

ABSTRACT

Testing a Mediation Model of Parental Bonds, Attachment Anxiety,
Media Internalization, and Body Dissatisfaction in
a Female Adolescent and Young Adult Sample

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Body image dissatisfaction emerges disturbingly early in females, as young as age 5 for some girls. During adolescence, body dissatisfaction predicts numerous adverse outcomes, including depression, suicide attempts, and disordered eating. Lamentably, the developmental trajectory of body image dissatisfaction is unclear; the literature needs an integrative etiological model to explain how developmental risk factors interface with sociocultural pressures. I investigated the role of parent-child bonds, friendship and romantic attachment anxiety, and media internalization in promoting body dissatisfaction. I recruited females ages 12-24 from a mid-sized religious university, a small religious school grades 5-12, and four religious youth groups in a southern city to complete self-report measures. The participant sample was ethnically diverse, with approximately 40% endorsing non-White ethnic status. Results showed that mother care and father care were negatively linked to friendship attachment anxiety. Father care was negatively linked to romantic attachment anxiety. Friendship and romantic attachment anxiety were positively linked to media internalization. Media internalization was positively linked to

body image dissatisfaction. Mother care and father care were negatively, indirectly linked to body image dissatisfaction through the mediators of attachment anxiety and media internalization. Mother care made a significant, albeit small contribution to body image dissatisfaction after controlling for other variables. I interpreted the results within the framework of Cheng and Mallinckrodt (2009), who proposed that poor quality parental bonds, via the mechanisms of heightening romantic attachment anxiety and media internalization, increase body dissatisfaction. Furthermore, a modified model in which friendship attachment anxiety replaced romantic attachment anxiety provided an even better theoretical fit. My findings may help bridge a critical gap in the literature between developmental and sociocultural conceptualizations of body dissatisfaction. Additionally, my findings suggest that attachment-focused therapies may prevent and reduce media internalization and body image problems among female youth.

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Female Adolescent and Young Adult Sample

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A Dissertation

Approved by the Department of Psychology and Neuroscience

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Submitted to the Graduate Faculty of
Baylor University in Partial Fulfillment of the
Requirements for the Degree
of
Doctor of Clinical Psychology

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Accepted by the Graduate School
August 2012

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ACKNOWLEDGMENTS

I would like to thank my committee chairperson, Helen E. Benedict, Ph.D., for introducing me to attachment theory and attachment-based interventions, and mentoring me in clinical work and research. Appreciation is also due to Randal Boldt, Psy.D. for teaching me how to conceptualize psychopathology using an interpersonal and attachment framework. I would also like to thank Dr. Alexander Beaujean, Ph.D. for conducting the statistical analysis of the data, and guiding me in writing the results chapter of this paper.

Appreciation is also due to my committee members for their valuable insights and recommendations regarding this project: Jim H. Patton, Ph.D., Charles Weaver, Ph.D., Christine Limbers, Ph.D., and Gaynor Yancey, D.S.W. I would also like to thank Kara Emery, M.S. for her assistance in collecting data.

Finally, I would like to thank several of my own attachment figures, including my parents, Dr. Stephen and Sherri V. Patton, for their encouragement, empathy, and intercession during my doctoral program. Appreciation is also due to my aunt and uncle Dr. Daryl and Suellen Vanderwilt, who were instrumental in my pursuing psychology and applying to the Baylor Psy.D. program, and who model a life of stewardship that I hope to emulate. I am so grateful for your enthusiasm, unconditional love, and prayer for me. I would like to thank Dave Kopplin, Ph.D. for mentoring me both personally and professionally as I undertook this project. Lastly, I am grateful for Jenny Bickell and Sherin Paul, who laughed, cried, and persevered alongside me on this journey.

CHAPTER ONE

Introduction

Body image dissatisfaction emerges disturbingly early in females, as young as age 5 for some girls (Davison, Markey, & Birch, 2000). Body dissatisfaction often reflects distress about falling short of the thin-ideal. This thin-ideal preference, researchers argue, is so widespread among female youth as to be considered a normative part of development (Koff & Rierdan, 1991). In a study of children from diverse ethnic and socioeconomic groups (DeLeel, Hughes, Miller, Hipwell, & Theodore, 2009), 35% of girls aged 9 preferred ideal figures that were smaller than their own figures. Body dissatisfaction becomes increasingly problematic as girls enter puberty. During adolescence, body dissatisfaction rates among females rise perilously (Cooper & Goodyer, 1997). Bearman, Presnell, Martinez and Stice (2006) found that 37% of females aged 12-16 endorsed moderate to severe dissatisfaction with their bodies; 2 years later, the rate was 44%. Lamentably, body dissatisfaction persists across the lifespan, remaining prevalent amongst adults, and even elderly women (Mangweth-Matzel et al., 2006; Thomas, Khan & Abdulrahman, 2010; Wood, Becker, & Thompson, 1996).

A substantial body of cross-sectional and longitudinal research links body dissatisfaction with adverse outcomes during adolescence (Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Stice, Hayward, Cameron, Killen, & Taylor, 2000; Stice, 2001; Stice & Shaw, 2003). Foremost amongst these is disordered eating, of which body dissatisfaction is the single strongest predictor (Polivy & Herman, 2002). Body dissatisfaction increases eating pathology amongst girls of diverse socioeconomic levels

(Attie & Brooks-Gunn, 1989; Killen, Hayward, Wilson, & Taylor, 1994). In adolescent females, body dissatisfaction predicts entry onto a high risk pathway for development of recurrent eating problems (Graber et al., 1994), binge eating (Stice, Presnell, & Spangler, 2002), unhealthy weight control behaviors (Stice & Agras, 1998), emotional eating, and abnormal attitudes toward eating and weight (Johnson & Wardle, 2005). The dual-pathway model of bulimia nervosa (Stice, Nemeroff, & Shaw, 1996) implicates body dissatisfaction in the onset of bulimic symptoms via mediating pathways of dieting or negative affect (Stice & Shaw, 2002). Body dissatisfaction perpetuates eating pathology in adolescent females (Attie & Brooks-Gunn, 1989), predicting the continuation of bulimic symptoms versus remission (Stice & Agras, 1998), and predicting relapse following discharge from treatment for anorexia nervosa (Carter, Blackmore, Sutandar-Pinnock, & Woodside, 2004).

Aside from disordered eating, body dissatisfaction increases grave outcomes in female youth of diverse ethnic and cultural groups. Body dissatisfaction at age 13 predicts reported suicide attempts in Spanish, community-based females (Rodríguez-Cano, Beato-Fernández, & Llarío, 2006), and suicidal ideation in early adolescent Korean females (Kim & Kim, 2009). Bearman and Stice's (2008) *gender additive model* implicates body dissatisfaction, amongst other gender-related factors, in elevated depression rates among female teens. Depression rates are significantly higher for females than males during adolescence (Marcotte, Alain, & Gosselin, 1999), and remain comparatively higher throughout adolescence (Wichstrom, 1999). Body dissatisfaction predicts onset of major depression during adolescence (Stice et al., 2000), increases in overall negative affect (Stice & Shaw, 2003), stress, low self-esteem (Johnson & Wardle,

2005), and worsening depression in adolescent females (Eggert, Levendosky, & Klump, 2007). Body dissatisfaction is positively linked to the onset of cigarette smoking in adolescent females (Stice & Shaw, 2003), and increased incidence of bullying by peers (Fox & Farrow, 2009).

Trends in Body Dissatisfaction Literature

Though researchers have conducted hundreds of body image studies, the developmental trajectory of body dissatisfaction remains elusive (Ferguson, Winegard, & Winegard; Smolak, 2004). The unclear etiology, according to Farrell, Shafran, & Lee (2006), impedes researchers from identifying the active therapeutic ingredients of body image interventions, which yield mixed results in children and adolescents (Durkin, Paxton, & Wertheim, 2005). Glamorous, thin-ideal media images have historically been implicated in body image and eating problems among females (Dalley, Buunk, & Umit, 2009; Thompson et al., 1999). Social comparison theory (Festinger, 1954) explains this connection, proposing that individuals use prevailing social standards to evaluate themselves. It certainly follows that media consumption would precipitate body dissatisfaction, given the proliferation of digitally-altered images in today's advertisements and magazines (Kee & Farid, 2011).

Recent literature, however, challenges the notion that media exposure independently increases body image problems (Muñoz & Ferguson, 2012; Tiggemann, 2006). Ferguson, Winegard, and Winegard (2011) argued compellingly that media's effects upon body image have been inflated and overstressed. Meta-analyses indicate that the effect size for media exposure upon body dissatisfaction is small at best ($r = .14$, $r = 0.17$) (Grabe, Ward, & Hyde, 2008; Want, 2009), and possibly insignificant (Ferguson,

Winegard, & Winegard, 2011). Thin-ideal media images may actually elevate mood and precipitate fantasizing in some females (Anschutz, Engels, Becker, & Van Strien, 2009), including restrained eaters (Mills, Polivy, Herman, & Tiggeman, 2010). Thus, conceptualizing media exposure as an independent, causal agent of body dissatisfaction may offer an intuitively appealing, yet overly-simplistic explanation. Due to equivocal findings in this area, many researchers endorse a shift in focus away from media as an independent cause of body dissatisfaction.

Many researchers conceptualize body dissatisfaction from a developmental perspective (De Panfilis, Rabbaglio, Rossi, Ziti, & Maggini, 2003). Therein, body image is considered an aspect of self-concept emerging from relational transactions with caregivers during youth (Cash, Theriault, & Annis; De Panfilis, 2003; Kiang & Harter, 2006). Evidence that body dissatisfaction and eating problems are positively tied to self-criticism and low self-confidence (Beato-Fernandez, 2004; Fennig et al., 2006; Taylor et al., 1998) substantiates this perspective. Developmentally-oriented body image researchers investigate the role of parent-child relationships and interpersonal functioning in the emergence and/or perpetuation of body dissatisfaction. Attachment and interpersonal theories (Bowlby, 1982; Sullivan, 1997) underlie these lines of scientific inquiry (Abbate-Daga, Gramaglia, Amianto, Marzola, & Fassino, 2010; Meesters, Muris, Hoefnagels, & van Gemert, 2007; Perry, Silvera, Neilands, Rosenvinge, & Hanssen, 2008; Ward, Ramsay, Turnbull, Benedettini, & Treasure, 2000). A gap remains, however, between developmental and sociocultural conceptualizations of body dissatisfaction. Any successful etiological model must explain how attachment and sociocultural risk factors interface to yield body dissatisfaction.

Cheng and Mallinckrodt's (2009) Mediation Model

Cheng and Mallinckrodt (2009) address this critical gap in body image literature through their proposed dual mediation model of parental bonds, anxious attachment, media internalization, and body dissatisfaction. In this model, compromised parent-child relationships, through the mechanism of facilitating anxious attachment to romantic partners, heightens vulnerability to media internalization, thereby increasing body image dissatisfaction. These researchers integrate sociocultural and developmental perspectives by articulating how a female's attachment history and interpersonal functioning interface with ubiquitous sociocultural pressures to generate body dissatisfaction. The central idea of their model is that parent-child bonds and subsequent attachment to romantic partners play a pivotal role in determining a female's vulnerability to detrimental media content and body image problems.

Attachment theory (Bowlby, 1982), object relations theory (Fairburn, 1952) and interpersonal theory (Sullivan, 1997) underlie Cheng and Mallinckrodt's model. According to these theories, poor quality parent-child relationships yield maladaptive relational patterns and disparaging views of self and others. Bowlby (1988) proposed that a child's perceptions of caretakers crystallize over time into persistent belief systems regarding self (value, lovability) and other (responsiveness, availability, sensitivity). He referred to these schemas as dichotomously-classified (positive/negative) working models. Over time, he argued, a child's working models shape habitual attachment patterns with significant others. Attachment theory is widely endorsed by researchers and clinicians, and is now considered the prevailing, most comprehensive theory of child development (Hughes, 2007). Over the past few decades, researchers have developed classification

systems to study attachment. These have evolved from a three-category system (Hazan & Shaver, 1987), to a four-category classification system (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994), and most recently to a dimensional approach. Brennan, Clark, & Shaver's (1998) orthogonal system features two dimensions: attachment anxiety and attachment avoidance. Cheng and Mallinckrodt utilize this latter system in examining how increased attachment anxiety relates positively to body dissatisfaction (2009).

Cheng and Mallinckrodt's (2009) mediation model received preliminary support when tested with a sample of predominantly European American college women: 1) Low perceived mother/father care was linked positively to media internalization through the mediator of romantic attachment anxiety; 2) romantic attachment anxiety was linked positively to body dissatisfaction via the mediator of media internalization; and 3) low perceived parental care was inversely linked to body image dissatisfaction through dual mediators of anxious romantic attachment and media internalization. Researchers have not yet replicated these findings, nor have they tested the mediation model with a predominantly adolescent sample. Testing Cheng and Mallinckrodt's model with younger females may clarify body dissatisfaction etiology, and improve interventions for female youth.

Additionally, testing an alternate version of the mediation model featuring attachment anxiety in close friendships instead of romantic attachment anxiety could illuminate an additional etiological pathway, particularly for females who have not yet begun dating. The attachment literature suggests that both close friendships and romantic relationships take on vital attachment functions during adolescence (Ainsworth, 1989;

Allen, 2008). Therefore, I proposed that poor quality parental bonds may promote attachment anxiety in close friendships, which may then, in turn, increase liability for media internalization and subsequent body image problems in the same way that romantic attachment anxiety is hypothesized to do in the original model.

In support of testing Cheng and Mallinckrodt's (2009) mediation model with female adolescents, and testing an alternate model version, the following sections 1) discuss literature regarding links between parent-child relationships and body dissatisfaction in adolescent females; 2) discuss literature regarding the links between peer relationships and body dissatisfaction in female youth; 3) discuss literature supporting the link between media internalization and body dissatisfaction in female adolescents; and 4) summarize literature regarding links between attachment and media internalization and between parental bonds and attachment patterns to peers in adolescents. Finally, (5) I will summarize literature linking puberty and genetic factors to body dissatisfaction, as this provides an important backdrop, given the complex biological processes characterizing this developmental phase. I will conclude this literature review with a discussion of my specific hypotheses.

Parent-Child Relationships and Body Dissatisfaction in Female Youth

Poor quality parent-child relationships are positively tied to psychopathology in youth. For example, low perceived parental care is associated with emotion regulation problems in adolescents aged 11-18 (Walton & Flouri, 2009), and depression in youth ages 7-16 (Stein et al., 2000). Insecure maternal attachment is predictive of depression in adolescent females (Margolese, Markiewicz, & Doyle, 2005). Additionally, weak parent-child relationships are positively linked to body dissatisfaction and eating pathology in

youth. For example, perceived deficits in parental support predict increased body dissatisfaction in adolescents (Bearman et al., 2006). Parental bonding deficits (low care, high overprotection) predict body image problems and alexithymia in eating disordered females (De Panfilis et al., 2003). Hahn-Smith and Smith (2001) found that strong maternal identification serves a protective factor from body image problems in ethnically diverse 8-13 year old girls. Girls who aspire toward their mothers' personality traits report higher self-esteem, fewer eating problems, and lower body dissatisfaction, even if their mothers hold negative body-related attitudes. For girls endorsing low maternal identification, however, mothers' body dissatisfaction corresponds with daughters' body dissatisfaction. Therefore, a strong mother-daughter relationship may decrease vulnerability to body dissatisfaction, even if mothers model negative body-related attitudes (Hahn-Smith & Smith, 2001).

Critical parental communication and negative parenting behaviors may also increase body dissatisfaction in children and adolescents. Researchers link greater weight-related criticism from parents with reduced body esteem, lower perceived peer acceptance, and decreased perceived cognitive ability in 5-7 year old girls (Davidson & Birch, 2002). Negative perceived parenting behaviors may increase eating problems in 10-16 year olds (Meesters et al., 2007). Taken together, the literature clearly supports the notion that parent-child relationship factors play a role in the development of emotional, cognitive, and/or behavioral problems (Margolese, Markiewicz, & Doyle, 2005). However, the processes by which developmental factors may increase body dissatisfaction in youth need further clarification.

Researchers have proposed several explanations for the positive association between weak parent-child bonds and negative body image. Cooley's (1902) theory of the *looking glass self* underlies one explanation. The mirror metaphor illustrates how a child constructs an image of herself by viewing what is reflected in parental feedback. If feedback reflects a disparaging image; a child internalizes the criticism, and forms a negative self-concept (Davison & Birch, 2002). Alternately, Kearney-Cooke (2002) attributes the connection between negative parent-child relationships and body dissatisfaction to the developmental process of *identification*, whereby a child adopts her same-sex parent's values and characteristics. Therefore, parents who habitually criticize may promote body dissatisfaction in their children by modeling negativity.

Attachment theory informs several explanations of why poor quality parent-child relationships are positively tied to body image problems in females. Specifically, attachment theorists avow that emotionally unresponsive or misattuned caregivers hinder a child's awareness of his/her internal world, namely emotions and cognitions (Bowlby, 1982). Low self-awareness is thought to compromise self-concept development, inhibit autonomy, and cloud a child's understanding of herself. Researchers argue that a poorly developed sense of self, in turn, complicates the individuation process during adolescence, and heightens vulnerability to body image problems (De Panfilis et al., 2003). In support of this theory, low autonomy prospectively predicts body image problems in 9-12 year old girls (Clark & Tiggeman, 2008). Also, insecure attachment to parents, via promotion of a negative attribution style, is linked to emotional problems in youth (Margoless, Markiewicz, & Doyle, 2005). A child who develops a negative

attribution style in the context of poor attachment relationships may be vulnerable to developing negative beliefs regarding her body.

Interpersonal Relations, Peer Attachment, and Body Dissatisfaction

Cheng and Mallinckrodt (2009) proposed that anxious romantic attachment increases young adult females' vulnerability to body image dissatisfaction. The available evidence supports the applicability of this theory to adolescent females. The literature indicates that painful interpersonal experiences with both romantic partners and friends may increase body dissatisfaction during youth. Weight-related teasing, for example, is positively associated with lower body esteem, and mediates the relationship between weight status and body esteem in 5-7 year olds (Davison & Birch, 2002). In middle school girls, weight/shape-related teasing is linked positively to weight concerns (Taylor et al., 1998) and prospectively predicts bulimic tendencies and drive for thinness (Wertheim et al., 2001). Peer support deficits predict body dissatisfaction in adolescents (Bearman et al., 2006). Based upon these findings, one might surmise that appearance-related social rejection directly damages a child's body image. However, it is also important to consider a possible reciprocal relationship between a child's belief system, and her perception of social rejection.

Proponents of attachment theory believe that a child's pre-existing beliefs and expectations heavily influence how she experiences and approaches relationships (Bowlby, 1982). Girls holding negative working models of themselves and/or others may perceive appearance-related disapproval in a manner consistent with their own beliefs, thus heightening body dissatisfaction (Bowlby, 1988; Cash et al., 2004; McKinley, 1999). Supporting this attachment-based conceptualization of body dissatisfaction, insecure

attachment to peers is linked positively to body image problems (Tasca et al., 2006) and increased risk for eating disorders (Lehoux & Howe, 2007). Specifically, the insecure-preoccupied style, which features a negative working model of self coupled with a positive working model of others, is linked positively to body dissatisfaction (Abbate-Daga et al., 2010; Bartholomew & Horowitz, 1991). A central feature of the insecure-preoccupied profile is a strong need for approval. This need independently predicts body dissatisfaction in eating disordered females (Abbate-Daga et al., 2010). Proximity seeking and abandonment fears, also characteristic of insecure-preoccupied attachment, are linked to body dissatisfaction via mediating factors of neuroticism and extroversion (Eggert et al., 2007).

Media Exposure, Media Internalization, and Body Dissatisfaction

As noted earlier, the literature indicates that media exposure is not an independent cause of body dissatisfaction (Ferguson, Winegard & Winegard, 2011). However, media content may interact with pre-existing cognitive, emotional, or relational vulnerabilities to promote poor body image. For example, long-term exposure to thin-ideal magazine images predicts negative affect, body dissatisfaction, bulimic symptoms, and dieting, but only for females reporting initial body dissatisfaction, low perceived relationship support, and perceived pressure to be thin (Stice, Spangler, & Agras, 2001).

Media exposure may adversely affect certain females who are predisposed to internalizing thin-ideal media standards. Thin-ideal internalization increases problematic eating attitudes and behaviors in middle school girls (McKnight Investigators, 2003), and is predictive of body image problems in 9-12 year old girls (Clark & Tiggeman, 2008), and bulimic symptoms in late adolescent girls (Stice & Agras, 1998). Wilksh and Wade

(2009) reported favorable outcomes regarding a media literacy program that increases resistance to thin-ideal messages. Adolescents who completed this treatment reported reduced weight and shape concerns. Therefore, reducing thin-ideal internalization may prevent and decrease body image problems in female youth (Wilksh & Wade, 2009).

Unfortunately, researchers have not clarified the factors that increase thin-ideal internalization in female youth. Some researchers argue that affluent socioeconomic status or Caucasian ethnicity heighten susceptibility (Wildes & Emery, 2001). However, Snapp (2009) found thin-ideal internalization to be prevalent among low-income Latino and African-American adolescent females. Cheng and Mallinckrodt (2009) found that romantic attachment anxiety is positively linked to media internalization in young adult females. Researchers have not yet examined this relationship in younger females, nor have they investigated friendship attachment anxiety as a risk factor.

However, the available evidence suggests that peer attachment anxiety may increase media internalization in female youth. Adolescents with low perceived social support are more vulnerable to detrimental media messages than adolescents reporting adequate social support (Stice, Spangler, & Agras, 2001). Additionally, appearance-related conversations with peers mediate the relationship between media exposure and thin-ideal internalization (Clark & Tiggemann, 2007). Given the lack of prior studies in this area, researchers call for further investigation into factors predisposing youth to thin-ideal internalization (Snapp, 2009). It is especially important to conduct studies with female youth, as thin-ideal internalization emerges prior to grade 6 in some cases, and remains stable throughout grades 6-9 for girls (McKnight Investigators, 2003).

BMI and Body Dissatisfaction in Female Youth

Researchers identify body mass index (BMI) as a risk factor for negative self-concept and body dissatisfaction in youth (Davison & Birch, 2002). BMI is positively associated with body dissatisfaction in 5 year old girls (Davison et al., 2000), 8-11 year old girls (Riciardelli, McCabe, Holt, & Finemore, 2003), and middle school girls (Taylor et al., 1998). BMI prospectively predicts body image problems in 9-12 year old girls (Clark & Tiggeman, 2008) and in middle/high school adolescents (Chen & Jackson, 2009). Meesters (2007) found BMI accounted for 30% of the variance in problematic eating behaviors and attitudes in 10-16 year old girls. In a longitudinal study of 12-16 year olds, female body dissatisfaction and BMI exhibited a positive linear relationship. A girl's body esteem, therefore, declines as she moves away from thin-ideal status (Bearman et al., 2006).

However, some researchers have not found BMI to correlate with body dissatisfaction and/or eating problems. For example, Stice and Agras (1998) found that BMI did not predict disordered eating amongst 16-18 year olds. They suggest that age or pubertal status may moderate this relationship, with younger adolescents experiencing distress surrounding early weight gain and perceived discrepancies from peers. By late adolescence, they argue, the majority of peers have made gains in weight and height, thus normalizing pubertal changes. Understanding BMI's role in body dissatisfaction is important. Overweight/obesity prevalence has become alarmingly high for children and adolescents, as NHNES data from 2007-2008 reveals that 17% of children/adolescents aged 2-19 years, and 9.5% of infants and toddlers had BMIs meeting or exceeding the 95th percentile (Ogden et al., 2010). The National Center for Disease Control and

Prevention characterizes US culture as “obesogenic” in promoting excessive food intake, physical inactivity, and unhealthy diet. This creates a complicated scenario, considering mass media’s thin-ideal pressures. US children and adolescents face challenges in negotiating these contradictory forces.

Puberty and Body Dissatisfaction and Adolescent Females

Fluctuations in body dissatisfaction among adolescent females correspond to the progression and timing of puberty (Kim & Kim, 2009). Pubertal onset is marked by three overlapping endocrine events: adrenarche, gonadarche, and growth axis activation. When these complex processes are set into motion, a cascade of hormonally-induced biological changes facilitate sexual development, increasing height and weight, behavioral changes, and alterations in brain functioning and organization (Blakemore, Burnett, & Dahl, 2010). Puberty precipitates distress, researchers argue, because it moves females uncomfortably far from a thin-ideal physique (Thompson et al., 1999). Body dissatisfaction increases from early to mid-adolescence (ages 10-15), and then decreases slightly from mid to late adolescence (ages 15-17) (Kim & Kim, 2009). Rapid increases in adipose tissue during early adolescence may explain this trend; female body fat percentages rise from 23.6% to 29.3% (Vink et al., 2010). This increase, along with the development of secondary sex characteristics, may induce weight concerns, body image problems, and eating pathology (Attie & Brooks-Gunn, 1989; Kim & Kim, 2009).

Earlier pubertal onset increases eating problems (Graber et al., 1994), body dissatisfaction during adolescence, as well as greater levels of body dissatisfaction following puberty (Killen et al., 1994; Ohring et al., 2002). This may result from the positive relationship between increased adipose tissue and body dissatisfaction, given that

females with early menarche exhibit higher body fat percentages during adolescence (Vink et al., 2010). Also, females who exhibit aberrant pubertal timelines may feel alone or conspicuous. Perceived physical differences between oneself and peers intensifies body dissatisfaction for some girls (Ohring et al., 2002). McCabe and Ricciardelli (2004) found both early and late-maturing girls to be at highest risk for engaging in unhealthy weight control behaviors. Risk factors for body dissatisfaction and eating pathology vary according to developmental phase (Attie & Brooks-Gunn, 1989; Wertheim, Koerner, & Paxton, 2001). In normal weight 13 year old females, physical factors such as body fat explained the largest proportion of variance of problematic eating. Two years later, physical factors no longer accounted for eating problems; instead, psychosocial factors accounted for eating pathology (Attie & Brooks-Gunn, 1989).

Hormonal changes during puberty induce both activational and organizational effects upon the brain (Blakemore, Burnett, & Dahl, 2010) that may increase vulnerability to body image dissatisfaction among female youth. In their review, Blakemore et al. (2010) cite animal research (Sisk & Foster, 2004) that link sex steroid hormones with plasticity and reorganization of neural circuits. Hormonally-induced activation and reorganization underlie changes in attention, motivation, behavior, and sensory experiences. Sex steroid hormones are empirically linked to three outcomes during puberty: reproductive behaviors, reorganization of sensory and association brain areas, and changes to the reward-reinforcement system. These shifts are thought to heighten awareness of and motivation to acquire sexual partners (Blakemore et al., 2010). If potential male partners are perceived to prefer thin-ideal females, and if females are positively reinforced for reaching thin-ideal status, then the aforementioned

neurochemical changes may increase the salience of thin-ideal media images, and increase motivation to engage in weight-change behaviors. These shifts, in combination with outward physical development and a changing social environment, may increase vulnerability to body dissatisfaction. Culbert et al. note ovarian hormones may moderate genetic vulnerabilities to body and eating issues (2009). Other puberty-related biological factors increase problematic eating attitudes and behaviors. Examples of these factors include circadian rhythms corresponding with a preference for later bedtime (Schmidt & Randler, 2010) and impulsivity (Kemps & Wilsdon, 2010).

Sebastian, Burnett, and Blakemore (2008) assert that increased activity of the medial prefrontal cortex may potentiate vulnerabilities in self-concept such as heightened self-consciousness and increased sensitivity to others' evaluations of the self.

Adolescents activate different brain areas than adults when engaging in self-evaluation. Adults tend to utilize stored information (lateral temporal cortex) more frequently, while adolescents rely on current self-processing via the dorsal medial prefrontal cortex (Sebastian et al., 2008). As a result, the adolescent self-concept is less stable, and subject to revision based on immediate experiences. Many researchers consider body image to be a central component of self-concept (Cash, Thériault, & Annis, 2004). Therefore, elevated self-consciousness and increased sensitivity to evaluation during adolescence may not only imperil global self-concept, but may also jeopardize healthy body image.

Sebastian et al. (2008) highlight fMRI data (Burnett et al., 2009) indicating that adolescents utilize self-processing strategies when evaluating the emotional responses of others. This self-processing may perpetuate body image problems, as adolescents reflect upon their own body-related feelings to surmise how others evaluate them. Structural

and functioning imaging research indicates that during adolescence, the prefrontal cortex increasingly facilitates cognitive and emotional processes such as affect regulation, response inhibition, abstract thinking, and executive functioning (Yurgelun-Todd, 2007). Because this transition occurs relatively late during adolescence, it follows youth experiencing early physical maturation may be disadvantaged by inadequate cognitive resources/strategies to cope with upsetting bodily changes (Graber et al., 1994).

Twin studies indicate that early puberty is associated with increased genetic effects on problematic eating attitudes and behaviors. Culbert, Burt, McGue, Iacono, and Klump (2009) studied 189 MZ and 129 DZ same-sex female twin pairs ages 10-28, and found that in prepubertal twins, genetic effects were 0%, while shared and non-shared environmental effects explained 34% and 66% of the variance, respectively. In pubertal twins, however, additive genetic effects explained 60% of the variance, while non-shared environmental effects explained the remaining 40%. Developmental differences in genetic effects were only seen when secondary sex characteristics, not menarcheal status, were used to determine pubertal status.

Culbert et al. (2009) suggest genetic vulnerabilities may moderate effects of sociocultural, psychological, and biological factors associated with adolescence. Additionally, Culbert et al. argue that gene-environment interactions and active gene-environment correlations are the mechanisms by which puberty-related factors enhance genetic effects. For example, thin-ideal media messages and peer pressures become more prevalent in the social environments of adolescents. Upon encountering these environmental pressures, females who are genetically predisposed to pathological eating attitudes and behaviors may exhibit body image and/or disordered eating (gene-

environment interaction). As suggested by Culbert et al., increased autonomy during adolescence may allow teens with genetic predispositions toward body image problems to seek out environments and influences consistent with their vulnerabilities (television programs, internet content, books, appearance-related sports). These environmental influences may then intensify body image problems, and result in greater genetic effects during adolescence (active gene-environment correlation).

Overview of Proposed Study

In this study, I tested Cheng & Mallinckrodt's (2009) mediation model of parental bonds, anxious romantic attachment, media internalization, and body image dissatisfaction in a sample of adolescent and young adult females. Additionally, I tested an alternate version of the model featuring attachment anxiety to close friends. Participants completed self-report questionnaires measuring the aforementioned variables. Participants completed a separate parental bonding questionnaire for each caregiver, and reported their height and weight; this allowed me to calculate and control for BMI (Attie & Brooks-Gunn, 1989; Cheng & Mallinckrodt, 2009; Rodgers, Paxton, & Chabrol, 2009), as well as calculate BMI percentile for female participants ages 12-20. BMI percentile is the standard for assessing weight status in youth, as BMI for youth is age and sex-specific. In this study, however, weight classification was not utilized as a variable. Because BMI was strictly utilized as a covariate, and because the transformation of BMI to BMI percentile in adolescents is linear, I controlled for BMI in all participants. I calculated BMI percentile in youth ages 12-20 for descriptive purposes.

I investigated the following hypotheses (while controlling for BMI): 1) Perceived mother care and perceived father care will be negatively associated with body image

dissatisfaction; 2) perceived mother care and perceived father care will be negatively associated with attachment anxiety in friendships; 3) perceived mother care and perceived father care will be negatively associated with attachment anxiety in romantic relationships; 4) attachment anxiety in friendships will be positively associated with media internalization; 5) attachment anxiety in romantic relationships will be positively associated with media internalization; 6) attachment anxiety in friendships will mediate the inverse relationship between perceived mother/father care and media internalization; 7) attachment anxiety in romantic relationships will mediate the inverse relationship between perceived mother/father care and media internalization; 8) media internalization will mediate the positive association between attachment anxiety in friendships and body image dissatisfaction; 9) media internalization will mediate the positive association between attachment anxiety in romantic relationships and body image dissatisfaction; 10) attachment anxiety in friendships and media internalization will mediate the inverse relationship between mother/father care and body image dissatisfaction; and 11) attachment anxiety in romantic relationships and media internalization will mediate the inverse relationship between mother/father care and body image dissatisfaction.

CHAPTER TWO

Methods

Procedure

Female adolescent and young adult participants were recruited from three sources in a small southern city: (1) a private religious university's online psychology departmental research scheduling website, (2) in-person recruitment at church and community youth groups, and (3) in-person recruitment at a private religious school. In recruiting from youth groups and the private school, a member of the research lab distributed parental informed consent letters and adolescent assent forms in advance of the study. Forms clearly indicated that study participation was voluntary, and could be withdrawn at any time. Participants were paid \$3.00 as a token of appreciation for their time, and were eligible to participate in a raffle to win an Ipod Shuffle or iTunes Gift Card. Parents and students were informed that data sheets were anonymous. A member of the research lab distributed packets containing surveys and a demographic questionnaire. Survey administration took place in a group format during normal youth group or study hall time. Participants took 15 to 45 minutes to complete the surveys. A research team member remained in the room to monitor students during data collection. Non-participating students were free to engage in youth group or study hall activities as usual. Youth leaders and teachers had no access to data. Participants self-reported their height and weight to allow calculation of and control for BMI (Attie & Brooks-Gunn, 1989; Cheng & Mallinckrodt, 2009; Rodgers, Paxton, & Chabrol, 2009), as well as calculation of BMI percentile for participants ages 20 and below. In recruiting from the

on-line psychology departmental subject pool, the principal investigator posted the surveys and demographic questionnaire online, advertising the study as concerning female body image. Participants completed surveys in one sitting via the secure research website. Participants received course credit, and could withdraw at any time without penalty. The above procedures were approved by the Baylor University Institutional Review Board.

Participants

Three hundred and thirty-two online surveys were submitted via the departmental subject pool. Surveys mistakenly completed by male participants were deleted, with 279 online surveys remaining. Forty-two adolescents from youth groups and the private school completed the survey packet, totaling 321 surveys. Of these, 12 were excluded due to missing data. The 12 excluded surveys were not systematically different on any of the outcome variables than the remaining 309. The mean age of the final sample ($n = 309$) was 18.75 years ($SD = 2.08$, range 12 – 24 years). With regard to reported ethnicity, 62.14% endorsed Caucasian, 11% African American, 11% Latino/Hispanic American, 6.15% Asian American, and 9.39% multi-ethnic. With regard to educational level, 44.66% were collegiate freshman, 21.68% were collegiate sophomores, 13.92% were collegiate juniors, 6.80% were collegiate seniors, 3.88% were high school juniors, 1.62% were high school freshman, 1.29% were high school sophomores, and 0.32% were high school seniors. The remaining 5.82 % were in grades 5-8. The mean BMI of all participants was 23.40 ($SD = 4.79$). The mean BMI percentile for female participants ages 12-20 was 58.11 ($SD = 26.53$).

Measures

Parental care

The Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) is a self-report measure comprised of two subscales (Care and Overprotection). Researchers designed the PBI to gather retrospective data from adults regarding how their fathers and mothers parented them from birth to age 16. Participants endorse items separately for each parent on a 4-point Likert scale. The Care subscale (PBI-C) assesses perceived parenting styles ranging from warm and empathic to cold and indifferent. Researchers may also administer the PBI to children and adolescents to measure current perceived parenting (Gladstone & Parker, 2005); several research teams recently utilized the PBI in this manner (Hiramura et al., 2010; Walton & Flouri, 2010; Wilksch & Wade, 2009). In this study, I administered 12 PBI-C items written in the present tense to assess perceived parental bonds between each participant and her mother/father. The PBI has demonstrated good reliability and validity (Gladstone & Parker, 2005). Strong concordance rates between sibling data suggest that the PBI measures perceived parenting, as well as actual parenting (Parker, 1990). Varying levels of depression do not influence PBI scores; this indicates that scores reflect actual parenting as opposed to perceptions of parenting altered by negative affective states (Parker, 1981). The PBI has shown acceptable test-retest reliability over a 20 year study (Wilhelm, Niven, Gordon Parker, & Hadzi-Pavlovic, 2005).

Attachment Anxiety

The Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998) is a 36 item self-report measure that assesses two dimensions of attachment:

anxiety and avoidance. Researchers frequently utilize the ECR to assess adult attachment to romantic partners. The literature, however, supports both the use of the ECR with adolescents (Liu, Zhou, Yang, Chu, & Liu, 2009; Miller & Hoicowitz, 2004; Yang, Wang, Li, Teng, & Ren, 2008), and slight modifications to ECR items (replacing “partner” with “mother” or “close friends”) to assess attachment to various significant others (Kiang & Harter, 2006). In keeping with Cheng & Mallinckrodt’s study, I administered the 18 anxiety subscale items only. In keeping with prior research, I modified items to assess attachment anxiety with close friends in general, and romantic partners in general (Miller & Hoicowitz, 2004).

Media internalization

The Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ-3; Thompson et al., 2004; Smolak, Levine, & Thompson, 2001) is a 30 item questionnaire regarding awareness and attitudes toward prevailing sociocultural standards of attractiveness. This measure contains 4 subscales: *Internalization-General*, *Pressures*, *Internalization-Athlete*, and *Information*. Items are answered on a 5-point Likert scale (1=definitely disagree, 2=mostly disagree, 3=neither disagree nor agree, 4=mostly agree, 5=definitely agree). I eliminated the 9 items from the *Information* subscale, in keeping with Cheng & Mallinckrodt’s study (2009). The SATAQ-3 has excellent convergent validity, adequate construct validity (Thompson et al., 2004), and is appropriate for use with adolescents (Wilksch, Tiggemann, & Wade, 2006).

Body image dissatisfaction

The Body Shape Questionnaire (BSQ; Cooper et al., 1987) is a 34 item measure that broadly assesses body dissatisfaction by tapping both weight and non-weight related

concerns (Rosen, Jones, Ramirez, & Waxman, 1996). Respondents endorse items on a Likert scale from 1 (never) to 6 (always) based on the previous four weeks. The BSQ correlates with other indicators of body dissatisfaction, showing concurrent validity ($r = 0.66$) with the Body Dissatisfaction subscale of the Eating Disorders Inventory (EDI; Garner et al., 1983) in a female clinical sample, as well as concurrent validity ($r = 0.61$) with the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) in a non-clinical female sample (Cooper et al., 1987). Additionally, the BSQ demonstrates concurrent validity with measures of overall appearance satisfaction (Rosen et al., 1996), suggesting broad assessment of body image dysfunctions.

The BSQ demonstrated satisfactory discriminatory validity in distinguishing between women self-described as “concerned” versus “unconcerned” about shape/weight (Cooper et al., 1987). Though eating disordered females produce higher elevations on the BSQ, the overlap amongst scores of patients vs. non-patients suggests the BSQ measures severity of body dissatisfaction and not merely eating pathology (Cooper et al., 1987; Rosen et al., 1996). The BSQ has high test-retest reliability, high internal consistency ranging from 0.94 to 0.97 (Ghaderi & Scott, 2004), and good criterion validity (Rosen et al., 1996). Researchers utilize the BSQ to assess body image dissatisfaction in adolescent and adult females ages 10 and up (Kendzor, Adams, Stewart, Baillie, & Copeland, 2009; Mousa, Mashal, Al-Domi, & Jibril, 2010). The BSQ is appropriate for a wide array of cultures and ethnicities, with demonstrated reliability and validity in Swedish, American, British, and Jordanian populations (Cooper et al., 1987; Ghaderi & Scott, 2004; Mousa et al., 2010; Rosen et al., 1996).

CHAPTER THREE

Results

Missing Data

Table 1 contains the amount of missing data for each variable. Full Information Maximum Likelihood Estimation (FIML) was utilized to handle missing data. FIML is a robust method to handle missing data (Enders & Bandalos, 2001), giving unbiased parameter estimates when data is missing completely at random or missing at random (Enders, 2011).

Descriptive Analyses

The first step of data analysis was to examine the distributional properties of the study variables. Table 2 contains descriptive statistics concerning central tendency and variability for the manifest variables. Pearson correlations for the manifest variables are presented in Table 3. As expected, mother care was negatively related to friendship attachment anxiety ($r = -0.24$) and romantic attachment anxiety ($r = -0.15$). Father care was also negatively correlated with both friendship attachment anxiety ($r = -0.25$) and romantic attachment anxiety ($r = -0.16$). Mother care and father care were both negatively associated with body image dissatisfaction ($r = -0.24$; $r = -0.08$, respectively). Consistent with Cheng and Mallinckrodt's (2009) findings, mother care and father care had very weak direct relationships with media internalization.

Table 1. *Missing Items Grouped by Variable*

Survey Item	Number Missing	Percent Missing
Attachment Anxiety-Friendship		
ECR: Items 8, 10, 18	1	0.32
ECR: Item 1	3	0.97
ECR: Item 9	4	1.29
Attachment Anxiety-Romantic		
ECR: Items 2, 7, 11, 13	9	2.91
ECR: Items 1, 8, 13, 15, 16, 17	10	3.24
ECR: Items 3, 4, 5, 6, 9, 10, 12, 18	11	3.56
Father Care		
PBI: Items 2, 9, 11	1	0.32
PBI: Items 4, 6, 7, 8, 10, 12	2	0.65
PBI: Items 1, 3, 5	3	0.97
Mother Care		
PBI: Items 2-11	1	0.32
PBI: Items 1, 12	2	0.65
Media Internalization		
SATAQ: Items 4, 21	1	0.32
SATAQ: Item 1	2	0.65
Body Dissatisfaction		
BSQ: Items 9, 10, 17, 18, 23, 25, 30, 31, 33, 34	1	0.32
BSQ: Item 32	2	0.65

Note: N=309

Table 2. *Descriptive Statistics for Manifest Variables*

Variable	Mean	SD
Attachment Anxiety-Friendship	60.53	20.51
Attachment Anxiety-Romantic	67.40	20.76
Media Internalization	67.49	19.90
Father Care	27.41	7.86
Body Image Dissatisfaction	94.29	36.82
Mother Care	30.18	7.55
BMI	23.40	4.79

Table 3. *Correlations Between Manifest Variables*

Variable	1	2	3	4	5	6	7
1. Friendship Anxiety	—	0.69	0.35	-0.25	0.36	-0.24	0.02
2. Romantic Anxiety		---	0.39	-0.16	0.41	-0.15	0.05
3. Media Internalization			--	-0.01	0.72	-0.08	0.16
4. Father Care				--	-0.08	0.30	-0.07
5. Body Dissatisfaction					--	-0.24	0.37
6. Mother Care						--	0.01
7. BMI							--

Measurement Model for Testing Mediated Effects

I used Mplus Version 6 (Muthén & Muthén, 2010) for data analysis. Because of the missing data and to correct for any departures from normality, I used Mplus' MLR estimator for the confirmatory factor and path models. MLR uses Satorra and Bentler's (2001) scaled chi-square to assess model fit. As recommended by Martens (2005), I used the following indices to determine goodness of fit for the model: comparative fit index (CFI; a value of 0.95 or greater denoting adequate fit), the Tucker-Lewis index (TLI; a value of 0.95 or greater indicating adequate fit), the standardized root-mean-square residual (SRMR; a value of 0.08 or less indicating adequate fit), and the root-mean-square error of approximation (RMSEA; a value of 0.08 or less indicating adequate fit).

Item Parcels

For all variables except BMI, I created three parcels of items to serve as indicators for the latent variables (Little, Cunningham, Shahar, & Widaman, 2002). To make the parcels, I fit a one-factor item-level exploratory factor analysis and assigned the items to parcels based upon the resulting item loadings, dispersing high and low-loading items as evenly as possible throughout the three parcels. The resulting item parcels were

subsequently fit into a confirmatory measurement model, with each parcel loading onto its intended factor, and allowing all the factors to correlate. The model fit the data relatively well: CFI = 0.99; TLI = 0.99; SRMR = 0.03; RMSEA = 0.04, scaled Chi Square (120, N = 309) = 186.20, $p < .001$. As shown in Table 4, factor loadings for all 18 measured variables on their corresponding latent variables were relatively large and homogenous (within an instrument), giving further evidence that the latent variables were adequately represented by their respective indicators.

Table 5 displays correlations among the five latent variables and BMI as a single item variable that was used as a covariate for body image dissatisfaction. My first hypothesis was supported, as both mother care and father care had a negative, albeit small, relationship with body image dissatisfaction. Of note, both mother care and father care had minimal correlations with media internalization. Cheng and Mallinckrodt (2009) also found a weak relationship between these variables. The hypotheses that attachment anxiety would be positively associated with body image dissatisfaction was supported for friendship attachment anxiety ($r = 0.39$) and romantic attachment anxiety ($r = 0.37$). Hypothesis two was supported, as both mother care and father care were negatively associated with attachment anxiety in Friendships, $r = -0.27$ and -0.25 , respectively. Hypothesis three was also supported, as mother care and father care were negatively associated with attachment anxiety in romantic relationships, $r = -0.27$ and -0.25 , respectively. Hypothesis four was supported, as attachment anxiety in friendships was associated with media internalization $r = 0.39$. Hypothesis five was also supported, as attachment anxiety in romantic relationships was positively associated with media internalization, $r = 0.41$.

Table 4. *Factor Loadings for the Measurement Model*

Variable	Unstandardized Pattern Coefficient/Factor Loading	SE	Z	p	β
Attachment Anxiety-F					
Parcel 1	6.35	0.31	20.68	0.00	0.91
Parcel 2	6.72	0.30	22.29	0.00	0.90
Parcel 3	6.56	0.29	22.95	0.00	0.87
Attachment Anxiety-R					
Parcel 1	6.21	0.29	21.59	0.00	0.91
Parcel 2	7.06	0.31	22.76	0.00	0.90
Parcel 3	6.88	0.28	24.44	0.00	0.95
Media Internalization					
Parcel 1	6.47	0.24	27.42	0.00	0.96
Parcel 2	6.61	0.24	27.16	0.00	0.96
Parcel 3	6.55	0.24	27.83	0.00	0.97
Father Care					
Parcel 1	2.22	0.16	14.33	0.00	0.86
Parcel 2	2.71	0.14	19.05	0.00	0.91
Parcel 3	2.45	0.15	16.24	0.00	0.89
Body Image Dissatisfaction					
Parcel 1	12.17	0.43	28.41	0.00	0.97
Parcel 2	11.60	0.46	25.40	0.00	0.96
Parcel 3	12.81	0.42	30.75	0.00	0.98
Mother Care					
Parcel 1	2.45	0.16	15.03	0.00	0.90
Parcel 2	2.50	0.16	16.12	0.00	0.93
Parcel 3	2.28	0.15	15.17	0.00	0.88

Note: SE=standard error, Z=unstandardized loading/standard error, β = standardized factor loading/pattern coefficient

Table 5. *Correlations Among Latent Variables for the Measurement Model*

Variable	1	2	3a	3b	4	5	6
1 Mother Care	-----	0.29	-0.27	-0.19	-0.10	-0.25	
2 Father Care		-----	-0.25	-0.21	-0.04	-0.09	
3a Friendship Anxiety			-----	0.76	0.39	0.37	
3b Romantic Anxiety				-----	0.41	0.42	
4 Media Internalization					-----	0.74	
5 Body Dissatisfaction						-----	0.29
6 BMI							-----

Note: Bold, italicized values denote correlations in which the 95% confidence interval contained zero

Testing Mediation Effects

I examined the data with respect to Baron and Kenny's (1986) three prerequisite conditions for testing mediation effects. These prerequisites are that each pair of variables in the mediation model must be pairwise associated with one another; thus, the predictor variable must be linked to mediator (1), the mediator must be linked to the outcome variable (2), and the predictor variable must be linked to the outcome variable (3). Table 3 indicates that only two of three prerequisites are met for the mediation relationship involving mother care/father care, attachment anxiety, and media internalization. Mother care and father care were linked to attachment anxiety (in both friendship and romantic models), and attachment anxiety in both models was associated with media internalization. Neither mother care nor father care, however, had a relationship with media internalization in either model. Kenny, Kashy, and Bolger (1998), though, argue that the third prerequisite, (i.e., a link between the predictor and outcome variable) is not necessary to evaluate the magnitude of mediation effects. Further, Shrout and Bolger (2002) suggest that this prerequisite is unnecessary for cases in which the expanse of time between the occurrence of the independent variable and the

outcome variable is lengthy, which is the case for the present model. Thus, there appeared to be enough reason to assess for mediation.

While there are multiple ways to assess for mediation (Beaujean, 2008), I used a structural equation modeling approach because the variables of interest were measured using latent variables. Structural equation modeling allows for simultaneous equation estimation (MacKinnon, 2008). First, I tested the model using friendship attachment anxiety. Results indicated an adequate fit of the model to the data: CFI = 0.987; TLI = 0.984; SRMR = 0.041; RMSEA = 0.045, scaled Chi Square (94, N = 309) = 153.187, $p < 0.001$. Figure 1 contains the results for the structural model using friendship attachment anxiety, with standardized path coefficients. BMI was used as a covariate to control for the influence of body mass index on body image dissatisfaction. Dashed lines indicate path coefficients that were not statistically significant using an α of 0.05. Figure 1 shows that father care and mother care were negatively connected to attachment anxiety in friendships ($\beta = -0.203$, $\beta = -0.195$, respectively). Friendship attachment anxiety was positively linked to media internalization ($\beta = 0.40$), which was, in turn, positively associated with body image dissatisfaction ($\beta = 0.66$). After controlling for the two-step mediation path and for the variance in body image dissatisfaction due to body mass index, mother care still had a direct effect on body image dissatisfaction ($\beta = -0.19$), while father care did not ($\beta = 0.03$). Using the same procedure as described above, I tested the model using romantic attachment anxiety. The results produced an adequate fit of the model to the data: CFI = 0.987; TLI = 0.983; SRMR = 0.041; RMSEA = 0.046, scaled Chi Square (df=94, N = 309) = 156.051, $p < 0.001$. Figure 2 shows that only some path coefficients connecting hypothesized mediating variables were statistically

significant. Father and mother care were both negatively linked to attachment anxiety in romantic relationships ($\beta = -0.19$ and -0.12 , respectively). Romantic attachment anxiety was positively linked to media internalization ($\beta = 0.42$), which was positively linked to body image dissatisfaction ($\beta = 0.63$), while controlling for BMI. After controlling for the two-step mediation path and for the variance in body image dissatisfaction due to BMI, mother care still had a direct effect on body image dissatisfaction ($\beta = -0.19$), while father care did not ($\beta = 0.04$).

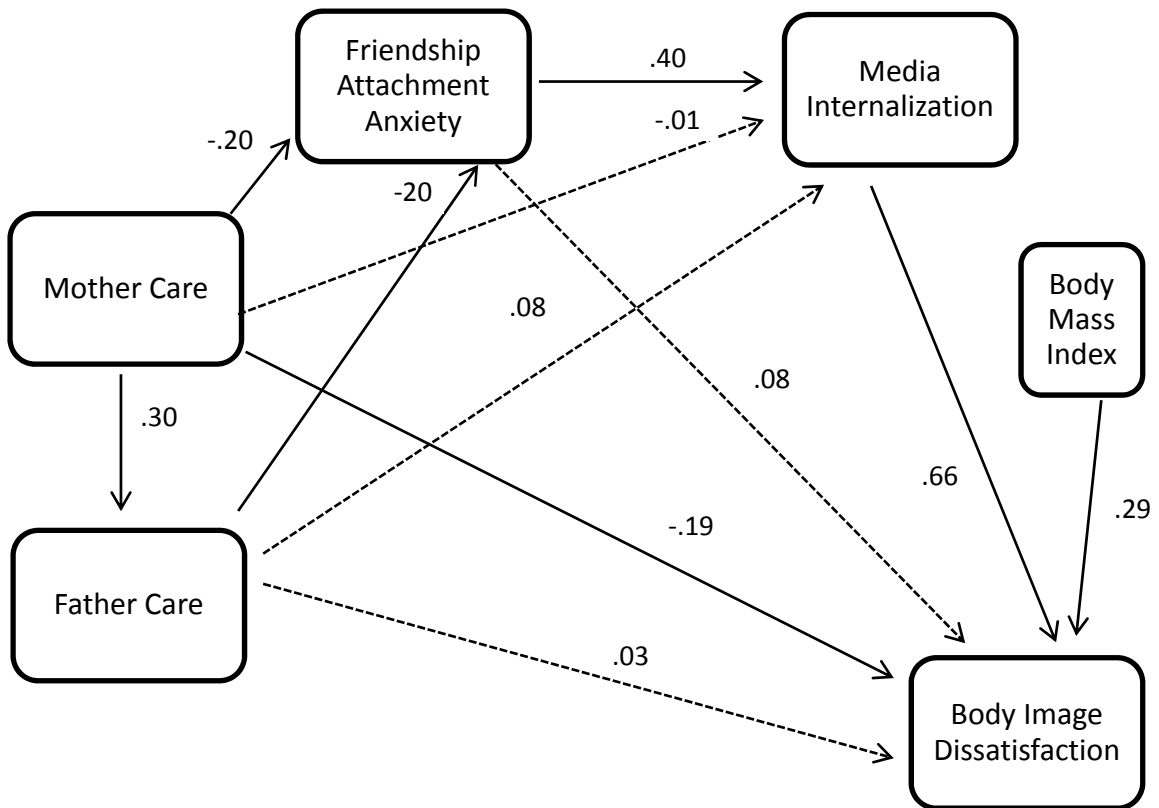


Figure 1. The structural model using friendship attachment anxiety. Dotted lines indicate paths that were not statistically significant.

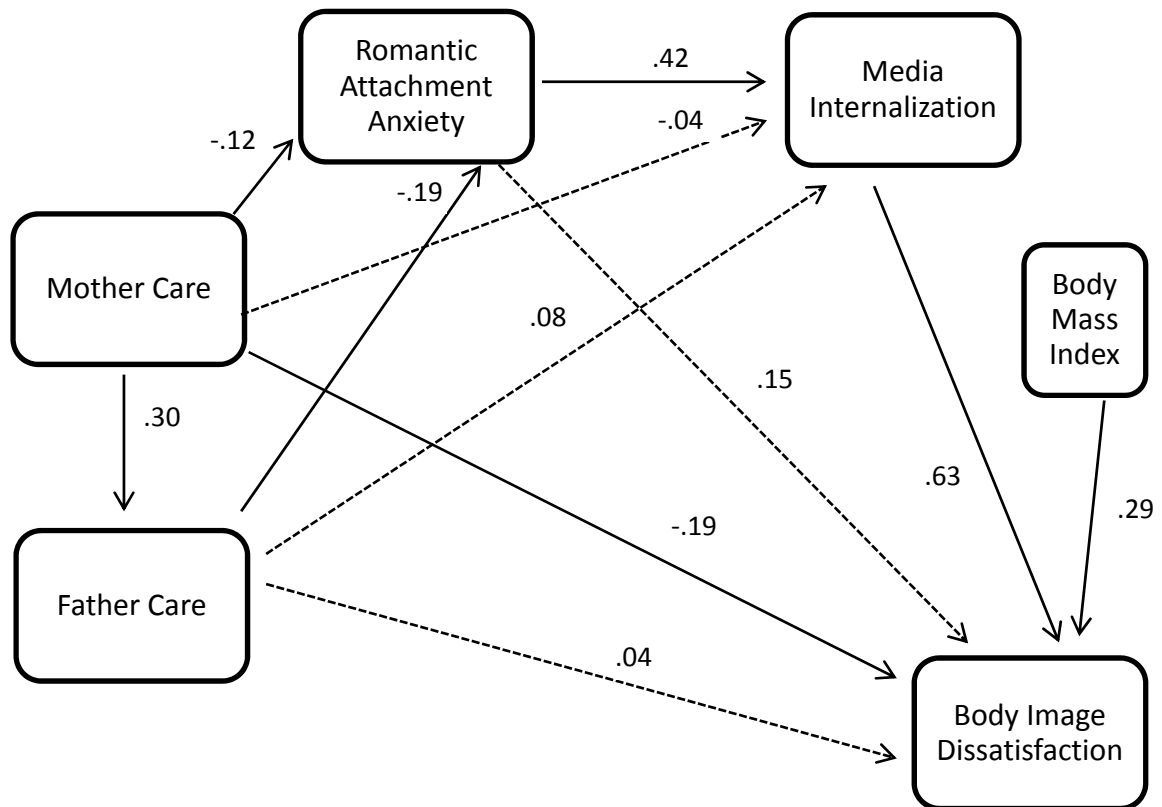


Figure 2. The structural model using romantic attachment anxiety. Dotted lines indicate paths that were not statistically significant.

Bootstrap Procedure for the Significant Level of Indirect Effects

Standard errors in mediation analyses are very difficult to compute analytically, so, instead, scholars recommend using bootstrapping techniques to estimate them (Preacher & Hayes, 2008). Table 6 contains results from the bootstrap analysis of the structural model using friendship attachment anxiety. Because the 95% confidence intervals for each of the five indirect effects exclude zero, the p -value for all five mediation effects can be considered to be less than 0.05. The first two rows of Table 6 support my sixth hypothesis, as friendship attachment anxiety was found to mediate the relationship between mother care/father care and media internalization. Row three

supports my eighth hypothesis, as media internalization was found to mediate the relationship between friendship attachment anxiety and body image dissatisfaction. Additionally, the statistically significant mediation effects of the two-stage model represented in rows four and five support my tenth hypothesis regarding attachment anxiety and media internalization both serving as mediators of parental care and body image dissatisfaction.

Table 6. *Bootstrap Analysis of Structural Model, Magnitude, and Statistical Significance of Indirect Effects using Friendship Attachment Anxiety*

Independent Variable	Mediating Variable	Dependent Variable	β (standardized path coefficient and product)	Mean Indirect Effect (b) ^a	SE of mean ^a	95% CI for mean indirect effect ^a (lower, upper)
Mother Care	Anxiety	Media Int	$-.195 \times .4 = -.078$	-.204	.072	-.367, -.077
Father Care	Anxiety	Media Int	$-.203 \times .4 = -.081$	-.237	.094	-.438, -.056
Anxiety	Media Int	BID	$.4 \times .66 = .264$.492	.08	.335, .664
Mother Care	Anxiety → Media Int	BID	$-.195 \times .4 \times .66 = -.051$	-.244	.086	-.46, -.097
Father Care	Anxiety → Media Int	BID	$-.203 \times .4 \times .66 = -.054$	-.284	.114	-.543, -.075

Note. N = 309

^a These values are based on unstandardized path coefficients.

Table 7 presents results from the bootstrap analysis of the structural model using romantic attachment anxiety. Four out of five mediation effects had confidence intervals that did not contain zero. As shown in the first row, romantic attachment anxiety did not mediate the relationship between mother care and media internalization. Thus, my seventh hypothesis was only partially supported, as romantic attachment anxiety did mediate the relationship between father care and media internalization. Hypotheses nine and eleven regarding the two-stage mediation model were supported, as romantic

attachment anxiety and media internalization together served as mediators of mother care/father care and body image dissatisfaction.

Table 7. *Bootstrap Analysis of Structural Model, Magnitude, and Statistical Significance of Indirect Effects using Romantic Attachment Anxiety*

Independent Variable	Mediating Variable	Dependent Variable	B (standardized path coefficient and product)	Mean Indirect Effect (b) ^a	SE of mean ^a	95% CI for mean indirect effect ^a (lower, upper)
Mother Care	Anxiety	Media Int	$-.12 \times .42 = -.051$	-.133	0.074	-.302, .002
Father Care	Anxiety	Media Int	$-.19 \times .42 = -.077$	-.224	0.085	-.423, -.072
Anxiety	Media Int	BID	$.42 \times .63 = .263$.493	0.081	.331, .652
Mother Care	Anxiety → Media Int	BID	$-.123 \times .42 \times .63 = -.032$	-0.244	0.086	-.46, -.097
Father Care	Anxiety → Media Int	BID	$-.185 \times .42 \times .63 = -.049$	-0.258	0.1	-.483, -.079

Note. N = 309

^a These values are based on unstandardized path coefficients.

CHAPTER FOUR

Discussion of Results, Treatment Implications, and Future Work

The foremost purpose of my study was to test a theoretical model of body dissatisfaction (Cheng & Mallinckrodt, 2009) with a primarily late adolescent sample. The model features an innovative integration of sociocultural and developmental conceptualizations of body dissatisfaction. According to this model, poor quality parental bonds increase body dissatisfaction through a double mediation process involving romantic attachment anxiety and media internalization. I also tested a modified model in which attachment anxiety in close friendships replaced romantic attachment anxiety. I surmised that friendship attachment anxiety may heighten media internalization and body dissatisfaction in the same way that romantic attachment anxiety is hypothesized to do in the original model. Overall, both models received support, though the modified model received stronger support in that all but one hypothesized relationship was statistically significant. In both models, maternal care and paternal care were each negatively linked to body dissatisfaction through a dual mediation pathway.

Direct Links between Primary Study Variables

I found strong direct relationships ($\beta = 0.63$, $\beta = 0.66$) between media internalization and body dissatisfaction in both models (Figures 1 and 2). This was anticipated, given research linking media internalization to poor body image in adolescent females (Clark & Tiggeman, 2008; Stice, Spangler, & Agras, 2001) and young adult women (Hamilton et al., 2007). Of note, the links between media internalization and body dissatisfaction in this study were substantially stronger than that found by

Cheng and Mallinckrodt (2009), who reported $\beta = 0.39$. This discrepancy may be explained by my recruitment of younger participants, whose mean age was two years below that of Cheng and Mallinckrodt's sample. In youth, reflective functioning and capacity to inhibit negative thoughts and emotions are not fully developed (Graber et al., 1994). I surmise that female youth who have internalized thin-ideal standards are less able than adults to inhibit dissatisfaction by shifting their focus, or engaging in positive self-talk. As a result, youth may endorse greater appearance-related distress than older females with superior inhibitory capabilities. Higher appearance schematicity amongst my participants could also account for the discrepancy; heavier investment in appearance-related aspects of the self promotes greater body-related distress for females who adopt thin-ideal standards (Tiggemann, 2006). Adolescent females deriving self-esteem from aspects of their self-concept unrelated to weight/shape, such as relationships, competence, and personality (Geller, Johnston, & Madsen, 1997) endorse greater body satisfaction, and are less threatened by weight/shape evaluation (Armitage, 2012).

There are other potential explanations for the comparatively stronger link between media internalization and body dissatisfaction in my study than in Cheng and Mallinckrodt's study (2009). Perhaps females in my research setting perceive greater social rejection for falling short of the thin-ideal, or greater social rewards for attaining it. Females in my sample may encounter a comparatively higher number of females meeting thin-ideal standards in their respective settings. Researchers have discovered that females in close proximity to a thin-ideal counterpart endorse greater body dissatisfaction than those in close proximity to a non-thin-ideal peer (Ferguson, Winegard, & Winegard, 2011). Therefore, encountering a greater number of thin-ideal females may generate

greater dissatisfaction for females endorsing thin-ideal standards. Finally, a greater number of females with thin-ideal body type may hold positions of power or salience in my research setting; if true, this may intensify body image dissatisfaction among females who have internalized media standards.

The focus of the present study was investigating how parent-child bonds and attachment anxiety in close friendships and dating relationships promote body image problems via direct and indirect relationships. My first hypothesis regarding direct links between perceived parental care and body dissatisfaction was partially supported; perceived maternal care, but not paternal care, was directly associated negatively with body image dissatisfaction (Table 4). After controlling for BMI, and the mediating effects of attachment anxiety and media internalization, low maternal care independently contributed to body dissatisfaction in both models (Figures 1 and 2). This confirms existing evidence that a strong mother-daughter relationship protects girls against developing a negative body image (Hahn-Smith & Smith, 2001). Additionally, these findings are consistent with research linking perceived deficits in parental support with subsequent increases in body dissatisfaction for adolescents (Bearman et al., 2006), and findings that parental bonding deficits (low care, high overprotection) predict body image problems in females (De Panfilis et al., 2003).

One explanation for the direct negative link between maternal care and body dissatisfaction is that emotionally expressive and responsive mothers are more likely to praise their daughter's physical attributes. Caring mothers may engage their daughters in appearance-related activities such as hair brushing, shopping for clothing, and help with personal hygiene; these activities provide natural opportunities to promote positive self-

image. Fathers, on the other hand, may have fewer occasions to directly shape their daughters' body image; this may explain why father care was not directly tied to body dissatisfaction. Another explanation for the direct link between maternal care and body image is that high perceived maternal care may foster a positive, global self-esteem. Researchers consider body image to be a central aspect of self-concept (Kiang & Harter, 2006). Thus, girls who form a positive overall self-concept during childhood likely develop a favorable body image therein.

Both anxious attachment to romantic partners and anxious attachment in close friendships were linked positively to body dissatisfaction. These findings are consistent with literature connecting insecure-preoccupied attachment classification to greater body dissatisfaction in female youth, given that attachment anxiety is a central feature of the insecure-preoccupied profile (Abbate-Daga et al., 2010; Eggert et al., 2007). The direct links, however, disappeared when mediators were considered, revealing indirect relationships that will be discussed in subsequent sections.

Romantic attachment anxiety and attachment anxiety in close friendships were directly and positively related to media internalization, supporting hypotheses four (Figure 1) and five (Figure 2). These findings are consistent with Cheng and Mallinckrodt's (2009) assertion that anxious attachment renders females susceptible to internalizing appearance-related media standards. Of note, the link between friendship anxiety and media internalization ($\beta = 0.40$) was equivalent with that between romantic anxiety and media internalization ($\beta = .43$). This supports my modification of Cheng and Mallinckrodt's model (2009), and indicates that anxious attachment in close female friendships may also heighten susceptibility to internalizing media ideals. This is a novel

finding, as researchers have not previously examined the relationship between anxious attachment to close friends and media internalization in adolescents. In one prior study, researchers linked greater perceived social support deficits to increased vulnerability to thin-ideal messages; my findings are consistent with this evidence (Stice, Spangler, & Agras, 2001).

The attachment literature explains how attachment anxiety might promote media internalization over time. Across the lifespan, anxious attachment patterns are connected positively to excessive dependency upon external sources of authority or influence. During infancy, insecure-ambivalent attachment (analogous to the anxious-preoccupied style in adulthood) is characterized by fearfulness, proximity-seeking, and vigilance to a caregiver's whereabouts at the expense of independent exploration (Ainsworth, Blehar, Waters, & Wall, 1978). Years later, children who were anxiously attached as infants exhibit reduced social competencies with peers (Berlin, Cassidy, & Appleyard, 2008), greater dependency, greater need for nurturance, less self-assertion, and greater reliance upon authority figures (Cassidy & Berlin, 1994). Children who carry attachment anxiety into adolescence may approach media influences in the same manner that they approach relational partners and authority figures: with submissiveness and dependency. Lacking assertiveness and autonomy, anxious attached youth may yield unquestioning allegiance to thin-ideal standards endorsed by the media.

Another explanation for the relationship between attachment anxiety and media internalization is that anxiously attached youth internalize media standards to compensate for poor social skills. Youth lacking interpersonal effectiveness may seek non-social avenues to acquire supportive relationships. Anxious teens, therefore, may adopt thin-

ideal standards to earn social approval. Anxiously attached youth may also process media in a manner that heightens internalization. For example, they may allocate greater attentional resources to thin-ideal content than to educational or otherwise enriching content. This bias may be understood as a form of preoccupation with maintaining attachment relationships. In very young children, preoccupation with attachment figures is overt. In the Strange Situation experiment, for example, insecure-ambivalent infants remain vigilant to their caregiver's whereabouts, and engage in fewer exploratory behaviors (Ainsworth, Blehar, Waters, & Wall, 1978; Cassidy & Berlin, 1994). During adolescence, attachment preoccupation may play out covertly. Insecurely attached teens, for example, may fixate upon thin-ideal content in the media if they perceive attachment security to be contingent upon adherence to these standards. This narrow attentional focus may reinforce internalized standards, and impede youth from absorbing content that might enhance other aspects of their self-concept such as creativity, competence, and interpersonal skills.

The link between anxious friendship attachment and media internalization challenges the notion that females internalize thin-ideal standards solely to become attractive sexual objects for male observers. My findings demonstrate that broader fears about rejection or abandonment in close relationships, even ones of a platonic nature, may lead young women to internalize media ideals. These results do not necessarily contradict evidence implicating female objectification in media internalization or body image dissatisfaction (Fredrickson & Roberts, 1997; Slater & Tiggemann, 2002). There is evidence that females objectify both themselves and one another (Strelan & Hargreaves, 2005). My findings suggest that anxious females are particularly aware of

this grim reality, and fear rejection by close friends if they do not meet societal standards of beauty.

Indirect Relationships between Primary Study Variables

Mother and father care were indirectly linked negatively to media internalization through the mediating pathway of friendship attachment anxiety. This finding makes a novel contribution to the literature in proposing an additional, perhaps earlier, route by which poor quality parental bonds may increase young females' susceptibility to media influences. These results suggest that compromised parent-child relationships, through the mechanism of increasing attachment anxiety in close friendships, render young women vulnerable to media internalization. Given that girls internalize media standards prior to acquiring serious romantic partners (McKnight Investigators, 2003), it is important to identify earlier pathways by which girls may become vulnerable. These findings indicate that warm relationships with both mothers and fathers, to the extent that they promote secure relationships with close friends, may shield adolescents from internalizing unattainable standards promoted by the media.

In testing the original model, I found that paternal care, but not maternal care, was indirectly linked negatively to media internalization via the mediating pathway of romantic attachment anxiety (Table 7). Given that paternal care was indirectly linked to media internalization in both the original and modified model, it appears that warm father-daughter relationships play as important a role as warm mother-daughter relationships in protecting girls from harmful media messages. These findings suggest that close father-daughter relationships, by promoting secure attachment relationships to friends and romantic partners, protect young females from harmful sociocultural

pressures. My findings also indicate that mothers and fathers may influence their daughters' susceptibility to media influence and body dissatisfaction via different pathways. Poor quality father-daughter relationships may have greater implications for the development of romantic attachment anxiety and subsequent media internalization than do poor quality mother-daughter relationships (Table 7). Mother-daughter bonds, however, may influence body dissatisfaction directly in a manner that father-daughter bonds do not (Figures 1 and 2). My findings regarding the role of father-daughter bonds are noteworthy, given that prior research has focused upon the role that mother's play in shaping attachment and body image (Hahn-Smith & Smith, 2001).

When I considered attachment anxiety as an independent variable, its positive relationship to body dissatisfaction was mediated by media internalization in both models, thus confirming hypotheses six and seven. These findings support the applicability of Cheng and Mallinckrodt's model (2009) to late adolescent females. Thus, anxious romantic attachment, to the extent that it heightens media internalization, may increase body image problems in female youth. Of note, these data also support the modified theoretical model featuring friendship attachment anxiety. Anxious attachment in close friendships, through the mechanism of promoting media internalization, may also heighten body dissatisfaction in adolescent and young adult females. This is a novel finding, as this pathway has not been previously identified. Researchers have linked compromised peer relationships to media internalization (Stice, Spangler, & Agras, 2001) and insecure attachment to body dissatisfaction in female adolescents (Abbate-Daga et al., 2010); my findings add to this literature by clarifying how interpersonal and sociocultural factors may interface to yield body image problems.

Two-Stage Mediation Model

Mother and father care were indirectly, negatively associated with body image dissatisfaction through a double mediation process (Table 7), consistent with Cheng and Mallinckrodt's 2-stage mediation model (2009). These results suggest that lower perceived warmth in caregiving relationships may increase attachment anxiety in adolescent romantic relationships, rendering females vulnerable to harmful media content. Greater media internalization, in turn, then increases body dissatisfaction. Additionally, my findings supported the double mediation process in the modified model featuring friendship attachment anxiety as a mediator (Table 6). This suggests an additional etiological pathway. Greater perceived warmth in caregiving relationships, through the mechanism of promoting secure attachment in close friendships, may deflect media influences and keep body image problems at bay. Causal relationships cannot be confirmed by my cross-sectional study. However, my findings do indicate that early parent-child bonds, by shaping recurrent interpersonal patterns with both romantic partners and close friends, may have long-term implications for a child's susceptibility to sociocultural pressures and body dissatisfaction.

Developmental psychologists assert that during adolescence, attachment needs formerly met by parents are progressively allocated to peer relationships, including close friendships and romantic partnerships. This transition involves not only greater dependency upon peers, but also a qualitatively different attachment relationship due to the steady acquisition of adult-like cognitive, emotional, and relational capabilities. The hierarchical nature of the parent-child attachment shifts to a reciprocal relationship between equal members. Moreover, attachment needs during adolescence differ from

those of childhood, as teens more likely to seek support, intimacy, and acceptance from peers than physical safety (Allen, 2008). The latter point implies that the factors which activate the adolescent attachment system differ substantially from those activating the infant attachment system.

Ubiquitous thin-ideal media content may activate an adolescent's attachment system if she perceives that failure to attain the thin-ideal will jeopardize close relationships. Securely attached teens may be less inclined to perceive media messages as threatening and/or to react by internalizing thin-ideal standards for several reasons. First, adolescents with secure attachment relationships exhibit superior social competencies and more effectively communicate their internal experiences to others than do insecurely attached youth (Berger, Jodl, Allen, McElhaney, & Kuperminc, 2005). Thus, when stressed by sociocultural pressures, secure teens effectually convey their distress to close friends, thereby eliciting sufficient support to de-activate their attachment system. Secondly, securely attached teens may dismiss media messages due to holding positive working models of self and other. Viewing themselves and others favorably, securely attached teens expect attachment figures to be responsive and unconditionally accepting of them. These positive working models may shield secure youth, preventing them from absorbing unrealistic appearance standards.

Thin-ideal media content may precipitate prolonged distress in anxiously attached teens for several reasons. First, youth with attachment anxiety often fail to convey distress in a manner that elicits emotional support (Allen, 2008). Researchers have noted that anxiously attached teens endorse comparatively more problems on self-report measures than their caregivers do on parent-report measures. This discrepancy implies

that anxiously attached youth may feel overlooked and alone when emotionally dysregulated. They may perceive caregivers to underestimate their distress. Therefore, it is conceivable that anxiously attached teens succumb to sociocultural pressures, and strive to attain the thin-ideal as a means of modulating fear. Secondly, anxious-preoccupied youth hold working models that reflect a positive view of others, and a negative view of self. These teens more readily assume the superiority of external recommendations, such as those promoted by media. Youth with a negative working model of self may eagerly seek avenues for self-improvement. Media content may offer them a (literal) model to follow in bettering themselves.

Implications for Treatment

The present study supports the utilization of attachment-focused interventions in the prevention and treatment of body dissatisfaction. Therapies that strengthen parent-child bonds, and increase attachment security may inhibit media internalization and prevent body dissatisfaction from emerging. If administered early, attachment-focused interventions may prove tremendously cost-effective in protecting youth, not only from body image problems, but from numerous other psychological problems. Attachment-focused dyadic or family therapies such as Theraplay (Bundy-Myrow, Booth, O'Connor, & Braverman, 2009), Attachment-Focused Family Therapy (Hughes, 2007), and Emotion Focused Family Therapy (Johnson & Lee, 2005) may be helpful, however; these therapies have not yet undergone rigorous testing to determine their effectiveness in alleviating body dissatisfaction. The present study suggests that systematically evaluating these interventions in the prevention and treatment of poor body image is worthwhile.

Interpersonal or attachment-focused group psychotherapies may also be helpful in reducing/preventing media internalization and body dissatisfaction. For example, Group Psychodynamic Interpersonal Psychotherapy (GPIP; Tasca, Balfour, Presniak, & Bissada, 2012) yielded a reduction in interpersonal problems amongst adult females with binge eating disorder. Adapting this intervention for adolescents may enhance attachment security amongst female youth, thereby reducing media internalization and body dissatisfaction. For younger children, Group Theraplay (Bundy-Myrow, Booth, O'Connor, & Braverman, 2009) may decrease susceptibility to body image problems by strengthening peer relationships. Researchers may also consider modifying existing cognitive-behavioral body image interventions to more heavily target negative working models underlying attachment anxiety in friendships and dating relationships.

Demographic Considerations

In interpreting these findings, it is important to consider the nature of my participant sample, which was drawn largely from a mid-sized religious university in the south, with a smaller number of adolescent participants recruited from church youth groups and a private religious school. Religious settings, to a greater degree than other settings, may promote intimate friendships through same-sex bible study, small group activities, and conservative rules regarding dating. Thus, my participants may rely more heavily upon close friendships to meet their attachment needs than do females in non-religious settings. Also, there was a higher percentage of females to males in the religious university setting from which the majority of my participants were recruited. In the absence of available romantic partners, my female participants may depend upon friendships for fulfillment of attachment needs to a greater degree than other females.

Thus, it will be important for researchers to investigate whether friendship attachment anxiety is significantly linked to media internalization and body image problems in non-religious or community settings.

My participant sample was comprised of approximately 40% ethnic minority females. Thus, my findings offer preliminary evidence that the mediation model is applicable across diverse ethnic categories. Future researchers should recruit a large, ethnically diverse sample, and investigate whether ethnicity moderates relationships between variables in the model. Researchers may also investigate other potential moderators such as socioeconomic status. The generalizability of my findings to males is limited by the fact that my sample was entirely female. Body image problems are prevalent in males (Presnell, Bearman, and Stice, 2004); thus, it would be worthwhile to replicate this study with a male sample.

Areas for Future Research

In my study, I used self-report checklists to assess friendship and romantic attachment anxiety. Future researchers may utilize the Adult Attachment Instrument (AAI; George, Kaplan, & Main, 1996), which is considered the gold standard for assessing adolescent and young adult attachment styles. With regard to assessing body dissatisfaction, I ran into considerable roadblocks in recruiting adolescent females from youth groups due to concerns that BSQ items were suggestive. A number of church pastors declined to participate in my study due to concerns that administering the BSQ to female youth would increase body dissatisfaction and unhealthy weight control behaviors among girls. While I am not aware of any literature supporting this fear, I suspect that utilizing a measure such as the Satisfaction and Dissatisfaction With Body Parts Scale

(Berscheid, Walster, & Bohrnstedt, 1973), which assesses dissatisfaction with nine body parts using a response scale ranging from 1 = extremely satisfied to 6 = extremely dissatisfied, would decrease barriers to recruitment.

My findings indicate that it would be worthwhile for researchers to conduct longitudinal studies to examine how parental bonds, attachment anxiety, media internalization, and body dissatisfaction relate over time. Ideally, multiple raters would code parent-child interactions with the Strange Situation protocol (Ainsworth et al., 1978) or Attachment Q-Sort measure (AQS; Waters, 1995) during participants' infancy. A behavioral coding system would be advantageous to researchers in allowing them to gather objective data. Also, these measures would allow researchers to calculate inter-rater reliability, and comprehensively assess parent-child interactions.

Research indicates that insecure-ambivalent attachment during infancy is positively linked, not necessarily to low parental care, but to inconsistent parental care. Also, insecure-ambivalent attachment is associated positively with parental behaviors that impede infant exploration (Cassidy & Berlin, 1994). This may explain why the associations between father/mother care and other model variables were small. Future researchers should test a modified model featuring inconsistent parental care as a variable instead of low parental care. In doing so, researchers may discover stronger relationships between variables. Future researchers should also examine how parental intrusive behaviors during infancy are related to attachment anxiety, media internalization, and body dissatisfaction.

Future researchers should incorporate genetic factors such as temperament, stress reactivity, or behavioral inhibition into the etiological model. The literature suggests that

these and other genetic factors may influence attachment relationships during early childhood. Temperamental characteristics are believed to interact with environmental factors such as caregiver warmth to shape attachment patterns in young children (Vaughn, Bost, & Ijzendoorn, 2008). Female youth with certain genetic predispositions to emotional dysregulation or dependency may be more inclined to develop attachment anxiety, and internalize media ideals in the absence of adequate caregiving. Youth with greater stress reactivity may require a higher level of emotional investment on the part of caregivers to facilitate the autonomy necessary to discount unrealistic media ideals. Also, children with greater behavioral inhibition may be more adversely affected by parental intrusive behaviors than children with less behavioral inhibition. Perhaps certain genetic liabilities must be present for anxious attachment to heighten media internalization in female youth, or for media internalization to promote body dissatisfaction. Clarifying the role of genetic factors in the etiology of body dissatisfaction may facilitate early identification of females who are at-risk for body image and eating problems.

APPENDIX

APPENDIX Survey Packet

Experiences in Close Relationships Scale---Friendships

The following 18 statements concern how you feel in **close friendships**. We are interested in how you generally experience relationships, not what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Circle the number from the list provided next to each question, using the following scale:

1	2	3	4	5	6	7
Disagree Strongly				Neutral or Mixed		Agree Strongly

1	2	3	4	5	6	7	1.	I worry about being abandoned.
1	2	3	4	5	6	7	2.	I worry a lot about my close friendships
1	2	3	4	5	6	7	3.	I worry that close friends won't care as much about me as I do about them.
1	2	3	4	5	6	7	4.	I worry a fair amount about losing my close friendships.
1	2	3	4	5	6	7	5	I often wish that my close friend's feelings for me were as strong as my feelings for him or her.
1	2	3	4	5	6	7	6.	I often want to merge completely with close friends, and this sometimes scares them away.
1	2	3	4	5	6	7	7.	I worry about being alone.
1	2	3	4	5	6	7	8.	My desire to be very close sometimes scares people away.
1	2	3	4	5	6	7	9.	I need a lot of assurance that I am loved by my close friend(s).
1	2	3	4	5	6	7	10.	Sometimes I feel that I force my close friend to show more feeling, more commitment.
1	2	3	4	5	6	7	11.	I do not often worry about being abandoned.
1	2	3	4	5	6	7	12.	If I can't get my close friend to show interest in me, I get upset or angry.
1	2	3	4	5	6	7	13.	I find that my close friends don't want to get as close as I would like.
1	2	3	4	5	6	7	14.	When I'm not involved in a close friendship, I feel somewhat anxious and insecure.
1	2	3	4	5	6	7	15.	I get frustrated when my close friend is not around as much as I would like.
1	2	3	4	5	6	7	16.	I get frustrated if my close friend is not available when I need him or her.
1	2	3	4	5	6	7	17.	When my close friend disapproves of me, I feel really bad about myself.
1	2	3	4	5	6	7	18.	I resent it when my close friend spends time away from me.

Experiences in Close Relationships Scale---Dating Relationships

The following 18 statements concern how you feel in **dating relationships**. We are interested in how you generally experience relationships, not what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Circle the number from the list provided next to each question, using the following scale:

1	2	3	4	5	6	7
Disagree						Agree
Strongly			Neutral or			Strongly
			Mixed			

1	2	3	4	5	6	7	1.	I worry about being abandoned.
1	2	3	4	5	6	7	2.	I worry a lot about my relationships.
1	2	3	4	5	6	7	3.	I worry that boyfriends/girlfriends won't care as much about me as I do about them.
1	2	3	4	5	6	7	4.	I worry a fair amount about losing my boyfriend or girlfriend.
1	2	3	4	5	6	7	5	I often wish that my boyfriend or girlfriend's feelings for me were as strong as my feelings for him or her.
1	2	3	4	5	6	7	6.	I often want to merge completely with boyfriends or girlfriends, and this sometimes scares them away.
1	2	3	4	5	6	7	7.	I worry about being alone.
1	2	3	4	5	6	7	8.	My desire to be very close sometimes scares people away.
1	2	3	4	5	6	7	9.	I need a lot of assurance that I am loved by my boyfriend or girlfriend.
1	2	3	4	5	6	7	10.	Sometimes I feel that I force my boyfriend or girlfriend to show more feeling, more commitment.
1	2	3	4	5	6	7	11.	I do not often worry about being abandoned.
1	2	3	4	5	6	7	12.	If I can't get my boyfriend or girlfriend to show interest in me, I get upset or angry.
1	2	3	4	5	6	7	13.	I find that my boyfriends or girlfriends don't want to get as close as I would like.
1	2	3	4	5	6	7	14.	When I'm not involved in a dating relationship, I feel somewhat anxious and insecure.
1	2	3	4	5	6	7	15.	I get frustrated when my boyfriend or girlfriend is not around as much as I would like.
1	2	3	4	5	6	7	16.	I get frustrated if my boyfriend or girlfriend is not available when I need him or her.
1	2	3	4	5	6	7	17.	When my boyfriend or girlfriend disapproves of me, I feel really bad about myself.
1	2	3	4	5	6	7	18.	I resent it when my boyfriend or girlfriend spends time away from me.

Sociocultural Attitudes Toward Appearance Scale-3 (SATAQ-3)

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

Definitely Disagree = 1

Mostly Disagree = 2

Neither Agree Nor Disagree = 3

Mostly Agree = 4

Definitely Agree = 5

1. I've felt pressure from TV or magazines to lose weight. _____
2. I care if my body looks like the body of people who are on TV. _____
3. I compare my body to the bodies of people who are on TV. _____
4. I feel pressure from TV or magazines to look pretty. _____
5. I would like my body to look like the models who appear in magazines. _____
6. I compare my appearance to the appearance of TV and movie stars. _____
7. I've felt pressure from TV and magazines to be thin. _____
8. I would like my body to look like the people who are in movies. _____
9. I compare my body to the bodies of people who appear in magazines. _____
10. I've felt pressure from TV or magazines to have a perfect body. _____
11. I wish I looked like the models in music videos. _____
12. I compare my appearance to the appearance of people in magazines. _____
13. I've felt pressure from TV or magazines to diet. _____
14. I wish to look as athletic as the people in magazines. _____
15. I compare my body to that of people in "good shape." _____
16. I've felt pressure from TV or magazines to exercise. _____
17. I wish I looked as athletic as sports stars. _____
18. I compare my body to that of people who are athletic. _____
19. I've felt pressure from TV or magazines to change my appearance. _____
20. I try to look like the people on TV. _____
21. I try to look like sports athletes. _____

This section asks questions about your relationship with your **father** during your childhood and adolescence. If you did not grow up with your father, you may choose another male who served in this role.

For this survey, my responses will relate to my: _____ father _____ stepfather
 _____ grandfather _____ foster father _____ adoptive father

Parental Bonding Instrument—Care subscale

This questionnaire lists various attitudes and behaviors of parents. As you think about your **FATHER**, please rate how he has treated you during your childhood and teenage years.

	0	1	2	3
	Very Like Unlike	Moderately Like	Moderately Unlike	Very
1. Speaks to me in a warm and friendly voice.	0	1	2	3
2. Does not help me as much as I need.	0	1	2	3
3. Appears to understand my problems and worries.	0	1	2	3
4. Seems emotionally cold to me.	0	1	2	3
5. Is affectionate to me.	0	1	2	3
6. Enjoys talking things over with me.	0	1	2	3
7. Frequently smiles at me.	0	1	2	3
8. Does not seem to understand what I need or want.	0	1	2	3
9. Makes me feel I'm not wanted.	0	1	2	3
10. Cannot make me feel better when I'm upset.	0	1	2	3
11. Does not talk with me very much.	0	1	2	3
12. Does not praise me.	0	1	2	3

This section asks questions about your relationship with your **mother** during your childhood and adolescence. If you did not grow up with your mother, you may choose another female who served in this role.

For this survey, my responses will relate to my: _____mother _____step-mother
 _____grandmother _____foster mother _____adoptive mother _____other

Parental Bonding Instrument—Care subscale

This questionnaire lists various attitudes and behaviors of parents. As you think about your **MOTHER**, please rate how she has treated you during your childhood and teenage years.

0	1	2	3
Very Like Unlike	Moderately Like	Moderately Unlike	Very

1. Speaks to me in a warm and friendly voice.	0	1	2	3
2. Does not help me as much as I needed.	0	1	2	3
3. Appears to understand my problems and worries.	0	1	2	3
4. Seems emotionally cold to me.	0	1	2	3
5. Is affectionate to me.	0	1	2	3
6. Enjoys talking things over with me.	0	1	2	3
7. Frequently smiles at me.	0	1	2	3
8. Does not seem to understand what I need or want.	0	1	2	3
9. Makes me feel I'm not wanted.	0	1	2	3
10. Cannot make me feel better when I am upset.	0	1	2	3
11. Does not talk with me very much.	0	1	2	3
12. Does not praise me.	0	1	2	3

BSQ-34

We should like to know how you have been feeling about your appearance over the **PAST FOUR WEEKS**. Please read each question and circle the appropriate number to the right. Please answer all the questions.

	Never		Rarely		Sometimes		Often		Very often		Always
1. Has feeling bored made you brood about your shape?	1		2		3		4		5		6
2. Have you been so worried about your shape that you have been feeling you ought to diet?	1		2		3		4		5		6
3. Have you thought that your thighs, hips or bottom are too large for the rest of you?	1		2		3		4		5		6
4. Have you been afraid that you might become fat (or fatter)?	1		2		3		4		5		6
5. Have you worried about your flesh being not firm enough?	1		2		3		4		5		6
6. Has feeling full (e.g. after eating a large meal) made you feel fat?	1		2		3		4		5		6
7. Have you felt so bad about your shape that you have cried?	1		2		3		4		5		6
8. Have you avoided running because your flesh might wobble?	1		2		3		4		5		6
9. Has being with thin women made you feel self-conscious about your shape?	1		2		3		4		5		6
10. Have you worried about your thighs spreading out when sitting down?	1		2		3		4		5		6
11. Has eating even a small amount of food made you feel fat?	1		2		3		4		5		6
12. Have you noticed the shape of other women and felt that your own shape compared unfavourably?	1		2		3		4		5		6
13. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)?	1		2		3		4		5		6
14. Has being naked, such as when taking a bath, made you feel fat?	1		2		3		4		5		6

	Never		Rarely		Sometimes		Often		Very often		Always
15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?	1		2		3		4		5		6
16. Have you imagined cutting off fleshy areas of your body?	1		2		3		4		5		6
19. Have you felt excessively large and rounded?	1		2		3		4		5		6
20. Have you felt ashamed of your body?	1		2		3		4		5		6
21. Has worry about your shape made you diet?	1		2		3		4		5		6
22. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?	1		2		3		4		5		6
23. Have you thought that you are in the shape you are because you lack self-control?	1		2		3		4		5		6
24. Have you worried about other people seeing rolls of fat around your waist or stomach?	1		2		3		4		5		6
25. Have you felt that it is not fair that other women are thinner than you?	1		2		3		4		5		6
26. Have you vomited in order to feel thinner?	1		2		3		4		5		6
27. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)?	1		2		3		4		5		6
28. Have you worried about your flesh being dimply?	1		2		3		4		5		6
29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?	1		2		3		4		5		6
30. Have you pinched areas of your body to see how much fat there is?	1		2		3		4		5		6
31. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?	1		2		3		4		5		6
32. Have you taken laxatives in order to feel thinner?	1		2		3		4		5		6
33. Have you been particularly self-conscious about your shape when in the company of other people?	1		2		3		4		5		6

34. Has worry about your shape made you feel you ought to exercise?

1 2 3 4 5 6

Demographic Form

****Please do not put your name on this or any of the following questionnaires****

1. Please **circle** your gender: Male Female

2. Please **Write** Your Age _____

3. Please **Write** Your Grade in School _____

4. Please **Write** Your Weight _____ (lbs)

5. Please **Write** Your Height _____ (ft) _____ (inches)

6. Please **Write** Your Religious Affiliation _____

7. Please **circle** how often you attend religious activities:

Never

Rarely

Once or twice a month

Once a week

Several times a week

8. How important is your religion to you? Please **circle one**:

Very Important

Moderately Important

Somewhat Important

Not Very Important

Not Important at All

9. Please **circle** your ethnicity (you may circle more than one):

Caucasian (white) American

Black or African American

Native American

Asian American

Hawaiian or Pacific Islander

Latino/Hispanic American

8. Please **circle** your relationship status right now:

Single

In a dating relationship (If so, how long? _____)

Engaged

Married

Separated

Divorced

9. Please **circle** the family situation that best fits your home life growing up:

Living with both biological parents

Living with one biological parent (if so, which one? Dad _____ mom _____)

Living with biological mom and a step parent

Living with biological dad and a step parent

Living with adoptive parents

Living with foster parents

Living with other family members (if so, which ones? _____)

10. Please **circle** how would you describe your grades in school during the past 12 months:

Mostly A's

Mostly B's

Mostly C's

Mostly D's

Mostly F's

Not sure

11. Please **circle** how far your mom (or female head of your household) went in her education.

Elementary or junior high school

High school

Some college or technical school

Graduated from a 2-year college or technical school

Graduated from a 4-year university

Received a master's degree

Professional degree (Ph.D., M.D., law degree, etc)

12. Please **circle** how far your father(or male head of your household) went in his education.

Elementary or junior high school

High school

Some college or technical school

Graduated from a 2-year college or technical school

Graduated from a 4-year university

Received a master's degree

Professional degree (Ph.D., M.D., law degree, etc)

13. Do you qualify for free or low-cost lunch at school? Please **circle**:

Yes

No

Not Sure

14. Does your family receive public assistance (Welfare, food stamps) or other types of assistance? Please **circle**.

Yes

No

Not sure

15. During the school year, how many hours a week do you work for pay? Please **circle**:

None

5-9 hours

10-20 hours

20 or more hours

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