

Body Image: Relationship to Attachment, Body Mass Index and Dietary Practices among College Students

Natalia Sira

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Cosby Steele Rogers, Ph. D.

Janet Sawyers, Ph. D.

Victoria Fu, Ph. D.

Jim Garrison, Ph.D.

Lawrence Cross, Ph. D.

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(ABSTRACT)

Body image or satisfaction with physical appearance has been established as an important aspect of self-worth and mental health across the life span. It is related to self-esteem, sexuality, family relationships and identity. Given the fact that physical appearance is a multifaceted structural concept that depends, not only on inner-biological, but also a psychological and socio-cultural components, the purpose of this study was to examine variables that are related to and influenced by satisfaction with physical appearance. Body mass index (BMI), eating disturbances, attachment (to mother, to father and to peers), global self-worth, parental control, peer influence and pressure regarding eating and media influence were examined in relation satisfaction with physical appearance.

College students in a large southeastern university (195 males and 340 females) completed two subscales of Harter's Self-Perception Scale for College Students. Each subject self-reported his/her weight and height and these were used to calculate weight/height ratio known as the body mass index. Participants also reported on attachment (to mother, to father and to peers) using the Inventory of Parent and Peer attachment scales (Armsden & Greenberg, 1987), Peer Influence Scale (Mukai, 1993) and the Media Influence scale, which was developed for this project.

Differences between male and female perceptions of physical appearance in relationship to BMI were found: Among women, higher BMIs were associated with lower scores on perceptions of physical appearance ($r = -.429, p \leq .001$), whereas for

males BMIs were not related to satisfaction with physical appearance. For both males and females, satisfaction with physical appearance was significantly and negatively ($r = -.258, p \leq .01$) associated with media influence. Media influence was related to higher scores on the EAT 26 scale that measured disturbed eating attitudes and behaviors ($r = .307, p \leq .01$). Females were affected by this association more so than were males. However, males appeared to not to be immune to such influence. Peer influence and peer pressure was another influential factor for both gender groups and it was associated with high eating disturbance scores ($r = .369, p \leq .01$ for peer influence, and $r = .413, p \leq .01$ for peer pressure). Attachment variables were associated with satisfaction of physical appearance and global self-worth in a different manner for females and males. For males, satisfaction with physical appearance was positively related to attachment to mother ($r = .135, p \leq .05$) and father ($r = .170, p \leq .05$) and negatively associated with maternal control ($r = -.246, p \leq .001$). For females, only attachment to mother ($r = .082, p \leq .05$) was positively associated satisfaction with physical appearance.

While there were many significant bivariate correlational findings, there were few significant coefficients in a regression analyses, presumably because of the high intercorrelations between the predictor variables. For females, BMI was the best predictor of satisfaction with physical appearance, whereas for males, the feeling of global self-worth was the strongest variable in predicting satisfaction with physical appearance.

Satisfaction with physical appearance is an essential part of global self-worth and is constructed differently by males and females. For females, high BMI was negatively related to satisfaction with physical appearance as well as global self-worth. On the other

hand, for males neither global self-worth nor perceptions of physical appearance were affected by high BMIs.

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Chapter I

Introduction

There has been a tremendous amount of research on eating disorders among females. However, the difficulty of distinguishing eating disordered populations from normal controls has led to a growing literature that focuses on body image rather than eating behaviors of normal adolescent females. Nevertheless, relatively little research has focused on factors that influence the body image among non-clinical adolescents, and almost no research has studied the relationship between body image and eating behaviors of males. This study examined body image and eating behavior among older adolescents of both genders.

Body image is a multidimensional construct, that involves internal biological and psychological factors as well as external cultural and social factors (Cash & Pruzinsky, 1990; Geller, Srikameswaran, Cockell, & Zaitsoff, 2000; Petersen, Schulenberg, Abramovich, Offer, & Jarcho, 1984) and it has been established as an important aspect of self-worth and mental health across the life span (Harter, 1988; 1998; 1999). Several studies have demonstrated that body image as well as overall satisfaction with self undergoes change during adolescence years (Fabian & Thompson, 1989; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), partially in response to bodily changes associated with puberty. A negative self-evaluation during this time of developmental transition for young females often leads to body dissatisfaction and low self-esteem, as well as to increased incidents of depressive reactions and to eating-disordered behaviors (Ackard & Peterson, 2001; Button, Loan, Davies, & Sonuga-Barke, 1997; Davies & Furnham, 1986; Petersen, Sarigiani, & Kennedy, 1991).

Self-esteem and body esteem are terms that often used interchangeably to refer to evaluative perceptions of the self that are cognitively mediated and emotionally laden. Self-evaluation of physical appearance, or body esteem, is the only specific domain of self-esteem that has been studied extensively in overweight individuals, and findings of this research are consistent: overweight children, adolescents, and adults generally have lower body esteem than do their normal weight peers (Fabian & Thompson, 1989; Harter & Jackson, 1993; Mendelson, White, & Mendelson, 1996). Moreover, it is a well-known fact that if an adolescent fits into the cultural ideal of the slim, well-proportioned physique, he/she probably will have a positive self-concept (Harter, 1988; 1998; 1999). In contrast, individuals who perceive their bodies negatively with regard to culturally valued features may have low self-esteem and feelings of inferiority, as well as risk factors for depression, anxiety or eating disorders. Findings from research aimed at explaining the transitional change in perception of self-worth during adolescence (Cauffman & Steinberg, 1996; Fabian & Thompson, 1989; Thompson et al., 1999) indicate that with maturation the self-esteem of females' declines. In turn this leads to gender differences reflected in dramatically lower self-esteem in girls as compared to boys when esteem measures are based on their physical appearance (Harter, 1999; Mendelson et al., 1996; Smolak, Levine, & Gralen, 1993; Swarr & Richards, 1996).

The prevalence of eating disorders in the United States has increased significantly over the past few decades (Grigg, Bowman, & Redman, 1996; Lemberg, 1999). However, the number of individuals with diagnosable eating disorders and associated body image disturbances represents only a small portion of the population for whom body image issues are problematic. A large part of the population experiences body image dissatisfaction; yet, many

of these individuals do not manifest an eating disorder. Some may be exercising or using dietary practices in order to achieve balance and satisfaction. The findings reported by Lemberg (1999) revealed that about 34% of males and 38% of the female population were dissatisfied with their overall appearance. Although most of respondents were content with their face and their height, body weight and shape were sources of discontent. Data further indicated that prevalence of dissatisfaction is on the rise, especially among women (Lemberg, 1999). However, body image distortions and concerns also affect males (Cash & Pruzinsky, 1990; Parks & Read, 1997). Unlike females, many adolescent males consider themselves underweight; therefore their body dissatisfaction is not likely to lead to eating disorder that focuses on reduction of weight (Kaplan, 1984). Cash and Pruzinsky (1990) reported that how the normal weight person classifies his/her weight affects the person's body image, eating behavior, and psychological well-being. It is becoming apparent that many non-disordered individuals have some level of appearance-related, body image disturbance, such as dissatisfaction, specific size/weight dissatisfaction, or size perception inaccuracy, especially overestimation of body size (Cash & Pruzinsky, 1990). Among objectively normal weight individuals, those who proclaimed themselves overweight evaluated their bodies more negatively. Their personal dissatisfaction with body and appearance may have been intensified by societal norms to be thin and fit for females and to have masculine V-shape physique and tallness for males.

Adolescence is referred to as a time of special body image instability as well as a time of adaptation to one's own body because of overall radical body transformation (Fisher, 1986). During this time of transitions, the challenges include puberty, the beginning of heterosexual

relationships, time for change in parent-child relationships, and movement toward a career choice. One of the important indicators for successful adaptation through adolescence and for the development of healthy self-representation and self-concept is attachment to the caregiver (Harter, 1998; 1999). In the limited studies on the relationship between attachment and self-perception in adolescence, all (or almost all) have studied attachment to the mother figure. This study extended previous work by investigating the relationships between body image and attachment to mothers, fathers, and peers.

Cultural and societal standards regarding desirable body characteristics such as thinness have become unrealistic for young women within the past twenty years. Adolescent males are also vulnerable to the pressure to attain the “ideal” male body. Very often the “ideal” and “actual” body type will not or cannot coincide even with excessive exercising, and this leads to body image dissatisfaction for both males and females. Young adolescents are well aware of the cultural criteria for attractiveness through the news media, television and magazines. Media emphasis on possessing a muscular build for males and unrealistic thinness for females may have increased the percentage of young adolescents wishing to fit the “ideals”. It seems appropriate try to understand the developmental precursors and concomitant factors that are related to body image in order to comprehend the complexity of the self. It is also important to provide data on body image in non-clinical adolescents rather than promulgating studies within the narrow limits of the field of eating disorders.

The purpose of this study was to explore, among older adolescent males and females, the relationships between “Satisfaction with Physical Appearance” as measured by the Physical

Appearance Scale of Harter's Self-Worth Scale for College Students and the following variables:

- a) attachment to the mother, father, and peers as measured by the Inventory of Parent and Peer Attachment Scale (Armsden & Greenberg, 1987),
- b) actual body proportion measured by Body Mass Index (BMI), obtained by dividing weight (in kilograms) by height (in meters) squared,
- c) eating disturbances and attitudes as measured by EAT-26, (Garner, Olmsted, Bohr, & Garfinkel, 1982),
- d) "peer influence and peer pressure in the Dieting Domain" measured by the Peer Influence and Peer Pressure Scale, (Mukai, 1993; 1996), and
- e) media influence measured by the Media Influence Scale developed by the researcher for the present study,

By examining these factors, the researcher contributed to the research literature by providing data that deepens our understanding of the factors that influence satisfaction with physical appearance among older adolescents.

Chapter II

Review of Literature

Biological, psychological and socio-cultural components influence the development of body image and related concerns among adolescents in the United States. Because most research on body image has been conducted on females with eating disorders, relatively little is known about factors associated with satisfaction with physical appearance of non-clinical females. Moreover, almost no research has assessed factors related to body image of males. This review of literature will examine the definition of body image as well as theoretical perspectives and empirical research on factors related to body image such as, attachment, eating behavior, and objective body size. The factors of interest also include developmental aspects and gender differences.

Definition of Body Image

Body image is the term that has come to be widely accepted “as the internal representation of your own outer appearance- your own unique perception of your body” (Thompson et al., 1999, p. 4). This internal view of oneself is associated with feelings and thoughts and may modify one’s behavior in certain situations. In some cases the feelings that result from reflecting on one’s appearance may be positive; in other cases they may be so negative that they lead to depression or other behavioral disturbances.

Body image, the picture of the body that is formed in one's mind, is a “plastic, constantly changing concept, continuously modified by bodily growth, trauma, or decline, and significantly influenced by the ever-changing interaction with the social environment” (Sugar, 1993, p.63). According to Sugar, adolescent males and females have a fairly intact, integrated

sense of the body as separate from others, a sense of gender and a sense of “owning” the body, as well as a relatively positive attitude towards the body (Sugar, 1993).

The research findings of Alexander-Mott and Lumsden (1994), Bruch (1973), and Garfinkel and Garner (1982) support a theoretical model, which conceptualizes body image as a multidimensional and multifaceted construct. This conception was confirmed by recent research findings (Sands, 2000; Thompson et al., 1999; Usmiani & Daniluk, 1997) and supports the perspective that body image is a complex concept involving internal-biological and psychological factors and external social factors (Fisher, 1986; Geller, Johnston, Madsen, Goldner, Remick, & Birmingham, 1998; Petersen et al., 1984). Evidence has indicated that a combination of perceptual and attitudinal/affective measures of body image proved to be better predictors of body image disturbance, drive for thinness, and disordered eating than either of them alone (Sands, 2000).

At any given moment an individual may be simultaneously monitoring different aspects of his/her body, e.g. its position in space, the integrity of its boundaries, and changes in its apparent size. In addition, modes of body perception may shift markedly at certain developmental points and may also be quite different in males as compared to females (Fisher, 1986; Gilligan, 1982; Sugar, 1993) providing evidence that body image undergoes continuous dynamic change.

Relationship of body image to self-esteem. Harter's (1988; 1993; 1998) formulation of self-perception raised questions on how global self-worth is related to body esteem. The constructs of body image, self-esteem, and self-concept are considered to be highly related (Button et al., 1997; Fisher, 1986; Geller et al., 2000; Harter, 1988; 1998; Usmiani & Daniluck

1997). Usmiani and Daniluck (1997) found that higher self-esteem scores were associated with more positive body image scores in adolescents. The findings of Harter's research indicated a high correlation between global self-worth and self-evaluation of physical appearance across the lifespan, suggesting that global self-worth and body esteem are highly related (Harter, 1988; 1998; 1999). Corroborating earlier data from Mendelson and White (1985) showed a relation between body esteem and across-domain measures of self-esteem in adolescents. Moreover, the earlier cross sectional study indicated body-esteem deficits in overweight children as young as 8 to 10 years of age (Mendelson & White, 1985), but self-esteem deficits only in overweight youngsters who reached early adolescence. Body Image scores as measured by the Physical Appearance Scale (Neemann & Harter, 1986) shared variance with Global Self-Esteem score falling in the range of .66 and .73 according to Harter (1988) and $r = .55$ according to Mendelson et al. (1996). This finding was corroborated by later research (Asci, Gokmen, Tiryaki, & Asci, 1997; Harter, 1998; 1999; Neemann & Harter, 1986) across different samples for both sexes. Because body image has been shown to be the key component of esteem, the focus of this study was to assess the satisfaction with physical appearance using the Physical Appearance Scale of Harter's Self-Perception Profile for College Students and to assess its relationship to Body Mass Index in a sample of older adolescent college students.

Self-esteem and body esteem are terms that often used interchangeably to refer to evaluative perceptions of the self that are cognitively mediated and emotionally laden. Self-evaluation of physical appearance, or body esteem, is the only specific domain of self-esteem that has been studied extensively among overweight individuals, and the findings appear unequivocal. Overweight children, adolescents, and adults generally have lower body esteem

than do their normal-weight peers (Mendelson et al., 1996; Mendelson & White, 1982), and this is especially true for females.

In addition to the relationship between body image and self-esteem, recent literature reflects an awareness among researchers that body image may also be related to many aspects of human development including self-esteem, sexuality, family relationships and identity. Moreover, body image has been established as an important aspect of self-worth and mental health across the life span (Harter, 1998). The importance of these findings lies in the fact that it is also well established that self-esteem is a good indicator of overall well-being (Harter & Jackson, 1993; Harter 1998, 1999). Body image or physical appearance has been assessed in terms of its concurrent relationships to global self-esteem, self-competence, self-worth and self-concept (Fisher, 1986; Harter, 1999; Mendelson et al., 1996; Thompson et al., 1999). All of these notions are factors that are embedded in a broader self-concept, with strong positive correlations between ratings of satisfaction with one's body and ratings of satisfaction with self (Button et al., 1997; Fisher, 1986; Sands, 2000; Thompson et al., 1999). The self-perceived dissatisfaction with one's body translates into dissatisfaction with oneself. If this dissatisfaction is important and extensive enough, motivated behavior may begin to emerge in order to reduce such discontent (Bruch, 1973; Button et al., 1997; Harter & Jackson, 1993). This kind of motivated behavior is usually manifested as disordered eating patterns and/or a pathway for adolescent depression (Ackard & Peterson, 2001; Bruch, 1973; Button et. al., 1997; Davies & Furnham, 1986; Petersen et al., 1991).

With the dramatic increase of eating disordered behavior in the last twenty years (Lemberg, 1999; Rosen, Tacy, & Howell, 1990), body image disturbance has been studied and

has become recognized as a factor contributing to the development of eating disorders, such as anorexia and bulimia nervosa. Further, shape- and weight-based self-esteem has been identified as a central substrate of body image and a structural aspect of global self-esteem (Geller et al., 1998; Geller et al., 2000). Geller et al. (2000) analyzed shape- and weight-based self-esteem in a sample of high school females and identified shape- and weight-based self-esteem as a “central cognitive substrate” (Geller et al., 2000, p.339) and a possible key predisposing factor to the development of disordered eating behavior. At the highest end of the body image dissatisfaction, one is likely to find body image disturbance so severe as to be associated with significant impairment in social functioning, occupational functioning, or both.

Theoretical and Empirical Considerations

Body image and eating disorders. The recently expanded field of eating disorders offers a variety of theories and an enormous amount of research that tries to explain the development of weight concerns as reflected in dieting arrangements and body image disturbances. This area of medical and psychological science has generated a great deal of academic and popular interest in body image beginning with the classic work of Bruch (1973). Her work included a specific focus on a particular aspect of disturbed body image as a central component of the symptomatology of anorexia nervosa and bulimia. Later, following Bruch’s suggestion, the American Psychiatric Association included diagnostic criteria related to body image disturbance as a necessary feature for the diagnosis of anorexia nervosa. Typically, both anorexics and bulimics have poor body image and a long history of dieting and weight loss attempts, possibly with some short degree of successes (Garfinkel & Garner, 1982). The pathological eating behavior patterns in such cases, serve as a coping mechanism and seem to

be triggered by negative body image and low self-esteem (Button et al., 1997; Mitchell, Hoberman, Peterson, & Mussel, 1996).

The seriousness of anorexia nervosa is difficult to overestimate but it includes potential medical complications and long-term health consequences, including the possibility of death. These hazardous health conditions are considered to be a result of unsatisfactory and negative body image perception that is formed in a one's mind. Eating disorders have been interpreted as extreme cases of body-image disturbances, which accompany low self-esteem and low perceived self-competence (Bruch, 1973; Button et al., 1997; Garfinkel & Garner, 1982; O'Dea & Abraham, 1999). The "goal" of such a mindset is to achieve the "perfect body" even when one is of normal weight or even underweight.

Bruch (1973) considered body image disturbance as the most important pathologic feature of anorexia nervosa and she felt that successful treatment was impossible without corrective change in body image perception. Recent findings on risk factors for the development of eating problems indicated that body dissatisfaction is the most consistent predictor for the onset of disordered eating behavior (Cash & Pruzinsky, 1990; Thompson et al., 1999).

Alexander-Mott and Lumsden's (1994) Model of Developmental Transition explained change in the existing structures of personality, self, and cognition as being reorganized in order to cope with the challenges of the next developmental stage. During early adolescence transitions, the challenges include puberty, the beginning of heterosexual relationships, and movement towards a career choice. The majority of teens cope successfully with such challenges because of support of family, peers and friends. But, for some this transition is

overwhelming. Thus, according to the developmental transition model (Alexander-Mott & Lumsden, 1994; O’Dea & Abraham, 1997), these challenges may be overwhelming if they occur simultaneously. However, it is not clear from the literature how much these cumulative stressors contribute to developing concerns about weight, body image, or low self-esteem in young adolescents (Ackard & Peterson, 2001; Archibald, Graber, & Brooks-Gunn, 1999; Swarr & Richards, 1996).

Body image and attachment theory. Attachment theory is one of the most popular theoretical perspectives influencing research on close relationships, friendship, and depression. It purports that caregivers who are sensitive and consistently responsive to their children’s needs are more likely to foster secure attachment in their children. Secure children are thought to develop a working model of themselves as lovable or worthy of others as responsive to their needs (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1988; Sperling & Berman, 1994). On the other hand, children with insecure attachment build up a response to inconsistent or insensitive caregivers, and are likely to develop a working model of themselves as unworthy or incompetent and of others as rejecting or unresponsive to their needs. Negative early experiences can contribute significantly to the abnormal development or to the development of a behavioral disorder later on in life. Bowlby (1969, 1988) and Ainsworth et al. (1978) argued that the quality of attachment has a great impact on subsequent development, including pathological development (Sperling & Berman, 1994).

John Bowlby (1969; 1988) is well-known for his work on human attachment. He brought the notion of infant-caretaker attachment from the evolutionary perspective on ethological theory and its findings, into the reflections of psychoanalysis and pointed attention

to the importance of these relationships. Bowlby's theory of attachment had at its core the belief that children are equipped with emotional systems that help to establish proximity to caretakers, thus promoting survival. For Bowlby, parental availability is children's basic source of security, and parental responsiveness to the needs of children is the primary guide to further relationship development, as well as a prototype for relationships with others. Bowlby believed that attachment theory is a theory of development relevant not to the early years alone; he also insisted that attachment phenomena are life-long (Ainsworth et al., 1978; Bowlby, 1988). The contribution of early attachment relationships to the development of an internal working model of relationships that are carried forward into adulthood was supported in research work by Bowlby (1969, 1988).

Recent research supports the long-held theoretical proposition that attachment is positively correlated with development of the self (Pipp, Easbrooks, & Harmon, 1992; Verschueren & Marcoen, 1999). According to Pipp et al. (1992) attachment and separation or individualization processes during infancy and childhood are both components of self-development. Thus, those lacking a secure foundation may develop a negative view of the self and may be at risk for the development of adverse outcomes. In support of Bowlby's theory, Harter (1998, 1999) stated that one of the important indicators for successful adaptation through adolescence and the development of healthy self-representation and self-concept is the attachment pattern to the caregiver. During the first year of life the young organism's body 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.

Attachment theory provides an important perspective for identifying factors that contribute to the development of self-esteem and self-worth. With secure attachments, infants develop a sense of the caregiver as a “secure base” from which to explore the environment (Ainsworth et al., 1978; Bowlby, 1978, 1988). 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 et al., 1999; Armsden & Greenberg, 1987; Kenny, 1987; Paterson, Pryor, & Field, 1995). Ainsworth et al. (1978) proposed that parents continue to exert a powerful influence on adolescents’ well being even though there are certain to be development changes in the nature of attachment during adolescence. Indeed, research has suggested that the association between adolescents’ perceived quality of attachment to parents and psychological well-being does not change across the adolescent years (Greenberg, Siegal, & Leitch, 1983).

Differential attachment to mother vs. father. Attachment theorists (Ainsworth et al., 1978; Bowlby, 1969, 1988) have argued that the quality of attachment to mother will be a better predictor of self-esteem than the quality of attachment to father. However, findings have been inconsistent: Some studies report findings that maternal support is more central to self-esteem than paternal support (Haudek, Rorty, & Henker, 1999; Offer, Ostrov, & Howard, 1982; Sharpe, Killen, Bryson, Shisslak, Estes, Gray, Crago, & Taylor, 1998); others found that paternal support has a greater impact on self-esteem and well-being (Ohannessian, Lerner, Lerner, & von Eye, 2000; Swarr & Richards, 1996). Such inconsistency might be related to the identification process as well as to a process of the construction of self. Those processes are

tied together and are highly dependent upon the internalization of the opinions and relations with significant other.

The relationships between parental bonding, eating problems, and body satisfaction was investigated by Haudek et al. (1999). Results suggested that the quality of the parent-child relations, particularly mother-daughter relationships, might be an important factor in relation to body satisfaction and eating disturbances. According to Haudek et al., (1999), maternal care as a blueprint of an attachment pattern emerged as a more important predictor of eating problems. Sharpe et al. (1998) reported an association between attachment style and weight concerns in 9-12 year old females, and they considered this association a major risk factor for the development of eating disorders. Those who suffer from eating disorders, like insecurely attached individuals, often report feelings of social incompetence, low self-esteem, and lack of personal effectiveness, and this is especially evident in young adolescents girls (Crago & Taylor, 1998; Greenberg et al., 1983; O'Dea & Abraham, 1999).

A recent study by Ward, Ramsey, and Treasure (2000) and another by Saelens, Ernst, and Epstein (2000) corroborated the findings of Sharpe et al. (1998) and Haudek et al. (1999). They reported that the insecure attachment pattern is common in the eating disordered population. These authors analyzed the attachment styles of an eating disordered population and compared them with normal controls. They concluded that they have suggestive empirical evidence linking the ideas of Bruch (1973) and Ainsworth et al. (1978) that mother-child interactions characterized by low warmth and care may predict attachment insecurity and eating disturbances in later life (Saelens et al., 2000). Their findings could be interpreted as a meaning that, for adolescents who are insecurely attached, transitioning into adulthood and

separating from the parents might be more problematic than for securely attached individuals. The same researchers reported that adolescents, who have more negative models of others and self, as do insecurely attached individuals, appear to be at greater risk for depression and low self-esteem. However, the pathway for adolescent depression tends to vary depending on the attachment figure (mother, father) involved in the interpersonal stress (Margolese, Markiewicz, & Campini, 2001; Petersen et al., 1991).

An investigation of parental bonding in a two groups of anorexic females (chronic or fully recovered) was conducted by Bulik, Sullivan, Fear, and Pickering (2000). They discovered that the chronically ill group (duration of disorder about 15 years) reported significantly lower paternal and maternal care than did the fully recovered and control groups. The low paternal and maternal care could be interpreted as a precursor to insecure attachment that is resistant to change.

Research regarding quality of attachment relationships to the parents and its influence on self-competence is not very rich and has produced mixed results. A study by Paterson et al. (1995) on New-Zealand adolescents found that, with regard to the mother and father, adolescents' utilization of parental support and proximity-seeking were weakly associated with some aspects of self-esteem. On the other hand, adolescents' quality of affect toward their mothers and fathers had a significant and meaningful effect on overall self-esteem and coping abilities. These findings are consistent with Greenberg et al. (1983) who reported that adolescents' confidence in their parents' commitment to them is more crucial to well-being than is the actual utilization of available parental support. It seems likely that the ability to utilize emotional support from parents may have an important and positive effect on the way

adolescents conduct their lives and decisions they make. These findings indicate that the knowledge of the availability of emotional support, and not the actual utilization, may be the factor that influences their feelings of self-worth.

Offer and colleagues (1982) reported that certain characteristics of the family and of the parent-adolescent relationship (e.g., perceived parental acceptance) are more strongly related to perceptions of the self for girls than for boys. Ohannesseian et al. (2000) suggested that discrepancies in adolescent-parent perceptions of family functioning are inversely related to the perceived self-competence of adolescent girls. The explanation for such a gender difference in the findings appeared to be linked to attachments and relationships with others as was mentioned in a study by Gilligan (1982), which indicated that female psychological development is based on connection, rather than independence or separation. In contrast, for boys the development of self seems to be related to separation from others (Gilligan, 1982). Ohannesseian et al. (2000) did not report other indicators of adolescent adjustment, such as attachment to the parents. The present study is designed to attend to this important factor.

The investigation of the degree to which pubertal development and parental –adolescent relationships are associated with girls’ current and future dieting and body image were explored in a study by Archibald et al. (1999). The relationship between parent-adolescent relationships and subclinical eating problems is especially interesting given that eating problems often emerge at a time when adolescents are attempting to renegotiate their relationships with their parents. The results of the Archibald et al. (1999) study indicated that adolescent girls’ perceptions of parent-adolescent relationships were associated with increased dieting and lower body image. In other words, a more positive body image was predicted by more positive and

less conflictual relationships with both parents. However, attachment styles were not assessed in that study. The present study will examine relationships with the parents as a variable that is potentially associated with dieting attitudes and behavior and/or body image satisfaction.

The influence of mother-daughter relationships on development have been under investigation for a long time and seems to be very well defined and explained (Bruch, 1973; Freud, 1962; Minuchin, Rosman, & Baker 1978; Usmiani & Daniluk, 1997). However, father-daughter relationships received the attention of researchers only recently (Lewis & Johnson, 1985; Ohannessian et al., 2000; Verschueren & Marcoen, 1999). Recent research by Lamb (1997) indicated that, even though mothers are considered to be the main caregivers in a modern family, the quality (not amount) of time spent with the fathers is important for establishing supportive and sensitive relationships with the father. Lamb also described the nature of the father-adolescent relationship (as opposed to the mother-adolescent relationship) in terms of its importance for androgyny or sex-flexibility that might be desirable for modern adults. The atmosphere in which the father shares parenting responsibilities with the mother allows the child to develop a healthier self-concept, gender identity, and perceived competence (Lamb, 1997; Verschueren & Marcoen, 1999).

The field of study that describes the influence or absence of the father in the child rearing process usually focuses attention on the relationships between son and father. For example, Lamb (1986; 1997) and Verschueren and Marcoen (1999) reported that a close relationship with the father is a valuable indicator for sons' school achievement, secure identity formation, and social adaptation. However, few studies have explored similar outcomes of father-daughter relationships and their impact on identity formation (Ohannessian, 2000). One

exception was a recent study by Domini, Johnson, and Koch (2000) in which they reported that obese women with binge eating disorder perceived their father as more rejecting than did woman in a healthy control group.

A few qualitative researchers have presented cases studies, in which they examined the development of a female personality in relationship to availability and sensitivity of the father (Fields, 1983; Sharpe, 1994). These studies indicated that throughout development adolescent girls are influenced by the father figure in a family context through his behavior, his perceptions, and the father-daughter relationship.

The previously reported findings in a study by Offer et al. (1982) showed gender differences in parent-child communications. According to Offer et al., communication between fathers and daughters had less effect on self-image than did communication between mothers and daughters. This implies that daughters' self-images are more dependent on the quality of the parent-child relationships and that the mother-daughter relationship is important for the development of adolescent girls' self-images. It is crucial that more research be conducted on the attachment to each parent separately in regard to body images.

Usmiani and Daniluk (1997) investigated the complex relationships between age, physical maturation, and mother-daughter dynamics and the development of a positive body image for adolescent girls. They found that higher self-esteem scores were associated with more positive body image scores, but interestingly enough, they found that high masculinity scores (for the females) were correlated with a more positive body image score. According to this finding, one can speculate that some identity with the father or other strong male figure, is taking place or we can postulate that a good relationship with the father may play an important

role in enhancing the body image of adolescent girls. The result indicates a need for further investigation of the father-daughter relationships in connection to their influence on the development of a body image.

Nelson, Hughes, Katz, and Searight (1999) explored the relationships between family climate, parent-child dynamics, and self-concepts of college age adolescence with and without maladaptive eating attitudes and behavior. They also studied the relationship between eating attitudes and psychological distress as an indicator of strategic adaptation. The results of the study indicated that college students without symptomatic attitudes and behaviors had more positive self-concepts and reported less psychological distress than did those with eating disturbances. It could be concluded that maladaptive eating symptomatology is an indicator of low adaptation strategies as well as an indicator of low physical and poor personal self-esteem. Regarding parental relationships, researchers (Nelson et al., 1999) found similar clinical presentations for both genders where mother-child relationships tended to be very close, while father-son or father-daughter relationships tended to be distant. Attachment to the parents was not assessed in that study, but findings could be interpreted to mean that low or negative attachment to the fathers plays a role in adaptation strategies contributing to self-esteem and physical self-competence for males and females with maladaptive eating behaviors.

Attachment to peers. Within the last decade researchers have begun to explore how parent-child attachment is reflected in the development of friendship patterns, as well as the influence of early attachment on the development of intimate relationships in adulthood and other psychological phenomena such as, adolescent depression, eating disorders and overall

well being (Domini et al., 2000; Lieberman, Doyle & Markiewicz, 1999; Sperling & Berman, 1994).

Adolescence is the time when the social environment and the interactions within it as well as a perspective of how one fits into the societal picture, plays an important role in a structuring the healthy and satisfactory image of oneself. Peer friendship may influence self-perceptions of body image and self-competence in adolescents. The body image plays a much greater role in relationships with peers and general adaptation to the environment than once believed (Harter, 1998, 1999; Sugar, 1993).

Congruent with the increasing role of peers in adolescents' lives is the diminishing time spent with parents. Although, researchers have demonstrated the powerful role that parents play in young adolescents' development, including the formation of self-perception (Ainsworth et al., 1989; Archibald et al., 1999; Offer et al., 1983; Ushmiani & Daniluk, 1996; Ward et al., 2000), autonomy from parents has been also viewed as an important developmental task. At the same time, the establishment of intimate friendships becomes salient along with the development of a network of same sex friends (Rubin, Bukowski, & Parker, 1998). It is widely believed that peer influence is a cause of both desirable and undesirable behaviors, attitudes, and values (Harter, 1998; 1999; Rubin et al., 1998).

The psychoanalytic model of family functioning emphasizes detachment as the normal developmental course of parent-child relationships during adolescence years (Blos, 1972). Newer models, based on Bowlby's lifespan view, have emphasized the importance of attachment or connectedness to parental figures during the adolescent years, despite decreases

in shared activities and interaction with family members (Bowlby, 1969, 1988; Rubin et al., 1998).

Peer pressure has been described as the primary mechanism for transmitting group norms (Grotevant, 1998). It has been suggested that peers exert influence by offering desirable rewards to those who conform to group norms and/or undesirable consequences to those who resist them. Considering the fact that adolescents decrease in terms of susceptibility to parental influence, it is interesting that studies of parent peer linkage in adolescence have received short shift. This is especially pertinent given that ages 14-18 years are the most stressful years for parents who worry about such peer related issues as their children's choice of friends and negative peer pressure.

A study by Paterson and colleagues (1995) illustrates the complexity of relationships between quality of adolescent attachment to parents and friends and various aspects of self-esteem. Their research findings indicated a significant relationship between quality of affect towards friends and the feeling of competence in social situations. This highlights the crucial role that the friends play in this aspect of adolescent life. Such findings are consistent with the notion that parents and peers contribute to different facets of adolescents' self-esteem (Lempers & Clark-Lempers, 1992). Lempers and Clark-Lempers (1992) found that the best same-sex friends were ranked highest in all three age groups of adolescent: ages from 11 to 13, 14-16, and 17-19 for intimacy and companionship. Friends were also ranked significantly lower than were parents and siblings for conflict occurrences. These data confirmed the importance of adolescent friendships for intimate self-disclosure and for taking care of one another as true companions.

With increasing age, adolescent girls spend increasingly greater time talking with their same-sex friends, seeking the advice of same-sex friends, wanting to be like their close friends, and being willing to share secrets and inner feelings with friends. (Crockett, Losoff, & Petersen, 1984; Rubin et al., 1998). The impact of peer influence upon adolescent girls in the domain of eating attitudes and behavior is still unknown. However, a study examining the relative influence of best friends and social crowds of older adolescents on cigarette smoking were conducted by Urberg (1992). The results indicated that best friend influences predicted change in cigarette smoking over a one-year period, while social crowd influence appeared to be minimal. This study is a powerful reminder of how catching attitudes among friends can be.

Mukai (1993, 1996) attempted to clarify the roles that mothers and same-sex friends might play in the socialization of eating attitudes and behaviors in Japanese adolescent girls. Mukai pointed out that as role models, mothers and peers may either (a) exhibit their investment in their own thinness, (b) verbally deliver messages regarding their beliefs about the importance of physical attractiveness for women, or (c) express their criticism of adolescent's weight or/and eating style. The Mukai (1993; 1996) studies were conducted with 7th, 8th, 9th, 10th, and 11th grade students. The findings, consistent with theoretical formulations of psychological adjustment during adolescence (Blos, 1972; Rubin et al., 1998), revealed that older adolescent girls reported more interaction with same sex peers than did their younger counterparts. In the United States Levine, Smolak, Moodey, Shuman and Hessen, (1994) reported that maternal and peer investment in girls' thinness contributed to the adolescent girls' eating problems. Same-sex peers were found to exert a greater influence on older girls' eating

attitudes and behaviors, whereas the maternal influence remained significant across all grades level.

Social reinforcement and modeling could be applied in understanding research findings on college sorority members and reported eating disordered symptomatology. Kashubeck, Marchand-Martella, Neal, and Larsen (1997) examined the relationship between the pressure to be thin and bulimic symptomatology in college students. One factor that seemed to be important in investigating bulimic behavior was whether or not one lived on campus, a context known to abound with high peer pressure. Thus, according to the findings of Kashubeck et al., (1997), membership in a sorority was associated with an increased likelihood of experiencing eating-disordered behavior as opposed to off campus communal living that did not seem to be a risk factor. All these findings suggest that sorority membership significantly affects its members' lives since the social and academic life of its members revolves around the sorority and relationships between members of the sorority provide the peer pressure that leads to the increase of the bulimic symptomatology (Kashubeck et al., 1997).

A few recent studies have investigated the friendship variables in relation to body image, dietary restraint, extreme weight loss behaviors, and binge eating in adolescents' girls. Lieberman, Gauvin, Bukowski, and White (2001) conducted a study on a Canadian high school population and assessed peer pressure on components of peer teasing, popularity and negative peer relations. All of the components of peer pressure were significantly related to dieting manifestation and predicted eating behavior and body esteem. Paxton, Schultz, Wertheim, and Muir (1999) achieved similar results on an Australian sample of high school girls. Their results

indicated that friendship attitudes contributed significantly to the prediction of individual body image concerns, eating behavior and dieting manifestation.

Eating disordered tendencies and dieting attempts are highly correlated with maturation and socializing with members of the opposite sex (Cauffman & Steinberg, 1996; Swarr & Richards, 1996). Thus, findings of Simmons and Blyth (1987) indicated a strong relation between girl's interest in opposite-sex popularity and concern with physical appearance, body weight and body shape. On the other hand, dating may increase an adolescent's vulnerability to depressed affect, which may in turn increase the risk for developing eating problems (Smolak et al., 1993).

Systems theory view. Some theorists (Bronfenbrenner & Morris, 1998) believe that the study of human development should begin with the environment of the child, adolescent, or adult and investigate the environment as a significant influence on the course of the development. Bronfenbrenner's bioecological model of human development focuses on the settings for development which occur in the interaction of individuals and groups within and across settings (Bronfenbrenner & Morris, 1998). This model takes into account issues of person, process, context, and time and views the environment as nested systems that include the microsystem (immediate context and relationships), mesosystem (interrelationships between microsystems link to the person) and macrosystem, which represent cultural norms and values. All of the systems interrelate and influence development. The closest family environment serves as a microsystem and established relationships in family are the basic and most influential on the personal psychological development of an individual (Bronfenbrenner & Morris, 1998). In the past several decades, researchers have attempted to identify specific

situations, behaviors, and environments that are associated with development of positive/negative body image and self-representation in adolescence (Bruch, 1973; Domini, et al., 2000; Leon, Fulikerson, Perry, & Dube, 1994; Minuchin et al., 1978).

In the bioecological framework (Bronfenbrenner & Morris, 1998), adolescence is a time for change, not only for young individuals in terms of becoming an adult, but also for parent-child relationships and family dynamics. During adolescence, physical growth and maturation processes become the stimulus for ego development and for transformational processes of self in relationship to others. This development is also directed toward adaptation to the larger social context. A child's body image plays a much greater role in his/her relationships with peers and general adaptation to the environment than once believed and it is influenced tremendously by family relationships, attitude and acceptance (Harter, 1998; Herzog, Kronmuller, Hartmann, Bergmann, & Kroeger, 2000; Offer et al., 1982; Sugar, 1993). As a part of the microsystem in family systems theory, family functioning and family dynamics, e.g., parent-adolescent relationships, play an important role in the development of perceived self-competence and self-esteem for young personalities, and they are considered to be associated with of body image satisfaction (Domini et al., 2000; Laliberte, Boland, & Leichner, 1999; Leon et al., 1994; Ohannesseian et al., 2000; Usmiani & Daniluk, 1997; Vandereycken, Kog, & Vanderlinden, 1989).

Family structure and dynamics seem to be related to the development of self. Certain structures and processes are known to have negative outcomes such as anorexia nervosa. Minuchin et al. (1978) noted that the family of anorexic patients avoided conflicts. He postulated that strong parental control fails to allow children to develop individuality and

independence (Minuchin et al., 1978). He identified four common family characteristics of dysfunctional families: enmeshment, rigidity, overprotectiveness, and inability to resolve conflicts. With enmeshment, family members being “in each others’ laps” emotionally; there is a parent-child hierarchy confusion that leads to great difficulty in achieving personal individual autonomy for the maturing individual. Change and growth in such families was perceived as unnecessary, difficult and threatening. In protecting its balance, the rigid family system in this case, had meaning and significance for symptoms as a regulator of the system. The adolescent girl in such a family might, in Minuchin’s view, have been held back from adulthood and its responsibilities. By developing anorexia nervosa, she strove for identity and autonomy by controlling the one area she felt she could (i.e., eating disorder).

Gilligan (1982) who advocated the importance of maintaining the connections and relationships with others in maturation of females, probably would explain such a state as reflecting an inability to preserve and maintain both the connection with others and separation-individualization process.

Psychoanalytic view. Psychoanalytic (e.g., Freud, 1923/1962) and neo-psychoanalytic theory (Erikson, 1968) purported that children’s experiences in early primary relationships establish the basis for subsequent social and personality development later in life. According to Freud, much of the adult personality is determined before adolescence and depends on successful transition from earlier developmental stages (Miller, 1999). In the psychosomatic model, anorexia and bulimia nervosa as well as obesity are accompanied by negative body image and disturbed eating patterns or dieting arrangements. These disorders manifest with

particular family communication patterns and methods of conflict resolution (Minuchin et al., 1978; Vandereycken et al., 1989).

Erikson attributed more importance to wide socio-cultural influences and to the interaction of physical and psychological development across the life span. Erikson's (1968) fifth life-cycle stage of identity versus identity confusion views the adolescence as a second individualization process. Family, peers and culture play an important role in this process. Erikson (1968) in his work "Identity Youth and Crises" pointed to adolescence "as a time in the life cycle when the intersection of personal life history and history of society becomes more visible and acute" (p. 27). In this light the current increase in problems among adolescent girls such as disordered eating and dieting behavior among the high school and college population (Bruch, 1978; Grigg et al., 1996) may reflect societal problems with survival and regeneration. In this instance, the anorexic girl, described in the literature as not wishing to grow up, may be seen as split between a female and an adult image, where care and dependence became a subject that needs to be revised as a possible line that has been missing from the description of human development. It is important to note that, adolescents who diet even when they have normal body weight can threaten their nutritional status; they may deny their bodies' important nutritional components at a time when they are most needed (Grigg et al., 1996).

Family systems and self-representation. The aesthetic appeal of body or bodily attributes affects how others view and treat us. Our psychological development and unique self-experiences reflect our ways of thinking, feeling and reacting to our own self-perceived physical appearance. The closest environments such as family, friends, and peers shape a major part of it (Ainsworth et al., 1978; Bowlby, 1969; 1988; Offer et al., 1982; Verschueren &

Marcoen, 1999). Empirical research has explored family functioning and dynamics as important factors affecting the development of self-representation and body image. The viewpoint of the family is important because it encompasses the background against which individual behavior is interpreted. Herzog et al. (2000) concluded that family perception patterns, rather than single characteristics of interpersonal behavior, are prognostically relevant as predictors of low self-esteem and self-confidence as well as eating disturbances and depression. These authors assessed perceived family patterns of interpersonal behavior from the viewpoint of all family members. Their results were interpreted as indicating that a discrepancy between positive self-perception and less positive familial perception of the patient can be understood as denial, which leads to low self-esteem and self-confidence.

Leon et al. (1994) explored family influence and school behavior in adolescents at risk for the later development of eating disorders. At risk female adolescents rated family cohesion, parent-adolescent communication processes, and overall family satisfaction more negatively than did the comparison group. Laliberte and colleagues (1999) investigated variables that represented the hypothesized family climate for the development of eating disorders (conflict, cohesion, expressiveness) or in “general” family dysfunction. They reported that the group with the disordered eating patterns scored much higher on family dysfunction variables as compared to the group without eating pathologies. The significant difference between groups on the family climate variables suggested that eating disordered patients were more likely to perceive their families as having greater appearance and achievements concerns and low maternal and paternal care (Leon et al., 1994).

Rorty, Buckwalter, Rossotto, and Gurthrie (2000) focused on families with adolescents who presented with disordered eating patterns (e.g., bulimia). These families scored high on a parental intrusiveness scale that correlated positively with a disturbed relationship in the family of origin and was highly related to eating problems compared to the controls. High parental intrusiveness also accompanied low self-esteem and body dissatisfaction for the adolescents. According to findings of this study, parental intrusiveness may be interpreted as high parental control or inadequate/unresponsive parental care, which was associated with low self-esteem and high occurrence of eating problems in adolescence.

Most of the research in the area of family functioning has been on disturbed families. The available studies on non-clinical families provide a different perspective. For example, to investigate the degree of agreement between parents and their adolescent children regarding adolescents' self-image, Offer et al. (1982) examined the relationships between adolescents' self-images and the perceptions of these adolescents as held by their parents in normal families. Their findings indicated that the self-image of normal (nonpatient) adolescents was significantly more positive than that of a disturbed population. Mother-child congruence scores were more highly correlated with adolescents' self-image ratings than were father-child scores. Daughters' self-image scores were more highly associated with parent-child agreement than were those of sons. These findings supported the notion that smoothly functioning family systems have good parent-adolescent communication, which is reflected in positive self-perceptions among adolescent children. Better parent-adolescent communication is associated with more positive adolescent self-image. Offer et al. (1982) also reported gender differences in parent-child communications. Communication between fathers and daughters had a minimal

effect on self-image, while communication in the mother-daughter relationship was crucial for the development of self-image among adolescent girls, and indicated that daughters' self-image was more dependent on the quality (not quantity) of the parent-child relationships. Because of these findings, the role of the parents and their attitudes is considered to be an important factor in shaping the body image and positive self-representation of adolescents.

Influences on Body Image

Biological, social, and cultural factors have a tremendous impact on body image formation. The developmental gender influences as well as socio-cultural attitude toward body image and its relation to eating will be the topic of this research study.

Developmental and gender aspects of body image. Optimal development in adolescence depends, in part, on successful accomplishment of certain developmental tasks in infancy and childhood. One such task is the development of a positive perception of oneself. Many child development specialists and researchers believe that the child's perception of his/her own body becomes the nucleus of the awareness of the self. Freud (1962) stated, "The ego is first and foremost a bodily ego" (p. 62). This statement has implications for the developing self during the adolescence period.

Adolescence is a period of transition from childhood to adulthood. It is a more rapid and deeper developmental shift than any period before. In general, adolescents face several components of transformation in their development to become an adult. Those changes include (a) biological, or physiological changes that occur due to puberty, (b) psychological changes or transformations in relationships (parent-child, friendship, intimate relationship) as well as development of identity, and (c) societal changes that reflect requirements valued by society as

part of the change in the societal status, i.e., transitioning from child into adult (Grotevant, 1998). Development in the biological, psychological, and social domains proceeds, not independently, but with interaction through which the events in any area might be able to slow down or accelerate the development of each of the others. Thus, it is important to understand how changes in biological size and shape are related to psychological development.

Body growth provides a stimulus for ego development and transformation of the sense of self in relation to others (Sugar, 1993). There is no doubt that the perception and awareness of one's body as well as feelings of satisfaction or dissatisfaction about a body image that is taking on adult contours are powerful stimuli in the separation-individualization process in adolescence. A clear illustration of faulty separation-individualization processes during the adolescence come from cases of anorexic girls who starve themselves back into childhood to avoid confrontation of this developmental separation (Minuchin et al., 1978). Adolescence is often a time of special body image instability (Fisher, 1986), in which one's own body sensations and cues become increasingly important. Developmentalists have included the assessment of body image as a crucial variable in accurate conceptualizations of the pubertal process, especially in females (Attie & Brooks-Gunn, 1989).

In an attempt to unfold the complexity of transitional physical/hormonal and psychological changes, several studies have demonstrated that body image, as well as feelings of satisfaction with self, undergo change during the adolescence years (Fabian & Thompson, 1989; Gralen, Levine, Smolak, & Murnen, 1990; Harter, 1998; Thompson et al., 1999). O'Dea and Abraham (1999) confirmed that gender, puberty, age, and body weight concerns effects adolescents' self-concept. A negative self-evaluation during the time of developmental

transition for young females very often leads to body dissatisfaction and low self-esteem, as well as to an increased incidence of depressive reactions and eating-disordered behaviors (Ackard & Peterson, 2001; Button et al., 1997; Davies & Furnham, 1986; Gralen et al., 1990; Petersen et al., 1991).

During adolescence, the evaluation of self and others is especially dependent on superficial clues and on awareness of how attractive each individual is in relation to others (Fallon & Rosin, 1985). Consequently, as indicated by the gender differences within percentage of eating disorders, women fall prey to this negative social pressure and conditioning more often than do men (Garfinkel & Garner, 1982). In addition, cross-culturally, a view of physical beauty or attractiveness is a more important evaluation factor for women than for men. Thus, it is not surprising that self-confidence and anxiety fluctuate with the state of body image more in women than in men (Cash & Pruzinsky, 1990; Davies & Furnham, 1986; Harter, 1998, 1999). Hence, it seems important to understand and recognize the gender differences in the development of body image.

During adolescence, body image changes in response to physical changes. Males' voices deepen and facial hair begins to appear, female's hips and breasts become enlarged (Garfinkel & Garner, 1982). It is males' shoulders, not hips, that become broader as they simultaneously experience an overall increase in lean body mass, as opposed to females. Women are more susceptible than men to the sociocultural messages regarding thinness (Fallon & Rosin, 1985; Parks & Read, 1997). For adolescent males developmental timing has only a few very specific effects, primarily involving body image. As opposed to early maturing girls (Ackard & Peterson, 2001; Smolak et al. 1993; Swarr & Richards, 1996), early maturing boys

show greater satisfaction with their height, weight and muscles as compared to late maturing boys (Simmons & Blyth, 1987). The increasing BMI that accompanies puberty changes in males, such as broader shoulders and greater bone width and length, represent a positive and wishful effect for adolescent males (Asci et al., 1997). Developmental timing for males also affects relationships with the opposite sex as well as relationships with parents as they move toward independence. As opposed to females, such a transition toward autonomy and independence was perceived by males as less stressful (Simmons & Blyth, 1987). These findings are supported by theorists who emphasized differences in psychological development of males and females during the adolescence period.

Psychological development for females has, been conceptualized predominantly according to the male model of separation-individuation process, i.e., as a movement towards an autonomous self. More recently, it has been suggested that females go through a somewhat different experience from males: the maturing self is organized around an ability to make and maintain connections with others; loss of a relationship is experienced as a loss of self, and self is defined, not by reflection, but by interdependence and interaction with others (Gilligan, 1982; Miller, 1976). Femininity has a central component based on the early psychological existence of female body awareness. Gilligan (1982) indicated that gender identity is the “unchanging core” (p.7) for personality formation and theorized that attachment to the mother and the process of identification were fused and as such provide a different focus for understanding the psychological and emotional experience for adolescent girls. Gilligan, (1982) emphasized that in contrast to male gender identity, where identity is threatened by intimacy,

female gender identity is threatened by separation, thus potentially contributing to problems in development in adolescence.

O'Dea and Abraham (1997) reported that females have increased personal expectations and are dissatisfied with their weight /shape change during adolescence. Dissatisfaction with the body was associated with increased feelings of inadequacy and decreased self- esteem, which were reflected in eating behavior, depressive episodes, dieting arrangements and/or excessive exercise patterns (Geller et al., 2000; O'Dea & Abraham, 1997).

Body satisfaction, a measure of body image, physical attractiveness, and Body Mass Index were assessed in the research study of Rosenblum and Lewis (1999) in participants at ages 13, 15, and 18 years. Their findings support a previously demonstrated tendency that there is a change in the association between body image and attractiveness as children move through adolescence. In the early adolescence years, both boys and girls who are more attractive reported greater satisfaction with their bodies. Rosenblum and Lewis (1999) reported a significant longitudinal relationship between attractiveness and body dissatisfaction: girls who were more attractive at 13 years were more satisfied with their bodies at 18 years of age. This data suggests that for girls being attractive early in adolescence and receiving positive social feedback may serve to bolster their future body image regardless of future attractiveness. According to that study, external cues and social feedback play influential roles in shaping body image early on. In later adolescence body image is not as affected by these externally observable factors. Alternatively, girls who encounter unfavorable feedback about their appearance early on appear to be at risk for developing a poor body image that persists over time and may be resistant to change (Harter, 1999; Rosenblum & Lewis, 1999).

Adolescent males are more satisfied with their physical appearance and body changes due to puberty, which is reflected in higher self-esteem and body esteem scores across samples (Bruch, 1973; Harter, 1988; 1999; Simmons & Blyth, 1987). However, body image distortions and concerns also affect males (Cash & Pruzinsky, 1990; Parks & Read, 1997). Unlike females, many adolescent males consider themselves underweight; therefore their body dissatisfaction is not likely to lead to an eating disorder (Kaplan, 1984).

However, studies by Asci et al., (1997) and Parks & Read, (1997) indicated that male adolescents' participation in athletics is motivated by a desire to achieve the well-advertised V-shape physique and muscular body. On the other hand, dissatisfaction with body image among adolescents may be a possible predictor of anabolic steroid use (Asci et al., 1997; Parks & Read, 1997; Schwerin, Concoran, LaFleur, Fisher, Patterson, & Olrich, 1997). Presented studies indicate that males are not always satisfied with their physical appearance and body shape. Although those studies have been conducted on athletes, where body shape and build is important for their athletic achievements, it would be interesting to know the level of satisfaction with physical appearance in a sample of non-athlete adolescent males. The proposed research study is designed to explore the relationship of BMI and body image satisfaction among both males and females.

In samples of young adolescent girls, some researchers (Cauffman & Steinberg, 1996; Gralen et al., 1990; Smolak et al., 1993; Swarr & Richards, 1996) investigated the joint importance of two developmental factors believed to affect dieting and disordered eating during adolescence, i.e., pubertal maturation and socialization with members of the opposite sex. Their research findings indicated that menarcheal status might indeed affect dieting and

disordered eating. Specifically, it indicated that dating is strongly correlated with dieting and disordered eating tendencies among girls who have recently experienced menarche. According to these findings, it is evident that socializing factors such as dating and menarcheal status are not simply additive in their effects on dieting behaviors, but rather the importance of one factor is moderated by the other.

The timing of pubertal change varies by gender. Physical changes that accompany pubertal development come earlier and are more marked and abrupt for females than for males (Garfinkel & Garner, 1982). The increase of body fat that occurs during female puberty, accompanied by heightened body dissatisfaction has been found to be related to the development of eating problems in some studies (Attie & Brooks-Gunn, 1989; Smolak et al., 1993) but not in others. For example, Ackard and Petersen (2001) and Fabian and Thompson (1989) did not find early onset of puberty in females to be a consistent risk factor for disordered eating or body dissatisfaction. In contrast, early maturers or those perceiving their prepubertal weight as overweight were more symptomatic and more at risk for the later development of disordered eating or dieting arrangements in other studies (Ackard & Peterson, 2001; Smolak et al. 1993; Swarr & Richards, 1996). The explanation of these findings may be a higher Body Mass Index, which is considered to be one of the triggering factors for the development of disordered eating behavior (Fisher, 1986; Gowen, Hayward, Killen, Robinson, & Taylor, 1999; Gralen et al., 1990). Weight gain due to puberty in this group of early matures tends to be a larger fraction of their total body weight and this group perceived themselves as heavier when compared to a group of late maturing adolescents (Attie & Brooks-Gunn, 1989).

Fisher (1986) reported that girls demonstrated greater body image differentiation during puberty than did boys. They also began earlier than boys to voice their dissatisfaction with their body appearance and continued to do so into the adult years (Ackard & Petersen, 2001; Fisher, 1986; Gralen et al., 1990; Rosenblum & Lewis, 1999). Some research findings stress that females' dissatisfaction with their bodies begins shortly before adolescence, and that such normative discontent is culturally reproduced and maintained by a range of important and influential social messages (Alexander-Mott & Lumsden, 1994; Bruch, 1973; Garfinkel & Garner, 1982; Sands, 2000). Such dissatisfaction with their body may reflect the special importance ascribed in our culture to the outward attractiveness among females or/and also may reflect changes in our society for the last 40 years where females have changed their social status from being homemaker to being equally career oriented as men. Sociocultural demands appear to place many more requirements on females, apart from the fact that individual development is very unique and distinguished by psychological and physical maturation compared to males. Society's high evaluation of male height and muscularity favors developmental changes due to puberty in males, whereas society's high evaluations of a slim but developed female figure favors (not early) but late maturing among girls. Because of biological timing it is very rare or impossible to achieve such a condition (Simmons & Blyth, 1987; Sugar, 1993).

Socialization of body image perception. Despite some recent changes, Western culture still socializes girls and boys differently in terms of the importance of physical attractiveness. A view of physical beauty or attractiveness is a more important evaluation factor for women than for men. During adolescence, the evaluation of self and others is especially dependent on

superficial clues and on awareness of how attractive each individual is in relation to others. As a result, it is possible that some young people, overly concerned with weight and body image, may develop symptoms of eating disorders as they try to imitate some of their favorite idols (Altabe, 1998; Cash & Pruzinsky, 1990; Fallon & Rosin, 1985).

Personal dissatisfaction with body and appearance may be intensified by societal norms to be thin and fit. Western society seems to envision the ideal female figure as a stereotype for success, independence and a measure of health. Along with the cultural changes over the past 30 years, such as the sexual revolution and the entrance of more women into the workforce, there has been an increasing emphasis on thinness as the ideal for women. Since the growing girl believes the idealized slender shape is important for further success in the social and career life, threats in this arena will also activate the thinness schema and create anxiety or dissatisfaction with one's personal body image. As adolescents, girls confront choices of careers as professionals or as housewives, and often view the traditional roles their own mother may have played as extremely negative.

The drive for thinness among adolescent females in Western societies is a concern among health professionals, psychologists, educators, and sport administrators. The research findings stress that, for females, dissatisfaction with their bodies begins shortly before adolescence, and such normative discontent is culturally reproduced and maintained by a range of important and influential social messages (Ackard & Peterson, 2001; Alexander-Mott & Lumsden, 1994; Bruch, 1973; Garfinkel & Garner, 1982; Sands, 2000). That is why it is not surprising that self-confidence and anxiety fluctuate with the state of body image more in

women than in men (Button et al., 1997; Cash & Pruzinsky, 1990; Davies & Furnham, 1986; Harter, 1998, 1999).

Body image is a symbol of beauty that varies across cultures. That is why, personal dissatisfaction with body as well as perception of attractiveness and weight has been experienced diversely in different ethnic groups (Botta, 2000; Cogan, Bhalla, Sefa-Dedeh, & Rotblum, 1996; Ofofu, Lafreniere, & Senn, 1998). Botta (2000) and Cogan et al., (1996) reported that black adolescent girls were more satisfied with their bodies and had a larger personal ideal size than white adolescent girls. Conversely, the study of Haudek et al., (1998) indicated that weight-concerned Asian American women reported more dissatisfaction with body shape than did Caucasian women. Those studies (Botta, 2000; Haudek et al., 1996) indicated differences in perception of body image satisfaction among different ethnic groups. However, they also found some similarities between the adolescents that narrowed the ethnic gap in the development of eating disorders.

Influence of media. In addition to the influences of parents and peers on their behaviors and attitudes, adolescents are subjected to sociocultural pressure from a variety of sources media in the public arena (Strasburger & Wilson, 2002). While most school health curricula seek to foster positive health-related practices and self-perceptions, youth are bombarded daily with images that undermine this goal. For example, marketing specialists use models with “ideal” body images on billboards, packaging materials, television, and in popular magazines to attract buyers to their products. Other media influences include school text books, fiction writing, and lyrics of popular music, to mention but a few of the powerful conveyors of sociocultural ideals (Botta, 1999). Such media often promote standards that are impossible for

most people to achieve. This, in turn, plays an important role in the lowering of self-esteem. Not only females but also adolescent males are vulnerable to the pressure to attain the “ideal” body. Very often the “ideal” and “actual” body type will not or cannot coincide even with excessive exercising, leading to body image dissatisfaction. Despite that, little research has been directed toward the factors mediating the link between media exposure and body image (Strasburger & Wilson, 2002). However, at least one study reported data indicating that prolonged television viewing dictates the choices of role models for young adolescents (Andersen, Huston, Schmitt, Linebarger, & Wright, 2001). The media is not homogeneous in its impact on children and adolescents, it depends on how these powerful messages have been delivered and valued by peers, close friends and parents (Altabe, 1998; Strasburger & Wilson, 2002). In another study that used focus groups of adolescent females to analyze the relationship between body image and socio-cultural pressure, Botta (1999) found that the effects of media were stronger or even negative where media messages were discussed in peer groups and peers were the advocates, who estimated the importance of such media message. Moreover, these messages seemed to have different values in different racial groups (Botta, 2000). The extent of media influence on adolescents’ body image, as well as its differential influence on various cultural and ethnic groups within American culture, makes it interesting to include exploratory descriptive data in the scope of this study. Specifically, participants were asked to identify to what extent they have been influenced by media sources to purchase the items in order to enhance body image. The nature of this aspect of the study is purely exploratory on “ideal” versus “real” body image perceptions.

Purpose

It is important to understand the developmental structure of a healthy body image in order to comprehend the complexity of perceived self with body image as a significant part of it. Also, it seems important to provide an overview of the concept of body image and remove it from its narrow limits within a field of eating disorders. The number of individuals with diagnosable eating disorders and associated body image disturbances is only a small portion of the population for which body image issues are problematic and important. A large part of the population, especially women, experience body image dissatisfaction and yet might not manifest an eating disorder. Nevertheless, they may be exercising excessively or changing dieting arrangements uncontrollably in order to achieve balance and satisfaction with their body image.

The review of literature revealed that parental relationship and family climate has a significant direct effect on the formation of healthy body image as well as on dieting attitudes and behavior. These associations were of interest because previous research using non-clinical samples is notably sparse. It seemed to be very important to begin to unfold the more general family environment and focus on particular aspects of family relationships such as parent-adolescent attachments, peer attachments and their influence on adolescent's development, as well as the structure of a positive body image and positive perception of self as a components of overall self-worth.

Each family has certain structural differences in a way of influencing and shaping the maturing individual. Family perceptions and interactions as well as family relationships play an important role in development of a healthy self-concept, which is considered to be an indicator

of personal well-being. This study was focused on a non-clinical population in order to examine links between family and peer relations and the development of positive or negative body image in older adolescents. Specifically, this study was designed to investigate how an attachment style to the mother, father and peers is related to body image satisfaction/dissatisfaction in older adolescents, dieting arrangements or/and weight management. A further purpose was to determine the strength of the relationships of attachment to the mother, to father, and/or peers to body image satisfaction and eating behaviors. Media influence was examined in terms of associations between scores on scales measuring satisfaction with physical appearance, global esteem, peer pressure, and eating disturbances. These variables were also examined in terms of their relationships to BMI as a factor influencing satisfaction with physical appearance in older adolescents.

The following research questions were asked:

1. What are relationships between quality of attachment to the mother, (father), (peer) as measured on the Inventory of Parent and Peer Attachment Scale and the degree of eating disturbance as measured by Eating Attitude Test scale?
2. What is the strength of the relationship between the quality of attachment to (a) mother, (b) father and (c) peers and Satisfaction with Physical Appearance scores of adolescents in this sample?
3. Does the relationship between Satisfaction with Physical Appearance scores and the actual Body Mass Index vary by gender?
4. What is the relationship between Body Mass Index and Satisfaction with Physical Appearance?

5. What is the relationship between Body Mass Index and Global Self-esteem score?
6. What is the relationship between BMI and Eating Disturbances scores?
7. What is the relationship between Parental Control and Eating Disturbances scores?
8. What is the relationship between Parental control and Global Self-Worth?
9. What is the relationship between Peer Pressure scores in eating domains and adolescent Eating disturbance scores?
10. What is the relationship between Satisfaction with Physical Appearance scores and Media Influence scores?
11. What is the relationship between Media Influence scores and Global Self- Esteem scores?
12. What is the relationship between Media Influence scores and Eating Disturbances scores?
13. What is the relationship between Media Influence and Global Self-Worth scores?

Chapter III

Methodology

Sample

One goal of the current study was to examine body image and eating patterns in a normal rather than a clinical sample. This was important because the vast majority of research in the area of disordered eating and body image development has focused on a treatment-seeking population that differs from a general population in terms of level of psychopathology (Bruch, 1973). Also, it makes an important contribution to the literature because an understanding of the development of positive body image is an important part of overall self-esteem in a general population.

This study was conducted in a large southeastern university in the United States. Data were collected from 559 university students who volunteered from among a total of 757 enrolled in one either an introductory child development or a human nutrition class. This represents a 73.8% rate of participation. All participants were between the ages of 18 and 25 (median age of 19.00). Among the 559 surveys that were collected, 24 participants indicated a medical condition that requires special diet (diabetes, anemia, stomach disease and pregnancy). They were excluded from the study.

Instrumentation

Questionnaires were printed on 8.5-by 11-inch paper and administered during a regular 50 minutes class period under the supervision of the course instructor and the researcher. Participants who volunteered for participation in the study were assured of the confidentiality of responses and the voluntary nature of their participation. Participants were allowed to work on

surveys until the questionnaires were completed. No student required more than 25 minutes to complete the survey. The researcher collected all completed surveys.

The first page of the survey consisted of demographic questions related to age, sex, ethnicity, number of siblings, parental educational level, weight and height.

Physical appearance and global self-worth scale. The measure of satisfaction or dissatisfaction with one's physical appearance and perception of self-worth were assessed by appropriate subscales of the Self-Perception Profile for College Students (Neemann & Harter, 1986). This multi-dimensional measure of self-concept includes a measure of satisfaction with one's physical appearance and global self-worth perceptions. Two items that assessed the Importance of Physical Appearance from the Self-Perception Profile for College Students (Neemann & Harter, 1986) were added as a measure of importance of appearance for college students. These scales have good psychometric properties. Neemann and Harter, (1986) reported reliability coefficient alpha, which were assessed in their research as index of internal consistency for the Physical Appearance scale (.85) and Importance of Appearance scale (.72). Physical Appearance shared variance with Global Self-esteem which was reported to be in the range of .66 and .73, according to Harter (1988) and $r = .55$, according to Mendelson et al. (1996). The physical appearance scale was validated with the Revised Body Esteem Scale (Mendlason et al., 1996) and shown to have high face validity. The reliability coefficient Cronbach's Alpha (r_{xy}) was calculated for each scale used in the present study and presented in Table 1(Appendix D).

“Physical Appearance” and “Global Self-worth” subscales 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," and "Other students are happy with the way they look ") and after that to select one of two options, such as "Really true for me" or "Sort of true for me" for the same item.

There is no middle response of "undecided" or "neither." The response to each item was assigned a score of 1, 2, 3, or 4 depending upon the degree of competence or self-judgment reflected by the answer. These scores were summed on a domain-by-domain basis to yield a separate score for each subscale. The Physical Appearance subscale tapped the degree to which the adolescent is happy with the way he/she looks, likes one's body, and feels that he/she is good looking.

Importance of Physical Appearance assesses the level of importance of physical appearance for a college student. Three major scores were calculated from Harter's Self-Perfection Profile:

Satisfaction with Physical Appearance, Global Self-worth and Importance of Physical Appearance.

Inventory of parent and peer attachment. The revised version of the Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1989) was designed to assess the cognitive-affective dimension of attachment, defined as a quality of affect toward parents and peers. Three dimensions are assessed by this instrument: feeling of mutual trust, quality of communication and feeling of isolation and anxiety in relationship to parents and peers. The instrument is a self-report questionnaire with five-point Likert-scale response format and consists of 25 identical items in each of three sections: for mother, father and peers. Three attachment scores were computed according to standardized instructions (Armsden & Greenberg, 1989). The "quality of affect" scores were obtained by reverse scoring where appropriate and summing all item responses for each target figure. Validity for the Inventory of Parent and Peer Attachment as a measure of perceived quality of close relationships in adolescence was

investigated by Armsden and Greenberg (1987). They reported that among late adolescents, parental attachment scores are moderately to highly related to Family and Social Self Scores from the Tennessee Self-Concept Scale and to most subscales on the Family Environmental Scale (Armsden & Greenberg, 1987). In the same studies, scores on the IPPA were also shown to be associated with a number of personality variables, including positiveness and stability of self-esteem, life-satisfaction, and affective status (Armsden & Greenberg, 1987). Peer attachment was also modestly correlated with parent attachment as assessed by the IPPA as well as measures of general family functioning and self-concept as family member (Armsden & Greenberg, 1987). Based on the same sample of adolescents, Armsden & Greenberg (1987) reported Cronbach's Alpha reliabilities for three subscales to be .91 (Trust), .91 (Communication), and .86 (Alienation). Three-week test-retest reliability for the same sample of 18 to 20 year-olds was .93 for parent attachment and .86 for peer attachment.

Autonomy and control. Three questions regarding parental control were added to the Mother and Father attachment scale, which were: "try to control my life", "ignore what I have to say", and "treat me like a younger child". Those questions were extracted from the Parental Attachment Questionnaire (PAQ) by Kenny (1987). This subscale assessed parental fostering of autonomy and independence of adolescent on a five-point Likert-scale.

Eat-26. The original Eating Attitude Test (Garner & Garfinkel, 1979) was modified to produce the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982). It is a self-report survey of eating disturbances and is one of the most widely used scales in research on eating disorders. The short form, the EAT-26, assesses a broad range of symptoms of anorexia nervosa and bulimia nervosa, including dieting behavior, drive for thinness, vomiting after eating, and food

preoccupation. Respondents rate the frequency of each behavior on a 6-point scale from 1(always) to (6) never. The Eat-26 is a continuous measure of disordered eating with total scores ranging from 0 to 78. Higher scores reflect more disordered eating.

Although Eat 26 was validated with anorexia nervosa patients, it has also been found to be useful in identifying eating disturbances in non-clinical samples (Berland, Thompson, & Linton, 1986; Garner et al., 1982). Thus, the Eat 26 was judged to be a suitable screening instrument for work with non-clinical sample. Respondents rated each item as to whether the behaviors described applied to them "always," "usually," "often," "sometimes," "rarely," or "never." The responses "always", "usually" and "often" located on a (left) "symptomatic" part of questionnaire, while responses "sometimes", "rarely" and "never" are located on (right) "nonsymptomatic" part. Responses for each item are weighted from 0 to 3, with a score of 3 assigned to the responses furthest in the "symptomatic" direction. The responses in the nonsymptomatic range did not contribute to the total score. Item 25 is the only negatively keyed item on the EAT-26 and was scored according to instruction. Thus, positively scored items were weighted as follows: always = 3, usually = 2, often = 1, sometimes = 0, rarely = 0, never = 0. The reverse-scored item "Enjoy trying new rich foods" (item 25) was weighted in the opposite manner (never = 3, rarely = 2, sometimes = 1, often = 0, usually = 0, always = 0).

The total EAT-26 score (the sum of all items) was computed for this study. The clinical cut-off point for eating disturbances is 20. If the score of a respondent is above 20, it is indicative of serious eating or weight concerns, or eating disorder. A score below 20 indicates that respondents do not have any symptoms or attitudes characteristic of an eating disorder.

Peer influence and pressure in the dieting domain (revised). The 13-item Peer Influence Scale (PFS) assessed the role of close same-sex friends as role models and expectancy socializers in the domain of weight concern and dieting behavior (Mukai, 1993, 1996). The Peer Influence Scale (PFS) uses a 5-point Likert scale. Respondents rated the frequency of their interchange with one or a couple of close friends regarding their eating habits. Some items of the PFS were designed to index mutual modeling behavior, such as disclosure of information concerning weight and comparison of each other's weight or eating styles and other items designed to tap the frequency (pressure) of the communication patterns between friends regarding diets, calorie intake, so on. Cronbach's alpha reliability for all 13 items of PFS was estimated to be .59 for the present study. After elimination of the items 4, 5, 7 and 8 that were designed as items of mutual or modeling behavior, reliability of the remaining scale increased to $\alpha = .70$. Thus, scores for the 13-item scale were used as the total score for peer influence in this study. A peer pressure score that taps the frequency (pressure) of the communication patterns between friends regarding diets, eating habits, calories intake, and/or exercise management was calculated for further analysis as a separate score. The high number (52 for Friend's Influence and 44 for Peer Pressure) represents the higher influence and pressure from friends regarding eating domains. Items 1, 2, 6, 8, 10 and 11 were reverse coded, while the rest of the items 3, 4, 5, 7, 9, 12 and 13 were scored by direct scoring.

Media influence scale. Three questions were designed to assess the impact of media on adolescents' body image satisfaction. These questions were written by the investigator to assess the direct influence of the media on decision-making strategies regarding body image satisfaction or motivation for body image enhancing. Students were asked to indicate whether or not, and

what diet or exercise equipment he/she bought after being influenced by media or TV. Also, they were asked to indicate to what extent he/she had been influence by media or TV to do that in order to enhance body image. Responses to the Media Influence scale were assessed using a 3-point Likert style scale with options being “Not at all”, “Somewhat”, and “Considerably” influenced. Total scores could range from 3 to 9, with highest scores representing greater susceptibility to media influence.

Data Analysis

Volunteers self-reported body weight to the nearest pound and height to the nearest inch. These anthropometric measures were used to calculate the Body Mass Index (BMI), a commonly accepted index of body proportion.

The questionnaire data were keyed directly into an SPSS data file. Proper transformations were applied to those items that required reverse coding. Total scores were computed for each scale, described above. Cronbach’s alpha was used to estimate the reliability of composite scales.

Descriptive statistics were computed for all variables across the entire sample and broken out by genders and/or race when meaningful to do so. The dependent variable of primary interest in this study was the Satisfaction with Physical Appearance. All other variables were treated as independent variables thought to be predictive of the scores on the Satisfaction with Physical Appearance Scale. Multiple regressions were used to determine the extent to which variance in the Satisfaction with Physical Appearance Score could be predicted using a linear combination of the independent variables. Regression coefficients were inspected to assess the relative contribution of each independent variable, but due to the correlational nature of the data

collection, no causal inferences were implied. Pearson correlation coefficients among all variables were also output in order to explore bivariate relationships among the variables.

Chapter IV

Results

The primary purpose of this study was to examine the conjoint and separate contribution of family attachment variables as well as peer and media influence variables to satisfaction with physical appearance in a non-clinical population of college students.

Descriptive Characteristics of Respondents

Demographics. Data for this study were collected from 559 college students (ages 18-25) in attendance at a large southeastern university. Table 1 shows the demographic characteristics of participants. As shown, the sample was comprised of 340 (63.6%) females and 195 (36.4%) males. A breakdown by race indicated the following proportions: Caucasians 362 (67.7%), African Americans 124 (23.2%), Asians 40 (7.5%), Biracial 5 (.9%) and others 4 (.7%). 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.

The body mass index (BMI). Body Mass Index was calculated by dividing each participant's weight (in kilograms) by height (in meters) squared (Bray, 1986). For the entire sample BMI ranged from 14.35 to 41.79 ($N = 532$), with a mean BMI of 23.16 ($SD = 3.89$). Adolescent females ($n = 338$) had a mean BMI of 22.39 ($SD = 3.76$), while males ($n = 194$) had a mean BMI of 24.52 ($SD = 3.76$). According to a table of norms for the older adolescents (Halls, 2002), the mean BMI for males and females in this sample was within the normal range for age and sex.

For the present sample, the range of BMI for females was from 15.06 to 41.27, and for males it was 14.35 to 41.79. Using the standards described by Halls (2002) for older

Table 1

Demographic Characteristics of Participants

Characteristics	Category	Number	Percent
Gender	Males	195	36.4
	Females	340	63.6
Race	Caucasians	362	67.7
	African Americans	124	23.2
	Asians	40	7.5
	Biracial	5	.9
	Others	4	.7
Age groups	18-20 years	397	74.2
	21-23 years	134	25.1
	24-25 years	4	.7
Number of siblings	0	62	11.6
	1-2	318	59.4
	3-4	127	23.8
	5 or more	22	4.1
Mother's Education	Did not complete High School	0	0.0
	High School Diploma	85	15.9
	Some College	107	20.0
	Completed College	238	44.5
	Completed Graduate School	102	19.1
Father's Education	Did not complete High School	2	.4
	High School Diploma	69	12.9
	Some College	83	15.5
	Completed College	215	40.2
	Completed Graduate School	159	29.7

adolescents, 16.17 % of the sample was overweight ($n = 85$), 66.35 % was normal 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 mean BMIs of various racial groups were as follows: Caucasians ($n = 366$) BMI = 22.95 ($SD = 4.03$), African Americans ($n = 124$) BMI = 23.18 ($SD = 3.51$), Asians ($n = 40$) BMI = 22.36 ($SD = 3.90$), biracial ($n = 5$) group BMI = 20.38 ($SD = 2.27$) and for others ($n = 4$) 25.40 ($SD = 1.46$).

Self-Perception. Three scores were computed from the Self-Perception Profile for College Students (Neemann & Harter, 1986). They were: Satisfaction with Physical Appearance, Global Self-Worth, and Importance of Physical Appearance. Items were scored on a 1 to 4 scale, where 4 represented the most satisfactory self-judgment. Selected items were recorded as prescribed by the instructions before scales were computed. The means and standard deviations are broken down by sex in Table 2 and by race in Table 3.

Table 2

Means and Standard Deviations of Self-Perception Scores by Sex.

Scores	<u>Physical Appearance</u>		<u>Global Self-worth</u>		<u>Importance of Appearance</u>	
	Mean	SD	Mean	SD	Mean	SD
Total Sample ($N = 507$)	9.79	1.87	18.59	3.40	4.30	1.36
Males ($n = 183$)	10.24	1.81	18.63	3.38	4.48	1.41
Females ($n = 324$)	9.54	1.87	18.59	3.43	4.19	1.32

Inspection of Table 2 shows only small mean differences between male and female respondents on the Global Self-Worth and Importance of Appearance scores. However, larger mean differences are noted between sexes for the Physical Appearance scores, the higher scores reported by the male respondents were determined to be statistically significant at the .05 level using independent t -tests, $t(510) = 4.08, p \leq .001$.

Table 3

Means and Standard Deviations of Self-Perception Scores by Race

	<u>Physical Appearance</u>		<u>Global Self-worth</u>		<u>Importance of Appearance</u>	
	Mean	SD	Mean	SD	Mean	SD
Caucasians (<i>n</i> = 345)	9.86	1.91	18.68	3.38	4.28	1.34
African Americans (<i>n</i> = 117)	9.69	1.87	18.60	3.34	4.34	1.39
Asians (<i>n</i> = 37)	9.62	1.77	18.00	3.94	4.32	1.27
Biracial (<i>n</i> = 5)	10.00	.82	17.50	3.51	4.00	1.82
Others (<i>n</i> = 4)	8.25	.95	19.00	3.46	3.25	1.50

Table 3 shows small differences between racial groups on the scores of Physical Appearance, Global Self-Worth and Importance of Appearance. These differences between the means for racial groups were determined by *t*-tests to be not statistically significant. Hence, for subsequent analyses, groups were not divided by race.

Attachment to Mother, Father and Peers. The inventory of Parent and Peer Attachment (Armsten & Greenberg, 1989) yielded three subscale scores: (1) Parental Mutual Trust, (2) Communication and (3) Alienation. These scores were computed as they pertained to (a) Mother, (b) Father and (c) Peers. All items were answered on a 5-point Likert-type scale; high numbers were indicative of good communication, high mutual trust and a high level of alienation, as perceived by the participant. Total attachment scores for mother, father and peers were obtained by summing all of three subscale scores (reversing all items on the Alienation scale) (See Table 4).

Table 4

Means and Standard Deviations for Attachment Scores by Sex

Target of Attachment	<u>Sample</u>		<u>Male</u>		<u>Female</u>	
	(N = 532)		(n = 192)		(n = 330)	
	Mean	SD	Mean	SD	Mean	SD
Mother (total)	77.54	4.21	78.38	1.94	77.06	3.81
Trust	39.02	4.24	38.73	4.51	39.18	4.10
Communication	19.71	3.09	20.42	3.19	19.26	2.97
Alienation	21.94	2.96	22.82	3.32	23.39	2.21
Father (total)	78.41	4.48	78.82	5.00	78.18	4.13
Trust	37.39	5.57	37.54	5.68	37.50	5.51
Communication	20.99	3.74	21.06	3.47	20.94	3.90
Alienation	23.19	2.67	21.73	3.23	22.06	2.79
Peers (total)	102.47	11.07	98.21	11.69	104.92	9.91
Trust	43.40	6.75	40.77	7.02	44.92	6.11
Communication	43.40	6.75	40.76	7.02	44.92	6.11
Alienation	15.67	4.33	16.69	4.29	15.08	4.25

Note. Alienation scores used in this table are not reversed. Possible range and number of items in scale are presented in Table 1 in Appendix D.

Inspection of Table 4 shows only small mean differences between sexes on the subscales measuring Attachment to Mother versus Attachment to Father. However, females had significantly higher scores than males on Peer Attachment scale $t(532) = -7.05, p \leq .001$. A

repeated measures ANOVA determined significant differences between scores for Attachment to Father, Mother, and Peers. As shown in Table 4, and confirmed by posthoc tests, the means for Attachment to Peers were significantly higher than for either Attachment to Mother or Attachment to Father.

Autonomy and control. A measure of control by both parents, as perceived by the college students in this sample, was computed as the direct sum of three items that were extracted from the Parental Attachment Questionnaire (Kenny, 1987). Those questions were answered on a 5-point Likert-type scale. High numbers were indicative of higher perceived parental control and lower levels of perceived independence and autonomy.

Table 5

Means and Standard Deviations for Parental Control

Gender	<u>Maternal Control</u>		<u>Paternal Control</u>	
	Mean	SD	Mean	SD
Males (<i>n</i> = 192)	6.22	2.88	6.01	2.75
Females (<i>n</i> = 330)	5.73	2.65	5.73	2.79

Note. Possible range and number of items are presented in Table 1 in Appendix D.

Although the means for males were higher than those for the females (See Table 5) on both of the control measures, these differences were not significant at the .05 level, as determined by an independent *t*-test.

Eating Disturbances were measured by the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982). It is a continuous measure with a potential range from 0 to 78. High scores

reflect more disordered eating behaviors or attitudes. A score above 20, the clinical cut-off point, is indicative of serious eating or weight concerns, or an eating disorder.

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 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 disturbed eating habits and/or attitudes than did males in this sample. Eighty-four (15.78 %) of the respondents had an EAT score over 20 which is indicative of disturbed eating behavior but not necessarily have clinical anorexia nervosa or another eating disorder (Garner et al., 1982). This included 66 females (19.52 % of the female respondents) and 18 males (9.47 % of the males). Follow up interviews to verify whether or not the high scoring college students had a clinical eating disorder were not conducted.

Peer influence and pressure in the dieting domain. The 13-item Peer Influence Scale (Mukai, 1993, 1996) which makes use of a 5-point Likert scale, produced two scores: (a) Peer Influence and (b) Peer Pressure (See Table 6).

Table 6

Means and Standard Deviations for Peer Influence and Peer Pressure by Sex

	Peer Influence		Peer Pressure	
	Mean	SD	Mean	SD
Males ($n = 192$)	32.58	5.40	23.90	5.41
Females ($n = 338$)	34.48	5.69	25.77	5.66

Inspection of Table 6 shows mean sex differences for the Peer Influence and Peer Pressure scores, with higher scores reported by the females. Sex differences were statistically significant at the .05 level using independent *t*-tests, $t(528) = -3.76$ for Peer Influence, and $t(528) = -3.68, p \leq .001$ for Peer Pressure.

Media influence. The impact of media on college students' satisfaction with their physical appearance was measured by three questions related to decision-making strategies and/or motivation for enhancing one's physical appearance. The Media Influence scale is a 3-point Likert style instrument on which students reported themselves to be influenced (1) "Not at all", (2) "Somewhat", or (3) "Considerably". The highest score represents the strongest influence.

Table 7

Means and Standard Deviations for Media Influence by Sex and by Race

	<u>Media Influence</u>	
	<u>Mean</u>	<u>SD</u>
Sex		
Males ($n = 195$)	5.64	1.44
Females ($n = 340$)	6.34	1.44
Race		
Caucasians ($n = 362$)	6.07	1.47
African Americans ($n = 124$)	6.10	1.52
Asians ($n = 40$)	6.00	1.36
Biracial ($n = 5$)	7.00	1.58
Others ($n = 4$)	5.60	2.16

Inspection of Table 7 shows only small mean differences between racial groups on the Media Influence scales. However, larger differences are noted between the sexes for the Media influence scale, with higher scores reported by the female respondents $t(533) = -5.43, p \leq .001$.

Correlational Analyses

Correlations between key variable scores are presented in Table 8 for the total sample and Table 9 provides a breakdown by sex. To interpret the correlation coefficients involving sex in Table 8, it should be noted that sex was coded as “1” for males, and “2” for females.

Caucasians were coded as “1,” African-Americans as “2” and Asians as “3”.

It is seen in Table 8 that sex correlated negatively with BMI ($r = -.263, p \leq .001$), indicating that males tended to have a higher BMI than did females. Sex also correlated negatively with Satisfaction with Physical Appearance ($r = -.178, p \leq .001$), indicating that males were more satisfied with their physical appearance than were females. Sex correlated positively with EAT scores ($r = .222, p \leq .001$) indicating that females tended to have more eating disturbances than did males. BMI correlated negatively with the Satisfaction with Physical Appearance score for entire sample ($r = -.258, p \leq .01$), indicating that respondents with higher Body Mass Indexes tended to feel less satisfied with their physical appearance. However, inspection of Table 9 shows that the relationship between these same two variables differs between males and females: Among females ($n = 325$) the correlation between Satisfaction with Physical Appearance and BMI is $r = -.429, p \leq .001$, but among males ($n = 183$), the correlation is negative, $r = -.113$, and is not significant. Media Influence scores correlated negatively

Table 8 Bivariate Correlations between Key Variables for entire sample ($N = 510$)

	Physical Appearance	BMI	Sex	Race	Media Influence	EAT	Global Self-worth	Importance of Appearance	Attachment to Mother	Attachment to Father	Attachment to Peers	Maternal Control	Paternal Control	Friends Influence	Peer Pressure
Physical Appearance	1.000														
BMI	-.258**	1.000													
Sex	-.178**	-.263**	1.000												
Race	-.064	-.039	.003	1.000											
Media Influence	-.281**	-.040	.229**	.013	1.000										
EAT	-.271**	-.061	.222**	-.063	.307**	1.000									
Global Self worth	.391**	-.193**	-.008	-.041	-.268**	-.260**	1.000								
Importance Appearance	.237**	-.029	-.111*	-.027	-.351**	-.229**	.160**	1.000							
Attachment to Mother	.117**	-.064	-.151**	-.028	-.126**	-.161**	.147**	.124**	1.000						
Attachment to Father	.103**	.000	-.069	-.073	-.082	-.095*	.144**	.015	.627**	1.000					
Attachment to Peers	-.063	-.020	.292**	-.037	.111*	.019	.183**	-.070	.035	.065	1.000				
Maternal Control	-.124**	-.048	-.089*	.128**	.076	.068	-.199**	-.049	-.189**	-.136**	-.229**	1.000			
Paternal Control	-.044	.069	-.048	.108*	-.034	-.028	-.173**	.039	-.109*	-.221**	-.171**	.664***	1.000		
Friends Influence	-.089*	-.220**	.162**	.038	.253**	.369**	-.124**	-.133**	-.129**	.040	-.069	.116**	.063	1.000	
Peer Pressure	-.162**	-.061	.158**	.031	.286**	.413**	-.192**	-.161**	-.124*	-.032	-.067	.128**	.065	.947**	1.000

*** Correlation is significant at the $p \leq .001$

**Correlation is significant at the $p \leq .01$

* Correlation is significant at the $p \leq .05$

Table 9 Bivariate Correlations between Key Variables for males ($n = 172$) and females ($n = 311$)

	Physical Appearance	BMI	Media Influence	EAT	Global Self-worth	Importance of Appearance	Attachment to Mother	Attachment to Father	Attachment to Peers	Maternal Control	Paternal Control	Friends Influence	Peer Pressure
Physical Appearance	1.000	-.113	-.223**	-.151*	.362***	.245***	.135*	.170*	.043	-.246***	-.111	-.095	-.096
BMI	-.429***	1.000	.031	-.074	-.074	-.177*	.079	.063	.077	-.009	.002	-.157*	.019
Media Influence	-.277***	.031	1.000	.065	-.287***	-.331***	-.044	-.038	-.040	.163*	.124*	.144*	.149*
EAT	-.291***	.031	.378***	1.000	-.188**	.027	-.093	-.158*	-.231***	.172*	.145*	.300***	.366***
Global Self-worth	.427***	-.274***	-.275***	-.297***	1.000	.040	.215**	.223**	.310***	-.231***	-.154*	-.104	-.163*
Importance of Appearance	.215***	-.006	-.352***	-.340***	.237***	1.000	.051	-.021	-.164*	.019	.098	-.097	-.135
Attachment to Mother	.082*	-.008	-.159**	-.145**	.110*	.190*	1.000	.722***	.038	-.174*	-.112	-.119*	-.100*
Attachment to Father	.046	-.088	-.103*	-.047	.081	.036	.539**	1.000	.122*	-.163*	-.203**	-.169*	-.154*
Attachment to Peers	-.031	.011	.105*	.003	.118*	.037	.081	.047	1.000	-.311**	-.216**	-.189**	-.215**
Maternal Control	-.070	.036	.048	.042	-.191***	-.127*	-.226***	-.127*	-.155**	1.000	.685***	.096	.125*
Paternal Control	-.016	.103	-.003	-.083	-.177**	.008	-.138**	-.252***	-.137**	.663***	1.000	.089	.109
Friends Influence	-.038	-.182**	.255***	.393***	-.145**	-.132*	-.103	.048	-.065	.137**	.051	1.000	.941***
Peer Pressure	-.149**	-.013	.312***	.433***	-.218***	-.162**	-.092*	.059	-.044	.134**	.043	.945**	1.000

Note. Males' correlation results are on upper right side and females' on lower left.

*** Correlation is significant at the $p \leq .001$

**Correlation is significant at the $p \leq .01$

* Correlation is significant at the $p \leq .05$

($r = -.281, p \leq .01$), with Satisfaction with Physical Appearance scores when statistics were computed for the entire sample. This indicated that respondents who reported themselves to be highly influenced by the media also reported lower scores on Satisfaction with Physical Appearance.

The correlation between scores on the Satisfaction with Physical Appearance and scores on the EAT scale produced a significant negative correlation ($r = -.271, p \leq .01$) when the entire sample was considered. However, the correlation between the same variables was less strong among males ($r = -.151, p \leq .05$), as compared to females ($r = -.291, p \leq .001$) (See Table 9).

For the total sample, Satisfaction with Physical Appearance scores correlated positively and significantly with scores of Global Self-Worth ($r = .391, p \leq 0.01$) and ratings of the Importance of Physical Appearance ($r = .237, p \leq 0.01$). Global Self-Worth scores correlated moderately with Satisfaction with Physical Appearance scores for both sexes ($r = .427, p \leq .001$ among females ($n = 327$) and $r = .362, p \leq .001$ among males ($n = 183$)).

Inspection of Table 8 shows that the correlation between Satisfaction with Physical Appearance scores and Attachment to Mother scores for total sample was modest but statistically significant ($r = .117, p \leq .01$). That is, students who reported high scores on Satisfaction with Physical Appearance also reported high scores on Attachment to Mother. However, among males, Attachment to Mother and Attachment to Father scores were significantly correlated with Satisfaction with Physical Appearance scores ($r = .135$, for Attachment to Mother, and $r = .170, p \leq .05$, for Attachment to Father). Among females, only Attachment to Mother correlated significantly with Satisfaction

with Physical Appearance ($r = .082, p \leq .05$). In addition, scores on Maternal Control were negatively correlated with scores on Physical Appearance among males and did not produce a significant relationship for females (See Table 9).

Peer Pressure scores correlated negatively and significantly with scores on Satisfaction with Physical Appearance ($r = -.162, p \leq .01$) in the total sample, indicating that high peer pressure experienced by respondents tended to be associated with lower levels of satisfaction with physical appearance. A correlation between Satisfaction with Physical Appearance and Peer Pressure scores among females ($n = 311$) yielded a negative correlation ($r = -.143, p \leq .005$), while among males ($n = 181$) the correlation between Peer Pressure and Satisfaction with Physical Appearance was negative and not significant ($r = -.099, p \leq .186$). In other words, female respondents in the sample experienced more pressure from close friends regarding eating behaviors than did male respondents, and they reported less satisfaction with their physical appearance.

Secondary Correlational Analyses

As is shown on Tables 8 and 9, the correlations between BMI's and scores on EAT were not significant for either gender. A significant negative correlation between BMI and Global Self-Worth ($r = -.274, p \leq .001$) was observed among females (See Table 9), however, among males the same correlation was not statistically significant. Also, among females there was a significant negative correlation between scores on Attachment to Mother and Media Influence ($r = -.159, p \leq .01$) indicating that lower attachment scores were associated with stronger media influence. In contrast to scores for males (see Table 9), Media Influence scores for females were associated with higher scores on the EAT scale ($r = .378, p \leq .001$). High eating disturbance scores among

females were associated with lower Global Self-esteem scores ($r = -.297, p \leq .001$) and lower scores on Attachment to Mother ($r = -.145, p \leq .01$). Among males, high EAT scores were associated with lower Global Self-esteem ($r = -.188, p \leq .01$), lower Attachment to Father ($r = -.158, p \leq .05$) and lower Attachment to Peers ($r = -.231, p \leq .01$). For both sexes high Peer Pressure in eating domains was predictive of higher eating disturbance (EAT) scores (See Table 9), introducing a tendency for females to experience higher peer pressure regarding eating domains than did males.

Further inspection of Table 9 shows that among males, Global Self-Worth scores correlated positively and significantly with scores on Attachment to Mother ($r = .215, p \leq .01$), Attachment to Father ($r = .223, p \leq .01$) and Attachment to Peers ($r = .310, p \leq .001$). Maternal and Paternal Control scores correlated negatively with Global Self-Worth for males ($r = -.231, p \leq .001$ and $r = -.154, p \leq .05$ respectively). On the other hand, among females, Attachment to Mother correlated positively with Global Self-Worth ($r = .110, p \leq .05$) and negatively with Maternal Control ($r = -.191, p \leq .01$) and Paternal Control ($r = -.177, p \leq .05$). In addition, scores on Peer Pressure correlated negatively and significantly with Global Self-Esteem scores among females ($r = -.218, p \leq .001$) and among males ($r = -.163, p \leq .05$). Global Self-Worth scores correlated negatively and significantly with Peer Influence scores and Peer Pressure scores for both sexes, indicating that more peer pressure was experienced by respondents who had lower self-esteem scores. However, data from female respondents yielded, a much stronger correlation between peer pressure and Global Self-Worth scores as presented in Table 9 ($r = -.218, p \leq .001$ for females and $r = -.163, p \leq .05$ for males).

Peer Influence and Peer Pressure correlated significantly with EAT scores

($r = .369, p \leq .01$ for Peer Influence and $r = .413, p \leq .01$ for Peer Pressure). When broken down by sex, a high and significant correlation was found for both males and females. In general, respondents who experienced high Peer Pressure or Peer Influence reported more eating disorder symptomatology.

It was previously reported that BMI correlated negatively and significantly with Satisfaction with Physical Appearance scores for the total sample, indicating that respondents with a higher Body Mass Index tended to feel less satisfied with their physical appearance. This tendency is supported by a significant negative correlation only in the Caucasian group ($n = 347$) of respondents with $r = -.286, p \leq .001$. However, for African Americans ($n = 117$), the correlation between BMI and Satisfaction with Physical Appearance was negative and not significant ($r = -.159, p = .087$).

Previously discussed Media Influence scores correlated negatively and significantly with Satisfaction with Physical Appearance scores, indicating that respondents who perceived themselves to be highly influenced by the media also reported lower scores on Satisfaction with Physical Appearance (See Table 8). This tendency varied by racial groups i.e., Media Influence scores yielded a higher negative correlation with Satisfaction with Physical Appearance scores ($r = -.297, p \leq .001$) for Caucasians ($n = 348$), than for African Americans ($n = 118$) for whom the Physical Appearance and Media Influence correlation was $r = -.260, (p \leq .005)$. Among Asians ($n = 37$) the correlation between Satisfaction with Physical Appearance and Media Influence scores was negative ($r = -.209, p \leq .215$), but not quite as strong as for Caucasians or African Americans.

Correlational analysis had shown that Media Influence was experienced strongly among respondents with BMI over 25 ($n = 124$) ($r = -.354, p \leq .001$). In contrast, for respondents with BMI's less than or equal to 20 ($n = 93$), the correlation between Satisfaction with Physical Appearance and Media Influence was negative and not significant ($r = -.175, p \leq .093$). Respondents with BMI's within physiologic norms (BMI = 23 ($n = 288$) and BMI = 21 ($n = 151$)) presented these correlations ($r = -.221, p \leq .001$; $r = -.293, p \leq .001$ respectively). This could suggest that college students were differentially influenced by media sources according to their BMI. In other words, obese and even normal weight adolescents were more prone to be influenced by media than were respondents with lower BMI's.

Among males there was no significant correlation between the last statement in the Media Influence scale ("My ideal body image is influenced by attractive people on TV or other media sources") and Satisfaction with Physical Appearance scores. However, for females, ($n = 327$) the correlation between this item and Satisfaction with Physical Appearance was negative ($r = -.248, p \leq .001$) and statistically significant.

Regression analyses

Multiple regression equations were used to estimate the relative contributions of the independent variables to the prediction of adolescent's Satisfaction with Physical Appearance for both sexes and for the total sample. Two blocks were used in the analysis. The first block consisted of the demographic variables that included age, race and BMI. The second block consisted of psychological variables that included Attachment to Mother, Attachment to Father, and Attachment to Peers, Maternal Control, Paternal Control, Global Self-worth, Importance of Appearance, Media and Peer Pressure

Table 10

Summary Regression Coefficients (Betas) for Predicting Satisfaction with Physical Appearance for College Students

Variable	Step 1			Step 2		
	β			β		
	<u>Sample</u>	<u>Males</u>	<u>Females</u>	<u>Sample</u>	<u>Males</u>	<u>Females</u>
	(N = 482)	(n = 171)	(n = 310)	(N = 482)	(n = 171)	(n = 310)
Age	.111**	.091	-.001	.059	.061	-.014
Race	-.083*	-.078	-.064	-.069*	.012	-.084*
BMI	-.285****	-.128	-.431****	-.236****	-.066	-.359****
	Attachment to Mother			.018	-.069	.024
	Attachment to Father			.035	.148	-.023
	Attachment to Peers			-.090**	-.093	-.048
	Maternal Control			-.096*	-.248**	-.031
	Paternal Control			.079	.096	.073
	Global Self-worth			.275****	.294****	.253****
	Importance of Appearance			.087**	.198**	.057
	Media Influence			-.122****	-.049	-.115**
	Peer Pressure			.022	.048	.012
	EAT			-.147****	-.086	-.150**
<i>R squared</i>	.087	.028	.188	.293	.248	.357
<i>R</i>	.293	.169	.434	.542	.498	.598

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

and EAT scores. Regression analysis was used to estimate the same model separately for males and females and for the total sample. The regression results are summarized in Table 10.

In Step 1, the demographic variables explained 8.7% of the variance in Satisfaction With Physical Appearance in the equation for the total sample, with the BMI and age variables contributing the most. However, the results were quite different between males and females. For males, no demographic variable made a significant contribution and consequently only 2.8% of the variance in Satisfaction with Physical Appearance was explained. In contrast, for females, the demographic variables entered in the Step 1 explained 18.8% of the variance in Satisfaction with Physical Appearance with BMI as the only significant predictor.

Psychological variables entered in the Step 2, explained an additional 20.6% of variance in Physical Appearance Satisfaction for the entire sample. BMI and race remained significant predictors among demographic variables for the entire sample. Among the psychological variables, the following contributed significantly to the predictability in Satisfaction with Physical Appearance for the sample: Attachment to Peers, Maternal Control, Global Self-worth, Importance of Appearance, Media Influence and EAT score.

In the regression equation for males, variables entered in Step 2, accounted for an additional 22% of variance in dependent variable. Maternal Control, Global Self-Worth and Importance of Physical Appearance contributed significantly to predictability of Satisfaction with Physical Appearance among males. In the regression equation for females, demographic variables entered in Step 1 (such as, race and BMI) contributed

significantly to the predictability of Satisfaction with Physical Appearance. However, among the psychological variables, only Global Self-Worth, Media Influence and EAT scores showed a significant contribution to predictability of Satisfaction with Physical Appearance and accounted for 16.9 percent of the variability in the dependent variable (Satisfaction with Physical Appearance). In other words, among males, those who expressed greater satisfaction with their physical appearance, report a more positive sense of self-worth, place higher importance on their appearance, and experience less maternal control. Similar to the males, females who express greater satisfaction with their physical appearance also have a more positive sense of self-worth but lower BMI indices. In contrast to males, for whom media influence and eating disturbances were not significant, both of these variables were significant for females in prediction of Satisfaction with Physical Appearance. Specifically, males expressing higher satisfaction with their appearance report being less influenced by media and expressed fewer eating disorders as measured by the EAT scale.

Chapter V

Discussion

Self-evaluation of physical appearance, or body esteem has been established as an important aspect of self-worth and mental health across the life span (Harter, 1988; 1998; 1999). Not only biological, but also psychological and socio-cultural components influence the development of body image. The purpose of this study was to examine the conjoint and separate contribution of family attachment variables as well as peer pressure and media influence on the prediction of satisfaction with physical appearance in a sample of older adolescent college students. The study also examined gender differences in body image perception and eating attitudes and behaviors in a college population. Results of the study are discussed in relationship to the research questions.

Research Question 1: What is the strength of the relationship between the scores measuring the quality of attachment to (a) mother, (b) father and (c) peers and self-reported perceptions of physical appearance among older adolescent college students in this sample?

Research regarding quality of attachment to parents and its influence on various aspects of self-worth is sparse and has produced mixed results. A study by Paterson et al. (1995) indicated that utilization of parental support and proximity-seeking were weakly associated with some aspects of self-esteem. In the present study, attachment to mother was significantly related to satisfaction with physical appearance for both males and females, but attachment to father was a predictor of satisfaction with physical appearance only among males. Attachment to peers was not significantly related to satisfaction with physical appearance in either males or females in this sample.

Research Question 2: What are relationships between quality of attachment to the mother, (father), (peer) as measured on the Inventory of Parent and Peer Attachment Scale and the degree of eating disturbance among college students as measured by Eating Attitude Test scale?

In regard to the prediction of eating disturbances in college population, attachment to mother was a stronger predictor than attachment to father among both males and females. Thus, these findings are congruent with previous research of Ward et al. (2000), Saelens et al. (2000), Sharpe et al. (1998), and Haudek et al. (1999). They reported that the abnormal (low) attachment pattern is common in the eating disordered population. In the present study, insecure attachment to mother was associated with higher eating disturbance scores among females but not among males. However, less secure attachment to father and to peers was predictive of eating disturbances among males.

Question 3: What is the relationship between Body Mass Index and Satisfaction with Physical Appearance?

In the present sample, differences between males' and females' perceptions of weight were apparent: women with high BMIs felt less satisfied with their physical appearance, whereas among males BMI was not associated with satisfaction with appearance. These findings are consistent with finding from other studies that have shown that adolescent males are more satisfied with their physical appearance and body changes due to puberty than are females (Cash & Pruzinsky, 1990; Davis & Furnham, 1986; Mendelson et al., 1996; Rosenblum & Lewis, 1999; Simmons & Blyth, 1987). It is important to remember that the increasing BMI may in part be attributed to pubertal

changes in males. For example, broader shoulders as well as greater bone width and length result in a positive effect for adolescent males (Asci et al., 1997; Falon & Rosin, 1985; Parks & Read, 1997).

In the present sample, 9.1% of the respondents felt very satisfied with their physical appearance. This group was equally divided between males and females. Among the subjects who were satisfied with their physical appearance, two females and one male had high EAT scores, 5 males (21%) were overweight with BMI >26, and all females who felt highly satisfied with their appearance had a low BMI. These findings are congruent with a previous longitudinal study by Mendelson and colleagues (1996) who found that BMI and weight were more important for self-evaluation among female adolescents than among males. Thus, for females to feel highly satisfied with physical appearance, it appears important to have a low BMI.

Caucasians students with a higher Body Mass Index felt less satisfied with their physical appearance as compared to African American respondents. Such a difference in perception of physical appearance in relation to BMI was discussed in previous literature (Haudek et al., 1999; Rosenblum & Lewis, 1999) and can be explained by the notion that what is considered attractive varies by ethnic group. For instance, African Americans value a larger body size and normal weight females are less likely to consider themselves to be overweight (Botta, 2000; Cogan, Bhalla, Sefa-Dedeh, & Rotblum, 1996; Ofofu, Lafreniere, & Senn, 1998).

Question 4: What is the relationship between Body Mass Index and Global Self-Esteem scores?

The correlation between global self-worth and BMI was negative and statistically significant only among female respondents. These results are congruent with the findings of Mendelson and White (1982; 1985) and Mendelson et al. (1996), but contradict the findings of Friedman and Brownell (1995) that self-esteem is weakly related to obesity. Among females in this sample global self-worth is associated with body proportion.

A strong negative association between BMI and global self-worth was found among Caucasians, while the same relationship was weak and non-significant for African American students. These findings are consistent with previous studies regarding differences in perception of attractiveness and weight in different ethnic groups (Cogan et al., 1996; Haudek et al., 1998). Future research with diverse samples is needed to investigate the association between “Physical appearance”, “Global self-esteem” and BMI for various ethnic groups.

Question 5: What is the relationship between Body Mass Index (BMI) and eating disturbance (EAT-26) scores?

Higher BMI has been shown to be associated with eating problems (Attie & Brooks-Gunn, 1989). Given the high prevalence of weight concern reported among adolescents (Button et al., 1996; Grigg et al., 1996), it was surprising that being overweight made no contribution to the prediction of eating disturbances in the present study. This contradicts the previous research that indicated that body fat was positively associated with eating disturbances and behavior (Attie & Brooks-Gunn, 1989). No significant relationship was found between BMI and EAT scores for either sex which is congruent with findings reported by Archibald et al. (1999) and Rosenblum and Lewis (1999). However, in the group of respondents who reported high scores on the eating

disturbances scale, BMI was negatively, but weakly, related to satisfaction with physical appearance and global self-worth, which is consistent research by Geller (1998, 2000) and colleagues, where the actual weight of eating disordered population was not related to high EAT scores, while perception of being overweight was.

Question 6: What is the relationship between parental control and eating disturbances scores?

Maternal control and paternal control were predictive of eating disturbances among male but not among female participants in this study. This contradicts Minuchin's theory that excessive parental control leads to eating disturbances in females (Minuchin et al., 1978).

Question 7: What is the relationship between parental control and perceptions of satisfaction with physical appearance?

Consistent with previous research indicating that parent-adolescent relationships play an important role in development of body image satisfaction (Domini et al., 2000; Laliberte et al., 1999; Leon et al., 1994; Minuchin et al., 1978; Usmiani & Daniluk, 1997), older adolescent college students in the present sample reported that parental control contributed negatively to attachment to both of the parents, global self-esteem, and satisfaction with physical appearance. Maternal control was one of the significant predictors of satisfaction with physical appearance among males as opposed to females, that is high maternal control was not associated with satisfaction with physical appearance, a finding that warrants further investigation. It may be associated with distinct and very specific identification processes for males and females (Gilligan, 1982). Excessive maternal control might be a factor that fosters inability to obtain autonomy and

independence for successful separation –individualization processes that are so meaningful for maturing males.

Question 8: What is the relationship between peer pressure in eating domains and eating disturbance scores?

Peer influence has been investigated in number of studies on adolescent' delinquency and drug, alcohol, and tobacco abuses. Peer pressure in eating domains such as dieting and weight management has received much less attention. However, studies by Kashubek, (1997), Lieberman et al., (2001), Mukai, (1993, 1996) and Paxton et al. (1999) investigated peer modeling and pressure in eating-disordered and non-eating disordered population and found that peer pressure regarding eating or dieting management could be a powerful triggering factor for development of eating disorders and /or excessive dieting among students. Congruent with previous findings, the present study found a strong positive relationship between peer pressure/influence and eating disturbances as measured on EAT-26 scale. Participants experiencing high peer pressure in the eating domain reported more disordered eating behavior. Peer pressure has been described as the primary mechanism for transmitting group norms (Grotevant, 1998; Paxton et al., 1999) and a college setting is one context for this process. The present findings together with a study regarding cigarette smoking (Urberg, 1992) or bulimic symptomatology in college women (Kashubek, 1997) could be a powerful reminder of how “catching” attitudes among friends can be. In regard to eating disorders and/or weight reduction strategies, a combination of low self- esteem with high peer pressure could be a powerful triggering factor for disturbed eating behavior and/or eating disorder.

Female respondents in this sample experienced more pressure from close friends regarding eating behaviors and attitudes than did male respondents, and they reported less satisfaction with their physical appearance. A significant correlation between peer pressure and satisfaction with physical appearance was found for Caucasians but not African Americans. On the same note, high peer pressure was associated with low global self-worth in the Caucasian group, but produced a weak and non-significant relationship with global self-worth in the African American group. Do the relationships between adolescents in various racial groups differ? Do adolescents from different ethnic backgrounds experience peer pressure in distinct ways? This study did raise some interesting questions regarding relative influence of best friends, peer pressure, and the social crowd on self-evaluation as well as eating attitudes and behavior in different ethnic groups and races. The present study did not assess the structural (how many and what ethnicity friends are) or cultural elements of friendship in order to investigate peer pressure and its relation to global self-worth and self-evaluation.

Question 9: What is the relationship between scores on satisfaction with physical appearance and Media Influence scores?

The media is not homogeneous in its impact on adolescents and adults, it depends on how these powerful messages have been delivered and valued by peers, close friends and parents (Altabe, 1998). Moreover, these messages seem to have different impact on different racial groups (Botta, 2000). The extent of media influence on college students' body images, as well as its differential influence on different cultural and ethnic groups within American culture, produced puzzling results (Botta, 2000; Strasburger & Wilson,

2002). An exploratory part of the present project produced expected findings: Media influence was negatively associated with satisfaction with physical appearance for the entire sample but when data were broken down by race, the relationship was found to be significant only in the Caucasian group. Media influence was experienced more strongly in the group of respondents with a BMI over 25, as opposed to group of respondents with BMI less than 25. Thus, such a relationship could indicate that college students are influenced by media sources according their BMI or weight. In other words, the heavier were college students, the more influenced they reported to be by media sources. Only female respondents admitted, “My ideal body image is influenced by attractive people on TV or other media sources” producing a strong negative relationship between media influence and physical appearance.

Question 10: What is the relationship between media influence and eating disturbances scores?

In general, media influence was associated with more eating disturbances among females but not males. As was previously mentioned, the present study was purely on “ideal” versus “real” image perception and needs more in depth investigation and assessment. It raises more questions for future research, as it is clear that body image has become an increasingly major concern of teenagers and adolescents, especially females.

Question 11: What is the relationship between media influence scores and global self-worth scores?

In general, both male and female college students with perceptions of lower self-worth and low satisfaction with physical appearance reported high eating disturbances and experienced a high level of influence by media. In regard to the relationship between

media influence and global self-esteem, the present study found that influence of media sources equally and negatively influenced global self-worth in both sexes. Thus, it seems that even when respondents reported feeling good about themselves, powerful media influence tended to be associated with their feeling of self-worth.

Strengths and Limitations of the Study

The strength of this study was the use of a relatively large, non-clinical population. Presumably the treatment-seeking population is more symptomatic or pathological than the rest of the population. As expected, participants in this study were diverse in terms of body size, race and gender. On the other hand, the sample was quite homogeneous in terms of age (18-25 years old), educational level of parents (median of 16 years for both parents), and educational goals of the participants. Participants in the study represented a middle class educated group. Therefore, current findings cannot be applied reasonably to the population in general.

In this study 17.75 % of all female and 9.47 % of male respondents reported disordered eating symptoms or/and attitudes. A similar study conducted with younger adolescents (Button et al., 1996) found that 8 % of high school students reported symptoms of eating disturbances. Those numbers seem to be high; however, the results support the generally held belief that anorexic-like attitudes and behaviors are common among college students. According to the American Psychiatric Association (APA,1994) about 5% of all female adolescents meet the diagnostic criteria for eating disorders. However, subclinical eating problems among adolescents are considered to be even more prevalent (APA, 1994). These numbers seem to be increasing in the college population. Nelson et al. (1999) reported that 20 % of the surveyed females had EAT-26 scores

indicative of anorexic symptomatology (20 or above, according to Garner et al., 1982). Regarding the male population, the same authors indicated that 10 % of the males scored high on EAT-26 scale. In the present sample 9.47 % of the males had symptomatic eating disturbances, which corroborate the findings of Nelson et al. (1999). Such a consistency in findings suggests that abnormal concerns with eating and weight (anorexic-like attitudes and behaviors) may be more prevalent in the college population than previously thought. This estimate of anorexic-like eating disturbances among males could be partially explained by the fact that the present sample was obtained from a group traditionally believed to be at increased risk for eating disorders, such as athletes (Asci et al., 1997; Parks & Read, 1997) for whom the human nutrition and exercise course was a requirement.

Association between attachment to parents and satisfaction with physical appearance was of interest because the previous research was notably sparse in using nonclinical samples. Typically researchers were aiming to assess a general family climate and functioning as a possible predisposing factor in etiology of eating problems (Archibald et al., 1999; Bulik et al., 2000; Haudek et al., 1999; Laliberte et al., 1999). In addition, previous studies on attachment to mother and father and their relationships to self-esteem were inconsistent. Some studies found that maternal support is more central to self-esteem than is paternal support (Haudek et al., 1999; Offer et al., 1982; Sharpe et al., 1998). Others found that paternal support has a greater impact on self-esteem and well-being (Ohannesian et al., 2000; Swarr & Richards, 1996). In the present study, attachment to mother/father and peers were predictive of global self-esteem with a strong significant correlation. Respondents who had a strong attachment to parents tended to

have strong attachment to peers and reported high self-worth scores. However, this tendency was not the same for males and females, i.e., attachment to mother/father and peers appeared to be significantly related to global self-worth among males, while among females only attachment to mother was predictive of global self-worth.

Weight reduction attempts or eating disturbances in adolescents are ubiquitous and generally have not been conceptualized as presenting health hazards. However, findings from different lines of research (APA, 1994; Kashubeck et al., 1997; Nelson et al., 1999) indicate that the rate of eating disturbances is increasing among college students and may not be as harmless as previously thought. Social and peer pressure, constant media messages are becoming persistent factors that influence self-evaluation and satisfaction with physical appearance of young adolescents. In order to assess the seriousness of issue in general population, further research is needed.

Body esteem or evaluation with physical appearance made a significant contribution to global self-esteem for both males and females. However, contribution of weight or BMI was a significant predictor only for females' global self-esteem. This fact indicates the need for further research and investigation to define a contribution of BMI (if any) on different domains of global self-esteem for males.

Self-reported weight and height, as well as calculated BMI have been shown to be accurate measures of human proportion. However, for more precise measure of adiposity and obesity, triceps skin fold thickness test could be performed. Self-reported satisfaction with physical appearance was assessed by the Physical Appearance scale from Harter's Self-perception Profile For College students. It is a reliable measure that assesses overall body satisfaction among college students, but it does not assess

separately a satisfaction/dissatisfaction with height of a student that possibly may be reflected on Satisfaction with Physical Appearance as a measure of attractiveness.

The results of this study suggest that maladaptive eating attitudes and behaviors are not just the domain of young women. A relatively large proportion of the surveyed males also engaged in disturbed eating attitudes and behavior. It would be useful to survey a larger number of males (not competitive athletes) to see if the present results could be replicated. It should be noted that the screening instruments used in the present study (EAT-26) and a peer influence and pressure in eating domains scale (Mukai, 1993) were designed for females. Thus, EAT-26 was developed using females who suffered from anorexia nervosa and normal controls (Garner et al., 1982). Only a small sample of males was employed for cross-validation research. Eating disordered males were not studied so intensively as compared to females. Not a general male population, but only males athletes were studied in regard to dieting and body image satisfaction (Asci et al., 1997; Parks & Read, 1997). It seems reasonable to investigate deeply this male eating disorder population and possibly develop or adjust norms and values for this scale that will be more sensitive in screening male population.

Despite the demonstrable importance of body image, little is know about factors that influenced changes in body image satisfaction over time. The present study is only a cross sectional sketch or glimpse on experiences, feelings and perceptions regarding body image in college students. More longitudinal studies are needed.

The present study reopened the ongoing discussion about the influences that impact a perception of self-evaluation in adolescence males and females, such as attachment relationship, media and peer pressure. Also, this research study pointed out

on the gender differences in perception of physical appearance and presented interesting racial differences in self-evaluation among college students, which could be a soil for further research.

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MEMORANDUM

TO: Natalia Kee FCD 0416
Cosby Rogers HD 0416
Janet Sawyers HD 0416

FROM: David M. Moore 

DATE: June 28, 2002

SUBJECT: **Expedited Approval** – “Body Image: Relationship to Attachment, Body Mass Index, and Dietary Practices in Older Adolescents” – IRB #02-351

This memo is regarding the above-mentioned protocol. The proposed research is eligible for expedited review according to the specifications authorized by 45 CFR 46.110 and 21 CFR 56.110. As Chair of the Virginia Tech Institutional Review Board, I have granted approval to the study for a period of 12 months, effective June 28, 2002.

Approval of your research by the IRB provides the appropriate review as required by federal and state laws regarding human subject research. It is your responsibility to report to the IRB any adverse reactions that can be attributed to this study.

To continue the project past the 12 month approval period, a continuing review application must be submitted (30) days prior to the anniversary of the original approval date and a summary of the project to date must be provided. My office will send you a reminder of this (60) days prior to the anniversary date.

cc:File

Departmental Reviewer: Fred Piercy HD 0416

Appendix B
Virginia Polytechnic Institute and State University
Informed Consent for Participants of
Investigative Project
***Body image: Relationship to Attachment, Body Mass Index, and Dietary Practices in
Older Adolescents.***
Investigator: Natalia Kee
Dr. Cosby Rogers
Dr. Janet Sawyers

The information provided here is to help you decide if you would like to voluntarily participate in the study listed above. You may withdraw from the study at any time without affecting your relationship with the investigator or professor teaching the class. You must be 18 years of age or older to participate.

Purpose. You are invited to participate in a study about body image satisfaction, eating behavior, and your relationships to closest family members and friends conducted by the Department of Human Development. The purpose of this study is to further our understanding of the relationship between perception of body image (physical appearance), relationships to the parents and peers, and dieting behavior in older adolescents. There has been very little research on this subject (using the measures we have included in our questionnaire) and your participation will help us gather valuable information.

Procedures. If you decide to participate in this study you will be ask to complete a questionnaire. The questionnaire consists of groups of questions relate to physical appearance, eating behaviors, relationships to the parents and peers, and demographic information. We ask that you complete the questionnaire in one sitting. The completion of the questionnaire should take you about 25 minutes.

Risks. There are no known risks involved in this study. However, in the event of any emotional distress caused by remembering unpleasant experiences, medical care or counseling is available through the Student Health Center.

Benefits. The study findings may provide information that would help counselors and psychologists to identify factors that could lead to the development body image disturbances and behavioral changes that accompany such an attitude. Also, this information may facilitate the development of different approaches in treatment options regarding negative self-image that could play a role in the development of eating disorders or depression and/or affect emotional or physical health.

Please, do not hesitate to ask any questions you may have before, during, or after the data collection. The findings from the research will be shared with you if you wish.

Anonymity and confidentiality. Every effort to preserve your anonymity will be made. All participants will be identified only by an arbitrary case number. All the information gathered will be handled and analyzed only by the primary investigator.

Approval of research. This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University, and by the Department of Human Development.

Subject's Responsibilities and permission. Having read this letter, you may decide whether to participate in this research project. If you decide to participate, the information you provide on your questionnaire will represent your agreement to participate.

Please, sign your name below if you voluntarily consent to be a part of this study with full knowledge of the purpose and nature of the research.

Signature of participant

Date

If you have any questions about this research or its conduct, you may contact:

Investigator Natalia Kee

Phone: 540-951-5019
nkee@vt.edu

Faculty Advisor Dr. Janet Sawyers

Phone: 540-231-3197
sawyers@vt.edu

Faculty Advisor Dr. Cosby Rogers

Phone: 540-231-4993
rogersco@vt.edu

Departmental reviewer Dr. Piercy

Phone: 540-231- 4794
piercy@vt.edu

Chair, IRB Research Division Dr. Moore

Phone: 540-321-4991
moored@vt.edu

Appendix C

The background questions below will be treated confidentially and will be used only to help interpret responses on the other parts of this survey instrument

Age: _____ Height: _____ Weight: _____ What is your gender: 1. Male 2. Female

Race: _____Caucasian; _____African-American; _____Asian; _____Biracial

The number of siblings in your family of origin: a). 1 b). 2 c). 3 d). 4 c) more then 5

What is the highest level of education completed by your father?

1. High school
2. Some college
3. College
4. Graduate school
5. Do not know

What is the highest level of education completed by your mother?

1. High school
2. Some college
3. College
4. Graduate school
5. Do not know

Do you have any medical condition that requires a special diet? _____Yes; _____No

	Not at all	Somewhat	Considerably
1. Have you been influenced by TV or other media to buy any of the types of products listed below that aim to enhance you body image?	1	2	3
a) High protein/vitamins bars and drinks			
b) Dietary products to lose weight			
c) Exercise equipment			
2. To what extent have you been influenced by TV or other media to engage in physical exercise to enhance your body mage?	1	2	3
3. My ideal body image is influenced by attractive People on TV or other media sources	1	2	3

This part of questionnaire asks you about satisfaction of your physical appearance

There are no right or wrong answers since students differ markedly . Please read the entire sentence across. First decide which one of the two parts of each statement best describes you; then go to that side of the statement and check whether that is just sort of true for you or really true for you. You will just choose one of the four numbers for each statement. Think about what you are like in the college environment as you read and answer each one.

REALLY TRUE FOR ME	SORT OF TRUE FOR ME			SORT OF TRUE FOR ME	REALLY TRUE FOR ME
1	2	Some students like the kind of person they are	BUT	Other students wish that they were different	3 4
1	2	Some students are not happy with the way they look	BUT	Other students are happy with the way they look	3 4
1	2	Some students are often disappointed with themselves	BUT	Other students are usually quite pleased with themselves	3 4
1	2	Some students are happy with their height and weight	BUT	Other students wish their height or weight was different	3 4
1	2	Some students usually like themselves as a person	BUT	Other students often don't like themselves as a person	3 4
1	2	Some students wish their body was different	BUT	Other students like their body the way it is	3 4

REALLY TRUE FOR ME	SORT OF TRUE FOR ME			SORT OF TRUE FOR ME	REALLY TRUE FOR ME
1	2	Some students really like the way they are leading their lives	BUT	Other students often don't like the way they are leading their lives	4
1	2	Some students like their physical appearance the way it is	BUT	Other students do not like their physical appearance	4
1	2	Some students would really rather be different	BUT	Other students are very happy being the way they are	4
1	2	Some students are often dissatisfied with themselves	BUT	Other students are usually satisfied with themselves	4
1	2	Some students feel that being good looking is important	BUT	Other students do not think that being good looking is very important	4
1	2	Some students feel appearance is not that important	BUT	Other students do feel appearance is important	4

Some of the following statements asks about your feelings about your **father and mother** or the person who has acted as your father or mother. If you have more than one person acting as your father/mother (e.g., natural and step-father/mother) answer the question for the one you feel has more influenced you.

Please, read each statement and circle the ONE number that tells how true the statement is for you

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
1. My <u>father</u> respects my feelings	1	2	3	4	5
My <u>mother</u> respects my feelings	1	2	3	4	5
2. I feel my <u>father</u> does a good job as my father	1	2	3	4	5
I feel my <u>mother</u> does a good job as my mother	1	2	3	4	5
3. I wish I would had a different <u>father</u>	1	2	3	4	5
I wish I would had a different <u>mother</u>	1	2	3	4	5
4. My <u>father</u> accepts me as I am	1	2	3	4	5
My <u>mother</u> accepts me as I am	1	2	3	4	5
5. I like to get my <u>father's</u> point of view on things I'm concerned about	1	2	3	4	5
I like to get my <u>mother's</u> point of view on things I'm concerned about	1	2	3	4	5
6. I feel it's no use letting my feelings show around my <u>father</u>	1	2	3	4	5
I feel it's no use letting my feelings show around my <u>mother</u>	1	2	3	4	5
7. My <u>father</u> can tell when I'm upset about something	1	2	3	4	5
My <u>mother</u> can tell when I'm upset about something	1	2	3	4	5

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
8. Talking over my problems with my father makes me feel ashamed or foolish	1	2	3	4	5
Talking over my problems with my mother makes me feel ashamed or foolish	1	2	3	4	5
9. My father expects too much from me	1	2	3	4	5
My mother expects too much from me	1	2	3	4	5
10. I get upset easily around my father	1	2	3	4	5
I get upset easily around my mother	1	2	3	4	5
11. I get upset a lot more than my father knows about	1	2	3	4	5
I get upset a lot more than my mother knows about	1	2	3	4	5
12. When we discuss things, my father cares about my point of view	1	2	3	4	5
When we discuss things, my mother cares about my point of view	1	2	3	4	5
13. My father trusts my judgment	1	2	3	4	5
My mother trusts my judgment	1	2	3	4	5
14. My father has his own problems, so I don't bother him with mine	1	2	3	4	5
My mother has her own problems, so I don't bother her with mine	1	2	3	4	5
15. My father helps me to understand myself better	1	2	3	4	5
My mother helps me to understand myself better	1	2	3	4	5

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
16. I tell my <u>father</u> about my problems and troubles	1	2	3	4	5
I tell my <u>mother</u> about my problems and troubles	1	2	3	4	5
17. I feel angry with my <u>father</u>	1	2	3	4	5
I feel angry with my <u>mother</u>	1	2	3	4	5
18. I don't get much attention from my <u>father</u>	1	2	3	4	5
I don't get much attention from my <u>mother</u>	1	2	3	4	5
19. My <u>father</u> helps me to talk about my difficulties	1	2	3	4	5
My <u>mother</u> helps me to talk about my difficulties	1	2	3	4	5
20. My <u>father</u> understands me	1	2	3	4	5
My <u>mother</u> understands me	1	2	3	4	5
21. When I am angry about something, my <u>father</u> tries to be understanding	1	2	3	4	5
When I am angry about something, my <u>mother</u> tries to be understanding	1	2	3	4	5
22. I trust my <u>father</u>	1	2	3	4	5
I trust my <u>mother</u>	1	2	3	4	5
23. My <u>father</u> doesn't understand what I'm going through these days	1	2	3	4	5
My <u>mother</u> doesn't understand what I'm going through these days	1	2	3	4	5
24. I can count on my <u>father</u> when I need to get something off my chest	1	2	3	4	5
I can count on my <u>mother</u> when I need to get something off my chest	1	2	3	4	5

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
25. If my father knows something is bothering me, he asks me about it	1	2	3	4	5
.If my mother knows something is bothering me, she asks me about it	1	2	3	4	5
26. My father tries to control my life	1	2	3	4	5
My mother tries to control my life	1	2	3	4	5
27. My father ignores what I have to say	1	2	3	4	5
My mother ignores what I have to say	1	2	3	4	5
28. My father treats me like a younger child	1	2	3	4	5
My mother treats me like a younger child	1	2	3	4	5

This part asks about your feelings about your relationships with your close **friends**. Please read each statement and circle the ONE number that tells how true the statement is for you

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
1. I like to get my friend's point of view on things I'm concerned about	1	2	3	4	5
2. My friends can tell when I'm upset about something	1	2	3	4	5
3. When we discuss things, my friends care about my point of view	1	2	3	4	5
4. Talking over my problems with friends makes me feel ashamed or foolish	1	2	3	4	5
5. I wish I had different friends	1	2	3	4	5
6. My friends understand me	1	2	3	4	5

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
7. My friends encourage me to talk about my difficulties	1	2	3	4	5
8. My friends accept me as I am	1	2	3	4	5
9. I feel the need to be in touch with my friends more often	1	2	3	4	5
10. My friends don't understand what I am going through these days	1	2	3	4	5
11. I feel alone or apart when I am with my friends	1	2	3	4	5
12. My friends listen to what I have to say	1	2	3	4	5
13. I feel my friends are good friends	1	2	3	4	5
14. My friends are fairly easy to talk to	1	2	3	4	5
15. When I am angry about something, my friends try to be understanding	1	2	3	4	5
16. My friends help me to understand myself better	1	2	3	4	5
17. My friends care about how I am	1	2	3	4	5
18. I feel angry with my friends	1	2	3	4	5
19. I can count on my friends when I need to get something off my chest	1	2	3	4	5
20. I trust my friends	1	2	3	4	5
21. My friends respect my feelings	1	2	3	4	5
22. I get upset a lot more than my friends know about	1	2	3	4	5
23. It seems as if my friends irritated with me for no reason	1	2	3	4	5

	Almost never or never true	Not very often true	Sometimes true	Often true	Almost always or always true
24. I can tell my friends about my problems and troubles	1	2	3	4	5
25. If my friends know something is bothering me, they ask me about it	1	2	3	4	5

We would like to ask about you and your friends a little bit more.

	Almost every day	Several times a week	Once a week	Several times a month	Less than once a month
1. How often do your friend(s) bring up the topic of food in your conversation?	1	2	3	4	5
2. How often do your friend(s) ask you about your weight ?	1	2	3	4	5
3. How many diet methods have you heard of from your friends?	1- none	2- 1-3	3- 4-6	4- 7-9	5- more than 10

Please think about your one or two best friend(s)

4. How much overweight do(es) your best friend(s) think about your current weight?	1.-overweight	2-a little overweight	3-just right	4- a little thin	5-thin
5. How often do(es) your best friend(s) think that you eat too much?	1-always eat too much	2-sometimes eat too much	3-usually eat just right	4-sometimes eat too little	5-always eat too little

6. How sure are you of your best friend's current weight?

1-100% sure 2-pretty sure 3-not very sure 4-taking a guess 5-have no idea

7. How much heavier or thinner do you think you are compare to your best friend(s)?

1-a lot heavier than my friend(s) 2-a little heavier than my friend(s) 3-about the same 4-thinner than my friend(s)
5-never compared

8. How often do(es) your best friend(s) tell you that they eat or skip breakfast?

1-skips every day 2-skips sometimes 3-eats usually 4-never skips 5-never talked about

9. How many times have you heard from your friend(s) that they avoid certain (kinds) of foods because of their high fat/calorie/energy content?

1-none 2-once 3- 2-3 times 4- 4-5 times 5-more than 6 times

10. When you are eating with your friend(s), how often does she/he comment on the amount of food you are eating?

1- always 2-often 3-sometimes 4-rarely 5-never

11. When you are eating with your friend(s), how often do(es) they comment on the amount of calories in food you are eating?

1- always 2-often 3-sometimes 4-rarely 5-never

12. How often have you been encourage to diet by your best friend(s)?

1-none 2-once 3- 2-3 times 4- 4-5 times 5- more than 6 times

13. How often have been suggested by your friend(s) to go on diet together?

1- never 2- once 3-twice 4- 3-4 times 5-more than 6 times

Please, don't give up, there is one more to go....

1. Am terrified about being overweight
2. Avoid eating when I am hungry
3. Find myself preoccupied with food
4. Have gone on eating binges where I feel I may not be able to stop
5. Cut my food into small pieces
6. Aware of the calorie content of foods I eat
7. Particularly avoid food with a high carbohydrate content (bread, rice, potatoes, etc.)
8. Feel that others would prefer if I ate more
9. Vomit after I have eaten
10. Feel extremely guilty after eating
11. Am preoccupied with a desire to be thinner
12. Think about burning up calories when I exercise
13. Other people think I'm too thin
14. Am preoccupied with the thought of having fat on my body
15. Take longer than others to eat my meals
16. Avoid foods with sugar in them
17. Eat diet foods
18. Feel that food controls my life
19. Display self-control around food
20. Feel that others pressure me to eat
21. Give too much time and thought to food
22. Feel uncomfortable after eating sweets
23. Engage in dieting behavior
24. Like my stomach to be empty
25. Have the impulse to vomit after meals
26. Enjoy trying new rich foods

Appendix D

Table 1

Description of the Independent Variables (possible range, number of items) and their Relationship with the Dependent Variable and BMI

<u>Variables</u>	<u>N</u>	<u>Range</u>	<u>Mean</u>	<u>SD</u>	<u>Items</u>	<u>Correlation w/ Dependent Variable</u>		
						<u>r_{XV}</u>	<u>BMI</u>	<u>Physical Appear.</u>
Global self-worth	507	6-24	18.59	3.40	6	.82	-.193**	.391**
Importance of Appearance	507	2-8	4.30	1.36	2	.79	-.029	.237**
Attachment to Mother	532	64-97	77.54	4.21	25	.51	.064	.117**
to Father	521	64-97	78.41	4.48	25	.55	0	.103*
to Peers	532	47-120	102.47	11.07	25	.77	-.020	-.063
Maternal Control	522	3-15	5.89	2.76	3	.75	.048	-.124**
Paternal Control	522	3-15	5.84	2.77	3	.76	.069	-.044
EAT	528	0-51	10.58	10.32	25		-.061	-.271**
Peer Influence	530	19-53	33.79	5.65	13	.59	-.220**	-.089*
Peer pressure	530	12-44	25.09	5.66	8	.70	-.061	-.162**
Media Influence	534	3-9	6.08	1.48	3	.66	-.040	-.281**

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2- tailed).

NATALIA SIRA

313 Owens Street, Apt. P-1
Blacksburg, VA 24060
Tel: (540) 951-5019
E-mail: nkee@vt.edu

EDUCATION

1998 to present

Ph D in Human Development
Virginia Polytechnic Institute & State University,
Blacksburg, VA

Dissertation: Body Image: Relationships to Attachment,
Body Mass Index and Dietary Practices among College
Students

Advisory Committee Chairs: Cosby S. Rogers
Janet Sawyers

Sept. 1975 - June 1981

M.D., Department of Medical Treatment, Uzhgorod State
University, Ukraine

*Research and teaching
Interests*

- Bioecological systemic approach to human development and behavior
- Gender differences
- Nature vs. Nurture: Influence of family and social environment on health and behavior
- Influence on Biological development on children's attachment relationships

PROFESSIONAL EXPERIENCE

August 2000 to May 2001

*Graduate Teaching Assistant, Department of Human
Development, Virginia Polytechnic Institute & State
University*

- Co-constructed and co-taught "Human Development" I: Childhood and Adolescence, HD 1004 (275 students)
- Assisted with on-line section of HD 1004, manage the web page, maintained students grades on SPSS and on Excel, assisted, supervised and advised to 5 undergraduate teaching assistants for HD 1004 class, and send announcements

- Assisted “ Special Study: Play in Development of Children”
- Led child development lab school tours and observation sessions for groups of undergraduate students for HD 1004 class

August 1999 to May 2000

Graduate Research Assistant, Department of Human Development, Virginia Polytechnic Institute & State University

- Assisted in research on Grandparents Visitations Rights, Dating Violence, Counseling and Multiculturalism searched web-based data bases, conducted library searches: Reviewed literature related to multiculturalism, domestic violence and abuse, family law
- Created EXCEL data tables, assisted with qualitative research project, analyzed data

Sept. 1997 to 2003

Animal Care Surgical Assistant, Small Animal Clinic, VA-Maryland Teaching Hospital, Blacksburg, VA

- Assisted surgical faculty during surgery, supervised graduate students in surgical procedures and techniques
- Instructor to senior veterinary students by demonstrating accepted surgical techniques and proper post- and preoperative management during and after surgical operations

Jan.1986 -Jan.1994

Anesthesiologist, Oncological regional Hospital of Transcarpathia, Uzhgorod, Ukraine

- Provided anesthesia and intensive care during and after surgical procedures; supervised and trained incoming medical residents.
- Provided specialized in-hospital training and classes for upcoming nurses in intensive care and post-operative management of oncological patients
- Provided psychotherapy for oncological patients as a part of rehabilitation
- Provided psychological consultations of clients with somatic disorders

Completed training in “ Psychoanalytical approach to human behavior and somatic disorders” Moscow, Russia, 1991-1992.

Oct.1981-Dec.1985

Anesthesiologist, Department of Anesthesiology and Rehabilitation, Research Institute of Medical Radiology Academy of Science of the USSR, Obninsk, Russia.

- “Concept of Eating Disorders- Adolescents’ View” (Graduate Research Methods Class) Virginia Tech, Va (December, 2000)
- “Concept of Eating Disorders” (Graduate Class, Advance Research Methods in Education) Virginia Tech, Va (April, 2001)
- “Body Image: Relationship to Attachment, BMI and Dietary Practices among College Students” Paper presentation, Southeastern Symposium on Child and Family Development, Quint State, (April 3-5, 2003) Auburn University, Alabama

Works in preparation

- “Body Image: Relationship to Attachment, BMI and Dietary Practices among College Students”(Article) Work in progress
- Rogers, C.S. et al. Instructor’s manual to accompany John Santrock’s Child Development. Boston, Ma:McGraw Hill. Revision in progress

