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# Parenting Practices and Disordered Eating Behaviors in Adolescents

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Parenting Practices and Disordered Eating Behaviors in Adolescents

Rebekah Mae Johnson

An evidence-based scholarly paper submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Master of Science

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## ABSTRACT

### Parenting Practices and Disordered Eating Behaviors in Adolescents

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**Background/Purpose:** Eating disorders are a common chronic condition among adolescents. Some parenting styles have been associated with adolescent disordered eating behaviors (DEB), which can lead to eating disorders and a variety of other psychological and physical complaints. Healthcare practitioners and parents need to identify these DEB early and intervene in hopes of preventing the sequela of other health problems. The purpose of this article is to review current research on the association between parenting styles or practices and DEB as well as associated psychological symptoms in adolescents.

**Methods:** CINAHL, Academic Search Premier, MEDLINE, and PsycINFO databases were searched for English-language research articles published since 2010. Search strategies included (adolescen\*) AND (parental OR parenting styles) AND (eating disorder OR disordered eating). Eleven correlational, prospective, and longitudinal studies were included in this review.

**Results:** Researchers found a correlation between the two parenting styles that exhibit low warmth (authoritarian and neglectful) and DEB in adolescents. They found a positive correlation between authoritarian parenting style and unhealthy and extreme weight control behaviors, emotional eating, depression, and anxiety in adolescents of both genders. Neglectful parenting correlated with unhealthy and extreme weight control behaviors, bingeing, bulimia symptoms, lower self-esteem, and social withdrawal. In addition, weight-related teasing from parents was also associated with bingeing. Overall, regular family meals were protective against DEB.

**Conclusions:** Knowing about the correlations between parenting practices and adolescent DEB can help healthcare providers educate parents about how to create a healthy atmosphere in the home. Interventional studies should be done to see if adolescent DEB decrease after parents receive education about these parenting practices.

**Keywords:** adolescents, eating disorders, disordered eating, parenting styles, parental

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### Parenting Practices and Disordered Eating Behaviors in Adolescents

Eating disorders, typically characterized by obsession with weight and weight-controlling practices, are the third most prevalent chronic condition in adolescents, second only to obesity and asthma (Herpertz-Dahlmann, 2015). In fact, 11.72% of adolescents, aged 13 to 18 years, in a national survey met clinical criteria for an eating disorder, such as anorexia nervosa (AN), bulimia nervosa (BN), eating disorder not otherwise specified (EDNOS), binge-eating disorder (BED), subthreshold AN, or subthreshold BED (Le Grange, Swanson, Crow, & Merikangas, 2012).

In addition to adolescents with these diagnoses, some adolescents fail to meet the clinical diagnostic criteria for an eating disorder, but still engage in risky eating behaviors and are in danger of developing an eating disorder. For instance, the Centers for Disease Control and Prevention (2013) showed that in a 30-day period, up to 13% of adolescents did not eat for a period of 24 hours or more in an attempt to lose weight or not gain any weight, and 4.4% vomited or used a laxative for this same reason. Zubatsky, Berge, and Neumark-Sztainer (2015) categorized risky eating behaviors into unhealthy weight control behaviors (fasting, eating little, using meal substitutes, skipping meals, and smoking more cigarettes), extreme weight control behaviors (using diet pills, laxatives, or diuretics, or self-induced vomiting), and binge eating. Therefore, in order to capture the entire population of adolescents struggling with both clinical and subclinical eating disorder diagnoses, this article will use the term disordered eating behaviors (DEB) to refer to these behaviors.

DEB is a relevant concern for all healthcare providers working with adolescents due to its prevalence, multifaceted nature, and correlation with many other serious comorbidities. Physical complications in patients with AN or BN include bradycardia, prolonged QT interval, anemia,

retardation of growth and pubertal development, osteoporosis, and metabolic alkalosis or acidosis (Herpertz-Dahlmann, 2015). In addition to these dangerous physical complications, many patients struggle with comorbid psychological problems. Patients diagnosed with AN have a high lifetime prevalence of one or more comorbid psychological conditions, such as a mood disorder (60%), anxiety disorder (25%), obsessive compulsive disorder (OCD), substance abuse (25%), or suicidality (with suicide attempts in up to 7%) (Herpertz-Dahlmann, 2015). Patients diagnosed with BN similarly have a high lifetime prevalence of a mood disorder (50%), anxiety disorder (66%), or substance abuse (20%) (Herpertz-Dahlmann, 2015). Perhaps the most startling statistic is that over half of these BN patients struggle with suicidal ideation, and one third have a history of suicide attempts (Herpertz-Dahlmann, 2015). Because adolescents with DEB present with a variety of other psychological and physical complaints, it is vital that healthcare providers and parents identify these behaviors early and intervene in hopes of stopping this dangerous sequela of other health problems.

Consequently, healthcare providers need to look for patterns in the home that might raise the risk for DEB. Some research has shown that certain parenting styles are associated with greater risk of eating disorders (Lobera, Ríos, & Casals, 2011). Identifying the parenting style or certain parenting behaviors can be helpful in preventing eating disorders if healthcare providers identify early and intervene appropriately. The purpose of this article is to review current research on the association between parenting styles or practices and DEB as well as associated psychological symptoms in adolescents.

### **Methods**

In order to get the most comprehensive list of articles, CINAHL, Academic Search Premier, MEDLINE, and PsycINFO databases were searched for English research articles

published between January 2010 and March 2018. Search strategies included (adolescen\*) AND (parental OR parenting styles) AND (eating disorder OR disordered eating). Other articles were found by reviewing the reference lists of articles found using search terms and by reviewing at other research by the authors. The resulting 154 studies were then evaluated based on several inclusion criteria: (1) The sample being studied had to include adolescents or older adults reflecting on their experiences in adolescence. Studies with samples focused exclusively on younger or older samples were excluded. (2) The study evaluated specific parenting styles or practices in relation to adolescent DEB. If the article did not assess specific parental practices in some way, it was excluded. Following evaluation based on the inclusion and exclusion criteria, eleven correlational, prospective, and longitudinal studies remained to be included in this literature review.

## **Results**

Included studies examined the relationship between parenting styles and practices and a variety of DEB in adolescents. Because psychological responses often occur in conjunction with these DEB, some studies also incorporated measurements of body dissatisfaction, weight phobia, drive for thinness, anxiety, and depression in adolescents and their relationship with parenting styles and practices.

### **Parenting Styles**

See Figure 1. According to Baumrind's initial research in 1967 and Maccoby and Martin's later work in 1983 developing a parenting style model, parenting styles are commonly broken into four categories: authoritative, authoritarian, permissive, and neglectful or uninvolved (Power, 2013). These parenting style categories are based on responsiveness (warmth) and demandingness (control) (Lobera et al., 2011; Power, 2013; Zubatsky et al., 2015). Authoritative

parenting is characterized by high levels of both demandingness and responsiveness, and authoritarian parenting is associated with high levels of demandingness and low amounts of responsiveness (Lobera et al., 2011; Power, 2013; Zubatsky et al., 2015). The permissive style is characterized by low levels of demandingness with high levels responsiveness, and neglectful or uninvolved parenting is characterized by low levels of both demandingness and responsiveness (Lobera et al., 2011; Power, 2013; Zubatsky et al., 2015).

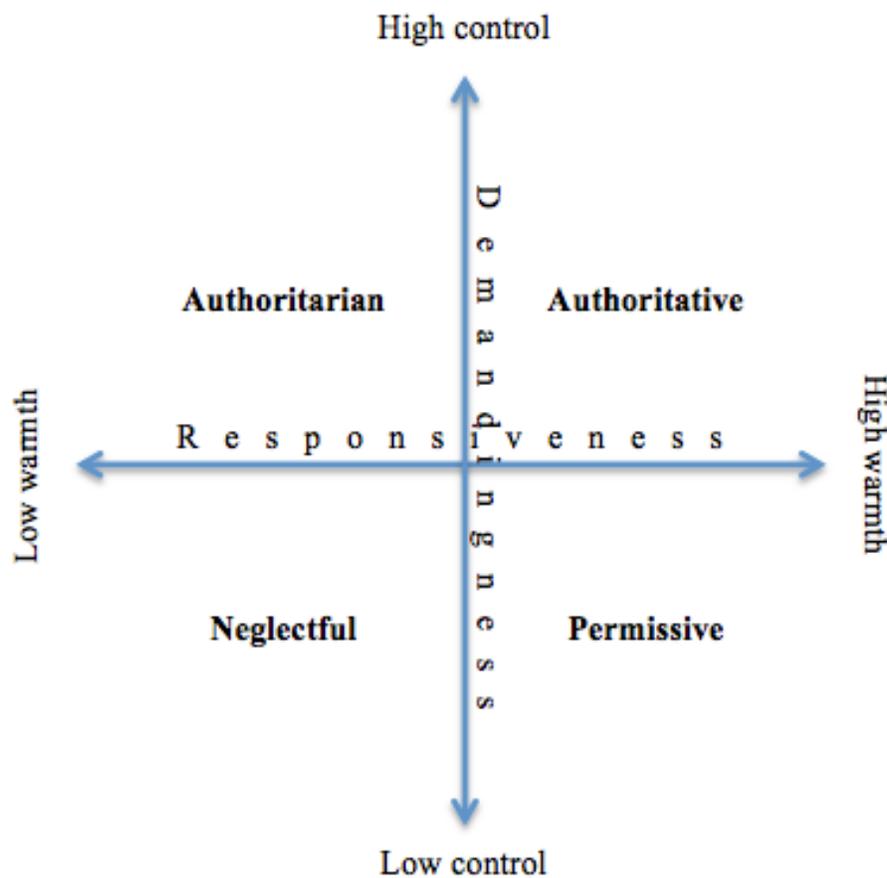


Figure 1. Diagram of parenting styles.

### Relationship Between Parenting Styles and DEB

**Authoritative and permissive parenting styles.** According to the literature, two types of parenting styles appear to be more protective against DEB in adolescents—authoritative and permissive. These both include high parental care and affection, with varying amounts of control.

In Project EAT (Eating Among Teens), a longitudinal study conducted with adolescents in Minnesota, Zubatsky et al. (2015) had 1,386 females and 1,130 males (11 to 18 years at baseline) answer questions about their mother and fathers' parenting styles and their own DEB. The multiethnic participants were surveyed across 31 middle and high schools in the Minneapolis area. Researchers stratified parents into the four parenting styles based on adolescents' responses at baseline, then measured the same adolescents' DEB at a five year follow up to determine the probability of engaging in DEB for each parenting style. DEB were categorized as unhealthy weight control behaviors, extreme weight control behaviors, and binge eating (Zubatsky et al., 2015). See Table 1. No significant longitudinal association was found between fathers' parenting style and any of the three DEB categories for either male or female adolescents (Zubatsky et al., 2015).

Table 1

*Disordered Eating Behaviors From The Eating Among Teens Study*

Disordered Eating Behavior	Definition
Unhealthy weight control behaviors	Fasting, eating little, using meal substitutes, skipping meals, and smoking more cigarettes
Extreme weight control behaviors	Using diet pills, laxatives, or diuretics, or self-induced vomiting
Binge eating	Eating large amounts of food in a short period of time

However, there were some significant associations between mothers' parenting style and DEB. Female adolescents with authoritative and permissive mothers (both styles associated with high responsiveness/warmth) had the lowest probability of engaging in unhealthy weight control behaviors ( $F = 4.57, p = 0.004$ ) and binge eating behaviors ( $F = 3.91, p = 0.009$ ) when compared to the two parenting styles associated with low warmth and responsiveness (Zubatsky

et al., 2015). Similarly, male adolescents with authoritative and permissive mothers had the lowest predicted probability of using unhealthy weight control behaviors ( $F = 2.66, p = 0.047$ ) when compared to the two parenting styles associated with low responsiveness and care (Zubatsky et al., 2015). Probabilities between mothers' parenting styles and extreme weight control behaviors for both adolescent genders were not statistically significant (Zubatsky et al., 2015). Based on these results, it appears that adolescents with parents who demonstrate high responsiveness and warmth are less likely to engage in certain DEB. In contrast, other research has found correlations between the other two parenting styles and increased DEB in adolescents.

**Authoritarian parenting style.** As discussed previously, authoritarian parenting is associated with high amounts of control over the adolescent, in conjunction with low amounts of warmth and responsiveness. High control can include exerting pressure on children to eat, establishing food rules, and restricting certain kinds and amounts of food (Lobera et al., 2011), and some studies have investigated a possible link between these kinds of high control parenting behaviors and DEB in adolescents.

For example, Loth, MacLehose, Fulkerson, Crow, & Neumark-Sztainer (2014) studied 1,045 male and 1,185 female adolescents (11 to 18 years) participating in the EAT study described earlier. Based on the self-reported data gathered from participants and their parents about parenting behaviors (pressure to eat practices or food restriction) and DEB, researchers found an increased use of weight control behaviors in male and female adolescents whose parents used high amounts of food restriction (Loth, MacLehose, Fulkerson, et al., 2014). In fact, females were 1.33 times more likely to use extreme weight control behaviors for every unit of increase in restriction from their mother ( $PR = 1.33, CI = 1.02-1.74, p = 0.04$ ). Likewise, males were 2.07 times more likely to use extreme weight control behaviors for every one unit increase

in food restriction from their mothers ( $PR = 2.07$ ,  $CI = 1.27-3.39$ ,  $p < 0.01$ ), and higher maternal food restriction was also associated with unhealthy weight control behaviors ( $PR = 1.16$ ,  $CI = 1.04-1.29$ ,  $p < 0.01$ ) (Loth, MacLehose, Fulkerson, et al., 2014). In addition, adolescent males were more likely to use unhealthy weight control behaviors when exposed to increased pressure-to-eat behaviors by mothers ( $PR = 1.23$ ,  $CI = 1.03-3.00$ ,  $p \leq 0.01$ ), and were more likely to use extreme weight control behaviors when exposed to increased pressure-to-eat behaviors by fathers ( $PR = 2.16$ ,  $CI = 1.46-3.22$ ,  $p \leq 0.01$ ) (Loth, MacLehose, Fulkerson, et al., 2014).

Likewise, in the follow up EAT study by Zubatsky et al. (2015), females with authoritarian mothers reported more binge eating (17.1%) five years later than those with authoritative (8.3%), permissive (10.7%), or neglectful (12.2%) mothers ( $F = 3.91$ ,  $p = 0.009$ ). Males did not have a significant association between maternal parenting style and bingeing or extreme weight control behaviors five years later. However, male adolescents had a higher predicted probability of unhealthy weight control behaviors with authoritarian mothers (37%) compared to others with authoritative (29.3%) or permissive (27.1%) mothers ( $F = 2.66$ ,  $p < 0.01$ ) (Zubatsky et al., 2015).

In a study in Seville, Spain, Lobera et al. (2011) included 10 male and 60 female participants ( $M = 21.30$  years) with a diagnosis of AN, BN, or EDNOS, who received weekly care at an Eating Disorders Unit. Participants self-reported their parents' parenting style, and their own self-esteem, coping strategies, anxiety, depression, and eating disorders both retrospectively (during the first 16 years of life) and at the time of the survey. As reported by the participants, the most dominant parenting style during their adolescence was affectionless control (authoritarian—high control, low responsiveness/warmth). In fact, 84.3% of participants' mothers and 75.7% of their fathers met the criteria for this parenting style. In addition, there was

a significant negative correlation between BN and current parental warmth ( $Rho = -0.313, p < 0.05$ ) (Lobera et al., 2011).

By comparison, Bäck (2011) included 45 male and 35 female healthy high school students ( $M = 18$  years) in Stockholm, Sweden. Adolescents self-reported on their height, weight, and DEB (dieting, oral control, and bulimia), as well as their parents' food rules in the home. These parental food rules included restriction (restricting the adolescent's intake, especially unhealthy foods), encouragement (encouraging the adolescent to eat healthy foods), and control (using food as a reward or punishment for the adolescent's behavior). There was a statistically significant relationship between increased DEB with food restriction ( $r = 0.41, p < 0.05$ ) and with encouragement ( $r = 0.40, p < 0.05$ ) (Bäck, 2011). In addition, there was also a significant relationship for females between increased BMI with food restriction ( $r = 0.43, p < 0.05$ ) and with control from parents ( $r = 0.36, p < 0.05$ ) (Bäck, 2011). The correlation approached significance between DEB and increased BMI in the female adolescent ( $r = 0.34, p = 0.06$ ) (Bäck, 2011). On the other hand, males did not have any statistically significant correlations between parental food rules, DEB, and BMI (Bäck, 2011).

Zhu Luo, Cai, Li, and Liu (2014) also examined the effects of high control exhibited by parents over their children by gathering self-reported data about DEB and parenting (specifically measuring authoritarian parenting) from 258 male and 336 female 10<sup>th</sup> and 11<sup>th</sup> graders ( $M = 16.7$  years) living in Changsha City, China. They found a positive correlation between emotional eating (eating in response to anxiety, depression, or hostility) and high control from mothers ( $r = 0.12, p < 0.01$ ) and between emotional eating and high control from fathers ( $r = 0.17, p < 0.01$ ). On the other hand, they found a negative correlation between adolescent self-control and high control from mothers ( $r = -0.24, p < 0.01$ ) or high control from fathers ( $r = -0.21, p < 0.01$ ) (Zhu et al., 2014).

**Neglectful parenting.** As previously discussed, neglectful parents exhibit low levels of both control and warmth/responsiveness, and were once labeled as “uninvolved” by Maccoby & Martin in 1983 (Lobera et al., 2011; Power, 2013; Zubatsky et al., 2015).

In the Lobera et al. (2011) study described previously, when researchers asked their participants (all being treated for an eating disorder at the time) about their parents’ parenting style during adolescence, the second most common style for both genders was neglectful (with 12.9% of mothers and 11.4% of fathers). This style from fathers was mainly correlated with bulimia symptoms ( $H = 10.493, p < 0.01$ ), in conjunction with body dissatisfaction ( $H = 4.765, p < 0.05$ ) and drive for thinness ( $H = 5.112, p < 0.05$ ). Analogous results were found in adolescents with neglectful mothers in regards to body dissatisfaction ( $H = 4.956, p < 0.05$ ) and drive for thinness ( $H = 5.001, p < 0.05$ ) (Lobera et al., 2011). Krug et al. (2016) described a “low warmth and low monitoring” parenting style similar to the neglectful parenting style described previously (p. 235). They studied 633 male and 667 female adolescents and a parent (usually mother) living in Victoria, Australia. Data about adolescent DEB and parenting practices were first collected from the participants and their parents when the adolescents were 13 to 14 years old and then again two years later. The risk for binge-eating behaviors ( $OR = 5.1, CI = 2.1, -12; t = 1.69, p = 0.093$ ), body dissatisfaction ( $OR = 3.4, CI = 1.4, -8; t = 2.56, p = 0.011$ ), and drive for thinness ( $OR = 4.3, CI = 1.7, -11.1; t = 3.22, p = 0.001$ ) increased in females with parents with this style compared to those with high parental warmth and monitoring. Males with low control and care similarly had higher binge-eating rates compared to those with high parental care and control ( $OR = 2.4, CI = 1.0, -5.3; t = 0.50, p = 0.61$ ), but body dissatisfaction and drive for thinness rates were not significant.

In the EAT five year follow up study by Zubatsky et al. (2015) discussed previously,

neglectful parenting was the least common parenting style of mothers of both males and females; however, neglectful parenting had high probabilities for DEB in both males and females. Neglectful maternal parenting had the second highest predicted probability of unhealthy weight control behaviors at 65% ( $F = 4.57, p = 0.004$ ) and binge eating at 12.2% ( $F = 3.91, p = 0.009$ ) for females. And for males, neglectful maternal parenting actually had the highest predicted probability of unhealthy weight control behaviors at 37.6% ( $F = 2.66, p = 0.047$ ) (Zubatsky et al., 2015).

### **Relationship Between Other Parenting Practices and DEB**

**Weight criticism.** Santoncini, Martín, García, González-Forteza, & Gutiérrez (2013) included 2,174 female participants ( $M = 16.3$  years) living in Mexico. Adolescents self-reported affection, communication, support, and criticism from both parents, as well as affection and criticism from siblings. Participants also reported on risky eating behaviors, self-esteem, body image, and depression. DEB scores were higher among females who received criticism from a parent or sibling ( $p \leq 0.05$ ), and DEB increased as BMI increased ( $p \leq 0.05$ ) (Santoncini et al., 2013). Thus, criticism was more connected with DEB in females classified as obese or overweight than those classified as normal weight (Santoncini et al., 2013).

Similarly, in the United States, Haines, Kleinman, Rifas-Shiman, Field, & Austin (2010) studied 4,262 female participants and 2,910 male participants ages 11 to 17 years. At the onset of the study, 219 females and 30 males were already engaged in purging, and 426 females and 90 males were already engaged in bingeing. Initially and then for three subsequent years, adolescents answered questions annually about a variety of health behaviors, DEB, and home and family eating behaviors and attitudes. BMI was calculated according to self-reported data. For females, parental teasing about the adolescent's weight was directly associated with bingeing ( $OR = 1.23, CI = 1.08-1.41$ ) and being overweight or obese ( $OR = 2.05, CI = 1.82-2.31$ ) initially, as well as

three years later ( $OR = 0.29$ ,  $CI = 1.08-1.55$ ;  $OR = 1.64$ ,  $CI = 0.88-0.97$ ) (Haines et al., 2010). At baseline, males had comparable positive associations to females between parental weight teasing and bingeing, as well as being overweight or obese (homogenous effect  $OR = 1.31$ ,  $CI = 1.15-1.50$ ), but these associations did not remain three years later (Haines et al., 2010). Likewise, when Loth, MacLehose, Bucchianeri, Crow, and Neumark-Sztainer (2014) performed another follow-up study to EAT with 1,082 females and 820 males, they found weight teasing at baseline was not a significant predictor of DEB ten years later in young adulthood in both males and females.

**Maternal thin body ideal.** Linville, Stice, Gau, & O'Neil (2011) studied 483 adolescent females ( $M = 17.5$  years) randomly recruited from schools in Oregon. Female adolescents were interviewed about their DEB according to diagnostic criteria, and both adolescents and their mothers were surveyed about ideal body image, body dissatisfaction, pressure to be thin, social support, and DEB. Linville et al. (2011) found that maternal pressure to be thin was not statistically significantly related to increased bulimic symptoms in the adolescents ( $estimate = 0.041$ ,  $SE = 0.021$ ,  $t = 1.93$ ,  $p = 0.054$ ,  $r = 0.09$ ). However, a higher thin body ideal in mothers was significantly associated with a higher thin body ideal in their adolescent daughter ( $estimate = 0.171$ ,  $SE = 0.041$ ,  $t = 4.24$ ,  $p < 0.001$ ,  $r = 0.019$ ) and subsequent increased bulimic symptoms in their adolescent ( $estimate = 0.018$ ,  $SE = 0.009$ ,  $t = 2.08$ ,  $p = 0.038$ ,  $r = 0.10$ ) (Linville et al., 2011).

**Family meals.** Haines et al. (2010) studied family meal frequency in relation to DEB and BMI. At baseline, family meal frequency was inversely related to purging ( $OR = 0.76$ ,  $CI = 0.63-0.91$ ) and bingeing ( $OR = 0.87$ ,  $CI = 0.77-1.00$ ) in their adolescent participants. During the prospective period, the frequency of family meals was also inversely related to purging, bingeing, and being overweight for the adolescents as a homogenous main effect ( $OR = 0.90$ ,  $CI = 0.83-$

0.98), but the individual outcomes of these variables did not have statistically significant relationships with the frequency of family meals (Haines et al., 2010). Likewise, Loth et al. (2015) found similar trends in the relationship between DEB and family meal frequency in the adolescents participating in the EAT study. In male adolescents, odds of males engaging in unhealthy weight control behaviors decreased by 0.83 with each additional meal eaten together as a family in the past week if parents reported low levels of pressure-to-eat feeding practices ( $p < 0.01$ ) (Loth et al., 2015). However, if parents reported high levels of pressure-to-eat feeding practices, family meals offered no protection against these unhealthy weight control behaviors ( $OR = 1.00$ ,  $CI = 0.91-1.10$ ), and no statistically significant associations were found between family meal frequency and binge eating or extreme weight control behaviors in male adolescents (Loth et al., 2015).

In female adolescents, greater family meal frequency in homes with low levels of weight-related teasing was associated with decreased odds of dieting ( $OR = 0.90$ ,  $CI = 0.85-0.96$ ) (Loth et al., 2015). However, the benefits of family meals were essentially negated in homes with high levels of weight talk, weight-related teasing, and poor overall family functioning. In homes with high levels of weight-related teasing, the odds of dieting increased among females with more frequent family meals ( $OR = 1.09$ ,  $CI = 0.97-1.24$ ) (Loth et al., 2015). And the odds of using unhealthy weight control behaviors were higher with frequent family meals if families had poor overall functioning ( $p < 0.01$ ), and frequent family meals were even a risk factor for dieting in females with high levels of weight talk at home ( $p = 0.05$ ) (Loth et al., 2015).

### **Relationship Between Parenting Practices and Associated Psychological Symptoms**

Some studies about parenting styles also included data about various adolescent psychological symptoms that are often found simultaneously with the DEB discussed prior.

Lobera et al. (2011) included several of these psychological symptoms in their research. Authoritarian parenting style during adolescence from mothers was positively associated with higher depression scores ( $H = 5.476, p < 0.05$ ) and worse coping skills (i.e. avoidance) ( $H = 4.897, p < 0.05$ ) in both genders. In addition, authoritarian parenting style from fathers was associated with higher scores in depression ( $H = 6.901, p < 0.01$ ) and anxiety ( $H = 5.477, p < 0.05$ ) in both genders (Lobera et al., 2011). Zhu et al. (2014) similarly found a positive correlation between high amounts of high control from mothers or fathers and adolescent worrying and fear ( $r = 0.20, p < 0.01$ ;  $r = 0.26, p < 0.01$ ). On the other hand, neglectful paternal parenting in adolescence was associated with lower self-esteem ( $H = 5.012, p < 0.05$ ) (Lobera et al., 2011), and patients who reported their mothers' current parenting style as neglectful had higher social withdrawal scores ( $H = 4.282, p < 0.05$ ) (Lobera et al., 2011). Overall, family criticism was correlated with decreased self-esteem, increased depressive symptoms, increased internalization of the thin ideal, and decreased affection from father, mother, and siblings (Santoncini et al., 2013).

## Discussion

### Limitations

There were several limitations to this literature review. To the extent that studies examined different variables and outcomes, it was difficult to compare and contrast findings. Each study contributed unique findings about different parenting behaviors, and adolescent DEB and psychological effect. Additionally, two studies had relatively small sample sizes, so it is difficult to generalize those samples to the larger adolescent population (Bäck, 2011; Lobera et al., 2011). The studies used in this review took place in various countries (Australia, China, Mexico, Spain, Sweden, and the United States) and had some similar findings, showing the

global nature of this problem in adolescents. This crossing of cultural lines makes the results more generalizable. However, there may be some cultural differences between countries not explored in these studies, making it more difficult to apply all findings from adolescents in one country to adolescents in another country.

Finally, in studies that included male and female adolescents, the same instruments were used to measure DEB symptoms in both genders. For instance, the Eating Attitudes Test and Children's Eating Attitudes Test were the questionnaires used in the Bäck study (2011) that included both males and females. However, these instruments were originally developed with females, as was the Eating Disorders Inventory used in the studies by Krug et al. (2016) and Lobera et al. (2011) that included males and females, so these measures may not be as reliable in the male population. Because each gender may interpret the questions differently, the instruments may not capture the whole population of adolescents struggling with DEB, males in particular. On the other hand, the studies discussed that were based on data from the longitudinal Project EAT study, state that the original survey was tested with a diverse adolescent sample before being used, so it should be reliable for both genders (Loth, MacLehose, Buchhianeri, et al., 2014; Loth, MacLehose, Fulkerson, et al., 2014; Loth et al., 2015; Zubatsky et al., 2015). Finally, some of the studies looked only at females, and so the results of those studies are not generalizable to both genders.

### **Implications for Further Research**

This review also highlighted some gaps in the research. The general public, including healthcare providers and parents, generally tend to think of DEB as a female problem, but this review showed that DEB is also present in adolescent males. As mentioned before, researchers used the same instruments to measure DEB for both genders, which may not gather the most

accurate data. Therefore, researchers need to create gender specific instruments then test their reliability and validity in accurately measuring DEB in all adolescents, and use those instruments moving forward. Secondly, longitudinal studies are needed focusing on the effect of parenting styles on adolescent DEB and their relationship with various psychological symptoms to see how those change over the years, including data from both females and males, to highlight any differences that develop or disappear over time. Third, because the research shows that benefits of family meal times in decreasing DEB can be negated by weight talk, teasing, or pressure-to-eat, it would be helpful to have an intervention study that teaches parents about creating a healthy family mealtime setting, and measures adolescent DEB before and after the intervention to determine if there is an impact on DEB.

### **Implications for Practice**

There are many potential implications for practice based on the results of this study. In screening adolescents for DEB, it is important not to overlook overweight or obese adolescents because they are also at risk for engaging in these DEB (Bäck, 2011; Haines et al., 2010; Neumark-Sztainer et al., 2007; Santoncini et al., 2013). The other implications are related to patient and family teaching for healthcare providers.

First, healthcare providers should help parents understand what kind of parenting behaviors are most helpful in assisting their adolescent develop healthy eating habits, as well as which parenting behaviors have been associated with DEB in adolescents. As exhibited in some of the research, any kind of parental control, whether restriction or pressure-to-eat, exhibited by parents has been correlated with increased DEB and psychological symptoms in adolescents (Bäck, 2011; Lobera et al., 2011; Loth et al., 2014; Zhu et al., 2014). Loth et al. (2014) offered a possible explanation for this correlation: if parents highly control their adolescents' eating

practices, the adolescents may consequently have difficulty with self-regulation related to food. Zhu et al. (2014) further explained that because some parents use harsh control in response to their adolescent's negative emotions, adolescents can subsequently adopt unhealthy coping mechanisms to deal with their own negative emotions. For instance, adolescents may be unable to differentiate between hunger and satiety when eating in response to emotional tension, so they may seek another outlet, like overeating (Zhu et al., 2014). Therefore, healthcare providers should encourage parents to limit the control they exert over their adolescents in relation to food in order to potentially decrease their adolescent's DEB and psychological symptoms. Rather than controlling the exact kind and quantity of food adolescents eat, parents can make healthy foods readily available in the home and then allow adolescents to make their own food decisions and learn to self-regulate their emotions and eating habits. In addition, to help prevent or diminish DEB in adolescents, healthcare providers should encourage parents to avoid criticizing and teasing adolescents about their weight, and not put too much focus on their own thin body ideal (Haines et al., 2010; Linville et al., 2011; Santoncini et al., 2013). Instead of focusing on weight, parents can model an overall healthy and active lifestyle and encourage their children to do the same.

Second, healthcare providers should begin assessing the frequency of family meals during well-child exams or sports physicals for adolescents (Loth et al., 2015). They can educate parents about the importance and overall benefits of family meals in regards to decreasing adolescent DEB (Haines et al., 2010, Loth et al., 2015). By explaining these potential benefits of frequent family meals, maybe parents, who do not currently have regular family mealtimes, will be motivated to have them more often. And in the context of discussing family meals, healthcare providers should help parents understand the importance of creating a mealtime atmosphere

conducive to the development of healthy weight-related attitudes in adolescents by implementing some of the parental behaviors discussed earlier: less weight talk overall, less weight-related teasing and criticism, and less control (pressure-to-eat, restriction) (Loth et al., 2015).

### **Conclusion**

In response to the rising prevalence of DEB in adolescents, it is time for healthcare providers to put more focus on educating parents about the effect their practices can have on their children. Exhibiting high amounts of any kind of control over adolescents' eating, especially in conjunction with decreased warmth, can lead to an increase in these DEB in adolescents. On the other hand, as more parents strive to show increased warmth and responsiveness to their adolescents and put control over eating back into the hands of their adolescents, overall DEB and concurrent psychological symptoms incidence in adolescents should decrease.

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