted with developmental risks (e.g., childhood overweigh, being teased about appearance) develops body image disturbance. It is important to investigate why some women seem to be able to refute sociocultural messages regarding beauty ideals, or to be free from detrimental impact of developmental risk factors on body image development. Recently, researchers (Crago, Shisslak, & Ruble, 2001; Striegel-Moore & Cachelin, 1999) have pointed out that there has been little discussion and research regarding protective factors in the area of body image problems and eating disorders. More empirical studies should make the effort to investigate protective factors in body image or eating disorders issues (Crago et al., 2001; Shisslak & Crago, 2001; Striegel-Moore & Cachelin, 1999). Understanding factors that contribute to positive body image development and healthy eating may not only make effective prevention efforts possible, but also facilitate the development of more effective therapeutic strategies (Striegel-Moore & Cachelin, 1999).

Potential Protective Factors for Body Image Satisfaction

Currently, little empirical data in terms of resilience are available, and even less target young females. However, drawing from studies on childhood and adolescence resilience in general, Crago et al. (2001) and Strigel-Moore and Cachelin (1999) argue that possible protective factors might exist in the personal level (e.g., a

strong sense of identity), family context level (e.g., good parental relationship), and social context level (e.g., social support). It is suggested that further research investigate these areas for potential factors that contribute to resilience against body image disturbance or eating pathology (Striegel-Moore & Cachelin, 1999). Because the present study is interested in the potential protective effects of parental bonding, adult romantic attachment, and social support in body image development in college women, the literature review in the following section will focus on the three variables.

Parental Bonding. Attachment theory (Bowlby, 1969, 1973, 1980) maintains that, when a caregiver is consistently available and sensitively attentive to the attachment needs of an infant, the infant will develop a secure attachment bond with the caregiver. The caregiver (i.e., attachment figure) serves as a "secure base" from which infants and children develop the security, interest, and ability to explore the environment and confront challenges. Should danger or stress arise, infants and children return to their attachment figures, who are like their "safe heaven," to seek protection and comfort (Bowlby, 1969, 1980). Based on the perceptions of the responsiveness and availability of their attachment figures during the early years of life, individuals develop mental representations of their selves, other people, and the world. These mental representations operate as "internal working models" that although formed in infancy and childhood, persist relatively stable and unchanged

throughout a lifetime. Internal working models are usually out of people's conscious awareness and serve as a mental framework that guides significant interpersonal relationships (e.g., romantic relationships) in adulthood (Bowlby, 1969, 1973, 1980; Bretherton, 1985).

According to attachment theory, individuals who develop secure attachment in the early years of life are less prone to psychopathology and more interpersonally competent than those with insecure attachment (Bowlby, 1973, Cassidy & Shaver, 1999). Secure parental bonding makes it more likely that a growing child will develop a positive self-image, and good attachment relationships also provide a good regulatory context where the child's affect, behavior, and cognition are organized (Rosenstein & Horowitz, 1996). As such, individuals with good parental bonding are more likely to develop a sense of self-worth and emotional comfort, whereas individuals with poor parental bonding (insecure attachment) are more likely to develop a negative image of the self that may lead to the development of preoccupations with weight and shape (Sharpe, et al., 1998), as well as to the emergence of eating pathology and body image disturbance (Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003). In fact, some researchers have recognized the importance of exploring parental bonding and attachment issues in the study of eating disorders and body image disturbances, as further investigation into attachment issues

in body image and eating problems may enable the application of more effective interventions in the prevention and treatment of body image and eating pathology (Sharpe, et al., 1998).

In an age that strongly emphasizes improving appearance and achieving thin-ideals (Heinberg, 1996; Levine & Smolak, 1996; Stice, 2002; Thompson et al., 1999), can good parental bonding continue to serve as a "secure base" and "safe heaven" for young women challenged by developmental hazards (e.g., childhood overweight) and/or sociocultural pressure (e.g., media messages) with regard to their physical attractiveness? A growing number of studies have revealed that good parental bonding is associated with higher body image satisfaction and less eating pathology (Bjorgen, 1997; Browman, 2000; Haudek, Rorty, & Henker, 1999; Panfilis et al., 2003; Slaton, 2001), although some have failed to find such a relationship (Sive-Ramirez, 2001). However, no empirical studies available have examined potential protective (moderating) effects of parental bonding that increase individuals' resilience against the adverse influence of risk factors on their body image.

In an effort to find protective factors for eating disorders, Wertheim, Paxton, Schutz, and Muir (1997) conducted a qualitative study that interviewed 30 high school girls. Several factors appearing to protect adolescent girls from excessive weight and shape concerns were identified, including family acceptance,

self-acceptance, positive influences from peers, and knowledge about the dangers of unhealthy eating practice. In a sample of 305 school girls (aged 9 to 12), Sharpe et al. (1998) investigated the relationship between girls' general attachment style and weight concerns. Results indicated that girls with insecure attachment style reported higher weight concerns than girls who perceive a secure attachment. Compared to securely attached girls, a greater proportion of girls with insecure attachment obtained high weight concern scores that classify them in the high-risk group for eating disorders. Based on the findings, Sharpe et al. emphasized the importance of examining attachment style in body image issues.

In an Italian adult sample, Panfilis et al. (2003) investigated if poor parental bonding was predictive of body image disturbance and athexithymia. The participants were 64 outpatient women diagnosed with eating disorders, and 68 healthy women serve as controls in this study. The Parental Bonding Instrument was used to measure parental bonding, the Body Uneasiness Test to assess body image disturbance, and the Toronto Alexithymia Scale to measure athexithymia. Results indicated that low parental care predicted body image concerns, weight phobia, and other criterion variables (e.g., avoidance), whereas parental overprotection was predictive of compulsive self-monitoring. Panfilis et al. (2003) concluded that body image disturbance in persons with eating disorders may reflect a developmental deficit of the

self, which results from dysfunctional parental bonding that contributs to one's inability in distinguishing bodily needs from emotional feelings.

In a college population, Slaton (2001) examined the relationship between parental bonding and females' and males' body image disturbance. Optimal parental bonding was associated with greater levels of body satisfaction in both females and males. Specifically, college students who reported optimal bonding with their father also reported higher perceived physical fitness and investment in keeping physical fitness than those who reported poor paternal relationships that are characterized by coldness, constraint affections, or affectionless control. Students who reported good maternal bonding perceived themselves to be attractive and physically fit, and reported more overall appearance satisfaction and investment in keeping physical fitness than individuals whose relationships with their mother were characterized by affectionless control. However, individuals in different parental bonding category did not different in their tendency toward social comparison or in their internalization of sociocultural ideals. Nevertheless, the relationship between maternal bonding and body image disturbance was mediated by internalization of sociocultural ideals and social comparison tendency.

Haudek, Rorty, and Henker (1999) examined the relationships among parental bonding, ethnicity, acculturation, and eating pathology in a college sample of

Asian-American (25) and Caucasian-American (26) women with weight concerns. As measured by the Parental Bonding Inventory, perceived low maternal care was associated with higher eating disturbance in both Asian- and Caucasian- American women. Results of regression analyses indicated that maternal care demonstrated more predictive value of eating pathology than did ethnicity. These findings led Haudek, Rorty, and Henker to argued that, regardless of ethnicity, the quality of parental bonding, especially the mother-daughter relationship, plays an important protective role in the development of eating disturbance.

Also in a college sample, Browman (2000) investigated the roles of parental attachment and emotional eating on the development of eating disorder symptomatology. Eighty-nine college women and fifty-five men completed the Parental Bonding Inventory, the Emotional Eating Scale, and the Eating Disorder Inventory-2. This study found that emotions may influence the development of eating disorders. Sex differences were also found, with female participants reported more maternal overprotection, body image dissatisfaction, and drive for thinness than male students. More symptoms of bulimia and feelings of lacking autonomy from their mothers were also reported by female participants. In a two-and-a-half year longitudinal study, Bjorgen (1997) found that poor parental bonding was associated with bulimia and depression in a college female population.

Although most of the empirical data seem to suggest important linkages between parental bonding and body image/eating disturbance, some research has failed to find such relationships. For example, Sive-Ramirez (2001) examined the relationship between insecure parental attachment and body image as well as dieting behavior in a sample of 63 female college students. In this study, parental attachment was measured by the Inventory of Parental and Peer Attachment (IPPA), and body dissatisfaction as well as dieting behavior were assessed by the Eating Disorders Inventory-2. Sive-Ramirez found that the three dieting groups (the high-risk, moderate-risk, or low-risk) did not differ in their parental attachment scores (Sive-Ramirez, 2001). The non-significant finding may be due to the fact that Sive-Ramirez (2001) used the IPPA instead of the PBI (as used in many of the studies reviewed above) to measure parental bonding. However, more studies are needed to further examine the role of parental bonding in body image dissatisfaction.

Adult Romantic Attachment. For most adults, romantic relationships are an important part of their lives. When individuals transit from adolescence to young adulthood, one of the developmental tasks they confront is the ability to develop intimacy and find fulfillments in romantic relationships (Erikson, 1985). Experience with romantic partners may shape young women's body image, as some individuals may have insecure feelings or fears of being negatively evaluated by their partners

while others may feel rather comfortable and secure with regard to how their partners may view their physical attractiveness (Thompson et al., 1999). How may women's perception of and experience in romantic relationships influence how they feel about their appearance? Does secure attachment with romantic partners help individuals maintain good body image?

Hazan and Shaver (1987) were the first researchers to apply Bowlby's (1969, 1973, 1980) attachment theory to conceptualize adult romantic relationships. Hazan and Shaver argued that, paralleling the attachment development in early years of life, adult romantic relationships could be seen as an attachment process. Like internal working models that formed during infancy and childhood, adult romantic attachment operates an internal mental representation that guides one's behavior to seek comfort and maintain security in romantic relationships (Hazan & Shaver, 1987). To test this hypothesis, Hazan and Shaver developed a self-report questionnaire to investigate romantic relationships, and identified three adult attachment styles that are similar to the three attachment typologies identified in infant studies (Ainsworth, Blehar, Waters, & Wall, 1978). The three adult attachment styles (as well as infant attachment styles) are: secure, avoidant, and anxious/ambivalent attachment.

After Hazan and Shaver's (1987) application of attachment theory to adult close relationships, other models on adult attachment were proposed. Bartholomew

proposed a model that categorizes adult attachment into four styles according to two dimensions (Bartholomew, 1990). Deriving from the concept of "internal working models" in Bowlby's theory, the two dimensions in Bartholomew's adult attachment model are the (internal working) model of self and the model of other. These two dimensions thus create four possible styles of adult attachment: *Secure* attachment is characterized by a positive internal working model of self and positive model of other; therefore, people with this attachment style usually feel secure, maintain trust, and enjoy intimacy with their significant others. *Preoccupied* attachment comprises a negative internal model of self and a positive model of other, thus making individuals with this style usually feel anxious about relationships, fear abandonment, and seek others' approval. *Dismissing* attachment style contains a positive representation of self and yet a negative internal model of other; thus, people with this style usually prefer independence and demonstrate little interest in close relationships. *Fearful* attachment style is characterized by a negative model of self and a negative model of other, leading individuals with this style to avoid intimacy, inhibit their desire for closeness, and anticipate bad consequences in relationships. The theoretical validity of this two-dimension, four-style adult attachment model has received empirical support (Bartholomew & Horowitz, 1991).

To resolve the typology issue raised by different adult attachment models,

empirical research has examined the convergence between Hazan and Shaver's three-typology model and Bartholomew's four-style model. The results reveal a diagonal, two-dimensional model as suggested by Bartholomew's (Bartholomew, 1990) model (Bartholomew & Shaver, 1998). Brennan, Clark, and Shaver (1998) took a further step to approach the issue by developing a single questionnaire based on all of the then available attachment measure (all in self-report format). Originally, more than 300 items were administered to over 1000 undergraduate students. Factor analyses identified two orthogonal factors, and thus, confirmed Bartholomew's two-dimensional model. Brennan, Clark, and Shaver named the first dimension (or factor) as attachment *avoidance* and the second as attachment *anxiety*. Consequently, a 36-item measure called the Experience in Close Relationship Scale was developed for use in adult romantic attachment research. This scale not only can be used to understand how people are experiencing in a current relationship, it may also assess how people generally experience romantic relationships.

Regardless whether using a three- or four- typology system, research has found that individuals with secure romantic attachment report more comfort with being intimate or close and less fear of being unloved or abandoned in relationships (Collins & Read, 1990), as well as more physical contact with romantic partners and more supportive comments offered to or received from their partners (Simpson,

Rholes, & Nelligan, 1992). As such, it is presumable that college women with security of romantic attachment may have less concerns about their body image and eating practice, whereas women with insecure romantic attachment (especially those with preoccupied style) may have more concerns about their weight and shape and may endorse some unhealthy eating, such as dieting or restricting food intake. However, so far little empirical data available have examined this speculation.

Suldo and Sandberg (2000) examined the relationship between adult attachment and eating disorder symptomatology in a sample of 169 female college students. Adult attachment was assessed by the Relationship Questionnaire which is a measure of Bartholomew's four-style model of adult attachment, and the Eating Disorder Inventory was used to measure eating disorder symptomatology. Suldo and Sandberg found that, among the four attachment styles, only the preoccupied attachment style was positively associated with drive for thinness and bulimia in the eating disorder symptomatology measure.

In a sample of 237 college females, Gilchrist (1995) investigated the predictive value of adult attachment and state-trait anxiety in determining levels of eating pathology. Gilchrist measured participants' attachment style by an 11-item instrument which was derived from Bartholomew and Horowitz's (1991) descriptions of the four-category attachment styles. Participants' anxiety was assessed by the

State-Trait Anxiety Inventory, and the Weight Management Questionnaire was used to assess participants' level of eating pathology along an eating disorder continuum. Results revealed that, among the prediction variables, fearful attachment and trait anxiety demonstrated the most predictive value in predicting severe levels of eating disturbance (i.e., subthreshold bulimia and bulimia).

As evidenced in the two studies reviewed above, insecure adult attachment appears to have important relationships with eating disordered symptoms. However, too little empirical data are available to draw conclusions about this issue. More surprisingly, none of the available studies have investigated how romantic attachment may associate with, ameliorate, or even exacerbate individuals' body image.

Social Support. For many college students, being in college involves developing an adjustment to being away from home and establishing a new support system. Theorists have maintained that perceptions of being supported and appreciated in one's social environment may promote positive body image, whereas a lack of social support may lead individuals to become susceptible to body image and eating disturbances (Stice, Presnell, & Spangler, 2002). Because college life may entail confronting intense academic and social stress and interpersonal appearance comparison (Strigel-Moore et al., 1989), it is important to examine whether perceived social support can protect individuals from developing body image dissatisfaction.

Although a search of literature could not locate a previous investigation of the role of social support in body image satisfaction among college women, some studies on adolescents have documented the adverse effects of a social support deficit on girls' body image and eating pathology (Stice et al., 2002; Stice & Whitenton, 2002). Stice et al. (2002) investigated the predictors of binge eating in a 2-year prospective study of adolescent girls. Results demonstrated that binge eating predicted the onset of obesity and identified the following risk factors for binge eating: elevated dieting behavior, perceived pressure to be thin, modeling (from family, peer, and media) of eating disturbances, overvaluation of appearance importance, body image dissatisfaction, depressive symptoms, emotional eating, BMI, low self-esteem and low social support. These factors all together predicted the onset of binge eating with 92% accuracy.

In a sample of 496 adolescent girls, Stice and Whitenton (2002) examined predictors of body dissatisfaction in a longitudinal design. A set of sociocultural, interpersonal, affective, and biological factors were investigated. Results indicated that elevated adiposity (BMI), perceived pressure to be thin, internalization of sociocultural ideals of thinness, and deficits in social support predicted increases in body dissatisfaction. In contrast, early menarche, weight-related teasing, and depressive symptoms did not predict body dissatisfaction. Two distinct pathways to

body image dissatisfaction were identified: one involving pressure to be thin and the other involving adiposity. In a longitudinal experiment, Stice and colleagues (Stice, Spangler, & Agras, 2001) investigated the effects of exposure to media-portrayed thin-ideal images on a sample of 219 adolescent girls. Results indicated that vulnerable adolescent girls, characterized by initial elevations in body image dissatisfaction and perceived pressure to be thin as well as deficits in social support, were adversely influenced by exposure to these media images.

Although researchers have just begun to recognize the importance of investigating protective factors in body image dissatisfaction or eating disorder symptoms, no studies of college women could be located that have included both risk and protective factors in their design, or examined interactions between the two set of factors. Accordingly, one goal of this study is to explore interactions among the potential risk and protective factors, with the hope of identifying factors that may protect young women from body image dissatisfaction.

The Present Study

Based on the literature reviewed above, the purpose of the present study, accordingly, is to identify potential risk and protective factors for body image dissatisfaction/satisfaction in college women. The study will examine four potential risk variables: (a) developmental teasing, (b) BMI, (c) overweight history, and (d)

perceived media influence; together with three potential protective variables: (a) parental emotional responsiveness, (b) adult attachment, and (c) social support.

Chapter 3

Method

This Chapter consists of four sections. First, the characteristics of the participants will be presented. Second, the psychometric qualities of each measure will be described. Third, procedures of data collection will be described. Finally, multiple regression methods will be discussed to analyze the data.

Participants

College women were recruited from the following courses at a Midwest public university: (a) Principals of Human Development, (b) Intimate Relationships and Marriage, (c) Foundations of Family Studies, (d) American Sign Language, and (e) Introduction to Educational Statistics. A total of 605 survey packets were distributed to women in these classes, with 267 (44 %) completed surveys returned. For reasons explained in greater detail in the Results chapter, data from 34 (13%) of the women who returned surveys were excluded. The remaining sample contained 233 female college students. Most participants were sophomores (37.8%), followed by juniors (23.3%), freshmen (17.2%), seniors (16.3%), graduate or professional students (5.2%), and those seeking professional certificate (.4%). Their ages ranged from 18 to 49

years old (M = 20.56 and SD = 3.67). Moreover, participants described themselves as predominantly Caucasian American (91.4%), followed by African American (3.0%), Hispanic/Latino American (2.1%), Asian American (1.7%), Other (1.3%), and Native American (.4%). In terms of current relationship status, more than half of the participants (66%) were in a committed relationship, and about 34% of the participants reported not currently involved in a committed relationship.

Measures

The Sociocultural Attitudes Towards Appearance Scale-3 (SATAQ-3). The SATAQ-3 (Thompson et al., 2004) is a revision of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ, Heinberg et al., 1995), which was widely used to measure sociocultural influences on body image and dysfunctional eating concerns. The SATAQ-3 has four factors: (a) Internalization-General (9 items), referring to a generic influence from the media (e.g., TV, magazines, and movies) regarding appearance ideals; (b) Internalization-Athlete (5 items), reflecting a tendency to internalize athletic ideals and sports figures from the media; (c) Pressure (7 items), indicating perceived media pressure regarding achieving certain appearance ideals; (d) Information (9 items), reflecting media as an informational source about fashion and attractiveness. The SATAQ-3 uses a 5-point, Likert-type scale (1= definitely disagree, 3= neither disagree nor agree, 5= definitely agree). Thompson et

al. (2004) reported high internal consistency reliability (coefficient alpha) for the four subscales, Internalization-General (.92), Internalization-Athlete (.89), Information (.94), Pressures (.94), and for the total scale (.94). Good convergent validity was indicated by the high associations between the SATAQ-3 subscales with measures of body image concerns and eating dysfunction. Also, eating-disordered and eating-disturbed samples reported higher scores on the subscales of SATAQ-3 than a control sample (Thompson et al., 2004). No test-retest reliability information was reported. In the current study, only the first three subscales (i.e., Internalization-General, Internalization-athlete, Pressure) were used. The alpha coefficients in the present study were .93 for the Pressure subscale, .96 for the Internalization-General subscale, and .86 for the Internalization-Athlete subscale.

Perception of Teasing Scale (POTS). The POTS was developed by Thompson, Cattarin, Fowler, and Fisher (1995). It is a revision of the Physical Appearance-Related Teasing Scale (PARTS) (Thompson et al., 1991). The POTS contains two subscales: Weight-Related teasing (6 items) and Competency teasing (5 items). In addition to assessing the frequency of teasing, the POTS also assess the effect of teasing by adding a question (e.g. how upset were you) to go with each teasing item. The POTS uses a 5-point, Likert-type scale, ranging from *never* (1) to *very often* (5) to measure the frequency of teasing, and from *not upset* (1) to *very*

upset (5) to assess the effect of teasing. Higher scores indicate a history of being teased more frequently, or being more upset by the teasing. Thompson et al. (1995) reported good psychometric qualities of the scale. The Weight-Related Teasing subscale has an internal consistency reliability (coefficient alpha) of .88 and test-retest reliability (two-week interval) of .90, whereas the Competency Teasing subscale has an internal consistency reliability of .75 and test-retest reliability of .82. Additionally, Thompson et al. (1995) reported test-retest reliabilities (two-week interval) of .85 for the Weight Teasing-Effect subscale, and .66 for the Competency Teasing-Effect subscale. Weight Teasing-Frequency subscale was moderately correlated with Weight Teasing-Effect subscale (r = .64), and so was Competency Teasing-Frequency with Competency Teasing-Effect subscales (r = .40). Evidence of validity is provided by the finding that Weight-Related teasing correlated with other measures (e.g., physical appearance state and trait anxiety, body dissatisfaction, drive for thinness, and bulimia) to a greater degree than Competence teasing (Thompson et al., 1995). To control for the length of the whole dissertation survey, only the 6 items of the Weight-Related teasing scale that assess the frequency of teasing were used in the current study. However, one item, “People teased you about your appearance”, was added to the original scale to assess the frequency of being teased about general appearance (not just about weight). In the present study, the coefficient alpha for the Weight-Related

teasing scale (7 items) was .90.

Body Mass Index. Body mass index (BMI), also referred to as Quetlet's index, is often used as an indicator of adiposity and is highly correlated with other measures of fatness (Garrow & Webster, 1985); it can be obtained from the equation: BMI = (Weight in kg)/(height in m^2). In this current study, body mass index was calculated based on participants' self-report data. Empirical studies have found a strong correlation between self-reported weight and actual weight measurements (e.g., r= .97 in Attie & Brooks-Gunn, 1989). According to the US national guidelines (Expert panel on the identification, evaluation, and treatment of overweight and obesity in adults, 1998), a BMI less than 18.5 is considered as underweight, between 18.5 to 24.9 as normal weight, from 25 to 29.9 as overweight, and equal to or greater than 30 as obese. In the present study, the mean of the BMI of the sample was 23.02, the standard deviation was 3.79, the minimum was 16.83, and the maximum was 41.17.

Perceived Weight History. To assess how having a history of being overweight may be associated with current body image, the present study asked participants to self-report whether they had been underweight, normal weight, or overweight during the following ranges of age: (a) Kindergarten to 5^{th} grade, (b) Sixth grade to 8^{th} grade, (c) Ninth grade to 12^{th} grade, and (d) After 12^{th} grade to present.

Parental Bonding Instrument (PBI). The PBI (Parker, Tupling, & Brown, 1979)

is a 50-item measure (25 items for each parent) designed to assess perceived parental behavior. Using a 4-point Likert-type scale (1= very like, 2=moderately like, 3= moderately unlike, 4= very unlike), respondents are asked to score each parent based on their memories until they were 16 years old. Within the two parallel forms of 25 items for each parent, 12 items consist of the *Care* scale, and 13 items consist of the *Overprotection* scale. The Care sale deals with parental affection and warmth versus parental rejection, and the Overprotection scale assesses parental promotion of psychological autonomy and independence versus psychological control. Higher scores on the Care scale indicate more perceived affection, empathy, closeness, and emotional warmth from mother or father, whereas higher scores on the Overprotection scale reflect more parental intrusion, excessive contact, and prevention of autonomous behavior. The authors' two-dimensional model has been supported by factor analysis. In terms of reliability, the Care scale demonstrates a test-retest reliability (three-week interval) of .76, while the Overprotection scale of .63. Split-half reliabilities were also reported for the Care scale (.88) and the Overprotection scale (.79). Concurrent validity was tested by examining the correlations between the PBI scores and ratings from interviews with participants by independent judges. Concurrent validities of .77 for the Care scale and .50 for the Overprotection scale were obtained (Parker, et al., 1979). In some subsequent studies, Parker and colleagues (Parker, 1981; Parker &

Lipscombe, 1981) found significant correlations (r=.44 to .55) between participants' PBI ratings and their mothers' independent PBI self-ratings. Moreover, Judges' ratings of personal interviews with each mother also correlated significantly with mothers' PBI self-ratings and with the ratings provided by their grown children (Parker, 1981; Parker & Lipscombe, 1981). In the current study, only the two parallel forms of the Care scale were used to assess perceived maternal and paternal care. In the present study, the coefficient alpha for the mother form of the Care scale was .94, and that for the father form of the Care scale was .95.

Experience in Close Relationship Scale (ECRS). The 36-item ECRS (Brennan, Clark, & Shaver, 1998) was used to measure adult romantic attachment in the current study. The ECRS was originally developed from responses of over 1000 undergraduate students to more than 300 items that were taken from the most frequently used self-report adult attachment measures. Two orthogonal factors were identified by factor analyses: attachment *avoidance* and *anxiety*. Each subscale has 18 items using a 7-point, fully anchored Likert-type scale (1= disagree strongly, 4= neutral/mixed, 7= agree strongly). Internal consistency reliability (coefficient alpha) for the Avoidance subscale was .94, and for the Anxiety subscale was .91 (Brennan et al., 1998). Test-retest reliabilities (three-week interval) for each subscale were .70 (Brennan, Shaver, & Clark, 2000). Evidence of validity was indicated by significant

correlations in expected directions with other adult attachment measures (Brennan et al., 1998, 2000). In the present study, the coefficient alpha for the Avoidance subscale was .96, and that for the Anxiety subscale was .91.

Social Provisions Scale (SPS). The SPS (Cutrona & Russel, 1987) is a 24-item instrument designed to measure perceived satisfaction with social support. It was developed based on Weiss's (1974) six functions of support provides through social relationships: *attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance.* Although the SPS has 6 subscales that correspond to Weiss's (1974) six functional types, in the current study, only the total SPS scale score was used to operationalize respondents' satisfaction with the quality of their current social relationships. The SPS uses a 4-point, Likert-type scale, ranging from *strongly disagree* (1) to *strongly agree* (4). The higher the scores, the greater perceived satisfaction with social support. Internal consistencies (coefficient alpha) for each subscale with total scale range from .85 to .92, while internal consistencies for each subscale range from .64 to .76. A test-retest reliability for the total scale of .59 was also reported (Russell & Cutrona, 1984). In the present study, internal consistencies for each subscale range from .51 to .70.

Multidimensional Body Self-Relations Questionnaire—Appearance Evaluation Subscale (MBSRQ-AE), and Body Area Satisfaction Subscale (BASS). The

MBSRQ-AE (Brown, Cash, & Mikulka, 1990) is a widely used seven-item scale that measures overall appearance satisfaction. The MBSRQ-AE uses a 5-point, fully anchored Likert-type scale (1= definitely disagree, 2= mostly disagree, 3= neither agree nor disagree, 4= mostly agree, 5= definitely agree). High scorers indicate positive feelings and satisfaction with one's physical appearance, while low scores reflect a general dissatisfaction with one's appearance. The BASS is similar to the MBSRQ-AE, except that it measures satisfaction with specific sites or aspects of one's appearance (i.e., height, weight). The BASS contains 9 items, which ask participants to respond on a 5-point, fully anchored Likert-type scale (1= very dissatisfied, 3= neither satisfied nor dissatisfied, 5= very satisfied). High scorers indicate general satisfaction with most areas of one's body, whereas low scorers suggest unhappiness with the appearance of several body sites or areas (Brown et al., 1990). Both measures demonstrate acceptable psychometric properties. For the MBSRQ-AE, the internal consistency (coefficient alpha) is .88 for a national survey sample of females aged 17 to 88 years, and the test-retest reliability (one-month interval) is .91 for a sample of college aged female students. For the BASS, an internal consistency of .73 was obtained from several combined samples investigated by the authors, and a test-retest reliability (one-month interval) of .74 is obtained from a sample of female college students. The sum of scores on the MBSRQ-AE and MBSRQ-BASS was used to

indicate body image satisfaction. The higher the sum, the more body image satisfaction. However, because the present study intended to examine risk and protective variables for body image disturbance, for the purpose of data analyses, scores on the original variable was multiplied by –1, and the construct was named "body image dissatisfaction". With this scoring scheme, the higher the score, the more body image dissatisfaction. In the present study, the coefficient alpha for the MBSRQ-AE subscale was .90, and that for the MBSRQ-BASS was .76.

Rosenberg Self-Esteem Inventory (RSE). The RSE (Rosenberg, 1965) is a10-item measure of general self-esteem. The RSE uses a 4-point, Likert-type scale, ranging from *strongly disagree* (1) to *strongly agree* (4). Silber and Tippett (1965) reported test-retest reliability (two-week interval) of .85 for the RSE. The same researchers also reported that the RSE converges well with other measures of self-esteem and with clinical assessment. RSE has often been used as a covariate variable in previous studies on body image and eating disturbance (e.g., Stormer & Thompson, 1996). In the present study, the coefficient alpha for RSE was .89.

The Center for Epidemiological Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) is a 20-item self-report measure of depression for the general population. The CES-D uses a 4-poin scale (1= "barely, or none of the time; less than one day" to 4 = "most, or all of the time; 5-7 days") to assess depressive symptoms

experienced during the past week. Internal consistency (coefficient alpha) for the CES-D is from .85 to .90, and test-retest reliabilities (four-week interval) is .53 (Radloff, 1977). In the current study, coefficient alpha for the CES-D was .91.

Multigroup Ethnic Identity Measure (MEIM). The new version of MEIM (Roberts, et al., 1999) was originally developed by Phinney (1992) to measure ethnic identity across three dimensions (ethnic identity achievement, affirmation, and belonging, ethnic behaviors). The original version (14 items) of the MEIM also has additional six items to separately measure other group orientation. Two items of the original MEIM were dropped and some modifications were made to form the current version of MEIM, which does not include the Other-group orientation scale (Roberts, et al., 1999). The new version of MEIM contains two factors: "affirmation, belonging, and commitment" (7 items) and "ethnic identity search" (5 items). The 12 items of the new version of MEIM are rated on a 4-point Likert-type scale from 1 (*strongly disagree*) to 4 (*strongly agree*), and high scores indicate strong ethnic identity. The coefficient alpha for the overall scale is .85, for the first subscale (affirmation, belonging, and commitment) is .84, and for the second subscale (ethnic identity search) is .70. The MEIM converges well with other measures of psychological well-being and salience of ethnicity (Roberts, et al., 1999). In the present study, the coefficient alpha was .85 for the first subscale, and .64 for the second subscale. For

the overall scale, the coefficient alpha was .83.

Validity Check. To ensure that participants would actually read and think about the questions, it was announced to the participants that administration time for the survey packet would take a minimum of 25 minutes. Four items were randomly added at regular intervals throughout the sequence of questions that asked participants to check a particular answer to a question (e.g. "please code a 4 for this answer") or in response to Likert type scales "I am working hard to answer all these questions accurately and honestly" to guard against random or inattentive responding. Data from participants who did not respond as expected to these validity items were excluded from further analyses.

Demographic questions. Participants were asked to complete a set of demographic questions, including sex, age, racial/ethnic background, year in college, height, weight, and current status in romantic relationships. Participants' self-reports of weight and height were used to calculate body mass index.

Procedures

The researcher first received permissions to collect data from instructors of the classes described in the Participants subsection of this chapter. Members of the research team came to class in person to invite students' participation. Survey packets were distributed to all students in these classes. However, only data of returned

surveys from female students were reported in the Participants section. Students were informed that participation in this study was completely voluntary, and that all responses would be confidential. Students were asked to fill out the survey packets at home and then to bring the packets back in the next class meeting. A member of the research team attended the next class meeting to collect the returned surveys. One of the instructors agreed to give students extra credit points for participating in the research. However, other instructors did not provide extra credit points or other incentives to encourage participation. In these classes, a raffle was used to promote participation. A total of $300 was used for the raffle, with two prizes of $50 and 20 prizes of $10. Students were informed prior to the survey distribution that they would have the chances to win the prizes by filling out the survey. Students were reassured again that the survey was totally confidential and voluntary. However, students who were interested in the raffle were asked to leave their names and contact information on separate sheets of paper when they turned in their survey packets. The survey packets and the sheets that they put their names and contact information on were collected separately. Raffle prize-winners were informed by email regarding their winning status and invited to pick up their prizes from the researcher.

To control for order effects, the different instruments (scales) used in the survey were arranged in two different order. All the survey data were optically

scanned by the Remark software, which is an optical scanning program, and checked for accuracy before any data analyses were performed.

Chapter Four

Results

Preliminary Analyses

A number of data screening procedures were first conducted with the raw data set consisting of 267 participants. The screening process started with detecting participants' inaccurate responses to four validity check items imbedded throughout the survey. Three of the validity items asked respondents to mark a specific response (i.e., "Please mark 4 for this item"). Respondents who answered one or more of the three items with an invalid response were excluded from further analyses. The fourth validity item asked respondents to respond to the statement, "I am working hard to answer all these questions accurately and honestly", on a 7-point Likert-type scale (1=disagree strongly to 7=agree strongly). Data from respondents who did not answer this item with 6 (agree somewhat) or 7 (agree strongly) were also excluded from further analyses. A total of 26 cases were eliminated from the data through this screening procedure. Mallinckrodt (personal communication) reports that previous experience with over a dozen studies using these screening methods at the University of Missouri suggests the typical rate of "inattentive responding" is about 20%. In

addition, one respondent did not indicate her/his sex, and thus, data from this respondent were also excluded. As a total, data from 27 subjects were excluded from this first step of data screening.

The next step of data screening involved conducting procedures to check for multivariate outliers. Following a procedure recommended by Tabachnick and Fidell (2001) the multivariate statistic Mahalanobis distance (the *M-distance* score) was used to detect any multivariate outliers. The procedure was to regress all continuous variables of research interest on criterion variable not of interest, in this case, the Feet digit of the participant's height. M-distance is distributed as chi-square with *df* equal to the number of predictors. Data from those participants whose obtained *M-distance* scores exceeded the critical value with $p < .001$ ($X^2 = 31.264$) were excluded. This procedure detected 7 significant outliers, which were excluded from the final data set. After these procedures were completed, the final data set consisted of 233 participants. Inspection of the data revealed that most of these subjects had either very high BMI scores (> 35, $n = 4$), or quite atypical combinations of scores on other variables (e.g., very low Mother Care, very high Father Care, $n = 3$).

Tests of Research Hypotheses

Hypothesis 1 and 2. Tests of potential risk and protective factors:

As shown in Table 2, all the hypothesized risk or protective factors (measured

as continuous variables) are correlated with Body Image Dissatisfaction in expected directions. The first set of hypotheses of this study posited that the risk variables (i.e., developmental teasing, current BMI, media influence) would be positively associated with body image dissatisfaction. The second set of hypotheses involved potential protective factors. Specifically, it held that parental care and social support would be negatively associated with body image dissatisfaction, while attachment anxiety and attachment avoidance would positively associated with body image dissatisfaction. In consideration that an individual's general well-being status (e.g., self-esteem, depression) might be confounded with the accurate measure of body image dissatisfaction, self-esteem and depression scores were used as covariates when testing the first two sets of hypotheses.

Hierarchical multiple regressions involving three steps were conducted to examine potential risk and protective factors, with Body Image Dissatisfaction as the criterion: (a) In the first step, Self-esteem and Depression were entered to the regression model. The two covariates accounted for 34.2% of the variance in Body Image Dissatisfaction. (b) In the second step, hypothesized risk factors were entered to the model (i.e., Teasing, BMI, and the three subscales of the Sociocultural Attitudes Toward Appearance Scale, Pressure, Internalization-General, and Internalization-Athlete). This set of variables, accounted for an additional 17.6% (F =

15.682, $p < .001$) of the variance of body image dissatisfaction. (c) In the final step, hypothesized protective factors were entered to the regression model (i.e. Mother Care, Father Care, Attachment Anxiety, Attachment Avoidance, and Social Support). This set of factors accounted for and additional 3.3% ($F = 3.039$, $p < .05$) of the variance in body image dissatisfaction, after controlling for the covariates and the hypothesized risk factors. Results of the hierarchical regressions are summarized in Table 3. Note that Table 3 identified four significant predictors of body image dissatisfaction in the final regression model: Internalization-General, BMI, Mother Care, and Attachment Anxiety.

Note that because the perceived weight history variable is not a continuous variable, but rather a categorical variable, it was not entered to the above steps of multiple regressions. Analyses with regard to whether having a perceived overweight history has an effect on body image dissatisfaction were performed separately. Based on their responses to the perceived weight history items, participants were categorized into four groups: (a) continuously normal weight ($n = 77$); (b) past over weight at some time, but now normal weight ($n = 30$); (c) currently over weight ($n = 66$); and (d) currently underweight, or currently normal weight but previously underweight at some time ($n = 60$). Cases in this fourth group were excluded from this analysis. Table 4 shows the distribution of different perceived weight history groups. Analysis of

Variance (ANOVA) was next performed to examine differences among the first three groups. Results of one-way ANOVA shown in Table 5 indicated that there were significant differences between groups. Therefore, Tukey HSD post hoc tests were conducted to identify the differences between specific pairs of perceived weigh history groups. Results of the post hoc tests indicated that there was no significant difference between the "continuously normal weight" group and the "past over weight at some time, but now normal weight" group (p = ns). Differences mainly existed between the "continuously normal weight" group and the "currently over weight" group ($p < .001$), as well as between the "past over weight at some time, but now normal weight" group and the "currently over weight" group ($p < .001$). Because no significant difference was found between the "continuously normal weight" group and the "past over weight at some time, but now normal weight" group, we concluded that a self-reported history of overweight was not a significant risk factor and no further analyses on the moderating effects or mediating effects in relation to the perceived weight history variable were conducted.

Hypotheses 3: Tests of moderating effects:

The third set of hypotheses of this study posited that protective factors would moderate the effect of risk factors on body image dissatisfaction. Testing moderating effect involved exploring statistical interactions between a risk factor (e.g.,

developmental teasing) and a particular moderator (e.g., social support) in connection with body image dissatisfaction. A series of hierarchical multiple regression analyses were conducted to examine the interactions between levels of a risk factor and a protective factor, with body image dissatisfaction as the criterion variable. To avoid problems with multicolinearity, the present study used procedures recommended by Cohen, Cohen, West, and Aiken (2003) to "center" the independent variables by subtracting the respective means of variable from the distribution of scores prior to analysis. Next, in the first step of each hierarchical multiple regression, self-esteem and depression were entered as covariates. Then, in each hierarchical regression, each of the hypothesized risk factors (centered) was entered first, and then, each of the hypothesized protective factors (centered) was entered in a next step. Finally, in the last step of each hierarchical regression, the product of a hypothesized risk factor (centered) and a hypothesized protective factor (centered) was entered to test for interaction effects. After accounting for simple direct effects in the first three steps (i.e., the covariates, a risk factor, and a protective factor), a statistically significant increment in R^2 for the final step indicates a significant interaction between a hypothesized risk factor and a hypothesized protective factor.

Among the 25 hierarchical regression analyses conducted, four met this test for significant interaction effects. Table 6 shows results for these significant

interactions. Specifically, the statistically significant interaction between perceived media Pressure and Mother Care accounted for an increment of about 1.4% in the explained variance in body image dissatisfaction. The interaction between media Internalization-General and Mother Care accounted for an increment of about 2.1% in the explained variance in body image dissatisfaction, and so did the interaction between developmental Teasing and Mother Care. Finally, the interaction between developmental Teasing and Social Support accounted for an increment of 1.2% in the explained variance in body image dissatisfaction.

Using procedures recommended by Frazier, Tix, and Barron (2004) and by Jaccard, Turrisi, and Wan (1990), graphs were constructed of the four significant interactions to examine the precise nature of the moderating effects. To prepare these graphs, separate regression equations were constructed for high (one standard deviation above the mean), medium (i.e., the mean), and low (one standard deviation below the mean) levels of the proposed moderating variables, that is, Mother Care and Social Support. Levels of one standard deviation above the mean and one standard deviation below the mean of perceived media Pressure, media Internalization-General, and Teasing, were then entered into these equations, respectively, to plot the values of Body Image Dissatisfaction shown in the panels of Figure 1. Please note that the values of Body Image Dissatisfaction on the Y-axis are calculated from the formula:

$DV = b_0 + (b_1*var_1) + (b_2*var_2) + (b_3*var_1*var_2)$; where b_0 is intercept, b_1 is the unstandardized regression coefficient for Var_1 (i.e., the predictor), b_2 is the unstandardized coefficient for Var_2 (i.e., the moderator), and b_3 is the unstandardized coefficient of the interaction term (i.e., the predictor × the moderator). Covariates and their regression coefficients are not included in calculations of the values of Body Image Dissatisfaction on axis Y. It should also be noted that the Body Image Dissatisfaction values on Figure 1 are calculated from centered variables; therefore, the means and standard deviations of Body Image Dissatisfaction presented in Figure 1 should not be confused with the raw values of Body Image Dissatisfaction reported in Table 2. For example, Table 2 shows that the mean of Body Image Dissatisfaction is –6.61, and the standard deviation is 1.36, whereas in Panel A of Figure 1, the mean of Body Image Dissatisfaction is –3.22, and the standard deviation is .42.

Panel A of Figure 1 shows that higher level of Mother Care was associated with a lower rate of increase in Body Image Dissatisfaction for each unit increase in perceived media Pressure. Panel B shows that higher level of Mother Care was associated with a lower rate of increase in Body Image Dissatisfaction for each unit increase in media Internalization-General. These two interactions are consistent with an interpretation of a "buffering effect" for Mother Care, because a high level of Mother Care appears to protect women from the otherwise greater increments in Body

Image Dissatisfaction for each unit increase in perceived media Pressure or in media Internalization-General reported by women who do not experience higher level of Mother Care.

In contrast, the remaining significant interactions shown in Panel C and D of Figure 1 suggest that higher levels of Mother Care and Social Support were associated, respectively, with a higher rate of increase in Body Image Dissatisfaction for each unit increase in Teasing. The findings indicated in Panel C and D are not consistent with the expected protective effects of Mother Care and Social Support on the effect of Teasing on Body Image Dissatisfaction.

Hypothesis 4: Tests of mediating effects:

The fourth set of hypotheses held that perceived media Pressure, media Internalization-General, media Internalization-Athlete, respectively, would mediate the associations of Attachment Anxiety with Body Image Dissatisfaction. Baron and Kenny (1986), suggest a series of regression analyses to test mediation variables. Evidence of significant mediation is present if three conditions are met: First, the proposed independent variable (i.e., Attachment Anxiety) must be significantly associated with the hypothesized mediator (e.g., media Pressure). Second, the independent variable must be significantly associated with the dependent variable (e.g., Body Image Dissatisfaction). Third, results of regressing the dependent variable

on both the independent variable and the hypothesized mediator should result in a weaker association between the independent and dependent variable as compared to the bivariate association between independent and dependent variable.

Baron and Kenny (1986) describe a recommended procedure for testing the statistical significance of a mediating variable that involves comparing the association of the independent and dependent variables with, and without the mediating variable included in the regression model. The difference in these path coefficients is modeled as a Z-score. Experts differ as to the most appropriate formula to use in deriving the error term for this *Z*-score. Baron and Kenny (1986), recommend using the square root of $b^2sa^2 + a^2sb^2 + sa^2sb^2$; where *a* and *b* are the unstandardized (raw) regression coefficients derived from the multiple regression analysis, and sa^2 and sb^2 are the corresponding standard errors. This formula was used in the present study. These values were calculated by hand and checked with the online calculator available at: http://www.unc.edu/~preacher/sobel/sobel.htm. Results of these analyses suggest only one significant mediating variable. Table 7 shows that perceived media Pressure significantly mediated the relationship of Attachment Anxiety and Body Image Dissatisfaction ($Z = 2.78$, $p < .01$). Note that there was also a trend ($Z = 1.94$, $p < .06$) for the media Internalization-General subscale to mediate this association as well.

Results of analyses of the mediation model depicting the relationships between

Attachment Anxiety, perceived media Pressure, and Body Image Dissatisfaction are presented in Figure2. As Figure 2 shows, the previously significant link between Attachment Anxiety and Body Image Dissatisfaction was not completely mediated by perceived media Pressure. However, evidence supporting partial mediation was found, indicating that about 42.9% of the total effect of Attachment Anxiety on Body Image Dissatisfaction is mediated by perceived media Pressure. The resulting model involving Attachment Anxiety and perceived media Pressure accounted for 16.3% of the variance in Body Image Dissatisfaction ($F = 21.78$, $p < .001$).

Follow-up Analyses:

Test of Hypothesis 2 indicates that Attachment Anxiety has a *negative* regression coefficient ($\beta = -.153$, $p < .01$) in connection with Body Image Dissatisfaction (see Table 3), implying that the higher attachment anxiety, the less body image dissatisfaction! However, Table 1 shows *positive* correlation between attachment anxiety and body image dissatisfaction. Because the researcher suspects that the negative regression coefficient is likely due to the inclusion of many other variables (i.e., covariates, risk factors, and other protective factors) in the final regression model, a follow-up regression analysis including only the hypothesized protective factors as independent variables was conducted. Results indicated that when the covariates and risk factors were not included in the regression model,

attachment anxiety had a positive regression coefficient in predicting body image dissatisfaction (see Table 8).

Chapter Five

Discussion

The purpose of this study was to identify potential risk and protective factors for body image dissatisfaction/satisfaction in college women. The first hypothesis of the present study investigated four potential risk variables for body dissatisfaction: developmental teasing, current BMI, perceived overweight history, and influence of media portrayals of thinness. The findings revealed that BMI and general internalization of thinness ideals were significant risk factors for body image dissatisfaction. For college women, having a higher BMI or an increased tendency to internalize media appearance ideals (Internalization-General) predicted greater body dissatisfaction. These results converge with previous findings that women who have a higher BMI are at risk for developing body dissatisfaction (Brodie & Slade, 1988; Cash et al., 1986; Cash & Hicks, 1990; Tsai, Hoerr, & Song, 1998), and that individuals who endorse and pursue these media prescribed ideals of attractiveness are more susceptible to poor body image (Cattarin, Thompson, Thomas, & Williams, 2000; Cusumano & Thompson, 1997; Stice, Mazotti, Krebs, & Martin, 1998).

It is perhaps not surprising to find that college women with higher BMI are

more dissatisfied with their bodies, because thinness is almost a synonym with attractiveness/beauty in current Western societies (Striegel-Moore & Franko, 2002), whereas being overweight or obese is not only associated with unattractiveness but stigmatized as lacking personal control (Crandall, 1994). It appears that college women with higher BMI may perceive themselves as "too large" to meet the thin ideal of feminine beauty, and may become very dissatisfied with their body image. It is also noted that, among the risk factors investigated, BMI maintains the most potent association with body image dissatisfaction (See Table 3), possibly indicating that under a societal climate of thinness pursuit, having a larger figure almost inevitably leads women to body dissatisfaction! Further, despite an individual's BMI status, the significant association between Internalization-General and body image dissatisfaction indicates that the more a woman internalizes sociocultural ideals of attractiveness, the more dissatisfaction she feels toward her body. This finding suggests that normal weight individuals may also develop intense body dissatisfaction, if they have a tendency to follow the media prescribed standards of beauty and pursuit those ultra thin ideals. It also indicates that when working with young women with body image issues, it is important to explore how they process media messages regarding attractiveness.

Although previous research documented a relationship between developmental

teasing and current body image dissatisfaction (Cash, Winstead & Janda, 1986; Thompson, Fabian, Moulton, Dunn, & Altabe, 1991), the present study did not find such a significant association. For women in the present study, being teased about weight and appearance in childhood or adolescence was not associated with their current body dissatisfaction. One potential reason that the current study failed to discover a relationship between developmental teasing and body dissatisfaction could be due to the fact that the majority of the participants reported relatively low frequencies of being teased in their early years (see Table 4 for mean, standard deviation of developmental teasing), although past research indicated that as high as 72% of college women reported experiences of appearance/weight-related teasing during their childhood or adolescence (Cash, 1995). However, some research on adolescent girls also indicated that weight-related teasing did not predict body dissatisfaction (Stice & Whitenton, 2002). Another explanation that teasing failed to predict body image dissatisfaction is that although teasing might serve as a significant risk factor independently, when it is considered with other variables (e.g., thin-ideal internalization, BMI) in the regression model, its predictive value became negligibly small, compared to other predictors. Finally, because the study did not assess the effect of teasing (e.g., how upset the individual became as a result of the teasing), it might have been that the effect or impact of teasing was more important than the

frequency of teasing in association with body image dissatisfaction.

Another potential risk variable of interest that failed to demonstrate its predictive value was perceived overweight history. Some previous studies indicated that currently normal weight college women with an overweight history during childhood or adolescence were more dissatisfied with their bodies than those without such a history (Cash, Counts, & Huffine, 1990; McLauren and Gauvin; 2002). Results of the present study did not show such vestigial effect from perceived past weight history on current body image; no difference in body dissatisfaction was found between the "continuously normal weight" group and the "past over weight at some time, but currently normal weight" group. It should be noted, though, that the disproportionately small sample size of the "past over weight at some time, but now normal weight" group, compared to the "continuously normal weight" group, might have contributed to the statistically non-significant group difference of body image dissatisfaction. However, one recent study (Williams, 2004) also did not find any difference on childhood overweight history among college women clustered into positive body image group, normative body image discontent group, and negative body image group.

The second set of hypotheses of this study explored potential protective factors for body satisfaction in college women. It was hypothesized that experiencing

more care from mothers and fathers, more social support, less attachment anxiety, and less attachment avoidance, would be associated with less body dissatisfaction for college women. Hypothesized protective factors as a set accounted for significant variation in addition to that accounted for by risk factors (i.e., BMI, Internalization-General, Pressure, Internalization-Athlete, Teasing) and covariates (i.e., Self-Esteem, Depression). Considering protective factors individually, Mother Care was significantly negatively associated with body image dissatisfaction, that is, women who perceived their mothers as more caring were dissatisfied less with their bodies. This finding is consistent with the literature that indicates caring relationships with mothers are important determinants of women's positive body image (Haudek, Rorty, & Henker, 1999; O'Koon, 1997; Panfilis et al., 2003). Although secure bonding with fathers characterized by high care and emotional responsiveness were found in previous research to be negatively associated with body dissatisfaction (O'Koon, 1997; Panfilis et al., 2003; Slaton, 2001), the current study failed to find such an association. However, Haudek, Rorty, and Henker (1999) reported similar findings that perceptions of low maternal caring (instead of paternal caring) were associated with higher levels of weight and shape concerns and eating problems in college women.

In tests involving the second set of hypotheses, attachment anxiety was also

found to be significantly negatively associated with body image dissatisfaction. However, at first glance, it might appear puzzling that the regression coefficient of attachment anxiety for the criterion of body image dissatisfaction is negative, implying higher attachment anxiety was associated with *less* body image dissatisfaction! However, it should be noted that the Pearson correlation (see Table 1) between attachment anxiety and body dissatisfaction is positive, indicating that the higher attachment anxiety, the more body dissatisfaction. Therefore, the negative regression coefficient of attachment anxiety in the final regression model is most likely due to the effect of the inclusion of the many other variables (covariates, risk factors, and other protective factors) in the prediction model. In order to test whether this is the case, the researcher did a follow-up regression analysis (reported in Table 8) including only the hypothesized protective factors in the model. Results indicated that when the covariates and risk factors were not included in the regression model, attachment anxiety had a positive regression coefficient in association with body image dissatisfaction, suggesting that women with higher attachment anxiety experienced greater body dissatisfaction. This finding is consistent with the limited research data available investigating attachment and body image concerns. In one study of a college sample, Cash et al. (2004) found a significant association between anxious romantic attachment and body image concerns for women. Suldo and

Sandberg (2000) reported that preoccupied attachment style, characterized by a negative internal model of self and a positive representation of others as well as high attachment anxiety, was positively associated with drive for thinness and bulimia symptomatology. Although results from the present study did not find associations between attachment avoidance and body dissatisfaction, one previous study indicated that fearful attachment and trait anxiety predicted severe levels of eating disturbance (Gilchrist, 1995). Because few empirical studies have examined adult romantic attachment in relation to body image concerns, the role of insecure romantic attachment (e.g., attachment anxiety, attachment avoidance) in body image development requires further investigation.

Analyses of the second hypothesis indicated that social support was not significantly associated with body image dissatisfaction among the set of hypothesized protective variables. This is not consistent with previous studies of adolescent girls which reported that deficits in social support predicted increases in body dissatisfaction (Stice et al., 2002; Stice & Whitenton, 2002). However, little empirical research available has investigated the relationships between social support and body image concerns among college women. The only study that can be located indicated that college women clustered in the positive body image group reported greater perceived social support, compared to other groups (Williams, 2004). The role

of social support in women's body image development is far from conclusive.

The third set of hypothesis of this study investigated whether the hypothesized protective factors would show protective effects by moderating the relations between risk factors and body image dissatisfaction, decreasing their association. To investigate the moderating effects of potential protective factors on risks for body image dissatisfaction, interactions between risk factors and each of the hypothesized protective factors were tested. Moderating relations were found for the following four combinations of risk factors and protective factors: (a) perceived media pressure and maternal care, (b) general internalization of media thinness ideals and maternal care, (c) developmental teasing and maternal care, and (d) developmental teasing and social support (see Figure 1). Panel A of Figure 1 shows that, comparing across women, as perceived media pressure increases, so does body image dissatisfaction, but the increase in body image dissatisfaction associated with a given increase in perceived media pressure is much less for women who reported higher levels of maternal care. In other words, the results suggest that for any pair of women with the same level of perceived media pressure, the one who experiences more care from her mother will tend to experience less body image dissatisfaction than her counterpart.

Similar results are indicated in Panel B of Figure 1. Panel B suggests that for any pair of women with the same level of general internalization of media appearance

ideals, the one who reports more maternal care will tend to experience less dissatisfaction with her body image than her counterpart. These findings appear to be consistent with some researchers' view that the quality of parental bonding, especially the mother-daughter relationship, plays an important protective role in the development of body image disturbance and eating disorders (Haudek, Rorty & Henker, 1999). The buffering effects of maternal care on perceived media pressure and thin-ideal internalization for body image dissatisfaction also echo attachment theory (Bowlby, 1969, 1973, 1980) that secure attachment with caregivers increases an individual's resilience and helps the person to meet challenges throughout a lifetime. A recent study (Marson, 2000) indicated that perceived nurturing touch experience between mothers and daughters during childhood was associated with current body satisfaction in college women. The researcher argued that a lack of such nurturing experience may, at least partly, add to a girl's vulnerability to body image dissatisfaction as she struggles to confront the negative sociocultural influence of unrealistic thinness ideals and to accept her body self and develop into adulthood (Marson, 2000). Findings of the present study suggest that the influence of good maternal attachment extends to young adulthood; for a young woman, good bonding with her mother appears to serve as a "secure base" and "safe heaven" that increases her ability to ward off the negative impact of sociocultural pressure and media

messages regarding physical attractiveness. Maternal care appears to be a promising variable that deserves more empirical attention in the area of body image and eating disorders research. Unfortunately, according to the author's search on current literature, thus far, no empirical studies available have examined moderating effects of parental bonding on risk factors for the development of body image disturbance.

Different from the buffering effects of Mother Care, Father Care did not indicate any significant moderating effects for Pressure or Internalization-General with Body Image Dissatisfaction, indicating that perceiving a higher level of paternal care does not protect college women from the negative impact of media message on their body image. It should be noted, though, that Father Care has similar significant bivariate correlation with Body Image Dissatisfaction as Mother Care (see Table 2). Perhaps the larger standard deviation of Father Care than that of Mother Care suggests more error involved in the measurement of Father Care, which diminishes the effect of Father Care and its interaction with risk variables to protect against body image dissatisfaction. The increased level of error could be due to the limitation of the Care Subscale to measure possible changes in father-daughter relationships when/after the daughter reaches puberty. It is possible that fathers may decrease physical expression of affection (e.g., hugging) toward their daughters during and after adolescence to avoid possible sexual concerns. Such changes in affective expression,

although out of good intention, may be perceived by daughters as love withdrawal. However, these speculations must be empirically investigated in future studies. Thus far, a search of the literature cannot locate empirical studies that explore possible changes in father-daughter relationship during/after puberty.

In contrast to the effects shown in Panel A and B of Figure 1 that are consistent with a "buffering" or "protective" moderating effect, Panel C and D revealed opposite and puzzling findings. Panel C shows that for any pair of women who experience a high level of developmental teasing (e.g., one standard deviation above the mean), the one who perceives more care from her mother experiences more body image dissatisfaction than her counterpart. However, for women who perceived low care from their mothers, despite whether they experienced high or low level of teasing during childhood or adolescence, their body image dissatisfaction level remains the same. The results seem to suggest that maternal care cannot protect a young woman from the negative effect of being teased about appearance during childhood or adolescence on their current body image. One explanation for this finding may be that during childhood or adolescence, when girls were teased about their weight or appearance by fellow peers in school, they came home with distress and their mothers took extra steps to try to make them feel better. It is also likely that when girls are teased and become more dissatisfied with their bodies, they elicit more

care and attention from their mothers. However, it appears that the increased level of maternal care does not stop teasing occurrences in school. Although mothers may try very hard to compensate for the negative impact of teasing, the effect of teasing on body image dissatisfaction remains difficult to ameliorate. When experiencing frequent teasing, individuals with a higher level of perceived care from their mothers could even become more dissatisfied with their body image than their counterparts. Although contrary to the hypothesis that maternal care would demonstrate protective effect on teasing for body image dissatisfaction, it is premature to draw any conclusion regarding the role of maternal care on the association between teasing and body image. Unfortunately, there are little empirical research to help explain these findings, although one study on undergraduate students investigating the moderating role of father (not mother) support also failed to find any buffering effect of father support on the relationships between childhood teasing and current psychosocial adjustment (Storch, et. al., 2003). Clearly, more research effort should be directed to investigate the role of parental care on developmental teasing and body image development.

Also contrary to our expectation, Panel D of Figure 1 indicates that, for any pair of women reporting the same level of childhood teasing, body image dissatisfaction tended to be higher for the one who reports a higher current level of

perceived social support than her counterpart. Several issues may explain this apparently anomalous finding. First, it should be noted that the teasing scale assessed participants' experience of being teased during growing up (ages 5-16), whereas the social support scale asked participants about current relationships with their support system. It is possible that individuals who were teased and became dissatisfied with their bodies in the past try more effort to establish their current social support, although increase level of current social support does not change their elevated level of body dissatisfaction resulted from past harmful teasing experience. A second explanation is that some people teased frequently in the past may develop more concerns with their body image in order to "look good" to their current friends or support system; therefore, although they experience support from their current social environment, their concerns about weight, shape, and appearance persist rather than decrease.

Another perspective on the finding of Panel D is the concept of "unhelpful social support". Research of adolescent girls has begun to examine a newly developed construct, "co-rumination," (Rose, 2002) that explains why girls' otherwise supportive friendships may not be helpful to protect them against emotional problems (e.g., depression, anxiety). Co-rumination is defined as discussing personal issues with a friend to an excessive extent that is "characterized by frequently discussing

problems, discussing the same problems repeatedly, mutual encouragement of discussing problems, speculating about problems, and focusing on negative feelings" (Rose, 2002, p. 1830). It is possible that such co-rumination process also occurs in college women's social support system. Some women who were teased frequently in the past may repeatedly discuss their body dissatisfaction or past teasing experience with their friends. Consequently, they may dwell even more on their negative feelings and become more dissatisfied with their appearance, compared to women with high levels of developmental teasing but do not have close social relationships to co-rumination on their negative feelings. Furthermore, although college life introduces many opportunities for social networking and friendship building, comparison of appearance and collective pursuit of thinness ideals with like-minded peers may go together with the social support that many young women receive from their supportive social relationships. If a young woman feels that her acceptance by her friends (who may be obsessively interested in their own appearance) is contingent on her physical appearance, her dissatisfaction with her body image will increase rather than decrease because her body dissatisfaction is likely to be reinforced by her peers. Thus, some types of social support can be harmful rather than merely unhelpful.

A growing attention has been drawn to the so-called "pro-eating disorder"

websites, chat rooms, or discussion forums on the Internet. Women with high body image dissatisfaction resulting from childhood teasing may log on to these websites for acceptance, support, and inspiration. However, the kind of support and validation they may receive from these media is likely to perpetuate their negative body image or even encourage disordered eating through modeling by members of these online clubs, because these clubs share a common goal of pursuing thinness (Haltom, 2002; Pollack, 2003). One empirical study on Norwegian online discussion boards found that the discussion forum of eating disorders investigated in the study involved a destructive dimension in their interactions that might have negative influence on viewers of this website (Johnsen, Rosenvinge & Gammon, 2002). However, it must remain for future studies to empirically investigate these explanations and speculations of the role that social support might play in the relationships between childhood teasing and current body image concerns. Scientific investigations are also needed to determine whether some kinds of social support may be unhelpful or even perpetuate women's dissatisfaction toward their bodies.

The fourth set of hypothesis of this study examined whether romantic attachment anxiety tends to promote the internalization of sociocultural messages regarding appearance, which in turn serves as a mediator on negative effects on body image dissatisfaction. Results of mediation analyses (see Figure 2) supported this

hypothesis. The connection between attachment anxiety and body dissatisfaction appears to be mediated by an individual's tendency to perceive pressure from the media with regard to their weight, shape, and appearance status. This finding appears to be consistent with attachment theorists' (Bartholomew & Horowitz, 1991) view that people with anxious attachment usually hold a negative internal working model of self and a positive model of other, and tend to fear abandonment and seek others' approval in relationships. This combination of working models may heighten their vulnerability to be negatively influenced by idealized media messages of female beauty (Greenwood & Pietromonaco, 2004). Women with anxious attachment style may feel pressured by the media messages to lose weight or to look like certain prescribed beauty ideals, believing that they should work on increasing their physical attractiveness to secure their relationships with romantic partners; however, the more media pressure they feel, the more likely they are going to feel dissatisfied with their appearance, because of the psychology involved in commercial advertisements. Media psychology tends to use objectified images of women and fashion to prime feelings of insecurity and fears of disapproval in women with anxious attachment; consequently, this type of advertisements may lead young women to mistakenly perceive their attachment needs as body image concerns, and become dissatisfied with their appearance (Greenwood & Pietromonaco, 2004). Although another set of

analyses on the mediating role of general thin-ideal internalization failed to meet the significance level of test on mediation, its borderline level of significance ($p < .06$) may be improved if the sample size were larger. It is possible that, in addition to solicit more perceived media pressure in young women, attachment anxiety may also promote internalization of media thinness ideals and heighten body image dissatisfaction in young women. However, more studies are needed to further establish the relationships between attachment anxiety, media influence, and body image concerns. Thus far, few studies have investigated the relationship between adult attachment and body image, and little research has examined whether and how attachment anxiety tends to increase an individual's vulnerability to sociocultural messages of appearance ideals.

Before exploring the implications and clinical applications of the research findings, several important methodological limitations must be discussed. First, participants in this sample were solicited primarily from the following undergraduate courses in a Midwest public university: Principles of Human Development, Intimate Relationships and Marriage, Foundations of Family Studies, American Sign Language, and Introduction to Educational Statistics; therefore, the sample may not have been representative of all college women. Also, the relatively low return rate (44%) of the survey and the fact that this study only included university student samples limit the

generalizability of the findings. Second, the vast majority of the women in the sample are Caucasian-American (91.4%), and thus limit findings of this study to be generalized to other racial or ethnic groups. Some empirical studies have documented significant differences in body image dissatisfaction among different ethnic groups (Mayville, Katz, Gipson, & Cabral, 1999; Miller et al., 2000), although others found no ethnic differences on body dissatisfaction (Gardner, Friedman & Jackson, 1999). In order to control for possible effect of ethnic identity status on body image dissatisfaction, the study originally included participants' scores on the Multigroup Ethnic Identity Measure (Roberts, et al., 1999) together with self-esteem and depression variables as covariates; however, including the ethnic identity variables did not make any changes in the regression models. Therefore, they were eliminated from the tests of hypotheses.

An additional disadvantage of the current study is that all of the variables were measured through self-report instruments. Possible bias may result from such mono-method assessment (Heppner, Kivlighan & Wampold, 1999). Because variables were measured with the same method, the correlations between measured variables may result from method variance rather than the true correlations between the variables. Future research combing different assessment methods (e.g., self-report and behavioral observation) may reduce this methodological disadvantage.

Another methodological issue concerns the investigation of multiple moderator effects in the current study. Cohen et al. (2003) indicate that performing a large number of statistical tests on moderator relationships will result in an inflated Type I error rate. However, because the moderator analyses in this study were exploratory, a correction to alpha was not applied; thus, the consequent inflation of experiment-wise error is another limitation of this study. Since moderating effects are difficult to detect, larger sample sizes are necessary in order to explore more two-way or three-way interactions in the future (Stice, 2001b). Additionally, the puzzling findings regarding the moderation role of social support seem to suggest that more sophisticated and improved measurement of moderator variables are warranted. For example, future studies should consider exploring different types of social support in their measurement, including potentially harmful social support that might interact with some risk factors to exacerbate young women's body dissatisfaction.

It should also be noted that, among the 55% of variance of body image dissatisfaction accounted for by all of the independent variables, about 34% was accounted for by covariates (i.e., self-esteem and depression), and only 21% was accounted for the hypothesized risk and protective factors (see Table 3). The fact that this study did not include other unmeasured variables that might have accounted for a larger proportion of variance in body image dissatisfaction is another limitation of this

study. Finally, the correlational nature of this study does not allow conclusions about causality from the findings. For example, because the data are not longitudinal, it is possible that body image dissatisfaction develops first for reasons largely unrelated to media influence (or other independent variables investigated in this study). Perhaps subsequent body image dissatisfaction leads to increased level of romantic attachment anxiety and heightened tendency to internalize media messages regarding weight and appearance. Longitudinal or experimental studies are necessary to confirm the chronological precedence of risk and protective factors (Stice, 2001) to facilitate a better understanding of the processes involved in the development of body image dissatisfaction in young women.

Despite these limitations and the need to replicate these findings in future studies, the current study has several strengths. One such strength was the simultaneous inclusion and investigation of potential risk and protective factors for body image dissatisfaction/satisfaction in its research design. Many studies have examined risk factors for body image dissatisfaction, but to the author's knowledge, none have studied risk factors in conjunction with potential protective factors in young women. Second, the moderating and mediating effects found in the present study highlighted the importance of parental bonding and romantic attachment issues in body image and eating disorders research. However, to date, a search of the

literature located very few empirical studies exploring attachment and parental bonding issues in body image and eating disturbance. Third, the findings of this study provide clear support for future studies to continue to examine both risk factors and protective factors in relation to body image concerns in young adulthood.

In addition to these strengths, some findings of the present study have important implications for prevention and intervention of body image issues in young women. First, analyses of moderating effects indicate that perceived care from their mothers may help young women to develop resistance against the negative impact of media influence on body image. This finding may be encouraging to parent education programs and to mothers who care about their daughters even after they have left home for college, because it underscores the importance of secure parental attachment, especially attachment with mother figures, in the development of positive self-image and body image. It is important to realize that interpretation of this interaction is equally valid by reversing the "direction of consideration" for all three variables. One interpretation is that increased mother care lessens the impact of media influence on body image dissatisfaction, but it is equally valid to interpret the findings of this study as *decreased* mother care *increases* a young women's vulnerability to developing body dissatisfaction after exposure to media influence.

These findings may have some implications for psychotherapeutic

interventions. Perhaps when working with a young woman with body image concerns, it seems important for the therapist to explore the client's experience with the mass media and how the client processes sociocultural messages regarding appearance issues. Findings also suggest that it might be helpful for therapists to gather information about client perceptions of parental care, especially from mothers. It might also be useful for the therapist to facilitate a secure attachment between the client and the therapist (Mallinckrodt, Gantt & Coble, 1995) so that the therapist then may serve as a positive attachment figure who gradually facilitates corrective experience to help the client confront and examine the unrealistic nature of the beauty ideals prescribed in the mass media, develop her own definition of attractiveness, and empower herself for her own uniqueness, including her look and her body.

However, at this point, a question regarding whether the protective effects of maternal care found in this study are practically significant may arise. Consider, for example, the significant interaction between Mother Care and Internalization-General, Table 7 shows that the interaction accounted for about 2% of the variance in body image dissatisfaction, from a total of 40% (including that accounted by covariates) of the variance in body image dissatisfaction. At first blush, basing an intervention on variables that account for 2% of the variance in body image dissatisfaction may not seem very practically relevant (even if statistically significant). However, a

perspective on the relative importance of effects may be seen by considering that for two young women experiencing general media internalization at about 1 standard deviation above the mean, Panel B of Figure 1 shows that the difference between a high and low level of maternal care corresponds to a difference in body image dissatisfaction scores of –3.15 (around the mean of body dissatisfaction) versus –2.55 (almost 1.5 standard deviations above the mean of body dissatisfaction). This seems to indicate that experiencing high versus low maternal care corresponds to the difference between relatively common versus fairly serious levels of body image dissatisfaction.

Another finding of this study that appears to have important clinical implications is the mediation effect of perceived media pressure on the association of attachment anxiety with body image dissatisfaction. Young women with anxious romantic attachment tend to perceive more pressure from the media regarding achieving appearance ideals and tend to feel more dissatisfied with their body image. In counseling, this finding seems to imply that when working with a young woman on her romantic attachment issues, it is important to pay attention to whether she also struggles with body image concerns, and how she perceives pressure and messages from the media regarding pursuit of thinness ideals. It also seems important for the therapist to help the young woman recognize and differentiate her attachment needs

primed by the media from her feelings about her body image. It may also be useful to examine whether the young woman externalizes her attachment and emotional issues to body image and eating concerns. Finally, genuine and corrective interpersonal experience with the therapist may help the young woman develop more secure attachment and a wider range of tools for internal self-validation, which may lessen her tendency to feel pressured by the media to change her appearance in order to secure her relationships. Lessened reliance on external validation, and more reliance on internal validation may promote a positive body image.

In conclusion, this study identified potential risk and protective factors and the moderation and mediation processes by which they may operate to produce and protect against body image dissatisfaction in young women. Clearly, it is essential that more studies on risk and protective factors be conducted to further our understanding of body image issues and to inform prevention and treatment efforts on body dissatisfaction and disordered eating, both of which dangerously threaten the psychological and physical well-being of young women. One of the most useful directions for future research would be a prospective study that begins to unravel the causal sequence of possible risk factors, protective factors, and body image concerns for adolescents and young adults.

Table 1
Demographic Characteristics of Participants

Race:		Frequency	Percent (%)
African American		7	3.0
Asian American		4	1.7
Caucasian/Euro-American		213	91.4
Hispanic/Latino		5	2.1
Native American		1	.4
Other		3	1.3
	Total:	233	100.0
Campus Status:		Frequency	Percent (%)
Freshman		40	17.2
Sophomore		88	37.8
Junior		54	23.2
Senior		38	16.3
Seeking professional certificate		1	.4
Graduate or professional student		12	5.2
	Total:	233	100.0
Currently involved in a relationship:		Frequency	Percent (%)
Yes		153	65.7
No		79	33.9
	Total:	232[a]	99.6
Age[b]:		Minimum age	Maximum age
		18	49
		Mean age	Medium age
		20.56	20
Body Mass Index (BMI)[c]:		Minimum BMI	Maximum BMI
		16.83	41.17
		Mean BMI	Medium BMI
		23.02	22.23

Note.

[a]1 participant did not fill indicate current relationship status.

[b]1 missing data.

[c]1 missing data

Table 2

Inter-correlations Between Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
BID	-.56**	.35**	-.07	-.17*	.27**	.40**	.38**	.38**	.32**	.31**	-.24**	-.20**	.22**	.11	-.25**	-.14*	-.22**	-.20**	-.05	-.25**	-.25**
1	---	-.49**	.03	.20**	-.27**	-.14*	-.20**	-.22**	-.13	-.19**	.31**	.29**	-.44**	-.25**	.42**	.32**	.38**	.39**	.08	.34**	.44**
2		---	.03	-.08	.11	.08	.11	.13*	.07	.11	-.21**	-.22**	.40**	.29**	-.35**	-.25**	-.40**	-.33**	-.05	-.29**	-.27**
3			---	.49**	-.01	-.07	-.09	-.07	-.11	-.07	.03	.09	-.06	-.02	.02	-.06	-.03	-.02	.13	.01	.01
4				---	-.09	-.13	.05	.00	.05	.08	.19**	.20**	-.21**	-.16*	.26**	.20**	.20**	.16*	.16*	.19**	.25**
5					---	.43**	.03	.08	-.01	.01	-.07	-.19**	.21**	.12	-.09	-.04	-.08	-.07	.02	-.10	-.12
6						---	.04	.17*	-.09	.02	-.06	-.07	.14*	-.00	-.02	.05	-.06	.00	-.00	-.01	-.07
7							---	.90**	.91**	.82**	-.03	-.02	.15*	-.08	.01	-.00	.08	.00	.03	-.04	-.03
8								---	.77**	.57**	-.06	-.04	.21**	-.02	-.01	-.02	.02	-.01	.06	-.07	-.06
9									---	.61**	.00	.01	.14*	-.11	.01	-.00	.08	.01	.01	-.02	-.05
10										---	-.01	-.02	.04	-.06	.04	.02	.11	.00	.02	-.01	.03
11											---	.38**	-.26**	-.26**	.38**	.26**	.39**	.36**	.18**	.25**	.29**
12												---	-.32**	-.18**	.26**	.16*	.22**	.20**	.13*	.26**	.18**
13													---	.24**	-.33**	-.26**	-.30**	-.30**	-.04	-.28**	-.33**
14														---	-.30**	-.15*	-.42**	-.21**	-.14*	-.18**	-.22**
15															---	.76**	.80**	.81**	.58**	.80**	.75**
16																---	.57**	.70**	.21**	.62**	.51**
17																	---	.64**	.34**	.56**	.49**
18																		---	.25**	.65**	.53**
19																			---	.31**	.28**
20																				---	.54**
21																					---
M	33.23	1.80	2.47	3.08	1.42	23.02	10.97	3.75	3.65	3.57	2.62	2.28	3.79	2.54	3.63	3.80	3.67	3.81	3.29	3.71	3.51
SD	1.36	.51	.52	.52	.64	3.79	2.65	1.03	1.07	.93	.54	.69	1.12	1.23	.31	.34	.44	.35	.52	.39	.46

BID, M = -6.61

BID, SD = 1.36

*$p < .05$. **$p <$. 01. ($N = 227$ through 233)

BID=Body Image Dissatisfaction; 1=Self-Esteem; 2=Depression; 3=ethnic identity search; 4=affirmation, belonging, commitment; 5=teasing; 6=BMI; 7=total SATAQ; 8=pressure; 9=internalization-general; 10=internalization-athlete; 11=mother care; 12=father care; 13=attachment anxiety; 14=attachment voidance; 15=total social support; 16=reliable alliance; 17=social provisional attachment; 18=guidance; 19=opportunity for nurturance; 20=social integration; 21=reassurance of worth; M=Mean; SD=Standard Deviation

Table 3

Hierarchical Multiple Regressions to Examine the Predictive Value of Hypothesized Risk Variables and Protective Variables, with Body Image Dissatisfaction as Criterion

Step/Variable	R^2	Change in R^2	F Change	*Final Model Coefficients*		
				B	SE B	β
Step 1. Covariates	.34	.34	57.16***			
Step 2. Set of potential risk factors	.52	.18	15.68***			
Step 3: Set of potential protective factors	.55	.03	3.04*			
Self-Esteem				-.110	.017	-.411***
Depression				.323	.152	.120*
Teasing				.027	.114	.013
BMI				.131	.020	.370***
Internalization-General				.316	.107	.243**
Pressure				-.013	.105	-.010
Internalization-Athlete				.072	.090	.049
Mother Care				-.386	.149	-.139*
Father Care				-.087	.103	-.043
Attachment Anxiety				-.185	.068	-.153**
Attachment Avoidance				.032	.058	.028
Total Social Provisional Support				-.022	.245	-.005

*$p < .05$. **$p <. 01$. ***$p < .001$.

($N = 223$)

Table 4.

Distribution of Frequency of Perceived Weight History Group

Perceived Weigh History Group	Continuously normal weight	Past over weight at some time, but now normal weight	Currently overweight	Currently underweight, or currently normal weight but previously underweight at some time	Total
Frequency	77 (33 %)	30 (13 %)	66 (28%)	60 (26%)	233

Table 5.

ANOVA of Body Image Dissatisfaction by Perceived Weight History Group

Perceived Weight History Group	Body Image Dissatisfaction		
	n	M	SD
Continuously normal weight	76	-7.02	1.29
Past over weight at some time, now normal weight	30	-6.98	1.04
Currently overweight	64	-5.48	1.12
ANOVA Results		27.44, $p < .001$	
Post Hoc (Tukey HSD) Group Comparisons		Currently overweight > Continuously normal weight, $p < .001$ Currently overweight > Past over weight at some time, now normal weight, $p < .001$	

Table 6

Hierarchical Multiple Regressions to Examine Interactions of hypothesized Risk Variables and Protective Variables, with Body Image Dissatisfaction as Criterion

Step/Variable	R^2	Change in R^2	F Change	*Final Model Coefficients*		
				B	SE B	β
Analysis 1: For Pressure and Mother Care (N = 227)						
Step 1. Covariates (Self-esteem, Depression)	.31	.31	51.21***			
Step 2. Pressure	.38	.07	25.42***	.358	.071	.271***
Step 3. Mother Care	.39	.00	1.11	-.144	.140	-.057
Step 4. Pressure × Mother Care interaction	.40	.01	5.08*	-.274	.122	-.118*
Analysis 2: For Internalization-General and Mother Care (N = 227)						
Step 1. Covariates (self-esteem, depression)	.31	.31	51.21***			
Step 2. Internalization-General	.38	.06	22.49***	.325	.067	.254***
Step 3. Mother Care	.38	.00	1.56	-.251	.143	-.099
Step 4. Internalization-General × Mother Care Interaction	.40	.02	7.72**	-.287	.103	-.148**
Analysis 3: For Teasing and Mother Care (N = 227)						
Step 1. Covariates (Self-esteem, Depression)	.31	.31	51.21***			
Step 2. Teasing	.33	.02	5.17*	.294	.119	.139*
Step 3. Mother Care	.33	.00	.92	-.202	.147	-.080
Step 4. Teasing × Mother Care interaction	.35	.02	7.28**	.551	.204	.150**
Analysis 4: For Teasing and Social Support (N= 229)						
Step 1. Covariates (Self-esteem, Depression)	.32	.32	52.49***			
Step 2. Teasing	.33	.02	5.34*	.331	.122	.157**
Step 3. Social Support	.33	.00	.06	.039	.264	.009
Step 4. Teasing × Social Support interaction	.34	.01	4.07*	.727	.360	.113*

*$p < .05$. **$p <. 01$. ***$p < .001$.

Table 7

Multiple Regression to Examine Mediating effects

	B	SE B	β	Z Test of mediation significance
Testing Step 1				
Criterion: Body Image Dissatisfaction				
Predictor: Attachment Anxiety	.269	.079	.222**	
Testing Step 2				
Criterion: Pressure				z-value: 2.783
Predictor: Attachment Anxiety	.197	.060	.213**	p-value: .005
Testing Step 3				
Criterion: Body Image Dissatisfaction				
Mediator: Media Pressure	.455	.083	.345***	
Predictor: Attachment Anxiety	.181	.076	.149*	

	B	SE B	β	Z Test of mediation significance
Testing Step 1				
Criterion: Body Image Dissatisfaction				
Predictor: Attachment Anxiety	.269	.079	.222**	
Testing Step 2				
Criterion: Internalization-General				z-value: 1.942 p-value: .052
Predictor: Attachment Anxiety	.136	.062	.143*	
Testing Step 3				
Criterion: Body Image Dissatisfaction				
Mediator: Internalization-General	.367	.080	.289***	
Predictor: Attachment Anxiety	.219	.076	.180**	

*$p < .05$. **$p <. 01$. ***$p < .001$.

(*N*= 227 through 230)

Table 8

Follow-up Multiple Regressions to Examine the Prediction Direction of Attachment Anxiety on Body Image Dissatisfaction

Variable	B	SE B	β
Mother Care	-.460	.195	-.176*
Father Care	-.150	.138	-.077
Attachment Anxiety	.133	.085	.110
Attachment Avoidance	-.021	.076	-.019
Total Social Provisional Support	-.556	.318	-.129

*$p < .05$.

($N = 223$)

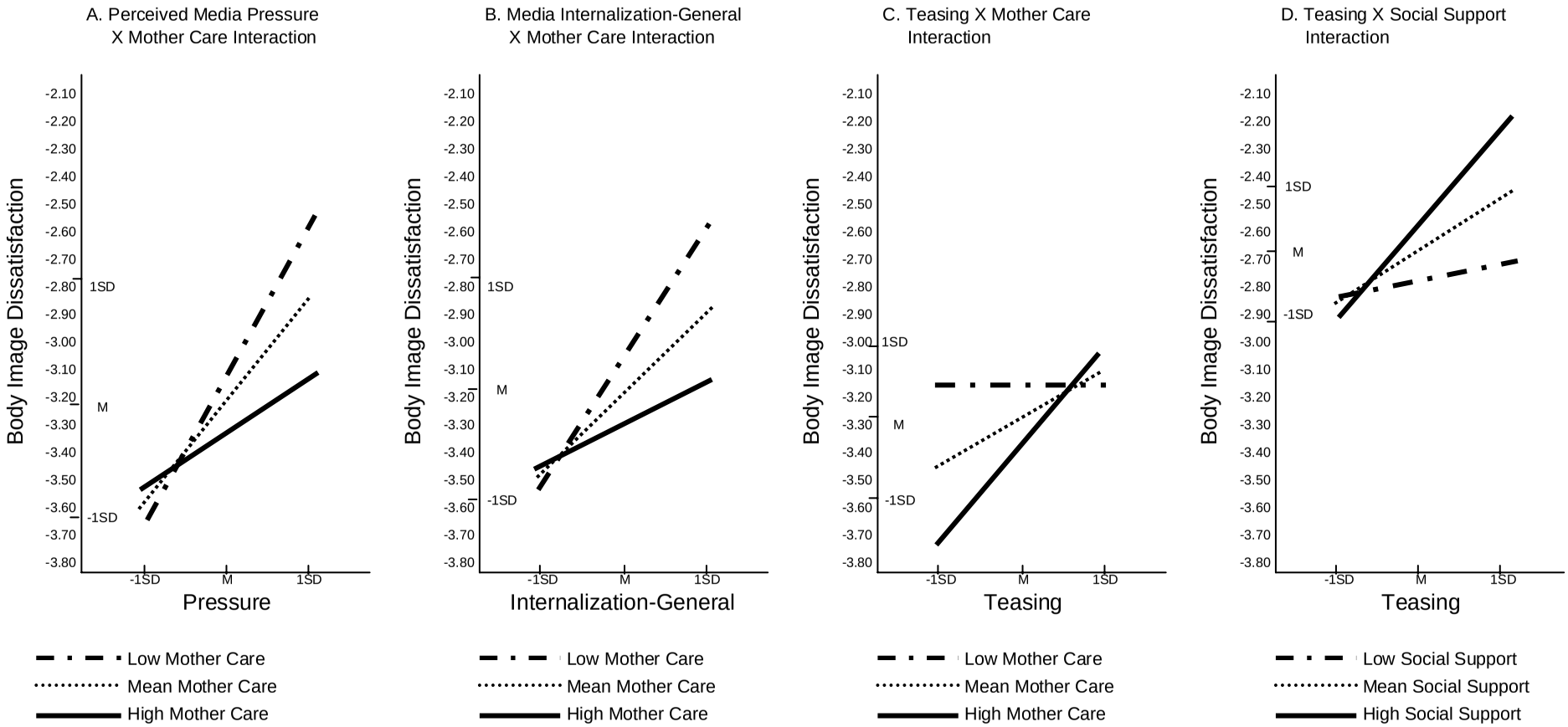

Figure 1. Significant interactions of protective factors (mother care, social support) with levels of risk factors (pressure, internalization-general, teasing) in predicting body image dissatisfaction

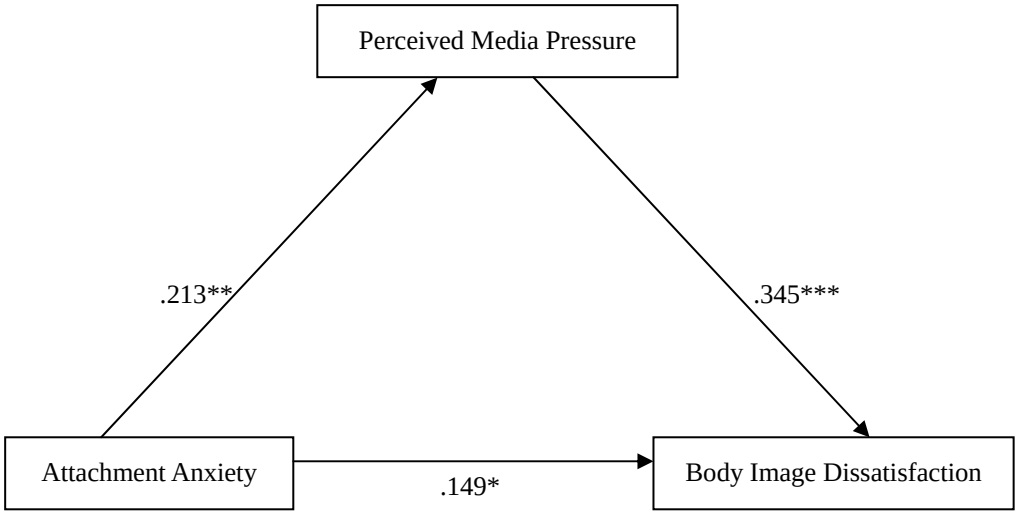

Figure 2. Results of the path analysis delineating how perceived media pressure mediate the association between attachment anxiety and body image dissatisfaction.

All numbers represent standardized beta weights.

(N= 230). *$p < .05$. **$p <. 01$. ***$p < .001$.

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