

## Gender Differences in Body Satisfaction: An Examination of Familial and Individual Level Variables

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**ABSTRACT.** This study investigated gender differences in body satisfaction in college students. Participants (195 males and 340 females) self-reported weight and height (in order to calculate BMI). In addition, attachment (to mother and father), dieting behaviors, perceived parental control, global self-worth, and body satisfaction were measured and examined in relation to satisfaction with one's body. Lower BMIs were associated with a higher degree of body satisfaction and higher self-worth scores among females, but male scores were not related to BMI. Regression analysis revealed that psychological correlates, such as attachment to mother and father, parental control, and eating attitudes demonstrated a unique association among variables in prediction of body satisfaction for each gender. Implications for clinicians and researchers are discussed.

### Introduction

Body image is a multidimensional construct that involves internal biological and psychological factors as well as external cultural and social factors (Cash & Pruzinsky, 2002; Geller, Srikameswaran, Cockell, & Zaitsoff, 2000). Body satisfaction, a dimension of body image, has been established as an important aspect of self-worth and mental health across the lifespan (Harter, 1998). Body dissatisfaction can be viewed as a continuum ranging from eating disorders with related distorted body perception at one end to overeating and obesity at the other (Franko & Omori, 1999). This continuum also includes many non-eating disordered individuals who have some level of body image disturbance, such as overall dissatisfaction, specific size/weight dissatisfaction, or size perception inaccuracy—especially overestimation of body size (Cash & Pruzinsky, 2002). Regardless of where one falls on this continuum, personal negative self-evaluation leading to body dissatisfaction can impact self-esteem, depression, anxiety, excessive dieting, and overall quality of life (Ackard & Peterson, 2001; Harter, 1998; Tiggemann, 2005).

The etiology of body dissatisfaction typically implicates both individual characteristics (e.g., BMI, self-esteem, eating behaviors, and perceived family dynamic) and socio-cultural factors (e.g., media and social pressure to be thin for females and muscularity for males) (Cash, Morrow, & Hrabovsky, 2004; Cash & Pruzinsky, 2002; Peterson, Paulson, & Williams, 2007). These socio-cultural factors may be mediated via parents, resulting in a sub-cultural influence.

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The family is the primary social institution influencing young children; thus, it is likely that many modifiable risk factors for body concerns, childhood obesity, and/or extreme weight control have substantial roots within the family context (Fonseca, Ireland, & Resnick, 2001; Peterson et al., 2007; Wheeler, Wintre, & Polivy, 2003).

However, there has been limited attention given to the role of family as a shaping factor in body satisfaction. Additionally, much of the work that has been done on body satisfaction has been with an adolescent population and/or with a clinical sample (e.g., eating disorders). Consequently, this study adopts both a developmental and a family system approach to examine components that may be linked to the construction of body satisfaction among a non-clinical sample of university students who are in the emerging adulthood stage of development. Specifically, this study explores the interrelationship of familial (attachment relationships to mother and father and parental control) and individual variables (self-worth, BMI, body satisfaction, and eating attitudes) of male and female college students and the ability of these variables to predict body satisfaction. The specific objective of the study was to determine which set of variables (BMI, eating behavior, global self-worth, attachment relationships, and parental control) is best able to predict body satisfaction for each gender.

### **Theoretical Frameworks**

Three theoretical frameworks guided this study and provide a context for interpretation of results. Two developmental approaches, attachment theory (Bowlby, 1988) and the theory of emerging adulthood (Arnett, 2004), illustrate the unique developmental factors that may influence body satisfaction. Development does not occur in isolation but occurs within the context of the family. Family systems theory states that families are interdependent, and factors affecting one family member will influence all members of the family (Bowen, 1966). Therefore, the intersection of these developmental approaches with the influences present within the family system provides a broader understanding of the factors that contribute to body dissatisfaction. These three theories—attachment theory, emerging adulthood (developmental transition), and family systems theory—are briefly outlined in this section.

#### **Attachment Theory**

According to attachment theory (Bowlby, 1988), the young organism's body during the first year of life is "owned" by its parents, and it survives only by the virtue of symbolic attachment to them. Relationships that mimic this paradigm later in life provide a strong base for successful adaptation and coping strategies as well as for healthy self-representation. The notion of such a "secure base" is very important at the time when the growing child enters adolescence and will help to develop a sense of emotional comfort and self-competence (Archibald, Graber, & Brooks-Gunn, 1999; Armsden & Greenberg, 1987; Kenny, 1987). These early attachment relationships contribute to the development of an internal working model of relationships that is carried forward into adulthood.

#### **Emerging Adulthood**

Arnett (2004) proposed the theory of emerging adulthood as a separate period of the life course (ages 18-24) that is characterized by five distinct features: age of identity explorations, the age of instability, the self-focused age, the age of feeling in-between, and the age of possibilities. Defining this period as a unique developmental period rather than just a transition

period allows for the integration of areas such as cognitive development and family relationships (Arnett, 2007).

Emerging adults have not made the transitions historically associated with adult status, but they are much freer from parental control than adolescents and are in a period of independent exploration (Arnett, 2004). For university students, this developmental period is associated with pressures to fit a societal picture and conform to the cultural ideal. These pressures, exacerbated by Arnett's (2004) ideas of instability, identity exploration, and feeling in-between, play a decisive role in triggering negative self-evaluation, weight control, unhealthy eating behavior and the development of eating disorders (Basow, Foran, & Bookwala, 2007; Davis, Karvinen, & McCreary, 2005; Nelson, Hughes, Katz, & Searight, 1999; Racette, Deusinger, Strube, Highstein, Deusinger, 2005).

### **Family Systems Theory**

Many family systems theorists agree that disturbed eating can be viewed as a symptom or reflection of a more pervasive problem within the family's role structure, style of interacting, relationship dynamic, or level of emotional expression (Humphrey, 1989). Rigid or unhealthy relationship patterns, inappropriate closeness or distance between certain members, and codependence or enabling are often commonplace in families who face eating dysfunctions within one of its members (Edwards, 1998). Within this theory, the family is seen as a unit of interacting elements influenced by its environment and constantly trying to maintain balance while dealing with matters such as developmental transitions. Family systems view allows examining the extent to which factors in one social context (e.g., the family) are related to self-perceived body satisfaction in time of developmental transition.

The fact that emerging adults are transitioning from a dependent relationship to an independent relationship with their mothers and fathers, internalized parenting system, (especially attachment relationship to mother and father) may make a unique contribution to the adjustment in this transitional time (Laible & Carlo, 2004). This time of developmental transition and body image instability is also linked to adaptation to one's own body because of overall radical body transformation (Alexander-Mott & Lumsden, 1994), which may place insecure individuals with low self- and body-esteem at risk for eating disturbances and other health-related risks (Blouin & Goldfield, 1995; Paxton, Schutz, Wertheim, & Muir, 1999).

These challenges may be overwhelming if they occur simultaneously (Alexander-Mott & Lumsden, 1994). However, it is not clear from the literature how much these cumulative stressors contribute to developing concerns about weight, body satisfaction, or low self-esteem in emerging adults (Ackard & Peterson, 2001; Archibald et al., 1999; Swarr & Richards, 1996).

## **Review of literature**

### **Self-esteem and Body Esteem**

Body satisfaction has been assessed in terms of its concurrent relationships to global self-esteem, self-competence, self-worth, and self-concept (Harter, 1998; Mendelson, White, & Mendelson, 1996; Thompson et al., 1999). All of these notions are factors embedded in a broader self-concept with strong positive correlations between ratings of satisfaction with one's body and ratings of satisfaction with oneself (Button, Loan, Davies, & Sonuga-Barke, 1997; Tiggemann, 2005; Thompson, Heinberg, Altabe, & Tanfleck-Dunn, 1999). The self-perceived dissatisfaction with one's body translates into dissatisfaction with oneself and may trigger eating pathology (Mendelson et al., 1996; Tiggemann, 2005; Thompson et al., 1999).

Indeed, children's sense of self-worth is influenced by physical appearance (Gurari, Hetts, & Strube, 2006), and as children grow into adolescents and young adults, an individual's self-esteem is directly related to perceived body satisfaction in comparison to cultural standards (Hesse-Biber, Leavy, Quinn, & Zoino, 2006). Discrepancies between an individual's actual and ideal body image may be a function of the culturally defined standards of an acceptable and desirable bodily appearance (Perez & Joiner, 2002; Sira & Ballard, 2009).

### **Attachment and Control**

Despite questions about these cumulative stressors, one of the important protective factors for successful adaptation through adolescence and for the development of healthy self-representation and self-concept as an adult is attachment to the caregiver (Harter, 1998; Pipp, Easterbrooks, & Harmon, 1992; Verschueren & Marcoen, 1999).

Most studies on the relationship between attachment and self-perception in adolescence have focused on attachment to the mother figure, usually the primary caregiver, (Bruch, 1973; Chassler, 1997; Wade, Bulik, & Kendler, 2001). The influence of mother-daughter relationships on development of healthy body image has been well-defined (Bruch, 1973; Minuchin, Rosman, & Baker, 1978), concluding that quality of the mother-daughter relationships might be an important factor in relation to body satisfaction and self-esteem because an insecure attachment pattern and low self-esteem are common in the eating disordered population (Haudek, Rorty, & Henker, 1999; Ward, Ramsey, & Treasure, 2000). Yet father-daughter relationships have been ignored and have received the attention of researchers only recently (Ohannessian, Lerner, Lerner, & von Eye, 2000; Lieberman, Doyle, & Markiewicz, 1999). Some studies report that maternal support is more central to self-esteem than paternal support (Haudek et al., 1999; Offer, Ostrov, & Howard, 1982); others found that paternal support has a greater impact than maternal support on self-esteem and well-being (Ohannessian et al., 2000; Swarr & Richards, 1996). Thus, Jones, Leung & Harris (2006) reported that parental rearing behaviors were predictive of eating disturbances and poor body satisfaction among females. At the same time, research by Lamb (1997) indicated that the androgyny or sex-flexibility present in father-adolescent relationships (as opposed to the mother-adolescent relationships) might be desirable for the formation of healthy self-representation, such as body satisfaction and self-esteem.

Researchers have demonstrated the powerful role that parents play in young adolescents' development, including the formation of self-perception (Archibald et al., 1999; Bowlby, 1988; Ward et al., 2000), and autonomy from parents also has been viewed as an important developmental task. At a time when emerging adults are negotiating the separation-individualization process, parental control may mediate the relationship between body satisfaction and eating psychopathology. Strong parental control fails to allow children to develop individuality and independence (Minuchin et al., 1978). Excessive parental control of children's eating has also been linked to self-regulation of food intake and pathology of eating behaviors (Birch, Fisher, & Davidson, 2003). At the same time, parental over-protectiveness is linked to severity of bulimic attitudes in women (Jones et al., 2006; Meyer & Gillings, 2004).

### **Gender Differences**

A negative self-evaluation is a risk factor for a full range of psychological problems, and it is one of the most important factors involved in dieting behavior (Ackard & Peterson, 2001; Button et al., 1997) and maintaining eating disorders in adolescent and emerging adult females. However, body image concerns also affect males (Cash & Pruzinsky, 2002; Cash et al., 2004; McCabe & Ricciardelli, 2001). Unlike females, many adolescent and emerging adult males consider themselves underweight; therefore, their body dissatisfaction is not likely to lead to an

eating disorder that focuses on weight reduction (Fildes et al., 1999; McCabe & Ricciardelli, 2001; 2003). Poor body image in males is related to low self-esteem, anxiety, depression and risky behavior often exhibited by eating in order to gain muscle mass (Blouin & Goldfield, 1995; McCabe & Ricciardelli, 2003). In recent years, body dissatisfaction has been intensified by societal norms for males to be tall and have a masculine V-shape physique (Cash et al., 2004; Corson & Andersen, 2002).

Given the differences in individualization-separation processes and ideal body image for males and females, males report pressure for increased masculinity and higher BMI (Corson & Andersen, 2002; McCabe & Ricciardelli, 2001; 2003), which suggests different links between body satisfaction, BMIs and associated familial correlates. Therefore, it is essential to investigate principles for developing healthy body satisfaction for both genders.

Thus, the purpose of this study was to explore the extent to which attachment relationships, parental control, self-worth, dieting behaviors, and BMI are associated with body satisfaction in non-clinical emerging adults, with particular interest on gender differences. Specific objectives of the study were: a) to examine the relationship of BMI, dieting behavior, body satisfaction, and global self-worth among both men and women, b) to determine the role of BMI, global self-worth, dieting behaviors, attachment relationships (to mother and father) and perceived parent control in predicting body satisfaction among both genders.

## Methods

### Participants

Approval from the Institutional Review Board was received to conduct this study. Data were collected from 559 college students (ages 18-25) who volunteered from among a total of 757 enrolled in two introductory classes in a large southeastern university. This represents a 73.8% rate of participation. Students for participation in the study were recruited from human development and nutrition courses with the majority of participants from the human development courses. Students were ensured that participation was voluntary and confidential, and no incentives were provided. The survey included demographic information and self-report of body weight and height. Questionnaires were completed at the end of class sessions as permitted by instructor time. It took 15 minutes to complete the survey.

Participants averaged 19.59 years of age ( $SD = 1.45$ ). Among the 559 surveys that were collected, 24 participants indicated a medical condition that requires a special diet (i.e., diabetes, anemia, stomach disease, and pregnancy), and they were excluded from the study. This was done in order to filter participants whose dieting behavior was due to diagnosed medical conditions. The sample was comprised of 340 (63.6%) females and 195 (36.4%) males and was racially diverse: 362 (67.7%) Caucasians, 124 (23.2%) African Americans, 40 (7.5%) Asians, 5 (.9%) Biracial, and 4 (.7%) "Other." The parental educational attainment levels reported by the students show that nearly 80% of their fathers and 65% of their mother's had completed college.

### Procedure and instruments

**Body Mass Index.** BMI, a commonly accepted index of body proportion, was calculated as weight in kilograms / height squared in meters. BMI is used routinely as an estimate of an individual's level of body fat, although it can be influenced by other factors such as muscle mass. BMI is correlated highly with skin fold and other body fat measures. Height and weight were obtained by self-report. Previous research has shown that adolescents' self-reports are highly

correlated with actual measurements of weight and height (Brooks-Gunn, Warren, Rosso, & Gargiulo, 1987; Phares, Steinberg, & Thompson, 2004).

**Body satisfaction.** This variable was measured by the physical appearance subscale of the Self-Perception Profile for College Students (Neemann & Harter, 1986), which assesses college students' degree of satisfaction with one's body. It consisted of four items and asked students to select which one of two self-descriptions were more like them (e.g., "*Some students are not happy with the way they look,*" or "*Other students are happy with the way they look*"). They were then asked to select one of two options, such as "*Really true for me*" or "*Sort of true forme*" for the same item (selected self-description). Items were scored on a 1 to 4 scale, where 4 represented the most satisfactory self-judgment. Scoring was done based on standard instructions. This subscale is separate from any other domains and from the global self-worth scale of the Self-Perception Profile for College Students (Neemann & Harter, 1986). The reliability coefficient alpha for the Body Satisfaction scale was robust, with alphas of .83 for the entire sample, .83 for males, and .84 for females.

**Global self-worth.** The global self-worth scale, a subscale of the Self-Perception Profile for College Students (Neemann & Harter, 1986), consisted of questions that were separate from any of the other domains (i.e., the physical appearance domain is not subsumed under the global self-worth rating). This subscale has six items, where students are asked to select which one of two self-descriptions were more like them (e.g., "*Some students like the kind of person they are*" or "*Other students wish that they were different*"). Items were scored on a 1 to 4 scale, where 4 represented the most satisfactory self-judgment. The total score was calculated based on standard instructions. The highest score represented the most satisfactory self-evaluation. The reliability coefficient alpha for global self-worth was .82 for the entire sample with .82 for males, and .81 for females.

**Inventory of parent and peer attachment.** IPPA - the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) is a self-report questionnaire with a 5-point Likert-scale consisting of 25 identical items in each of two sections: mother and father. The IPPA yielded three subscale scores: Parental Mutual Trust, Communication, and Alienation. High numbers were indicative of high mutual trust, good communication, and a high level of alienation, as perceived by the participant. Total attachment scores for mother and father were obtained by summing all three subscale scores (reversing all items on the Alienation scale). A high score was indicative of a higher degree of attachment to the target figure. Reliability coefficient alpha for attachment to mother and to father scale was .86 and .87 respectively.

**Autonomy and control.** A measure of control by both parents, as perceived by students, was computed as the direct sum of three items that were extracted from the Parental Attachment Questionnaire (Kenny, 1987). Questions such as "*Mother/Father tries to control my life,*" "*Mother/Father treats me like a younger child,*" and "*Mother/Father ignores what I have to say*" tap the degree of perceived control by the respondent and were answered on a 5-point Likert-scale. High numbers were indicative of higher degree of parental control and lower levels of perceived independence and autonomy. The reliability coefficient alpha for maternal control was .75 and .76 for perceived paternal control.

**Eating behaviors.** The Eating Attitude Test (EAT-26) is a 26-item measure that assesses a broad range of symptoms of anorexia and bulimia nervosa, including dieting and food preoccupation (Garner, Olmsted, Bohr, & Garfinkel, 1982). Although the EAT-26 was validated with anorexia patients, it is also a suitable screening instrument for work with a non-

clinical sample. In recent studies (Desai, Miller, Staples & Bravender, 2008) EAT-26 was proven to be a reliable screening instrument for overweight college students to assess dieting strategies.

The EAT-26 is an objective self-report measure in which respondents rate the frequency of various behaviors (e.g., “avoid foods with sugars in them,” “feel extremely guilty after eating,” “engage in dieting behavior”) on a 6-point scale ranging from “never” to “always.” The clinical cut-off point for eating disturbances is above 20, which is indicative of serious eating or weight concerns, or eating disorder. For this study, EAT-26 was used as a continuous measure with a high score indicating more eating disturbances, and the total EAT-26 scores were computed as the sum of all items using the scoring instructions.

In multiple psychometric studies, the EAT-26 has been found to have good reliability (alphas ranged from .79 to .94 across studies) and has acceptable criterion-related validity and high internal validity (Garner et al., 1982). The reliability coefficient alpha for the EAT-26 in this study was .86 for both genders.

### Data Analysis

The questionnaire data were keyed directly into an SPSS data file. Proper transformations were applied to those items that required reverse coding for scoring. The purpose of this study was to examine the conjoint and separate contribution of psychological variables (Global Self-worth, Maternal and Paternal Control, Attachment to Mother, and to Father, and Eating Behavior) and BMI to perceived body satisfaction among college males and females; thus correlation and regression analyses were conducted using SPSS v.11.5.

## Results

### Preliminary Analysis

Female students ( $n = 338$ ) had a mean BMI of 22.39 ( $SD = 3.76$ ), while male students ( $n = 194$ ) had a mean BMI of 24.52 ( $SD = 3.76$ ). Using the CDC categories (2009) for adults, 16.17% of the sample was overweight ( $n = 85$ ) with a BMI from 25 to 30; 66.35 % was normal or healthy weight ( $n = 357$ ) with a BMI from 20 to 25; and 17.48 % of the sample was underweight ( $n = 93$ ) with a BMI below 20. Among females ( $n = 338$ ) 3.84 % was severely obese ( $n = 13$ ) with a BMI > 30, while among males ( $n = 194$ ) 7.73% was severely obese ( $n = 15$ ) with a BMI over 30.

The Total EAT-26 scores were computed as the sum of all items. The range of EAT scores for the sample ( $N = 528$ ) was from 0 to 51 with a mean score of 10.58 ( $SD = 10.32$ ). Female respondents ( $n = 338$ ) presented a mean of 12.26 ( $SD = 11.16$ ), while males ( $n = 190$ ) had mean of 7.49 ( $SD = 7.74$ ). Means comparison using a  $t$  test revealed that EAT scores of females were significantly higher than those of males,  $t(526) = -5.21$ , ( $p \leq .001$ ). In other words, females reported more symptoms of dieting behaviors than did males in this sample. Eighty four (15.78%) of the respondents had an EAT score higher than 20, which is indicative of disturbed eating behavior but does not necessarily indicate an eating disorder (Garner et al., 1982). This included 66 females (19.52 % of the females) and 18 males (9.47 % of the males).

In this sample 9.1% of the respondents reported high body satisfaction. This group was equally divided between males and females. Among the subjects who were satisfied with their body appearance, two females ( $n = 2$ ) and one male had high eating attitude scores, five males (21%) were overweight with BMI > 26, and all females who reported high body satisfaction had a low BMI in the underweight category with BMI < 20.

Means and standard deviations and range and reliability coefficients for each measure, separated by gender, are shown in Table 1. Bivariate correlations were used to examine the relationship between participants' self-perceived body satisfaction and other variables (See Tables 2 & 3). Body Satisfaction was positively correlated with global self-worth score for both genders in this sample.

Based on correlation analyses, females with higher BMIs tended to feel less satisfied with their body appearance and reported lower global self-worth. Among males, the same correlations were not statistically significant. While among females body satisfaction associated moderately (positively) with Attachment to mother scores, both attachments (to father and to mother) were associated with body satisfaction in males. Also among males, a higher degree of maternal control was associated with a lower degree of body satisfaction. The same correlation was not significant for females.

Correlation analyses revealed that dieting behaviors were associated with lower Self-Worth and lower Body Satisfaction scores for both genders; at the same time, among females, increased dieting behavior was associated with lower quality of attachment to mother. For males, increased dieting behavior was associated with lower quality of attachment to father and associated with higher degree of parental control. Dieting behavior did not associate with BMIs in this sample.

Table 1  
*Means and Standard Deviations*

Variable	Males		Females		Range	$\alpha$
	<i>(n = 195)</i>		<i>(n = 340)</i>			
	Mean	<i>SD</i>	Mean	<i>SD</i>		
Attachment to Mother	78.38	1.94	77.06	3.81	64-97	.86
Attachment to Father	78.82	5.00	78.18	4.13	64-97	.87
Maternal Control	6.22	2.88	5.73	2.65	3-15	.75
Paternal Control	6.01	2.75	5.73	2.79	3-15	.76
Global Self-Worth	18.63	3.38	18.59	3.43	6-24	.82
Body Satisfaction	10.24	1.81	9.54	1.87	4-16	.83
Eating Behavior	7.49	7.74	12.26	11.16	0-51	.86



Table 2  
Correlations between Key Variables for Male group (n = 190)

Variables	1	2	3	4	5	6	7	8
1. Body Satisfaction	–							
2. BMI	-.113	–						
3. Eating Attitudes	-.151*	-.074	–					
4. Global Self-Worth	.362***	-.074	-.188**	–				
5. Attachment to Mother	.135*	.079	-.093	.215**	–			
6. Attachment to Father	.170*	.063	-.158*	.223***	.722***	–		
7. Maternal Control	-.246***	-.009	.172*	-.231***	-.174*	-.163*	–	
8. Paternal Control	-.111	.002	.145*	-.154**	.112	-.203**	.685***	–
*p< .05								
**p< .01								
***p< .001								

Table 3  
Correlations between Key Variables for Female group (n = 340)

Variables	1	2	3	4	5	6	7	8
1. Body Satisfaction	–							
2. BMI	-.429***	–						
3. Eating Attitudes	-.291***	.031	–					
4. Global Self-Worth	.427***	.274***	-.297***	–				
5. Attachment to Mother	.082*	-.088	-.145**	.110*	–			
6. Attachment to Father	.046	-.088	-.047	.081	.539***	–		
7. Maternal Control	-.070	.036	.042	-.191***	-.226**	.127*	–	
8. Paternal Control	-.016	.103	-.083	-.177**	-.138**	-.252**	.663***	–
*p< .05								
**p< .01								
***p< .001								

### Regression Analysis

Multiple regression equations were used to estimate the relative contributions of the independent variables to the prediction of adolescent's Body Satisfaction for both males and females and are demonstrated in Table 4. While there were many significant bivariate correlations, there were few significant coefficients in a regression analyses presumably because of the high intercorrelations between the predictor variables.

The study is exploratory by nature, and two blocks were used for step forward regression analysis: the first block consisted of the demographic variables--age, race and BMI. The second block included psychological variables such as Attachment variables, Maternal and Paternal Control, Global Self-Worth and EAT- 26 scores. In Step 1, no demographic variable made a significant contribution, and consequently only 2.8% of the variance in Body Satisfaction was explained for males. In contrast, for females, the demographic variables explained 18.7% of the variance in Body Satisfaction with BMI as the only significant predictor.

Table 4  
*Summary Regression Coefficients (Betas)*

Variable	$\beta$		$\beta$	
	Males ( <i>n</i> = 190)	Females ( <i>n</i> = 330)	Males ( <i>n</i> = 190)	Females ( <i>n</i> = 330)
<b>Step 1</b>				
Age	.091	-.001	.061	-.014
Race	-.078	-.064	.012	-.084*
BMI	-.128	-.431****	-.071	-.363****
<b>Step 2</b>				
Attachment to Mother			-.095	-.056
Attachment to Father			.124	.052
Maternal Control			-.268***	-.152**
Paternal Control			.102	.128
Global Self-Worth			.224****	.253****
Eating Attitudes			-.106	-.180***
<i>R</i> <sup>2</sup>	.028	.187	.148	.347
<i>R</i> .	.169	.434	.383	.589

Note.  $p \leq .05$       \*\* $p \leq .01$       \*\*\* $p \leq .001$       \*\*\*\* $p \leq .000$

For males, variables entered in Step 2 accounted for an additional 12% of variance in Body Satisfaction with Maternal Control and Global Self-Worth as significant predictors. Among the psychological variables for females, Global Self-Worth, Maternal Control and Dieting Behavior produced significant contributions to predictability in Body Satisfaction and accounted for 16% of the variability. Thus, among males, those who expressed greater body satisfaction reported a positive sense of self-worth and experienced a lesser degree of maternal control. Females who expressed greater body satisfaction also reported a positive sense of self-worth but lower BMI indices, experienced a lesser degree of maternal control, and reported fewer eating disturbances.

For females, global self-worth and BMI were the best predictors of body satisfaction, whereas for males, the feeling of global self-worth was the strongest variable in predicting body satisfaction.

## **Discussion**

### **BMI and Gender**

Consistent with previous research (Shroff & Thomson, 2006; Tiggemann, 2005), this study found that BMI was predictive of body satisfaction only for college-females and not college-males. The fact that BMI and body satisfaction in males are not directly linked is discussed in previous research by Frederick, Gordon, Grigorian, & Jarcho, (2007). Thus, when demonstrating the complexity of relationship among weight, body satisfaction, and gender, Frederick and others (2007) reported the linear association between BMI and body satisfaction among females (i.e., underweight females who reported higher body satisfaction) and a parabolic (inverted U) association for males (i.e., underweight and overweight men reported lower body satisfaction). Whether college-aged males are in an overweight or underweight category, it places them at risk for weight control, disordered eating, excessive exercise, or other strategies to improve their body satisfaction (Cash et al., 2004; Frederick et al., 2007; Tiggemann, 2003).

### **Dieting Behavior**

High BMIs have been shown to be associated with dieting behavior as a strategy to maintain positive body image (Attie & Brooks-Gunn, 1989; Button et al., 1997). Based on the regression model, this suggestion was supported in the female group where lower BMIs and fewer dieting behaviors were predictive of body satisfaction. Study results could also be linked with findings by Geller and others (2000) where the actual weight of respondents was not related to high EAT-26 scores, although perception of being overweight was. It should be noted that a high BMI alone does not contribute to dieting behavior; however, in combination with low global self-worth and other factors might produce dieting behavior. The same association was not supported among males.

Also, 19.5% of all female and 9.47% of all male respondents reported a high degree of dieting behavior (i.e., EAT-26 score above 20), which is similar to previous research findings with a college sample. For example, Nelson and others (1999) reported that 20% of the surveyed college females had EAT-26 scores indicative of extreme dieting (20 or above, according to Garner et al., 1982) and that 10% of the males scored high on the EAT-26 scale.

The theory of emerging adulthood (Arnett, 2007) can be helpful in further interpreting these results. Emerging adults are in a period of identity instability and exploration and may be more susceptible to media images that emphasize a low BMI (particularly in women) and the dieting behaviors used as a strategy to achieve these low BMIs.

### **Global Self-Worth and Body Satisfaction.**

Body satisfaction is an essential part of global self-worth and is constructed differently by males and females. While for females, high BMI was negatively related to body satisfaction and global self-worth, for males neither global self-worth nor body satisfaction were affected by high BMIs. By addressing gender differences in self-perception with regard to BMI and other components of self-esteem, these findings, with further investigation, are able to provide proper guidance for implementation of gender-specific programs designed to promote healthy body

satisfaction, improve eating behaviors, and fight obesity. This also invites further investigation to explore the contribution of BMI (if any) to different domains of global self-esteem for males.

### **Familial Influence**

Results of this study are consistent with previous research indicating that parent-adolescent relationships play an important role in the development of healthy body perception (Archibald et al., 1999; Lieberman et al., 1999). At the same time, they highlight the role of gender specific relations with mothers and fathers, which may be because of identity formation in adolescent years.

Regression analyses revealed that high global self-worth was predictive of body satisfaction for both genders, introducing that the attachment relationship with parents play complex or (additive) and complementary (transformational) roles in psychological well-being during developmental transition. This effect of parental attachments may be translated into adolescent self-worth, suggesting the quality of relationships in this developmental period plays an important role in the construction and evaluation of self (Wilkinson, 2004). It may be that during the identity instability and exploration of emerging adulthood (Arnett, 2007), familial influences such as the parent-child relationship are synthesized into current experiences and influence the emerging adult's self-evaluation. Self-evaluation, including global self-worth and body satisfaction, play an important role in the identity formation that is occurring during this developmental time period.

The effects of relationships with parents on various aspects of adolescents' self-evaluations have been discussed (Lieberman et al., 1999; Offer et al., 1982). Perceived maternal control contributed negatively to perceived body satisfaction for both genders, but males' self-perception was found to be more sensitive to the control/autonomy aspect of maternal behavior (Gecas & Schwalbe, 1986). Results of the study indicate that not just global self-worth but also males' body satisfaction was strongly linked to degree of perceived maternal control. These findings may be related to distinct and very specific identification processes for males as opposed to females (Gilligan, 1982). Excessive maternal control might be a factor that fosters an inability to obtain autonomy and independence for successful separation—individualization processes that are meaningful for maturing males and influence their body satisfaction.

Findings of the hierarchical regression are in support of family systems theory and Minuchin's general description of psychosomatic family dynamic, where excessive parental control does not allow for young individuals to obtain independence and autonomy, which in turn may lead to lower body satisfaction and increased dieting behavior (Bowen, 1966; Edwards, 1998; Laible & Carlo, 2004; Minuchin et al., 1978). Thus, maternal control was predictive of negative body satisfaction for both genders but associated with increased dieting only in female college students. The investigation of parent-child interaction, specifically the aspect of maternal/paternal control, is valuable because family relationships may have a long-term outcome in adjustment, self-perception, and eating pathology in young adults (Jones et al., 2006). These findings warrant further investigation taking into consideration that data and results of the study are based on a non-clinical sample of college students.

### **Limitations**

A limitation of this study was the use of only one classic measure to assess body satisfaction. It is known that body satisfaction is a complex structural concept that has been measured in many different ways; a variety of perceptual measures such as figure drawing as

well as assessing perception of being overweight could enhance and contribute to further research. It is important to examine whether results using additional body satisfaction and appearance evaluation scales are replicable.

Another limitation of the study was the use of BMI as an estimate of body type. Self-reported weight and height and calculated BMI have been shown to be accurate measures of human proportion (Brooks-Gunn, et al., 1987; Phares, et al., 2004). However, for a more precise measure of adiposity and obesity, a triceps skin fold thickness test could be performed. BMI is commonly used as a measure of body fat and is highly correlated with other measures, but at the same time, other factors besides body fat level can influence BMI score (e.g. muscularity). It is important that future studies on body satisfaction employ measures assessing muscularity and other physical features combined with the BMI.

Finally, the use of a convenience sample should be noted as a limitation in that results are not generalizable to a larger population. This study used students' reports on perceived parenting strategies of control and quality of care, which may result in biased answers due to cognitive abilities where the sensitive line between care and control aspects of parenting may not be fully recognized by college students.

### **Conclusions & Implications**

The results of this study suggest that body concerns are not just the domain of young women. Males also experience poor body satisfaction and engage in dieting behavior, which indicates the need for assessment tools that would be able to gauge male-specific eating behavior focused on muscle/body gain accompanied with protein and supplement intake. Taking into consideration the complex relationship between BMI and body satisfaction in males, more studies are needed to understand links and developmental components in male body satisfaction.

Findings of the present study uncover important links associated with body satisfaction for both genders and are extremely valuable in light of recorded body satisfaction changes within the male population (Cash et al., 2004; McCabe & Riccardelli, 2001; 2003). Psychological links between body satisfaction, self-worth, and parental attitudes could serve as key components for promotion of positive and healthy body satisfaction in younger generations. Implementation of proper parental, gender-specific strategies could improve the quality of weight reduction interventions for both genders in addition to improving quality of life and satisfaction with self. Additionally, this study has implications for parenting education. Parents need to be aware of the role they play in their child's body satisfaction. Mothers particularly should be made aware of issues surrounding control and eating in that higher maternal control is predictive of lower body satisfaction. Strategies that mothers can use to reduce their control, thereby increasing autonomy of eating behaviors among their children, might be beneficial additions to family life education programs.

The present study is only a cross sectional sketch of experiences, feelings and perceptions regarding body satisfaction in college students. More longitudinal studies incorporating media, peers, and societal influences are needed. It remains important to promote and facilitate a healthy body perception that is personally acceptable and does not reduce an individual's quality of life.

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