

ATTACHMENT STYLES OF EMERGING ADULTS AND PARENTS, BMI,  
ENCOURAGEMENT TO DIET, OVER-EATING OR EMOTIONAL-UNDEREATING  
RESPONSE

By

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ABSTRACT

The purpose of this study is to determine the impact of attachment on parents' and students' BMI, encouragement to diet on their emerging adult children and if this relationship impacts the emotional over-eating or under-eating response. Existing literature indicates that secure attachment styles foster a strong sense of individual self that can serve as protective factors against external stimuli. Insecure attachment styles (anxious and avoidant) require individuals to rely on external regulation strategies due to negative views of self. Not studied is how parents' attachment style impacts their BMI and conversations surrounding weight related topics such as encouragement to diet as well as the impact this conversation has on emotional over-eating or under-eating behaviors employed by their children past childhood into adolescence. To address this gap in the literature, the researcher used a path analysis of regressions to determine the interaction between secure attachment styles of the mother and father on their BMI and dieting behaviors individually, and the impact of this relationship on each parents' encouragement to diet. From here, the impact this relationship had on emerging adults when looking at the emotional over-eating or emotional-undereating outcomes.



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OR EMOTIONAL-UNDEREATING RESPONSE

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## CHAPTER 1: INTRODUCTION

Environment has a profound impact on the way human beings interact with the world around them and make meaning. A person's environment is multifaceted and consists of both societal messages and interactions with family. In the United States, societal messages surrounding weight and expectations vary for male and female emerging adults. Emerging adulthood ranges from 18 to 29 though both males and females desire to change their weight and shape during this time to fit a societal ideal, leading to misperceptions (Bearman et al., 2006; Al Sabbah et al., 2009; Arnett et al., 2014). Body weight misperception is common across both men and women outside of adolescence in healthy and overweight categories (Yongwen et al., 2014). For males, emerging adulthood is categorized by increasing muscle mass and shoulder width, taking them closer to the ideal body image, but for females, this time is categorized by bodily changes that take them away from the unrealistic thin body (Cash & Smolack, 2011; Ricciardelli & McCabe, 2011; Palmeroni et al., 2020). The ability to achieve this ideal body type (e.g., “being thin”) informed the perceptions people created of themselves through their weight, impacting the conversations and behaviors employed, specifically surrounding diet choices and view of weight (Patrik & Nicklas, 2004; Marques et al., 2017). Individuals strove for the thin ideal prior to emerging adulthood and children in middle school expressed the most satisfaction when they were underweight and dissatisfaction when they were normal weight (Makinen et al., 2012). A few large-scale longitudinal studies examined long-term body image development demonstrated that most adolescence experienced a dramatic increase in negative body image in early adolescence (Bucchianeri et al., 2013; Eisenberg et al., 2006; Frisén et al., 2015) and maintained their negative body image throughout adolescence and into emerging adulthood

(Frisén et al., 2015; Rogers et al., 2018). Body image in emerging adulthood tended to remain stable throughout life (Grogan, 2017; Gattario & Frisen, 2018).

### **Alternative Explanation: Attachment Theory**

The psychological underpinnings that surround the impact of the thin ideal and weight fixation on individuals are still unclear. One possible explanation are people's attachment styles. Attachment styles began in infancy with how newborns relate to a primary caregiver and apply across life stages to how emerging adolescents and adults relate to others in their life (Bowlby, 1973; Bowlby, 1980; Holmes, 2014). Attachment styles serve as a foundation for understanding relational aspects of individuals and are determined through consideration of a person's view of both themselves and others (Feeny, 2016). A secure attachment style is seen when an individual has a positive sense of self and others which contributes to a positive body image and perception of weight (Feeney, 2016; Holmes, 2014). An anxious attachment style is when someone has a negative view of self and a positive view of others, avoidant attachment styles are categorized by a positive sense of self and a negative view of others and fearful is a negative sense of self and others (Feeney, 2016; Holmes, 2014). The intersection between attachment styles of parents and the impact of this on their weight perception independent of their view of their children's was a facet of the literature that had not been explored. Expanding on this relationship and impact on parents' encouragement to diet and the subsequent impact on eating behaviors such as emotional over or undereating.

Attachment theory is viewed an internal working model of self, an individual's perception of being accepted by their primary attachment figures, and a working model of others as affecting emotional and behavioral reactions and future social interactions and relationships (Hintsanen et al., 2010; Levy et al., 1998; Feeney, 2016). Acceptance by a primary caregiver can

be seen across multiple aspects of a person's life and one area of interest is in a person's perception of their weight and how eating behaviors are discussed between a caregiver and child and how attachment impacts this conversation. Parents influence their children's eating behaviors in a few ways; through the foods they make accessible as well as by their own eating behaviors (Scaglioni et al., 2008; Clifford et al., 2015). When looking at the experience of adolescent girls in elementary and middle school, insecurely attached females were more likely to express weight concerns than securely attached females highlighting a connection between attachment and disordered eating implementation (Sharpe et al., 1998). In general, children are seen to replicate the attachment styles of their parents (Levy et al., 1998). Parents of secure children are seen as responsive and sensitive to the needs of the children, parents of avoidant children are often rejecting and tend to withdraw from children when their children are distressed and parents of anxious children are more self-preoccupied and tend to be more attentive to their own anxiety as opposed to children's needs (Levy et al., 1998). Parents' impact on eating behaviors and parents' impact on attachment styles have both been studied independently and this study aims to bridge this gap in addition to looking at outcomes in children's eating habits and relationships between BWP and attachment styles.

Societal messages that surround the unrealistic thin ideal and body weight happened during a time in the United States when obesity levels are steadily increasing (Dorsey, Eberhardt, Ogden, 2009; Chooi et al., 2019) Negative perceptions of self that adolescents bring with them to emerging adulthood are furthered or diminished depending on discussions and messages conveyed by parents (Grogan, 2017; Clifford et al., 2015). Parents played a direct role in children's eating patterns through their behaviors, attitudes, and feeding styles as well as their perception of weight (Patrik & Nicklas, 2004). This included not only the way parents discuss

food, eating patterns and weight, but also in the food that parents made available (Patrik & Nicklas, 2004; Clifford et al., 2015). Discussions that centered on eating behaviors lead to positive relationships with food and facilitated distorted views and relationships with food as well (Tylka et al., 2015; Marques et al., 2017). When conversations around food consumption also include conversations around dieting simultaneously, anxiety about food rose for children that was reflected in the child's negative image of themselves (Tylka et al., 2015). These conversations impacted not only the children but also the parents experience with each other's dieting and weight experience (Ventura & Birch, 2008) BWP impacts the ways that individuals not only talk about weight, but also associated factors such as dieting and food consumption (Marques et al., 2017). Encouragement to diet has been a strong predictor in children's and adolescents subsequent dieting behaviors, a relationship seen more prominently in the literature when looking at the mother daughter relationship (Balatekin, 2019). Emotional overeating has been a risk for obesity later in life and emotional undereating has been viewed as a protective factor that when left unaddressed can turn into disordered eating patterns (Herle et al., 2017). Emotional over and under eating are influenced by the environment more than genetics (Herle et al., 2017). Understanding the specific aspects of the environment as well as what personal factors impacted this relationship and informed the understanding of parent child dynamics was paramount to this study.

### **Purpose**

The purpose of this article was to explore the relationship between parents and emerging adults' attachment styles and the impact on their BMI, encouragement to diet with an emerging adolescent population and how the attachment styles of the triad impacted their emotional over or under eating behaviors in response to parental diet encouragement. By conducting this study,

we were able to provide insight into this population's experiences because the literature focused primarily on children and adolescents when looking at dieting and weight perception. It is anticipated that a strong relationship will exist between secure attachment styles and lower BMI's, lower levels of maternal and paternal encouragement to diet, and lower emotional overeating or undereating behaviors. This relationship is anticipated for secure attachment styles for emerging adolescents, mothers, and fathers.

## CHAPTER 2: LITERATURE REVIEW

Health entailed various aspects of a person's physical, mental, and societal well-being and is not merely the absence of disease (Callahan, 1973). Increased prevalence of obesity diagnoses in the United States contributed to the concern of both researchers and healthcare professionals of the factors that surrounded the adverse health outcomes (Daniels, 2009; Chooi et al., 2019). Simultaneously, there have been increases in the perceived importance and desire toward the thin ideal, which contributed to the presence of disordered eating behaviors over the past few decades (Tylka et al., 2015; Palmeroni et al., 2020). How these two trends exist and the implications to overall health required a systemic examination of BMI, weight perception and eating behaviors. Society perpetuates the thin ideal ideology, which the family unit can further or minimize through modeling behaviors and parents' discussions surrounding their own weight and their children's weight. Both mothers' and fathers' own perceptions of self and others impact their children's subsequent development of these schemas for themselves. Understanding that relationship will further understand children's attachment to the resulting emotional over or under eating behaviors.

### **Attachment Styles**

Much of the relationships between body weight perception, BMI, encouragement to diet and emotional under and overeating can be understood through the utilization of attachment theory. This theory that was established by John Bowlby to explain how parents and children relate to each other (Bowlby, 1979; Ainsworth, 2010). This theory posited that a framework is developed by people to understand the world around them and this guides how they respond to others and perceive security and safety in their world as well as how they perceive themselves. One way this security and safety are established is through proximity to loved ones, both



emotionally and physically (Holmes, 2014). Ainsworth built on this understanding of security through the “strange situation”, which looked at how a parent’s response impacted the behavioral and emotional response from the child (Ainsworth et al.,1971). When an individual does not feel this trust and security, they may feel they cannot get close to the individual or see them as untrustworthy. In an insecure attachment, this insecurity can be seen in unavailability of a caregiver, which leads to the individual feeling abandoned or rejected and not allowing them to trust in how they engage with the world. Those who have a secure attachment can engage with confidence as they trust their base will be available should they need to rely on others in times of distress (Holmes, 2014). Attachment styles persisted from childhood into adulthood, highlighting a continued influence on the ways that individuals saw themselves and interact with others (Kim et al., 2021).

### **Attachment and Weight Perception**

Attachment styles where the individual is securely attached moderated the effects of negative experiences and criticism through a positive view of self and others. Those who are avoidant, anxiously, or fearfully attached experienced more impacts from negative experiences and perceived encouragement to diet from parents as criticism and turned to external mechanisms such as emotional over and under eating (Holmes, 2014). Attachment styles moderated the impact of encouragement to diet and the resulting emotional over and under eating behaviors (Holmes, 2014). Families where the parents had avoidant or anxious attachment styles were also more likely to have children with similar attachment styles, but this is not always the case (Bretherton, 1985). Children with avoidant or anxious attachment styles were more likely to feel the negative effects of encouragement to diet both when they saw it societally and within the family system. Insecurely attached children did not see the family as a safe base to which they

can turn to when confronted with messages about weight (Bjorklund et al., 2018; Holmes, 2014). In response to this, children felt the effects of encouragement to diet more severely and this resulted in increased presence of emotional over or under eating as a form of emotional self-regulation. Parents with a secure attachment were more likely to model this and were more likely to turn to the family in times of distress when conversations that surrounded weight arose, whether in the media or family unit (Bjorklund et al., 2018; Holmes, 2014). Securely attached individuals knew they can turn to family and internally regulate their emotions. Internal regulation minimized impacts when conversations surrounding encouragement to diet arose and resulted in less behaviors surrounding emotional over and undereating. Attachment styles, both for the parents and children, inflated or decreased the effects of external forces on sense of self. Parents who were anxiously or avoidantly attached had larger discrepancies in their ability to perceive their BMI, encourage dieting more for themselves and others and have children more likely to engage in emotional over and under eating behaviors. Parents' perceptions of weight related concepts, such as BMI, furthers understanding of how conversations are being had around these topics both as a society and between parents and children.

### **BMI Use and Implications**

Increased societal fascination with weight and weight management over the last two decades have led to the fascination of the thin ideal and obesity levels have consistently increased (Schaefer et al., 2019; Chooi et al., 2019). With the thin ideal came the societal correlation of health with thinness and perceptions of weight aided in what was understood to have contributed to this and the impact. BMI was one way people determined health through weight when a scale was used to determine where in a weight range based on gender, age and race, someone fell when compared to those who shared their same race and gender (Daniels,

2009; Weir & Jan, 2019). BMI was determined by taking a person's weight in kilograms over the person's height in meters squared (Weir & Jan, 2019). BMI was most used in medical settings when determinations were made surrounding potential obesity concerns or when health concerns and implications that were associated with this diagnosis needed to be addressed. (Daniels, 2009). Obesity had become a public health problem with approximately one third of adults in the United States categorized in the obese category according to BMI (Dorsey, Eberhardt, Ogden, 2009; Chooi et al., 2019). Married adults were found to impact each others experience with weight and weight related topics (Bove & Sobal, 2011) The BMI scale had four levels of classifications: underweight, healthy weight, overweight and obese. Utilization of BMI percentiles had been found to be clinically useful when the increased presence of body fat was assessed (Daniels, 2009). Unexplored were the moderating factors for determinations of perception of BMI versus actual BMI. Factors that influenced this relationship informed the implications for inaccurately perceiving one's BMI and how these impacted discussions surrounding weight, encouragement to diet, emotional over and under eating and attachment styles.

### **BMI Limits and Contraindications**

BMI had been used as a classification system with benefits for categorizing weight and offering comparison points. It had been used as a screening tool for obesity in children and adults. The BMI classification and cut off points were designed around and designated for White, Black and Hispanic populations and had not been calibrated to account for weight and body differences for other groups (Weir & Jan, 2019). One such group were those of Asian descent, who had a history of comorbidities due to obesity at lower BMI thresholds (Daniels, 2009). BMI also did not account for individual variations, as weight for BMI did not distinguish between fat

and muscle when classification was determined (Kittiskulnam et al., 2019). For this reason, BMI was not recommended to be the sole determination of health status of an individual. (Weir & Jan, 2019). Whether an individual was at a healthy weight, overweight or underweight their ability to correctly perceive this ratio was not accurate and was influenced by a variety of sociocultural factors (Dorsey, Eberhardt, Ogden, 2009).

### **Health and Weight Perceptions**

Body weight perception (BWP) has broad implications both individually and relationally. BWP was defined as the way a person views their weight when looking at their weight status (Marques et al., 2017). Societal expectations and messages influence this, which led to weight misperception (Palmeroni et al., 2020). An accurate perception of one's own weight is important when it came to maintenance of an appropriate weight. Osborn et al. (2015) looked specifically at emerging adults in college and their weight misperceptions and outcomes. Emerging adults were found to have body weight misperceptions that affected multiple health risk behaviors for both those who over and underestimated their perceptions (Yongwen et al., 2014). Some of these health risk behaviors included dieting and physical activity, such as trying to lose weight and fasting or using dieting pills to lose weight. BWP impacted the ways that individuals not only talked about weight, but also associated factors such as dieting and food consumption (Marques et al., 2017).

Body weight misperception was common across both men and women outside of adolescents in healthy and overweight categories (Yongwen et al., 2014). Attempts at dieting and weight loss behaviors to address the perceived health over or underestimates were found in the literature to be engaged majorly by women (Fleary & Ettienne, 2014). Mothers engaged in weight talk that focused on weight loss with children led to increases in dieting behaviors

because of the conversation. Conversations that pertained to weight talk from fathers led to less weight loss behaviors with their female children, though it contributed to negative views of self for the female child when conversations surrounded weight loss (Yourell et al., 2021; Neumark-Sztainer, 2010). The literature on the father's impact of weight talk remained under-represented in the research and very little existed that surrounded the impact of weight talk on male children (Yourell et al., 2021; Ackard et al., 2006). Body weight perception was also influenced by other relational facets such as peers' perception of the students' weight (Ackard et al., 2006). Relational factors that society, parents, and peers addressed impacted views of weight perceptions and furthered how various approaches to conversations with children when it comes to dieting and weight conversations were had.

### **Weight Misperception**

Societal messages informed individual understanding of the relationship between weight and health, which caused misinformation and misperceptions to arise. Weight misperception is the incorrect self-assessment of a person's weight (Dorsey, Eberhardt, Ogden, 2009). This is self-assessed and based on an individual's experience with weight discussions and weight perception. Misidentification of weight status led to higher or misinformed body satisfaction, which impacted how people discuss weight, weight loss and dieting (Fleary & Ettienne, 2014). The ability for men and women in the United States to accurately perceive their weight is skewed, and women, on average, tended to overestimate their weight and men underestimated their weight (Chang & Christakis, 2003; Jaworowska & Bazylak, 2009). The difference in perception contributed to how mothers and fathers approached conversations surrounding weight talk (Klein et al., 2016). Numerous factors, which included gender, age, marital status, race, income, and education, were independently associated with the self-evaluation of weight status. Weight

misperception can be found in those who were overweight and underweight who perceived themselves to be in the healthy weight category (Fleary & Ettienne, 2014). The ability to perceive weight and status based on BMI classifications of healthy weight, overweight and obese varied based on other variables outside of gender, those being socioeconomic status, education level, and race, with weight misperception being higher in racial and ethnic minorities when compared to white, non-Hispanic individuals (Dorsey, Eberhardt, Ogden, 2009). Parents perception both of their body weight and their children's body weight were also impacted by race and education level when the connection between inactivity and overeating was understood, which led to increased likelihoods of adverse health outcomes (Fleary & Ettienne, 2014). Attitudes that black women hold surrounding body weight perceptions differed and highlighted that black women were more likely to be accepting of their weight at higher BMI's when compared to the other women in the study (Semara et al., 2013). Those of lower education levels were at a higher risk of weight misperceptions (Dorsey, Eberhardt, Ogden, 2009; Fleary & Ettienne, 2014). The prevalence and factors that surrounded weight misperception were also influenced by the way parents discussed weight with their children and the subsequent result of these conversations, such as dieting and eating behaviors.

### **Encouragement to Diet**

Dieting increased in prevalence as a behavior among white Americans over the past few decades (Ramirez & Dunning, 2000; Liechty et al., 2013). Encouragement to diet had been linked to unhealthy eating and weight control behaviors, so where the encouragement came from and how it was presented will further how it is understood overall. Parents created environments for children that either fostered the development of healthy eating behaviors and weight, or that contributed to aspects of disordered eating behaviors (Clifford et al., 2015). Fathers and mothers

who talked about their own weight “very much” had a higher likelihood of implementation of weight control behaviors themselves and discussed weight control more frequently (Neumark-Sztainer, 2010). Subsequent parent child conversations that focused on the child's weight and weight loss were harmful and led to greater sedentary behaviors, dieting and dysfunctional eating patterns (Clifford et al., 2015). For some children, encouragement to diet did not contribute to disordered eating behaviors and weight management while for others it did and contributed to dieting later in life (Balentekin et al., 2014). Encouragement to diet had been a strong predictor in children's and adolescents subsequent dieting behaviors, a relationship seen more prominently in the literature when looking at mothers and daughters. (Balatekin, 2019; Clifford et al., 2015). Mothers' encouragement for daughters to diet was perceived as critical and subsequent disordered eating behaviors and negative self-image behaviors arose (Klein et al., 2016). Fathers' conversations that surrounded weight and dieting were received differently by daughters and resulted in less dysfunctional patterns in eating behaviors and less weight restriction was seen (Neumark-Sztainer, 2010).

Conversations that surrounded health overall and not weight and weight management were perceived by children as more positive and lead to less dysfunctional eating patterns and negative senses of self (Clifford et al., 2015). Non-diet-based interventions resulted in improvements in multiple facets such as disordered eating patterns, self-esteem and view and depression and did not result in weight gain or increases in blood pressure or glucose levels (Clifford et al., 2015). Ways to have productive conversations surrounding health with children can further what influenced children's view of parental encouragement to diet as critical and the impact that attachment security versus insecurity had on this relationship. Underlying impacts on

how mothers and fathers' conversations surrounding dieting and weight talk are perceived influenced the impacts of these conversations on eating behaviors.

### **Emotional Over and Under Eating**

Emotional overeating and emotional undereating were learned behaviors that resulted from responses to negative emotions like stress (Herele et al., 2017). Emotional experiences related to eating behaviors that people expressed especially in times of stress or heightened emotions (Bjorklund et al., 2018; Herele et al., 2017). The family dynamic, environment and attachment styles also contributed to the development of eating behaviors. If caregivers established an environment of little collaboration, increased levels of conflict, little cohesion and support between the caregivers and children, the emotional understanding of children was less and the understanding and handling of negative emotions was done through external self-employed means (Bjorklund et al., 2018; Herele et al., 2017; Byely et al., 2000). The ability for individuals to soothe themselves also played a role in emotional regulation, and individuals who were easily soothed were able to regulate their emotions without the use of external stimuli, while individuals who were more reactive used external stimuli more often, specifically food (Bjorklund et al., 2018). Parental sensitivity was also found to moderate and promote emotional sensitivity and understanding of children. One way that parents' sensitivity was conceptualized was through their ability to relate to others or attachment style, which aided in the explanation of both where behavior stemmed from and how it impacted multiple aspects of both the children's and parents experience.

### **Conclusion**

The research in the field of attachment had examined the relationship between parents' view of their own and their children's BMI, encouragement to diet and the impact this and



weight conversations has on children's views of self. The impact that parents' view of their BMI had on this conversation had not been studied nor how attachment style influenced weight perceptions on BMI, the encouragement to diet and potential for emerging adults to exhibit emotional over and undereating. These variables studied simultaneously added a systemic understanding of what factors contributed to the increasing thin ideal phenomenon, while the understanding of impacts increased as did factors that minimized or exacerbated the effects. This study aimed to explore this relationship while it simultaneously looked at the impact on mothers and fathers' encouragement to diet on their children and the relationship this had on children's.

## CHAPTER 3: METHODS

The purpose of this path analysis was to explore the relationship between attachment styles, maternal, paternal, and student BMI, paternal encouragement to diet, maternal encouragement to diet as well as their own dieting behaviors and the adolescents emotional over or undereating. for mothers, fathers, and students?

*Hypothesis 1:* It is predicted that mothers and fathers who have secure attachment styles, will have lower reported BMI levels, will engage in less dieting behaviors, and will encourage their daughter to diet less.

*Hypothesis 2:* It is predicted that students who have secure attachment styles will also have lower BMI levels.

### **Research Question 2: Does BMI influence dieting beliefs?**

*Hypothesis 3:* It is predicted that mothers and fathers who have a lower BMI will utilize less dieting behaviors themselves and will encourage dieting for their daughters less.

Hypothesis 4: It is predicted that students with a lower BMI will be impacted by encouragement to diet less

### **Research Question #3: What is the relationship between dieting beliefs and unhealthy eating behaviors?**

*Hypothesis 5:* It is predicted that encouragement to diet by secure mothers and fathers will result in less emotional under eating behaviors for their female students.

## **Methodology**

This study utilized a quantitative path analysis. One of the reasons this was utilized was because of a relationship between multiple variables (BMI, attachment styles (parents and children), Maternal dieting behaviors, paternal dieting behaviors, maternal encouragement to

diet, paternal encouragement to diet, emotional over or under eating behaviors for students, mothers, and fathers). In this study we examined the female students who had both their biological mother and father answer. Due to the low response rate for male students, their responses were not utilized in the analyses for this study. This study also examined how attachment styles interact with BMI and if it impacted encouragement to diet and emotional overeating and undereating in children. Path analyses allowed for examination of multiple relationships between variables simultaneously. When variables are examined from an interactional and systemic lens, a greater understanding of how these variables impact one another within the scope of the study and wider implications can be understood.

### **Data Collection Procedures**

The online survey examined and collected information on weight talk between children and their parents/caregivers as well as attachment, mental health conditions, health behaviors and body weight perceptions. Students were given extra credit in their undergraduate parenting class if they were able to get each of their parents to complete the survey as well. This allowed for triadic data to be gathered and both parents' responses as well as the emerging adult child's will be used. These students were from a large southeastern university and the data used in this study was from the data collected from this, making it a secondary data set. This was an existing data set that had received IRB approval from East Carolina University. The participants in this study were English speaking. The students were over the age of 18 (N = 136) to capture the emerging adult population. Both the data from the parents (N = 120 mothers; N = 101 fathers) and the female students will be used. The BMI measurements were collected using a Seca height board and scale in person in confidential spaces to obtain height and weight measures objectively. When measuring the weight, this was done with sensitivity surrounding this topic as the

paramount concern, so students' measurements were taken in confidential spaces. The weight was measured in kilograms as opposed to pounds and only the staff were aware of the actual weight to minimize stress and increase confidentiality. After height and weight measurements were taken, the students were given a unique numeric code that would allow them to connect their responses to their parents'. Wanting to ensure similar confidentiality and accuracy from the parents, they were asked to send in a picture of them measuring their weight and height on a scale and with a measuring stick. Both students and parents were asked to complete an online survey which included demographic information and assessed for encouragement to diet, attachment, BWP, BMI, depression, anxiety, and eating behaviors. To create a triadic dataset, students were assigned a numeric code including their initials and birthdate. Students were required, as part of the procedures, to give this specific code to their parents. Parents were not able to complete their surveys without entering their child's unique code.

### **Description of the Sample**

The current sample consisted of female students between the age of 18-29 (N = 136 students) and their biological parents (N = 120 biological mothers; N = 101 fathers). The college aged female students had a mean age of 21.4 (SD = 2.256). According to the responses, the sample of female students reported the following racial breakdown; White (74.3%), Black (14.7%) Asian (3.7%), Hispanic (1.5%), Pacific Islander (0.7 %), American Indian/ Alaskan Native (0.7 %) and other (4.4%). The mean age of biological fathers was 52.8 (SD = 6.356). The sample of fathers were White (82%), Black (11.9%), Asian (3.0%), Hispanic (2.0%), and other (1.0%) . The mean age of the biological mothers was 50.65 (SD = 5.583). The sample of mothers were White (75.8%), Black (15%), Asian (5 %), Hispanic (0.8 %), and other (3.3%).

### **Measures**

The specific research questions that were used in this study included several variables and measures from the original study (i.e., eating behaviors, BMI, attachment, and dieting behaviors). There were variables that were not used in our study but were collected (anxiety and depression measures). The following section will highlight the specific measurements that will be used for this study with a short description of each measurement included.

**Body Mass Index (BMI).** To determine the participants BMI, it was recorded in person using the Seca board and then broken into the four BMI categories of underweight (below 18.5), normal weight (18.5-24.9), overweight (25.0-29.9) and obese (30.0 and above).

**Encouragement to Diet.** To determine the parents' encouragement to diet, the questions on the survey were under the construct of child weight talk, specifically the question “I encourage my child to diet” and “I diet to lose weight or keep from gaining weight”. The parents ranked each of these questions from one (never) to five (very often). While there is no specific measure of encouragement to diet, other studies have used similar questions to ascertain the prevalence of dieting discussion (Bjorklund et al., 2018; Herele et al., 2017). This not only informs the study of the prevalence of dieting encouragement by parents to their emerging adult children, and the presence of dieting talk within the family system.

**Emotional overeating or undereating.** To determine eating behaviors in the study, the Child Eating Behavior Questionnaire (CEBQ) was used. This is a self-report measure and has Cronbach's alpha of 0.92, highlighting both internal validity and test rest reliability (Ayre et al., 2022). The CEBQ was given both to parents and the emerging adolescent population and contained questions that asked which statement was the most appropriate to their individual eating behaviors and some of the options were “I eat more when I’m worried;” “I eat more when I am upset;” “I eat less when I am upset.” The emerging adulthood participants rank each of the

twenty questions from one (never) to five (always). The Cronbach's alpha for our study was .562 for students, .748 for fathers, and .715 for mothers.

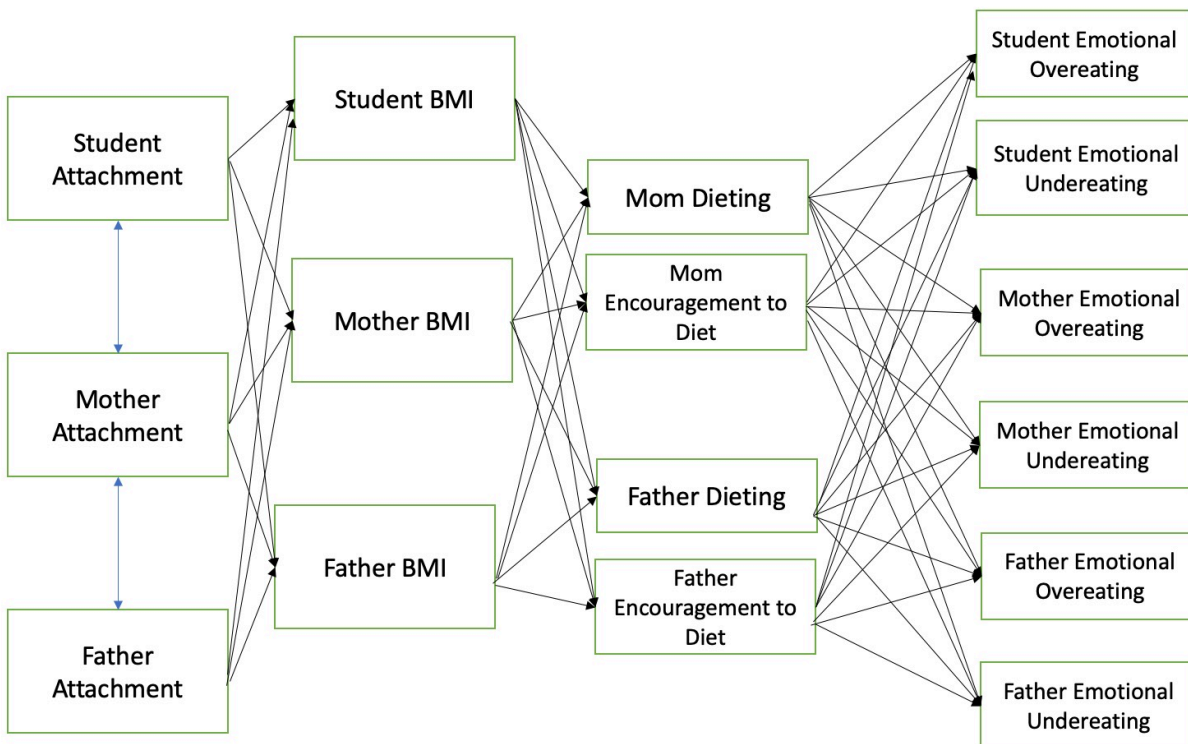
**Attachment styles.** To determine how the emerging adulthood population and parents relate to important others, the Experience in Close Relationships (ECR) questionnaire was used. The ECR has been normed and validated for adult populations (Fraley et al., 2011). This measure includes questions such as "I am very comfortable being close to others," "I prefer not to show others how I feel deep down," and "When others are out of sight, I worry that they might become interested in someone else." Emerging adults and their mothers and fathers ranked each of the 36 questions one through 7, with one being strongly disagree and 7 being strongly agree. Higher scores demonstrate higher levels of anxiety or avoidance. A score of or above four on the anxiety scale and below 4 on the avoidance scale would demonstrate an insecure-anxious attachment style. A score greater or equal to four on the avoidance scale and below four for the anxiety scale would determine an insecure-avoidant attachment style. Studies have demonstrated high reliability with Cronbach alpha coefficients of .91 for anxiety and .94 for avoidance scales (Brennan et al. 1998).

### **Analytic Plan**

We examined the relationships through a path analysis using MPlus 8.4. Path analysis, which allowed for examination of a series of regressions simultaneously. A path analysis is a statistical technique that is used to look at a causal relationship between two or more variables that is based on knowledge of the variables and theoretical knowledge and understanding (Olobatuyi, 2006). When looking at the relationship between two variables, a regression analysis was utilized when there is an observed sample on a response variable and a statistical analysis will allow an explanation to be ascertained regarding the behavior of the variable (Freund et al.,

2006). Descriptive statistics for the independent and dependent variables and the means of these variables were calculated using the SPSS program and the regressions and path analyses will be run through the program MPlus. We seek to further understand: (1) the association between parental attachment styles and their individual BMI, (2) the association between this relationship on parents dieting behaviors and encouragements to diet on their emerging adult children, (3) the association between encouragement to diet and emotional undereating or overeating behaviors.

Figure 1. Conceptual Model



## CHAPTER 4: MANUSCRIPT

Conversations that centered on weight talk were pervasive and took place at both a societal and familial level (Grogan, 2017; Gattario & Frisen, 2018; Yongwen et al., 2014). The frequency of these conversations had contributed to the development of the “thin ideal”. The thin ideal influenced individuals, particularly those within emerging adulthood, and skewed their perceptions of what constituted healthy versus unhealthy weight. Misperceptions of weight existed for both men and women in these categories as well as those who were categorized as both overweight and underweight (Yongwen et al., 2014). Categorization of weight had developed with the prevalence and utilization of BMI to categorize people. Categorization of people based on weight in addition to the prevalence of the thin ideal had contributed to pervasive weight conversations. The thin ideal also was seen in children who were found to be the most satisfied when they were underweight and unsatisfied at a healthy weight for their age, a perception which in early adolescence became significantly negative and remained stable into emerging adulthood (Grogan, 2017; Gattario & Frisen, 2018). Dissatisfaction over an individual's current weight perception influenced the measures that people employed, which was seen in dieting behaviors.

Emerging adulthood ranged from 18-29 and was a time categorized by shifts in dieting behaviors, increases in fast food consumption, and decreases in physical activity, to understand the mechanisms behind that shift, both the familial and societal level impacts were considered (Nelson et al., 2008). Individuals within the emerging adulthood category were also simultaneously receiving messages from society about the thin ideal as obesity levels within the United States were rising (Dorsey, Eberhardt, Ogden, 2009; Chooi et al., 2019). Through this shift into a new stage of development, emerging adolescents also experienced a change in



relationships with primary attachment figures (Nelson et al., 2008). Primary attachment figures impacted emerging adolescents through the way that conversations centered around weight and the prevalence of dieting talk, both for themselves and their dependent, which either increased or decreased negative perceptions (Grogan, 2017; Clifford et al., 2015). When conversations centered around food consumption and included conversations surrounding dieting simultaneously, anxiety surrounding food rose for the dependent, which was reflected in a negative self-image (Tylka et al., 2015). A negative view of oneself extended to how they perceived their body weight, regardless of their BMI, and impacted related factors such as unhealthy dieting and food consumption behaviors (Marques et al., 2017). Females had engaged in dieting behaviors and expressed dissatisfaction with their weight, even though their BMI did not classify them as overweight or obese (Jaworowska & Bazylak, 2008). Encouragement to diet and conversations centered on food consumption had been studied primarily between mothers and daughters and had been found to result in dieting behaviors. The presence of emotional over and under eating behaviors had been found to be influenced by the environment more so than by genetics as strategies to cope and manage stress (Balatekin, 2019; Herle et al., 2017). The specific aspects of the environment that impacted the parent-child relationship impacted conversations surrounding weight talk and dieting as well.

The psychological underpinnings that centered on the impact of the thin ideal and weight fixation on individuals are still unclear. One avenue considered were people's attachment styles. Attachment styles began in infancy with how newborns related to a primary caregiver and applied across life stages on how emerging adolescents and adults related to others in their life (Bowlby, 1973; Bowlby, 1980; Holmes, 2014). Attachment styles served as a foundation for relational aspects of individuals and are determined through consideration of a person's view of

both themselves and others (Feeny, 2016). The intersection between attachment styles of parents and the impact of this on their weight perception independent of their view of their children was a facet of the literature that has not been explored. To expand on this relationship, how this impacted parents' encouragement to diet and the how this impacted eating behaviors such as emotional over or undereating. Attachment theory was also multifaceted in that it examined an internal working model of self, an individual's perception of acceptance by their primary attachment figures, and a working model of others as having affected emotional and behavioral reactions and future social interactions and relationships (Hintsanen et al., 2010; Levy et al., 1998; Feeny, 2016). Acceptance by a primary caregiver impacted a person's sense of self through a person's perception of their weight and how eating behaviors were discussed between a caregiver and child and how attachment impacts this conversation.

Parents influenced their children's eating behaviors in a few ways; through the foods they made accessible as well as by their own eating behaviors (Scaglioni et al., 2008; Clifford et al., 2015). In general, children mirrored the attachment styles of their parents (Levy et al., 1998). Parents of secure children were seen as responsive, parents of avoidant children were often rejected and withdrew from their children's distress, parents of anxious children were preoccupied with self and attended to their own needs and anxiety (Levy et al., 1998). Parents also influenced eating behaviors based on the level of diet talk and parents who talked about dieting frequently fostered environments centered on weight conversations (Levy et al., 1998). Parents' impacted on eating behaviors and parents' impacted attachment styles and had both been studied independently and this study aimed to bridge this gap in addition examined outcomes in children's food habits and relationships between BWP and attachment styles.

### **Purpose of Study**

When the impact of attachment theory was considered, this secondary data analysis considered the many aspects that impacted the BMI of an emerging adolescent's experience, such as encouragement to diet, parents both for themselves and their female children, and the impact this had on the emerging adolescents emotional over or under eating behaviors. Through the secondary data set collected by both students and parents from a larger southeastern university, a path analysis was conducted in MPlus 8.4 that examined the relationship that existed between attachment styles (secure, anxious, avoidant, and disorganized) and BMI and how this impacted encouragement to diet (mothers, fathers and their emerging adult children) and the emotional overeating and undereating behaviors. To understand how parents approached conversations surrounding weight of their children, it was important to understand how dieting was discussed both amongst parents and their children as well as how it impacted emotional overeating and undereating behaviors.

### **Literature Review**

Health entails various aspects of a person's physical, mental, and societal well-being and is not merely the absence of disease or infirmity (Callahan, 1973). Increased prevalence of obesity diagnoses in the United States had contributed to the concern by researchers and healthcare professionals that surrounded and contributed to factors and ways that combated the adverse health outcomes (Daniels, 2009; Chooi et al., 2019). Simultaneously, there had been an increase in the perceived importance and striving toward the thin ideal, which contributed to the presence of disordered eating behaviors as a result over the past few decades (Tylka et al., 2015; Palmeroni et al., 2020). Society perpetuated the thin ideal ideology, which the family unit furthered or minimized through modeling behaviors and parents' discussions that centered on their own weight and dieting and their children's weight and dieting through encouragement.

Both mothers' and fathers' own perceptions of self and others impacted their children's subsequent development of these schemas for themselves. The relationship will further overall how children's attachment is understood and how BMI influenced the results on emotional over or under eating behaviors.

### **Attachment Styles**

Much of the relationships between BMI, encouragement to diet and emotional under and overeating can be understood through the utilization of attachment theory. This is a theory that was established by John Bowlby that explained how parents and children related to each other (Bowlby, 1979; Ainsworth, 2010). This theory posited that a framework was developed by people that fostered how to understand the world around them and this guided how they responded to others and perceived security and safety in their world as well as how they perceived themselves. One way this security and safety was established was through proximity to loved ones, both emotionally and physically (Holmes, 2014). When an individual did not feel this trust and security, they felt they cannot get close to the individual or see them as untrustworthy. In an insecure attachment, this insecurity was seen in unavailability of a caregiver, which led to the individual feeling abandoned or rejected and did not allow them to trust in how they engaged with the world. Those who had a secure attachment engaged with confidence as they trust their base would be available should they need to rely on others in times of distress (Holmes, 2014). Attachment styles persisted from childhood into adulthood and highlighted a continued influence on the ways that individuals saw themselves and interacted with others (Kim et al., 2021).

### **BMI Use and Implications**

There had been an increase in societal fascination with weight and weight management as the thin ideal had increased in pervasiveness and obesity levels have consistently increased and are seen at younger ages (Schaefer et al., 2019). The thin ideal and categorization of weight based on BMI had influenced the societal correlation of health with thinness, and to understand this further, examined how people classified and perceived their weight aided in understanding what contributed to perceptions and the impact. BMI was one way people determined health through weight when a scale was used to determine where in a weight range based on gender, age and race, someone felt when compared to those who shared the same race and gender (Daniels, 2009; Weir & Jan, 2019). The BMI scale had four levels of classifications: underweight, healthy weight, overweight and obese. People tended to misclassify their weight and perceived themselves as being in a higher BMI than they are, specifically when females experience with their weight was considered (Jaworowska & Bazylak, 2008) One area that was unexplored was the moderating factors that influenced people's perception of their BMI when their actual BMI was considered. Also unexplored were the implications for inaccurately perceiving one's BMI and how this impacted the ways a person discussed weight with those around them, especially when the family dynamics, encouragement to diet, emotional over and under eating, and attachment styles were considered.

### **Body Weight Perception**

Body weight perception (BWP) has wide-reaching implications both individually and relationally. BWP was defined as the way a person views their weight when they examined their weight status (Marques et al., 2017). Societal expectations and messages influenced this, which led to weight misperception. An accurate perception of one's own weight is important when it came to maintenance of an appropriate weight, and Osborn et al. (2015) examined specifically

adolescents in college and their weight misperceptions and outcomes. Adolescents were found to have body weight misperceptions that affected multiple health risk behaviors for both those who over and underestimated their perceptions (Yongwen et al., 2014). Some of those health risk behaviors included dieting and physical activity, such as trying to lose weight and fasting or using dieting pills to lose weight (Osborn et al., 2015). Misidentification of weight status led to higher or misinformed body satisfaction, which impacted how people discussed weight, weight loss and dieting (Fleary & Ettienne, 2014). Misidentification of weight status led to higher or misinformed body satisfaction, which impacted how people discussed weight, weight loss and dieting (Fleary & Ettienne, 2014).

### **Encouragement to Diet**

Encouragement to diet had also been linked to unhealthy eating and weight control behaviors, so where the encouragement comes from and how it was being presented furthered the overall understanding of this relationship. Parents created environments for children that fostered the development of healthy eating behaviors and weight, or that contributed to aspects of disordered eating behaviors (Clifford et al., 2015). Fathers and mothers who talked about their own weight “very much” were more likely to use weight control behaviors themselves and discuss weight control more frequently through dieting measures, which created a culture of dieting where discussions of weight ensue (Neumark-Sztainer, 2010). Subsequent parent child conversations that focused on the child's weight and weight loss were harmful and lead to greater sedentary behaviors, dieting and dysfunctional eating patterns (Clifford et al., 2015).

### **Emotional Over and Under Eating**

Emotional overeating and emotional undereating were learned behaviors that resulted from responses to negative emotions like stress (Herele et al., 2017). Learned behaviors were

fostered through the interactions within the family dynamics, environment, and attachment styles. If an environment of little collaboration, increased levels of conflict, little cohesion and support between the caregivers and children was established, the emotional understanding of children was shown to be diminished and the understanding and handling of negative emotions done through and understood by external self-employed means (Bjorklund et al., 2018; Herele et al., 2017; Byely et al., 2000). The ability for individuals to self soothe played a role in emotional regulation, as it was found that individuals who were easily soothed were able to regulate their emotions without the use of external stimuli, while individuals who were more reactive used external stimuli more often, specifically food (Bjorklund et al., 2018). Parental sensitivity was also found to moderate and promote emotional sensitivity and understanding of children. One way that parents' sensitivity is conceptualized is through their ability to relate to others or attachment style, which aided in the explanation of both where behavior stemmed from and how it impacted multiple aspects of both the childrens' and parents' experience.

## **Conclusion**

The research in the field of attachment had examined the relationship between parents' view of their childrens' BMI, encouragement to diet and the impact this and weight conversations had on children's views of self. The impact that parents' view of their BMI had on this conversation had not been studied nor how attachment style influenced weight perceptions through BMI on parents own dieting behaviors, the encouragement to diet and potential for emerging adults to exhibit emotional over and undereating. Looking at these variables simultaneously is an area that can add a systemic understanding of contributing factors to the increasing thin ideal phenomenon that has emerged during a time of rising obesity levels, while increasing the understanding of impacts and what factors minimize or exacerbate the effects.

This study aims to explore this relationship while simultaneously looking at the impact on mothers and fathers' encouragement to diet on their children and the relationship this has on children's attachment styles and engagement with emotional over and under eating behaviors.

### **Methodology**

The data collected for this sample came from a population of young adult students and their parents through utilization of an online survey. Students were given extra credit in their undergraduate parenting class if they were able to get each of their parents to complete the survey as well. This allowed for triadic data to be gathered and both parents' responses as well as the emerging adult children will be used. These students are from a large southeastern university and the data used in this study will be from the data collected from this, making it a secondary data set. This was an existing data set that had received IRB approval from a large southern university. The participants in this study were English speaking. The students were over the age of 18 (N = 136) to capture the emerging adult population. Both the data from the parents (N = 120 mothers; N = 101 fathers) and the female students were used.

### **Demographic Information**

The sample consisted of students between the age of 18-29 (N = 136) and their biological parents (N = 120 mothers; N = 101 fathers). The sample breakdown was 89.7% female and 10.3% male and had a mean age of 21.41 (SD = 2.256). According to the responses, the sample of students reported the following racial breakdown for the entire original sample; White (74.3%), Black (14.9%), Asian (3.3%), Hispanic (.8%), and Other (6.6%). It was ultimately decided to drop the male students' responses for the analysis due to the low response rate. The mean age of biological fathers was 52.8 (SD = 6.356). The sample of fathers were White (82%), Black (11.9%), Asian (3.0%), Hispanic (2.0%), and other (1.0%). The mean age of the biological



mothers was 50.65 (SD = 5.583). The sample of mothers were White (75.8%), Black (15%), Asian (5 %), Hispanic (0.8 %), and other (3.3%).

## **Procedures**

The online survey examined and collected information on weight talk between children and their parents/caregivers as well as attachment, mental health conditions, health behaviors and body weight perceptions. The BMI measurements were collected using a Seca height board and scale in person in confidential spaces to obtain height and weight measures objectively. When measuring the weight, this was done with sensitivity surrounding this topic as the paramount concern, so students' measurements were taken in confidential spaces. The weight was measured in kilograms as opposed to pounds and only the staff were aware of the actual weight to minimize stress and increase confidentiality. After height and weight measurements were taken, the students were given a unique numeric code that would allow them to connect their responses to their parents'. Since most parents who participated were not local, asking them to come to a secure setting to be measured in person was not possible. However, because of the limitations to self-report discussed previously, it was felt that height and weight measurements needed to include something more precise than the parents simply entering their own measurements. Parents were asked to upload a photograph either showing themselves on a scale or measuring their height with a measuring stick. While not as reliable as in person measurements it was deemed that this was a better option than simply relying on self-report. Both students and parents were asked to complete an online survey which included demographic information and was assessed for encouragement to diet, attachment, BWP, BMI, depression, anxiety, and eating behaviors. To create a triadic dataset, students were assigned a numeric code including their initials and birthdate. Students were required, as part of the procedures, to give this specific code

to their parents. Parents were not able to complete their surveys without entering their child's unique code.

## **Measures**

The specific research questions that were used in this study included several variables and measures from the original study (i.e., eating behaviors, BMI, attachment, and dieting behaviors). There were variables that were not used in our study but were collected (anxiety and depression measures). The following section will highlight the specific measurements that were used for this study with a short description of each measurement included.

**Body Mass Index (BMI).** To determine the participants BMI, it was recorded in person using the Seca board for students and parents submitted this information virtually with a picture for accuracy and then the measurement was broken into the four BMI categories. The BMI classifications that were underweight (below 18.5), normal weight (18.5-24.9), overweight (25.0-29.9) and obese (30.0 and above).

**Encouragement to Diet.** To determine the parents' encouragement to diet, the questions on the survey were under the construct of child weight talk, specifically the question "I encourage my child to diet" and "I diet to lose weight or keep from gaining weight". The parents ranked each of these questions from one (never) to five (very often). While there is no specific measure of encouragement to diet, other studies have used similar questions to ascertain the prevalence of dieting discussion and have found these questions to be reliable (Bjorklund et al., 2018; Herele et al., 2017). This not only informs the study of the prevalence of dieting encouragement by parents to their emerging adult children, and also the presence of dieting talk within the family system.

**Emotional overeating or undereating.** To determine eating behaviors in the study, the Child Eating Behavior Questionnaire (CEBQ) was used. This is a self-report measure that has Cronbach's alpha of 0.92, highlighting both internal validity and test rest reliability (Ayre et al., 2022). The CEBQ was given both to parents and the emerging adolescent population and contained questions that asked which statement was the most appropriate to their individual eating behaviors and some of the options were “ I eat more when I’m worried;” “I eat more when I am upset;” “I eat less when I am upset.” The emerging adulthood participants ranked each of the twenty questions from one (never) to five (always). The Cronbach’s alpha for our study was .562 for students, .748 for fathers, and .715 for mothers.

**Attachment styles.** To determine how the emerging adulthood population and parents relate to important others, the Experience in Close Relationships (ECR) questionnaire was used. The ECR has been normed and validated for adult populations (Fraley et al., 2011). This measure includes questions such as “I am very comfortable being close to others,” “I prefer not to show others how I feel deep down,” and “When others are out of sight, I worry that they might become interested in someone else.” Emerging adults and their mothers and fathers ranked each of the 36 questions one through 7, with one being strongly disagree and 7 being strongly agree. Higher scores demonstrate higher levels of anxiety or avoidance. A score of or above four on the anxiety scale and below 4 on the avoidance scale would demonstrate an insecure-anxious attachment style. A score greater or equal to four on the avoidance scale and below four for the anxiety scale would determine an insecure-avoidant attachment style. Studies have demonstrated high reliability with Cronbach alpha coefficients of .91 for anxiety and .94 for avoidance scales (Brennan et al. 1998). This study had a Cronbach’s alpha coefficient for students’ anxiety of .95 and avoidance scores of .91. Mothers’ anxiety and avoidance scores had coefficients of .93 and

.92 and the fathers anxiety and avoidance scores were .91 and .88 respectively. This demonstrated a high reliability for this measure overall.

Attachment style was recorded into a new variable in our study that compared the means in the study against each of the attachments as opposed to comparing them to global means for the ECR. This was done to have an equal number of people in each group by assigning people to groups based on the median (i.e., the point at which half of the cases fall above and half fall below) for each of the classifications (Fraley, 2012). Then, you compute the median score (MAVOID) for avoidance and the median score (MANX) for anxiety and assign people to the four Bartholomew groups in the following manner: if the individuals anxiety score is  $< \text{MANX}$  and the person's avoidance score is  $< \text{MAVOID}$ , then assign him or her to the secure group, if the individuals anxiety score is  $< \text{MANX}$  and the individuals avoidance score is  $\geq \text{MAVOID}$ , then assign him or her to the dismissing group, if the individuals anxiety score is  $\geq \text{MANX}$  and the person's avoidance score is  $\geq \text{MAVOID}$ , then assign them to the fearful group, if the individuals anxiety score is  $\geq \text{MANX}$  and the person's avoidance score is  $< \text{MAVOID}$ , then assign him or her to the preoccupied group (Fraley, 2012).

### **Research Questions and Hypotheses**

The purpose of this path analysis is to explore the relationship between attachment styles, maternal, paternal, and student BMI, paternal encouragement to diet, maternal encouragement to diet as well as their own dieting behaviors and the adolescents' emotional over or undereating.

**Research Question 1:** What is the relationship between attachment styles, BMI and dieting beliefs for mothers, fathers, and students?

*Hypothesis 1:* It is predicted that mothers and fathers who have secure attachment styles, will have lower reported BMI levels, will engage in less dieting behaviors, and will encourage their daughter to diet less.

*Hypothesis 2:* It is predicted that students who have secure attachment styles will also have lower BMI levels.

**Research Question 2: Does BMI influence dieting beliefs?**

*Hypothesis 3:* It is predicted that mothers and fathers who have a lower BMI will utilize less dieting behaviors themselves and will encourage dieting for their daughters less.

*Hypothesis 4:* It is predicted that students with a lower BMI will be impacted by encouragement to diet less

**Research Question #3: What is the relationship between dieting beliefs and unhealthy eating behaviors?**

*Hypothesis 5:* It is predicted that encouragement to diet by secure mothers and fathers will result in less emotional under eating behaviors for their female students.

**Data Analysis**

This study used a path analysis that was run through the statistical software in MPlus 8.4 to look at the relationship between attachment styles (independent variable) on BMI, the parents own dieting behaviors and encouragement to diet for their emerging adult children and the relationship of this on the female emerging adults and parents emotional overeating and undereating behaviors (dependent variables). The descriptive statistics such as the mean, standard deviation, frequency, and range for the variables in this study were obtained using the statistical software SPSS (Version 28.0) as seen in Table 2. A correlation table was also made that contains the independent and dependent variables for the female emerging adult female

students, the mothers and fathers and can be found in Table 3. The findings and description of what they mean will inform the secondary analysis.

A chi-squared statistics as well as the comparative fit index (CFI; Bentler, 1990), the root mean square error of approximation (RMSEA; Bentler, 1995), and the standardized root mean square residual (SRMR; Hu & Bentler, 1999) were utilized to determine goodness of fit for the path analysis that was utilized in this study. These indicate whether the model is truly the way to explain the relationship between variables, and whether this explains it not at all, fully, or in part. When looking at these indices, CFI values that are closer to 1, RMSEA values that are closer to zero, and SRMR values less than .08 indicate significant findings and confirm the overall goodness of fit for the model (Kline, 2015). For the chi-square test of model fit, a non-significant p value also represents a good fitting model, as this confirms that the data is not significantly different from the distribution we have hypothesized.

### **Descriptive Statistics**

Descriptive statistics were reported in the methods section, the attachment table was reported in Table 1 and intercorrelations were reported in Table 2. Within the sample, when looking at BMI for students', fathers', and mothers' the scores indicate that the mothers and daughters fell into the overweight BMI range and that the fathers fell into the obese range (M= 27.03, 30.22, 28.41 respectively, SD = 6.78, 5.16, 6.52, respectively). For attachment styles, the students', fathers', and mothers' attachment scores indicated that the sample had more secure attachment styles. (M = 1.51, 1.42, 1.46 respectively, SD = 1.24, 1.49, 1.32, respectively). When looking at dieting behaviors, only the fathers' and mothers' dieting behaviors were recorded (M = 2.55, 2.80, respectively and SD = 1.13, 1.15 respectively). These results indicated that both mothers' and fathers' reported engaging in dieting behaviors for themselves. When looking at

encouragement to diet on their daughters, mothers and fathers were seen to both engage in encouragement to diet, but mothers were encouraging dieting more than fathers (M = 2.11, 1.88 SD=1.13, 1.11). For female students, emotional overeating was engaged in at moderate levels (M=3.07, SD= .91). For emotional undereating, students' engaged at higher levels than overeating. (M= 3.25 SD=.81). Fathers' and mothers' emotional overeating were both reported at lower rates than students (M= 2.42, 2.85, respectively, SD = .87, .92, respectively). Fathers' emotional undereating was lower than mothers' and students' (M = 2.90, SD = .76), but students' levels of emotional undereating (M = 3.25, SD = .81) were higher than mothers' (M = 3.19 SD = .79), meaning female students engaged in emotional undereating more frequently than both of their parents.

**Figure 1. Descriptive Statistics**

	Frequency	Percent
<b>Student Attachment Style (N=121)</b>		
Secure	39	32.0
Anxious	20	16.4
Avoidant	25	20.5
Disorganized	38	31.1
<b>Fathers Attachment style (N=95)</b>		
Secure	35	28.7
Anxious	16	13.1
Avoidant	13	10.7
Disorganized	31	25.4
Missing	27	21.1
<b>Mothers Attachment Style (N=106)</b>		
Secure	40	32.8
Anxious	15	12.3
Avoidant	13	10.7
Disorganized	38	31.1
Missing	16	13.1

**Correlations**

The correlational analysis also highlighted several significant relationships between the variables. There was a positive correlation between the attachment of the mother and the attachment of the father ( $r = .340, p < .01$ ). This indicated that the more secure mothers in the study rated their attachment, that fathers would also rate themselves as secure. There is also a positive correlation between fathers' attachment and students' BMI ( $r = .205, p < .05$ ). This indicated that lower BMI for daughters would be associated with more secure attachment for fathers. Attachment of the father was also positively correlated with encouragement to diet from the father ( $r = .254, p < .05$ ). This indicated that the securely attached fathers encourage dieting less frequently for their daughters. When looking at BMI, there was a positive correlation between daughters BMI and fathers and mothers BMI ( $r = .214, p < .05, r = .231, p < .05$ ), indicating that the higher the BMIs were for daughters the higher they were for their fathers and mothers. Students BMI was also positively correlated with both fathers own dieting behaviors ( $r = .223, p < .05$ ) and fathers' encouragement to diet ( $r = .430, p < .01$ ). This indicated that the lower students BMI scores were the less fathers dieted and encouraged dieting for their daughters. There was also a positive correlation between emotional overeating of the father and the father's attachment ( $r = .289, p < .05$ ). This highlights that the securely attached fathers engaged in lower levels of emotions overeating. There is also a correlation between mothers emotional overeating and fathers' attachment ( $r = .301, p < .05$ ). This indicated that the more secure fathers rate their attachment, the less emotional overeating their spouse, the mothers of female students, engage in. When looking at the attachment for the mothers, there were positive correlations between this variable and fathers own dieting ( $r = .230, p < .05$ ), fathers' encouragement to diet ( $r = .307, p < .01$ ), indicating that the more secure mothers were, the less dieting fathers engaged in for themselves as well as less encouragement to their daughters. There



was a moderate negative correlation between mothers' attachment and students emotional overeating ( $r = -.200, p < .05$ ), indicating that the more secure the mother's attachment, the more emotional overeating students engaged in, which contradicted the research surrounding secure attachments and eating behaviors of daughters. Mothers' attachment style was moderately positively correlated with fathers emotional overeating ( $r = .369, p < .05$ ) and fathers emotional undereating ( $r = .398, p < .01$ ), indicating that the more secure mothers attachment styles were the less emotional over and under eating fathers engaged in.

When looking at dieting behaviors for mothers' and fathers' there was a moderate positive correlation between fathers' own dieting behaviors and mothers' own dieting behaviors ( $r = .302, p < .01$ ). There were also correlations between fathers' own dieting behaviors and both fathers and mothers' encouragement to diet ( $r = .439, p < .01, r = .426, p < .01$ ), highlighting that the more fathers engage in dieting for themselves the more both mothers and fathers encourage dieting for their daughters. Mothers' own dieting behaviors were also correlated with fathers' encouragement to diet ( $r = .657, p < .01$ ), meaning that the more mothers engage in their own dieting behaviors the more they encourage dieting behaviors for their daughter. There was also a negative correlation between daughters' emotional overeating and under eating behaviors ( $r = -.240, p < .01$ ) The daughters' overeating was also positively correlated with the mothers' emotional overeating behaviors ( $r = .342, p < .01$ ) meaning the more that children engage in emotional overeating the more mothers do as well. Fathers' emotional overeating behaviors was positively correlated with mothers' emotional overeating behaviors ( $r = .335, p < .05$ ), meaning that the more emotional overeating behaviors that fathers' engage in the more emotional overeating mothers' engage in.

*Figure 3. Correlation Table*

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Student Attachment Style	-															
2. Father Attachment Style	.085	-														
3. Mother Attachment Style	<u>.097</u>	<u>.340**</u>	-													
4. BMI for Students	.091	.205*	.040	-												
5. BMI for Fathers	<u>-.059</u>	.162	.187	.214*	-											
6. BMI for Mothers	<u>-.042</u>	.104	.036	.231*	.159	-										
7. Fathers Dieting Behaviors	.177	.138	.230*	.223*	.240*	-.120	-									
8. Mothers Dieting Behaviors	.114	.180	.142	.084	-.124	.026	.302**	-								
9. Father enc. to diet	.160	.254*	.307**	.430**	.199	.024	.439**	.194	-							
10. Mother enc. to diet	.048	.094	.074	.538**	.118	-.003	.426**	<u>.351**</u>	.657**	-						
11. Student Emot.Overeating	.150	.005	<u>-.200</u>	<u>.190*</u>	.171	.029	.008	.112	-.029	.657	-					
12. Father Emot. Overeating	-.060	<u>.289*</u>	<u>.369*</u>	.063	.269*	.060	.120	.150	.139	-.029	.108	-				
13. Mother Emot. Overeating	.074	<u>.301*</u>	<u>.140</u>	.280*	.115	.128	.198	.183	.484**	.147	.342**	.335*	-			
14. Student Emot. Undereating	.052	-.120	.021	-.134	<u>-.249</u>	<u>.018</u>	-.171	-.060	-.061	-.043	-.240**	-.084	-.163	-		
15. Father Emot. Undereating	-.033	.251*	.250	.215	.225	.115	-.083	-.099	-.024	.013	.131	.336*	-.027	-.030	-	
16. Mother Emot. Undereating	.087	<u>.237</u>	<u>.398**</u>	.306*	.127	-.006	.211	.069	.121	.072	-.004	.312*	.116	-.041	.187	-
<i>R</i>	.3	.3	.3	.3514	.2610	.2888	.4	.4	.4	.4	.4	.375	.375	.35	.40	.35
<i>M</i>	1.5082	1.421	1.4623	<u>.27026</u>	<u>.30331</u>	28.405	2.546	2.804	1.883	2.109	3.069	2.421	2.8532	3.2507	2.8973	3.1865
<i>SD</i>	1.23480	1.4848	1.3178	6.7765	5.1632	6.5118	1.1318	1.1522	1.1058	1.1288	.9057	.8664	.9163	.8053	.7595	.7867

Note: Emot = Emotional; \*p<.05, \*\*p<.01, † p < .10

## Path Analysis or Results for Research Questions

A basic Path analysis was used to look at the relationship between the independent and dependent variables in a multi-level regression format. A Path analysis is a statistical analysis that is used to look at the direct and indirect strength of relationships among and between variables (Lleras, 2005). The chi-squared statistic, the comparative fit index (CFI; Bentler, 1990), the root mean square error of approximation (RMSEA; Bentler, 1995), and the standardized root mean square residual (SRMR; Hu & Bentler, 1999) were tested to determine goodness of fit for the model and indicated a chi-square value of 11.034 (DF= 6,  $p = .0873$ ), a

RMSEA of 0.00, a CFI of 1.00 and a SRMR of .037. Attachment styles were scored 1-4, and re-coded to 0-3 to compare the means of each participant's attachment against the means that were obtained from the sample as is recommended in the literature (Fraley, 2012). BMI's were measured based on the standard equation and classified based on underweight (below 18.5), normal weight (18.5-24.9), overweight (25.0-29.9) and obese (30.0 and above). Dieting and encouragement to diet are rated on a numerical scale from 1-4. The hypotheses were partially supported and there were significant findings found within the path analysis.

A Path analysis was conducted so that the independent variable of attachment (students, fathers, and mothers) can be conducted with multiple dependent variables (BMI, dieting behaviors, unhealthy eating behaviors) and there were a few significant relationships that were found. Figure 3 showed the results of running the model through MPLUS 8.4. When looking at the independent variable of attachment there were a few instances of significance. When looking at the father's attachment, there was a positive relationship that approached significance between this and the students BMI ( $\beta = .205, p = .059$ ). There was also a positive significant relationship between mothers' attachment and fathers' encouragement to diet for their daughters ( $\beta = .273, p = .008$ ), highlighting that as fathers' attachment shifts one category towards the insecure, the students' BMI increases by .273. A significant negative relationship was also found between mothers' attachment and students' emotional overeating ( $\beta = -.328, p = .001$ ), highlighting that as mothers' attachment shifts one category toward the insecure, the students emotional overeating decreases by .328.. A positive relationship that approached significance was also seen between mothers' attachment and fathers' emotional overeating ( $\beta = .273, p = .052$ ) and a positive significant relationship for both fathers ( $\beta = .335, p = .007$ ) and mothers' emotional undereating ( $\beta = .441, p = .000$ ) was also seen, highlighting that as mothers' attachment shifts one category

towards the insecure, fathers' emotional undereating increases by .335 and mothers' by .441. When considering BMI, there were also statistically significant positive relationships seen, such as when looking at students BMI on fathers' encouragement to diet ( $\beta = .349, p = .000$ ), highlighting that as students' BMI shifts one category up, fathers' encouragement to diet increased by .349. Students' BMI also had a positive significant relationship to mothers' emotional undereating ( $\beta = .449, p = .001$ ), highlighting that as students' BMI shifted one category up, mothers' emotional undereating increased by .449. A positive relationship was also seen between students' BMI and mothers' encouragement to diet ( $\beta = .550, p = .000$ ), highlighting that as students' BMI shifted up one category, mothers' encouragement to diet increased by .550. BMI levels for fathers were also positively correlated with fathers' own dieting behaviors ( $\beta = .219, p = .025$ ) as well as fathers' emotional overeating ( $\beta = .295, p = .023$ ) and undereating ( $\beta = .286, p = .025$ ), highlighting that each category shift up in BMI categories for fathers caused a .219 increase in their own dieting behaviors, a .295 increase in fathers' emotional overeating and a .286 increase in undereating. A positive significant relationship was also found between fathers' BMI and students' emotional overeating ( $\beta = .286, p = .031$ ), highlighting that for each category shift toward a higher BMI level for fathers resulted in a .286 increase in students' emotional overeating. BMI levels for mothers were also approaching significance negatively related with fathers' own dieting behaviors ( $\beta = -.233, p = .057$ ). No statistically significant relationships were found between either mothers' or fathers' own dieting behaviors and any of the individual's emotional over or under eating behaviors. When looking at fathers' encouragement to diet, a statistically significant relationship was found when looking at mothers' emotional overeating ( $\beta = .438, p = .022$ ) and an approaching significant negative relationship was found when considering fathers' emotional undereating ( $\beta = -.293, p =$

.055). When looking at mothers' encouragement to diet for their daughters, there was a significant moderate negative relationship when looking at mothers' emotional overeating ( $\beta = -.386, p = .044$ ).

**Figure 2. Path Analysis**

*Standardized Parameter Estimates for Factor Loadings and Paths*

Paths	$\beta$	SE	p
<b>Attachment Student → BMI</b>			
Students BMI	.073	.090	.422
Fathers BMI	-.066	.098	.504
Mothers BMI	-.069	.098	.484
<b>Attachment Father → BMI</b>			
Students BMI	.205	.109	<b>.059</b>
Fathers BMI	.132	.112	.237
Mothers BMI	.208	.148	.160
<b>Attachment Mother → BMI</b>			
Students BMI	-.034	.100	.736
Fathers BMI	.120	.111	.279
Mothers BMI	-.044	.113	.700
<b>BMI Student → Dieting Beliefs</b>			
Father encouragement to diet	.349	.089	<b>.000</b>
Fathers own dieting behaviors	.155	.098	.144
Mothers encouragement to diet	.550	.069	<b>.000</b>
Mothers own dieting behaviors	.060	.097	.534
<b>BMI Father → Dieting Beliefs</b>			
Father encouragement to diet	.097	.094	.302
Fathers own dieting behaviors	.219	.098	<b>.025</b>
Mothers' encouragement to diet	.033	.097	.734
Mothers own dieting behaviors	-.142	.111	.203
<b>BMI Mother → Dieting Beliefs</b>			
Fathers' encouragement to diet	-.046	.129	.724

Fathers own dieting behaviors	-.233	.123	<b>.057</b>
Mothers' encouragement to diet	-.136	.089	.128
Mothers own dieting behaviors	-.016	.103	.877
<b>Student Attachment → Dieting Beliefs</b>			
Fathers' encouragement to diet	.097	.086	.257
Fathers own dieting behaviors	.138	.092	.135
Mothers encouragement to diet	-.021	.081	.796
Mothers own dieting behaviors	.097	.096	.309
<b>Fathers Attachment → Dieting beliefs</b>			
Fathers encouragement to diet	.074	.099	.456
Fathers own dieting behaviors	.047	.108	.667
Mothers encouragement to diet	-.067	.107	.531
Mothers own dieting behaviors	.146	.129	.259
<b>Mothers Attachment → Dieting Beliefs</b>			
Fathers encouragement to diet	.273	.102	<b>.008</b>
Fathers own dieting behaviors	.133	.109	.222
Mothers encouragement to diet	.119	.091	.193
Mothers own dieting behaviors	.111	.108	.301
<b>Father Dieting → Unhealthy Eating Behaviors</b>			
Student Emotional Overeating	.007	.119	.953
Fathers Emotional Overeating	-.064	.157	.685
Mothers Emotional Overeating	.116	.172	.498
Student Emotional Undereating	-.191	.133	.152
Father Emotional Undereating	-.189	.147	.199
Mother Emotional Undereating	.188	.156	.230
<b>Mother Dieting → Unhealthy Eating Behaviors</b>			
Students Emotional Overeating	.152	.108	.161
Fathers Emotional Overeating	.095	.145	.510
Mothers Emotional Overeating	.148	.132	.263
Students Emotional Undereating	-.062	.109	.568
Father Emotional Undereating	-.159	.129	.218
Mother Emotional Undereating	-.036	.120	.763
<b>Father Encouragement to Diet → Unhealthy Eating Behaviors</b>			
Students Emotional Overeating	.004	.141	.980
Fathers Emotional Overeating	-.007	.168	.966
Mothers Emotional Overeating	.438	.191	<b>.022</b>

Student Emotional Undereating	.060	.158	.705
Fathers Emotional Undereating	-.293	.153	<b>.055</b>
Mothers Emotional Undereating	-.209	.172	.225

**Mother Encouragement to Diet → Unhealthy Eating Behaviors**

Students Emotional Overeating	-.097	.149	.512
Fathers Emotional Overeating	.009	.219	.969
Mothers Emotional Overeating	-.386	.192	<b>.044</b>
Students Emotional Undereating	.119	.151	.432
Fathers Emotional Undereating	.112	.191	.555
Mothers Emotional Undereating	-.177	.180	.326

**Student Attachment → Unhealthy Eating Behaviors**

Student Emotional Overeating	.149	.086	.084
Fathers Emotional Overeating	-.097	.119	.416
Mothers Emotional Overeating	-.085	.120	.481
Student Emotional Undereating	.081	.091	.369
Father Emotional Undereating	.076	.117	.520
Mother Emotional Undereating	.038	.113	.739

**Father Attachment → Unhealthy Eating Behaviors**

Students Emotional Overeating	.027	.110	.809
Fathers Emotional Overeating	.218	.142	.126
Mothers Emotional Overeating	-.007	.170	.968
Students Emotional Undereating	-.064	.126	.612
Fathers Emotional Undereating	.191	.138	.168
Mothers Emotional Undereating	-.014	.153	.924

**Mother Attachment → Unhealthy Eating Behaviors**

Students Emotional Overeating	-.328	.101	<b>.001</b>
Fathers Emotional Overeating	.273	.141	<b>.052</b>
Mothers Emotional Overeating	.009	.134	.949
Student Emotional Undereating	.091	.105	.385
Father Emotional Undereating	.335	.125	<b>.007</b>
Mother Emotional Undereating	.441	.114	<b>.000</b>

**Student BMI → Unhealthy Eating Behaviors**

Students Emotional Overeating	.198	.108	.068
Fathers Emotional Overeating	-.018	.160	.912
Mothers Emotional Overeating	.214	.160	.179

Students Emotional Undereating	-.160	.113	.158
Fathers Emotional Undereating	.197	.151	.193
Mothers Emotional Undereating	.449	.134	<b>.001</b>

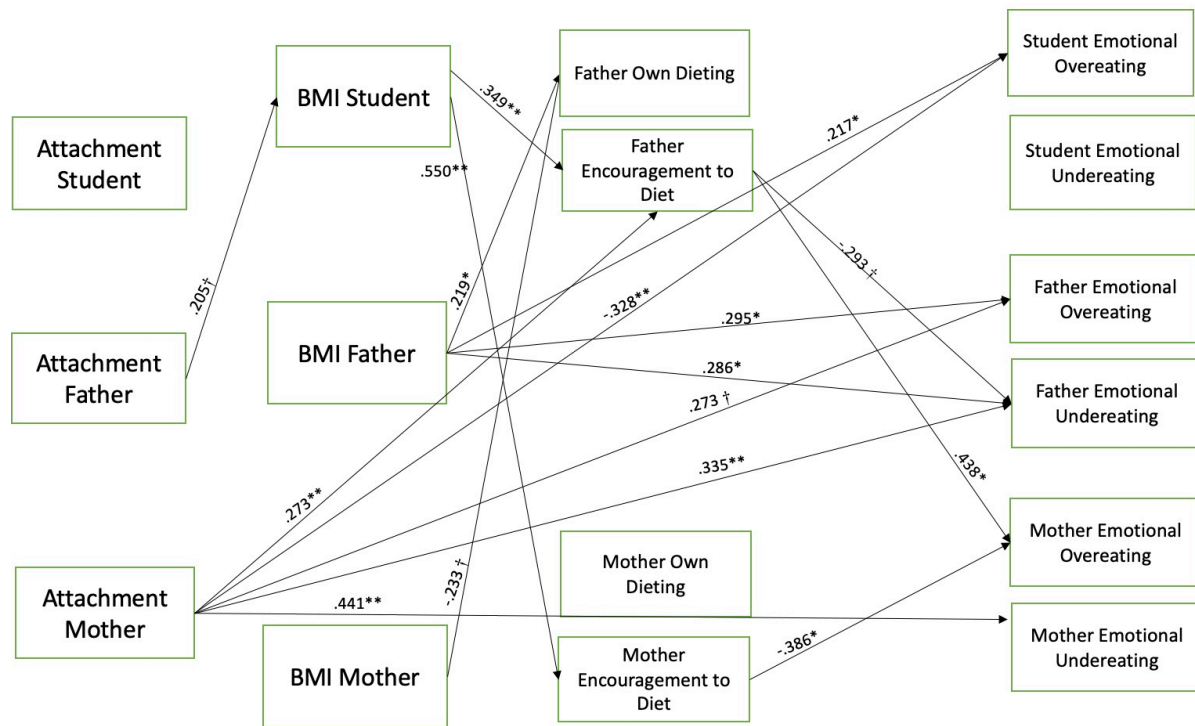
**Father BMI → Unhealthy Eating Behaviors**

Students Emotional Overeating	.217	.101	<b>.031</b>
Fathers Emotional Overeating	.295	.129	<b>.023</b>
Mothers Emotional Overeating	-.075	.146	.606
Students Emotional Undereating	-.217	.115	.060
Fathers Emotional Undereating	.286	.128	<b>.025</b>
Mothers Emotional Undereating	-.051	.134	.701

**Mother BMI → Unhealthy Eating Behaviors**

Students Emotional Overeating	-.031	.100	.754
Fathers Emotional Overeating	-.142	.217	.515
Mothers Emotional Overeating	.071	.158	.655
Students Emotional Undereating	.007	.101	.949
Fathers Emotional Undereating	.017	.177	.922
Mothers Emotional Undereating	-.131	.137	.338

Figure 3. Significance in Path Analysis





## Hypotheses

When considering the independent variable of attachment, only the father's attachment had a significant positive impact on the students BMI highlighting that each category change in attachment lead to a .205 change in the BMI of the students. No significance was found with either the mothers or students' attachment when looking at BMI. No significance was seen for students' attachment impacting any of the other variables. Mothers' attachment was seen as significantly relating to fathers' encouragement to diet for female students highlighting that each category change in attachment leads to a .273 change in encouragement to diet. Hypothesis 1 was partially supported as significance was only seen with the mother's attachment and not the fathers or students to dieting behaviors or encouragement to diet. For the second question of the first hypothesis, the findings did not support that students' attachment influenced their BMI as a significant finding was not found in the path. For the second hypothesis, the third question was partially supported as fathers BMI was significantly related with their own dieting, highlighting each categorical change in BMI was correlated with a .219 change in fathers own dieting behaviors. Each categorical change for BMI of fathers leads to a .295 and .286 change in their emotional overeating and undereating behaviors respectively. Mothers BMI was approaching significance when related to fathers own dieting behaviors in a negative relationship, highlighting that each categorical change in BMI levels for mothers result in a .233 change in the opposite direction of the dieting behaviors for fathers. Significance was also seen for the students BMI when looking at encouragement to diet from both mothers and fathers, highlighting that for each categorical change in BMI for students, a .349 and .550 change can be seen in encouragement to diet for fathers and mothers respectively that supports the fourth hypothesis.

The third hypothesis was not supported as no significance was found between either mothers or fathers' encouragement to diet on students' emotional over or under eating behaviors.

## **Discussion**

The purpose of this study was to determine the impact of attachment on parents' and students BMI, mothers and fathers own dieting behaviors, encouragement to diet for each on their emerging adult children and if this relationship impacts the emotional overeating or under-eating response. Existing literature indicated that parent's perception of their children's BMI impacted encouragement to diet and that secure attachment styles fostered a strong sense of individual self that served as protective factors against external stimuli (Bjorklund et al., 2018; Holmes, 2014). The current literature highlighted that attachment styles impacted multiple aspects of an individual's lived experience such as experience with weight, and how an individual responds when these topics are brought up. Little research has examined how attachment impacted an individual's BMI and the relationship between attachment on other aspects of lived experiences surrounding weight such as dieting conversations through view of behaviors and encouragement and how this impacted eating behaviors. Studies in the past examined this linearly and with one parent, mainly the mother, and how weight conversations impacted their daughters (Balantekin et al., 2014; Bearman et al., 2006; Byely et al., 2015; Klein et al., 2016; Liechty & Lee, 2013). The significant findings from the path analysis helped to expand the view of weight discussions by viewing familial interactions as multileveled and each of the triads lived experiences impacting both others.

**Attachment on BMI, Dieting Beliefs and Unhealthy Eating Behaviors for Students, Fathers and Mothers**

When considering the attachment variable, significance was found when considering this variable within the path and when looking at BMI, the significance was seen with the fathers' attachment on the female students BMI. Research has highlighted that fathers' discussions with their daughters about weight and dieting were viewed as less critical than mothers, which may inform the reasoning and provide further support to the literature (Balatekin, 2019; Klein et al., 2016). These findings also contributed to the field as past research that has looked at how weight conversations impacts dieting behaviors of daughters (Byely et al., 2015; Klein et al., 2016; Liechty & Lee, 2013), and this study added an additional level of understanding to this behavior in the ways that fathers and daughters relate to each other impacts not only their dieting behaviors but their overall experience with weight when considering the BMI levels for daughters. When considering the lens of attachment, for secure fathers, their daughters' lower BMI levels could be explained by the ability for daughters to trust that when they turn to their father, he will be a secure base and do not engage in external means of regulation (Bjorklund et al., 2018; Holmes, 2014). Mothers' secure attachment being related to increased levels of emotional overeating for their daughters differed from the literature that states that secure attachment types result in less external measures to regulate emotional experiences (Bjorklund et al., 2018; Holmes, 2014). A potential factor that potentially impacted this is the difference in how daughters' view weight conversations that come from their mother versus their father. Research has found daughters tend to view weight conversations from their mothers as critical and the undercurrent of this criticism was not looked at through an attachment lens (Balantekin et al., 2014; Bearman et al., 2006). Utilization of the means found within the study as comparison points for the attachment variable offered additions to the research as few studies have employed this methodology (Fraley, 2012).

Differing from past literature, students' attachment did not have any significant impact on either emotional over or under eating behaviors for themselves. Past research found that individuals with secure attachment were less likely to turn to external methods (i.e., food) for regulation (Bjorklund et al., 2018; Holmes, 2014), so our nonsignificant findings for students' attachment with the emotional over and under eating experiences contradicted this literature. With students BMI significantly impacted by encouragement to diet from both mothers and fathers, the results support the past literature that encouragement to diet impacts weight experience as lower BMI levels were correlated with less encouragement to diet for daughters for both mothers and fathers (Musher-Eizenman et al., 2009). BMI is also impacted by many variables that were not controlled for such as genetic components associated with weight status, which could contribute to understanding some of the non-significant findings between attachment and BMI in this study (Quasim et al., 2018).

Interactions within a triadic unit such as with mothers, fathers and their daughters do not occur linearly as everyone's experience impacted the other. Parents' experiences with weight conversations and dieting impacted each other as well as their daughters (Gillison et al., 2016). This was not originally considered in the hypotheses, but many significant findings came from the dyadic interactions between the female students' father and mother. There are not many studies that look at the impact that parents talking about their weight and dieting amongst themselves has on each of their experiences so the significant findings in our study added to the literature in this respect. Mothers' attachment had multiple significant interactions when looking at dieting behaviors for themselves and encouragement to diet for themselves, emotional undereating for themselves, overeating for students and both undereating and overeating for fathers. Research primarily studied the relationship between moms and daughters and even

though the findings from the study contradict the literature, the findings do reinforce the relationship. Expanding on the understanding of the dyadic relationship between mothers and fathers could be a future direction for research.

### **Limitations**

The findings and results from this study add to the research that currently exists, and there are several limitations that can provide clarity to the presence of insignificant findings. As this is a secondary analysis and not a longitudinal study, causation is more difficult to extrapolate the impact of attachment on BMI, dieting beliefs and unhealthy eating behaviors. Also, the way that the sample for the original dataset was collected may have added bias to the survey through the self-report aspect as well as the recruitment of students with the promise of extra credit in their class. The distribution of the survey was done through word of mouth and under the incentive of additional extra credit for additional participants recruited and not random sampling, adding to the likelihood that the sample was not representative of the entire population and instead a specific subset, impacting generalizability further. In addition, of the demographic variables collected, socioeconomic status was not one of them, so it is difficult to ascertain if this sample represents the population in this respect. The ethnicity was recorded and represented diversity in the sample, though most students' mothers and fathers were white, also impacting the generalizability of these findings. Another limitation is that the male students from the sample did not have their data considered as they made a minority of the sample population.

### **Implications**

Understanding the impact that attachment plays in daughters, mothers and fathers' relationship with BMI, dieting beliefs and unhealthy weight control behaviors is important in informing understanding of societal messages around the thin ideal during a time of rising

obesity levels (Dorsey, Eberhardt, Ogden, 2009; Chooi et al., 2019). When considering clinical implications, it is important for marriage and family therapists working with individuals, couples and families to have the knowledge of not only the impact of parent daughter interactions surrounding these topics, but also knowing that parent's weight and dieting conversations impacts them and potentially their romantic relationship as well.

### **Research implications**

Utilizing attachment as the theoretical underpinning of this study has research support and implication for its effectiveness (Obegi & Berant, 2010), in addition to the goodness of fit for this model, future research could utilize this methodology with other datasets and potentially find significance in results. When considering the limitations associated with the data collection when considering the sampling and measurements, researchers may want to utilize a sample that is more representative of the population through inclusion of socioeconomic diversity as well as gender minority groups in a true random sampling process. Since this study found the most significance between mothers and fathers' attachment when considering dieting beliefs and emotional over and undereating, it may be interesting for future researchers to study the impact attachment has on these relationships further with the mother father dyad through a longitudinal study to gain more in depth understanding of the parent relationship with weight related topics and possibly extrapolating this to impact on their relationship. When considering the lack of significance with daughters' attachment, future studies utilizing a true random sampling, without incentives, and in a more controlled environment may help to control for some of the extraneous variables that impacted the significance of this study's results.

### **Clinical Implications**

Marriage and family therapists as well as others within the mental health field could offer support to families who are attempting to navigate conversations surrounding dieting, weight topics and the resulting eating behaviors. While this study did not align with past findings in its entirety, utilization of attachment and theories that incorporate this such as Emotionally Focused therapy (EFT) provide an important perspective when attending to individuals, couple sand families that may be navigating the societally pervasive discussions and topics surrounding weight and dieting behaviors. Utilization of EFT allows for corrective and healing therapeutic conversations to be had. When considering the topic of dieting and weight, injuries have the potential to arise from comments being made both within the family system as well as within parents' dyadic relationship about individuals' food decisions or weight appearance both for themselves and others. EFT therapists can promote conversations that discuss these topics in healthy ways that promote self-efficacy and healing, both for the individual as well as the system. EFT therapists would also work to simultaneously structure conversations to promote restoration to relationships that have been damaged by the comments through systemic discussions of impacts to this both at societal, familial and individual levels when it comes to weight expectations and thoughts. Research pertaining to weight topics and their impact at societal relational and individual levels are important for marriage and family therapists to consider when working with clients. Weight topics and discussions are pervasive at all levels of the system and the connection between attachment, dieting beliefs and unhealthy eating behaviors impact at each of these levels is important in development of context when working with families, individuals, or couples. These topics have the potential to emerge throughout the course of care in the provision of secure attachments to help minimize the negative experiences that can arise from discussions surrounding weight and dieting behaviors and beliefs.

## **Conclusion**

To summarize, attachment influences multiple aspects of an individual's experience with BMI, dieting behaviors and beliefs and emotional over and under eating behaviors within a familial context. As our study supports, fathers' attachment impacts the daughters' BMI and mothers' attachment influences students emotional overeating behaviors, fathers' emotional over and undereating behaviors and the mothers' own emotional under eating behaviors.

Relationships between other dependent variables were also found and centered around the mother and fathers' experiences with their encouragement to diet for daughters' also impacting their as well as their spouses experience with emotional over and under eating behaviors.

Literature furthers the understanding of the impact that parents' encouragement to diet and weight talk has on their daughters'. While our study found mothers' attachment impacts daughters' emotional overeating in the inverse of the literature, more research needs to be conducted to look at the impact that secure attachment has on dieting beliefs and emotional over and undereating behaviors, both for parents within their dyadic relationship as well as for both sons and daughter.



## REFERENCES

- Ackard, D. M., Neumark-Sztainer, D., Story, M., & Perry, C. (2006). Parent–child connectedness and behavioral and emotional health among adolescents. *American Journal of Preventive Medicine, 30*(1), 59–66.  
<https://doi.org/10.1016/j.amepre.2005.09.013>
- Ainsworth, M. D. (1978). The bowlby-ainsworth attachment theory. *Behavioral and Brain Sciences, 1*(3), 436–438. <https://doi.org/10.1017/s0140525x00075828>
- Al Sabbah, H., Vereecken, C. A., Elgar, F. J., Nansel, T., Aasvee, K., Abdeen, Z., Ojala, K., Ahluwalia, N., & Maes, L. (2009). Body weight dissatisfaction and communication with parents among adolescents in 24 countries: International Cross-sectional survey. *BMC Public Health, 9*(1). <https://doi.org/10.1186/1471-2458-9-52>
- Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: Implications for mental health. *The Lancet Psychiatry, 1*(7), 569–576. [https://doi.org/10.1016/s2215-0366\(14\)00080-7](https://doi.org/10.1016/s2215-0366(14)00080-7)
- Ayre, S. K., Jansen, E., Gallegos, D., Tran, C. Q., Do, D. N., & Nambiar, S. (2022). Initial investigation of associations between feeding practices, eating behaviours, and weight status in Vietnamese children using modified questionnaires. *Obesity Research & Clinical Practice, 16*(4), 301–306. <https://doi.org/10.1016/j.orcp.2022.07.002>
- Balantekin, K. N. (2019). The influence of parental dieting behavior on child dieting behavior and weight status. *Current Obesity Reports, 8*(2), 137–144.  
<https://doi.org/10.1007/s13679-019-00338-0>

Balantekin, K. N., Savage, J. S., Marini, M. E., & Birch, L. L. (2014). Parental encouragement of dieting promotes daughters' early dieting. *Appetite*, *80*, 190–196.

<https://doi.org/10.1016/j.appet.2014.05.016>

Bearman SK, Presnell K, Martinez E, Stice E (2006): The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence*. 2006, 35: 229–241. [10.1007/s10964-005-9010-9](https://doi.org/10.1007/s10964-005-9010-9).

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>

Bentler, P. M. (1995). EQS structural equations program manual [Computer software manual]. Encino, CA: Multivariate Software.

Bjørklund, O., Wichstrøm, L., Llewellyn, C. H., & Steinsbekk, S. (2018). Emotional over- and undereating in children: A longitudinal analysis of child and contextual predictors. *Child Development*, *90*(6). <https://doi.org/10.1111/cdev.13110>

Bove, C. F., & Sobal, J. (2011). Body weight relationships in early marriage. weight relevance, weight comparisons, and weight talk. *Appetite*, *57*(3), 729–742.

<https://doi.org/10.1016/j.appet.2011.08.007>

Bowlby, J. (1979). The bowlby-ainsworth attachment theory. *Behavioral and Brain Sciences*, *2*(4), 637–638. <https://doi.org/10.1017/s0140525x00064955>

- Brennan, K., Shaver, P., & Belsky, J., (1998). The adult attachment interview and self-reports of romantic attachment: Associations across domains and methods. *Personal Relationships*, 7(1), 25–43. <https://doi.org/10.1111/j.1475-6811.2000.tb00002.x>
- Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development*, 50(1/2), 3. <https://doi.org/10.2307/3333824>
- Bucchianeri, M. M., Arikian, A. J., Hannan, P. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2013). Body dissatisfaction from adolescence to young adulthood: Findings from a 10 year longitudinal study. *Body Image*, 10(1), 1–7. <https://doi.org/10.1016/j.bodyim.2012.09.001>
- Byely, L., Archibald, A. B., Graber, J., & Brooks-Gunn, J. (2000). A prospective study of familial and social influences on girls' body image and dieting. *International Journal of Eating Disorders*, 28(2), 155–164. [https://doi.org/10.1002/1098108x\(200009\)28:2<155::aid-eat4>3.0.co;2-k](https://doi.org/10.1002/1098108x(200009)28:2<155::aid-eat4>3.0.co;2-k)
- Cash, T. F., & Smolack, L. (2011). Book review: Body image: A handbook of science, practice, and prevention (2nd ed.). *Psychology of Women Quarterly*, 36(3), 380–381. <https://doi.org/10.1177/0361684312439992>
- Cash T. F. & Smolak L. (Eds.), Body image: A handbook of science, practice, and prevention. New York, NY: The Guilford Press; DOI: 10.1016/B978-0-12-384925-0.00028-6
- Chang, V. W., & Christakis, N. A. (2003). Self-perception of weight appropriateness in the United States. *American Journal of Preventive Medicine*, 24(4), 332–339. [https://doi.org/10.1016/s0749-3797\(03\)00020-5](https://doi.org/10.1016/s0749-3797(03)00020-5)

- Chooi, Y. C., Ding, C., & Magkos, F. (2019). The epidemiology of Obesity. *Metabolism*, *92*, 610. <https://doi.org/10.1016/j.metabol.2018.09.005>
- Clifford, D., Ozier, A., Bundros, J., Moore, J., Kreiser, A., & Morris, M. N. (2015). Impact of non-diet approaches on attitudes, behaviors, and Health Outcomes: A systematic review. *Journal of Nutrition Education and Behavior*, *47*(2). <https://doi.org/10.1016/j.jneb.2014.12.002>
- Dorsey, R. R., Eberhardt, M. S., & Ogden, C. L. (2009). Racial/ethnic differences in weight perception. *Obesity*, *17*(4), 790–795. <https://doi.org/10.1038/oby.2008.603>
- Eisenberg, M. E., Neumark-Sztainer, D., & Paxton, S. J. (2006). Five-year change in body satisfaction among adolescents. *Journal of Psychosomatic Research*, *61*(4), 521–527. <https://doi.org/10.1016/j.jpsychores.2006.05.007>
- Feeney, J. A. (2016). Adult romantic attachment developments in the study of couple relationships. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (3rd ed., pp. 435–463). essay, The Guilford Press. Doi:10.1177/1468017309342543
- Fleary, S. A., & Ettienne, R. (2014). Inherited or behavior? What causal beliefs about obesity are associated with weight perceptions and decisions to lose weight in a US sample? *International Scholarly Research Notices*, *2014*, 1–10. <https://doi.org/10.1155/2014/632940>
- Freund, R. J., Wilson, W. J., & Mohr, D. L. (2006). Multiple regression. *Statistical Methods*, 375–471. <https://doi.org/10.1016/b978-0-12-374970-3.00008-1>

- Frisén, A., Lunde, C., & Berg, A. I. (2015). Developmental patterns in body esteem from late childhood to young adulthood: A growth curve analysis. *European Journal of Developmental Psychology, 12*(1), 99–115.  
<https://doi.org/10.1080/17405629.2014.951033>
- Gattario, K. H., & Frisén, A. (2019). From negative to positive body image: Men's and women's journeys from early adolescence to emerging adulthood. *Body Image, 28*, 53–65.  
<https://doi.org/10.1016/j.bodyim.2018.12.002>
- Grogan, S. (2016). Body image. <https://doi.org/10.4324/9781315681528>
- Herle, M., Fildes, A., Steinsbekk, S., Rijdsdijk, F., & Llewellyn, C. H. (2017). Emotional over and under-eating in early childhood are learned not inherited. *Scientific Reports, 7*(1).  
<https://doi.org/10.1038/s41598-017-09519-0>
- Hintsanen, M., Jokela, M., Pulkki-Råback, L., Viikari, J. S., & Keltikangas-Järvinen, L. (2010). Associations of youth and adulthood body-mass index and waist-hip ratio with attachment styles and dimensions. *Current Psychology, 29*(3), 257–271.  
<https://doi.org/10.1007/s12144-010-9084-8>
- Holmes, P., & Farnfield, S. (2014). *The Routledge Handbook of Attachment: Theory.*  
<https://doi.org/10.4324/9781315762098>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.  
<https://doi.org/10.1080/10705519909540118>

- Jaworowska, A., & Bazylak, G. (2009). An outbreak of body weight dissatisfaction associated with self-perceived BMI and dieting among female pharmacy students. *Biomedicine & Pharmacotherapy*, 63(9), 679–692. <https://doi.org/10.1016/j.biopha.2008.08.005>
- Kittiskulnam, P., & Johansen, K. L. (2019). The obesity paradox: A further consideration in dialysis patients. *Seminars in Dialysis*, 32(6), 485–489. <https://doi.org/10.1111/sdi.12834>
- Klein, K. M., Brown, T. A., Kennedy, G. A., & Keel, P. K. (2016). Examination of parental dieting and comments as risk factors for increased drive for thinness in men and women at 20-year follow-up. *International Journal of Eating Disorders*, 50(5), 490–497. <https://doi.org/10.1002/eat.22599>
- Kline, R. B. (2015). Global fit testing. In R. B. Kline (Eds.), *Principles and practice of structural equation modeling* (pp. 262-299). Guilford Publications.
- Liechty, J. M., & Lee, M.-J. (2013). Longitudinal predictors of dieting and disordered eating among young adults in the U.S. *International Journal of Eating Disorders*, 46(8), 790–800. <https://doi.org/10.1002/eat.22174>
- Mäkinen, M., Puukko-Viertomies, L.-R., Lindberg, N., Siimes, M. A., & Aalberg, V. (2012). Body dissatisfaction and body mass in girls and boys transitioning from early to mid adolescence: Additional role of self-esteem and eating habits. *BMC Psychiatry*, 12(1). <https://doi.org/10.1186/1471-244x-12-35>
- Marques, A., Naia, A., Branquinho, C. S. D. S., & Matos, M. G. (2018). Adolescents' eating behaviours and its relationship with family meals, body mass index and body weight perception. *Nutrición Hospitalaria*, 35(3), 550-556. doi: 10.20960/nh.1540

- Musher-Eizenman, D. R., de Lauzon-Guillain, B., Holub, S. C., Leporc, E., & Charles, M. A. (2009). Child and parent characteristics related to parental feeding practices. A cross-cultural examination in the US and France. *Appetite*, *52*(1), 89–95.  
<https://doi.org/10.1016/j.appet.2008.08.007>
- Obegi, J. H., & Berant, E. (2010). *Attachment theory and research in clinical work with adults*. Guilford Press.
- Olobatuyi, M. E. (2021). User guide to impact network analysis (INA). RTB User Guide. *University Press America*. <https://doi.org/10.4160/9789290605768>
- Palmeroni, N., Luyckx, K., Verschueren, M., & Claes, L. (2020). Body dissatisfaction as a mediator between identity formation and eating disorder symptomatology in adolescents and emerging adults. *Psychologica Belgica*, *60*(1), 328–346.  
<https://doi.org/10.5334/pb.564>
- Qasim, A., Turcotte, M., de Souza, R. J., Samaan, M. C., Champredon, D., Dushoff, J., Speakman, J. R., & Meyre, D. (2017). On the origin of obesity: Identifying the biological, environmental and cultural drivers of genetic risk among human populations. *Obesity Reviews*, *19*(2), 121–149. <https://doi.org/10.1111/obr.12625>
- Ricciardelli, L. A. (2012). Body image development – adolescent boys. *Encyclopedia of Body Image and Human Appearance*, 180–186. <https://doi.org/10.1016/b978-0-12-384925-0.00028-6>

- Rogers, C. B., Webb, J. B., & Jafari, N. (2018). A systematic review of the roles of body image flexibility as correlate, moderator, mediator, and in intervention science (2011-2018). *Body Image*, 27, 43–60. <http://dx.doi.org/10.1016/j.bodyim.2018.08.003>
- Scaglioni, S., Salvioni, M., & Galimberti, C. (2008). Influence of parental attitudes in the development of children eating behavior. *British Journal of Nutrition*, 99(S1).  
<https://doi.org/10.1017/s0007114508892471>
- Schaefer, L. M., Burke, N. L., & Thompson, J. K. (2018). Thin-ideal internalization: How much is too much? *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 24(5), 933–937. <https://doi.org/10.1007/s40519-018-0498-x>
- Sharpe, T. M., Killen, J. D., Bryson, S. W., Shisslak, C. M., Estes, L. S., Gray, N., Crago, M., & Taylor, C. B. (1998). Attachment style and weight concerns in preadolescent and adolescent girls. *International Journal of Eating Disorders*, 23(1), 39–44.  
[https://doi.org/10.1002/\(sici\)1098-108x\(199801\)23:1<39::aid-eat5>3.0.co;2-2](https://doi.org/10.1002/(sici)1098-108x(199801)23:1<39::aid-eat5>3.0.co;2-2)
- Tylka, T. L., Russell, H. L., & Neal, A. A. (2015). Self-compassion as a moderator of thinness related pressures' associations with thin-ideal internalization and disordered eating. *Eating Behaviors*, 17, 23–26. <https://doi.org/10.1016/j.eatbeh.2014.12.009>
- Ventura, A. K., & Birch, L. L. (2008). Does parenting affect children's eating and weight status? *International Journal of Behavioral Nutrition and Physical Activity*, 5(1), 15.  
<https://doi.org/10.1186/1479-5868-5-15>
- Weir, C. B., & Jan, A. (2019). BMI classification percentile and cut off points.



Yourell, J. L., Doty, J. L., Beauplan, Y., & Cardel, M. I. (2021). Weight-talk between parents and adolescents: A systematic review of relationships with health-related and psychosocial outcomes. *Adolescent Research Review*, 6(4), 409–424.

<https://doi.org/10.1007/s40894-021-00149-2>

