

# Maternal emotional feeding practices and adolescent daughters' emotional eating: Mediating roles of avoidant and preoccupied coping



Miriam Goldstein<sup>a</sup>, Cin Cin Tan<sup>a,b</sup>, Chong Man Chow<sup>a,\*</sup>,<sup>1</sup>

<sup>a</sup> Eastern Michigan University, United States

<sup>b</sup> University of Michigan, United States

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## ABSTRACT

The current study examined the link between early childhood emotional feeding and adolescent girls' emotional eating, using maladaptive coping styles as the underlying mechanisms mediating these associations. We examined adolescent girls' and mothers' retrospective reports of emotional feeding during childhood, as well as adolescent girls' current reports of their coping behaviors (i.e., preoccupied and avoidant) and emotional eating. Findings showed that adolescent girls' and mothers' retrospective reports of early emotional feeding were positively associated with adolescent girls' emotional eating. Preoccupied coping, but not avoidant coping, mediated the associations between early emotional feeding (reported by adolescents and mothers) and adolescents' current emotional eating. In conclusion, findings suggest that early childhood feeding experiences are linked to the development of maladaptive coping and emotional eating among adolescent girls.

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In recent decades, emotional eating has become a topic of much interest in research on eating behaviors, disordered eating, and obesity (Ganley, 1989; Macht, 2008; van Strien, Fritjers, Bergers, & Defares, 1986). A form of disinhibited eating, or eating opportunistically in response to non-hunger cues (Stunkard & Messick, 1985), *emotional eating* refers to the tendency for some individuals to (over)eat in response to negative emotions such as anxiety, depression, loneliness, and boredom (Faith, Allison, & Geliebter, 1997; Thayer, 2001; van Strien et al., 1986). Though emotional eating may serve as an emotion regulation strategy (Macht, 2008), it is considered maladaptive because it is associated with overconsumption of high-calorie foods and may increase the risk of disordered eating, binge eating, and obesity (Geliebter & Aversa, 2003; Nguyen-Michel, Unger, & Spruijt-Metz, 2007; Stojek et al., 2016). Emotional eating is not uncommon during adolescence (Nguyen-Michel et al., 2007; Snoek, Engels, Janssens, & van Strien, 2007) and appears to emerge or increase during this

period (Wardle et al., 1992; van Strien, van der Zwaluw, & Engels, 2010). Not all studies have found a gender difference among adolescents (Nguyen-Rodriguez, Unger, & Spruijt-Metz, 2009), but many studies have shown particularly high rates of emotional eating among adolescent girls (Snoek et al., 2007; Tanofsky-Kraff et al., 2007; Wardle et al., 1992; van Strien et al., 2010). The origins of emotional eating are not well understood; however, parental use of emotional feeding has received considerable attention as a potential contributor to emotional eating in childhood (Blissett, Haycraft, & Farrow, 2010; Braden et al., 2014; Farrow, Haycraft, & Blissett, 2015; Tan & Holub, 2014). Moreover, maladaptive coping styles have been examined in relation to emotional eating, consistent with theories of emotional eating based on affect regulation (Raspow, Matheson, Abizaid, & Anisman, 2013; Spoor, Bekker, van Strien, & van Heck, 2007). Thus, the current study included a sample of adolescent girls and their mothers to examine the following questions: (1) whether adolescents' emotional eating related to retrospective accounts of emotional feeding during childhood, (2) whether adolescents' emotional eating was associated with maladaptive coping styles, and (3) whether maladaptive coping styles mediated the association between emotional feeding in childhood and emotional eating in adolescence.

\* Corresponding author. Psychology Department, Eastern Michigan University, Ypsilanti, MI 48197, United States.

E-mail address: [cchow@emich.edu](mailto:cchow@emich.edu) (C.M. Chow).

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## 1. Parental emotional feeding and adolescent emotional eating

*Emotional feeding* describes a tendency for parents to feed their child in response to the child's apparent distress (Musher-Eizenman & Holub, 2007; Snoek et al., 2007). This feeding pattern may lead to emotional eating by teaching children to use food to regulate their own emotions (Blissett et al., 2010). Supporting this possibility, cross-sectional studies have demonstrated a link between parents' emotional feeding practices and children's concurrent patterns of emotional eating (Blissett et al., 2010; Braden et al., 2014; Tan & Holub, 2014). Few studies, however, have demonstrated this association in adolescence or adulthood. Though one study demonstrated a link between college students' emotional eating and their parents' recollections of earlier feeding practices, the measured feeding practices did not include emotional feeding (Galloway, Farrow, & Martz, 2010). Moreover, only a handful of studies has empirically examined the reason for the apparent association between emotional feeding and emotional eating. The predominant explanation has been that parents who feed their children for emotion regulation undermine their children's natural ability to regulate eating (Birch & Fisher, 1998). In other words, parents are teaching their children to soothe their emotions by eating, even in the absence of physical hunger (Blissett et al., 2010; Braden et al., 2014; Farrow et al., 2015). Thus, one possible mechanism linking parental emotional feeding to children's emotional eating may be through children's broader coping styles. That is, early feeding patterns may influence children's global coping styles, which in turn lead to specific coping behaviors such as emotional eating (Sim & Zeman, 2006; Spoor et al., 2007). Individuals who engage in emotional eating may share a repertoire of strategies, including emotional eating, for regulating or coping with negative affect (Raspow et al., 2013; Spoor et al., 2007). Though not yet empirically tested, emotional feeding may contribute to maladaptive coping through parental teaching of a particular maladaptive response to negative affect (i.e., eating).

## 2. Maladaptive coping

Recent research has linked female adolescents' and adults' emotional eating to maladaptive coping patterns that resemble preoccupied coping (i.e., ruminative, emotion-focused) and, to a lesser extent, avoidant coping (i.e., distracting, dismissive). In a sample of adult Dutch women with and without eating disorders (Spoor et al., 2007), participants reporting higher levels of emotional eating also reported more frequent use of non-social distraction (i.e., avoidance) and emotion-oriented coping (i.e., preoccupation, worry, and self-blame; Endler & Parker, 1994). Another study used an experience sampling technique to measure desire to eat among 16 obese adolescent girls four times per day over a seven-day period of dietary restriction. In this study, ruminative thinking (an aspect of preoccupied coping) increased the adolescents' desire to eat in response to daily hassles (Kubiak, Vögele, Siering, Schiel, & Weber, 2008). In a third study, Raspow et al. (2013) examined coping in relation to emotional eating in a large sample of undergraduate women. Like the current study, Raspow et al. (2013) examined coping styles as mediators of emotional eating; however, their starting point was unsupportive social interactions rather than emotional feeding. The researchers found that emotion-focused coping, but not avoidant coping, mediated the relation between unsupportive social interactions and emotional feeding. In summary, a small but consistent body of evidence has demonstrated an association between preoccupied coping and emotional eating among adolescent and adult women, but there is less evidence linking avoidant coping to

emotional eating, particularly among adolescents. Moreover, no studies have examined whether avoidant or preoccupied coping may explain the link between emotional feeding and emotional eating.

## 3. The current study

The major goal of the study was to examine whether maladaptive coping styles mediated the association between emotional feeding in childhood and emotional eating in adolescence. Specifically, we hypothesized that:

- (1) Retrospective emotional feeding (reported by both daughters and mothers) would be associated with higher levels of emotional eating among adolescents.
- (2) Retrospective emotional feeding (reported by both daughters and mothers) would be associated with both preoccupied and avoidant coping styles in adolescence.
- (3) Preoccupied and avoidant coping styles would be associated with greater levels of emotional eating in adolescence.
- (4) Both preoccupied and avoidant coping styles would mediate the relation between retrospective emotional feeding (reported by both daughters and mothers) and adolescent emotional eating.

## 4. Method

### 4.1. Procedures

Adolescent girls with ages ranging from 11 to 18 years, along with their mothers, were recruited from a Midwestern metropolitan area. Information regarding this study was distributed through electronic flyers posted on webpages (e.g., Facebook and Craigslist) and physical flyers posted in community centers (e.g., colleges and schools). Mother-daughter dyads who were interested in the study contacted the researchers to schedule a lab session and were then invited to visit the psychology department's lab for the study. Both adolescents and their parents were required to provide written informed consent before participating. Parents and adolescents were then assigned to separate rooms to complete a computer-administered survey. As compensation for their participation, each dyad received a \$40 grocery gift card.

### 4.2. Measures

#### 4.2.1. Emotional feeding

Mothers and adolescents each completed a subset of items from the Comprehensive Feeding Practices Questionnaire (Musher-Eizenman & Holub, 2007). For this study, the three-item Emotion Regulation subscale was used to assess mothers' and daughters' recollections of the mother's emotional feeding habits when the daughter was 5–10 years old. Because the original questionnaire was designed to capture *parents'* perceptions of *current* feeding habits, item wording was modified to reflect mothers' and daughters' retrospective perceptions of mothers' emotional feeding habits. Daughters answered the following questions on a scale ranging from 0 (*never*) to 5 (*always*): (1) "When you got fussy, was giving you something to eat or drink the first thing your parent did?"; (2) "Did your parent give you something to eat or drink if you were bored even if she thought you were not hungry?"; and (3) "Did your parent give you something to eat or drink if you were upset even if she thought you were not hungry?" Mothers completed the same items, but they were phrased in terms of the mother's own feeding habits with the child in question. The three

emotional feeding items were averaged separately for mothers and daughters to form a mother composite and a daughter composite, with higher scores on each composite reflecting greater emotional feeding. The reliability of the Emotion Regulation subscale was satisfactory, with Cronbach's  $\alpha = 0.84$  (mothers) and 0.79 (daughters).

#### 4.2.2. Coping style

Daughters completed the Prototypic Coping Questionnaire (Chow & Buhrmester, 2011), a 25-item measure that assesses an individual's characteristic ways of coping with stress. This study used the 6-item preoccupied subscale (e.g., "I have a hard time kicking off my bad feelings") and the 6-item avoidant subscale (e.g., "I act like nothing has happened") to measure participants' tendency to use preoccupied and avoidant coping strategies. Participants read a list of items, each of which described a particular way of coping, and indicated to what extent they had recently been doing what the item described on a scale from 0 (*I have NOT been doing this at all*) to 4 (*I have been doing this a lot*). Items on each subscale were averaged to form a composite, with higher scores reflecting greater use of that coping style. Both subscales had satisfactory reliability, with Cronbach's  $\alpha = 0.86$  (Preoccupied subscale) and 0.71 (Avoidant subscale).

#### 4.2.3. Emotional eating

Daughters completed the Dutch Eating Behavior Questionnaire (van Strien et al., 1986), a 33-item measure of eating behaviors. This study assessed emotional eating using the 13-item Emotional Eating subscale. Daughters read a list of questions about their desire to eat in response to a particular emotion or event (e.g., "Do you have a desire to eat when you are irritated?") and answered on a scale from 1 (*never*) to 5 (*very often*). Items on this subscale were averaged to form a composite, with higher scores reflecting greater emotional eating tendencies. The reliability of the Emotional Eating subscale was satisfactory, with Cronbach's  $\alpha = 0.94$ .

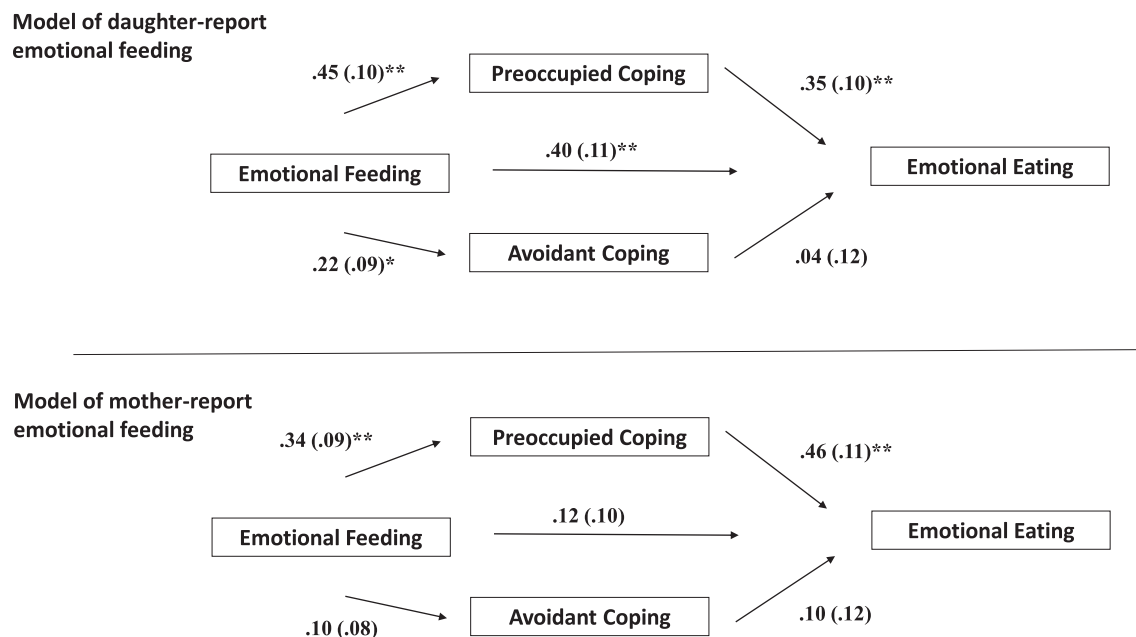
#### 4.3. Statistical analysis

The theoretical model presented in Fig. 1 was examined with a path model implemented in R (R Core Team, 2016) and the *lavaan* package (Rosseel, 2012). Because maternal emotional feeding was reported by both mothers' and daughters' reports, the same theoretical model was estimated twice for the two reporters, respectively. Although not shown, daughter age and BMI percentile were included as covariates in the models. In order to examine the mediation hypotheses, we estimated the indirect effects of maternal emotional feeding on daughters' emotional eating through daughters' avoidant and preoccupied coping (see Fig. 1). Based on Preacher and Hayes' (2008) recommendation, the significance of these indirect effects were tested with bootstrapped 95% confidence intervals ( $N_{\text{bootstraps}} = 5000$ ).

### 5. Results

#### 5.1. Participant characteristics

The current sample included 100 adolescent girls ( $M_{\text{age}} = 14.37$ ,  $SD = 2.29$ ) and their mothers ( $M_{\text{age}} = 44.03$ ,  $SD = 7.23$ ). According to mother-report, about 48% of the adolescents were Caucasians, followed by African Americans (30%), Asians (4%), Hispanics (2%), Middle Easterners (1%), and Mixed Race/Other (15%). Furthermore, a majority of the mothers reported a household income of \$35,000 or above (79%) and had at least some college education (90%). About 60% of the mothers reported that they were married, 14% were single, 17% were divorced, and 9% were either widowed or reported another relationship status not listed above. Mothers' and daughters' Body Mass Index (BMI;  $\text{kg}/\text{m}^2$ ) were computed based on their self-reported weight and height. Daughters' BMI was adjusted as a percentile based on their age and gender. For this study, mothers' average BMI was 30.28 ( $SD = 7.53$ ) and daughters' average BMI percentile was 64.96 ( $SD = 27.41$ ).



**Fig. 1.** Model demonstrating the associations between maternal emotional feeding and daughters' emotional eating as mediated by preoccupied and avoidant coping. Although not shown in the model, covariates included daughters' age and BMI percentile. Estimates for daughter-reported emotional feeding are above, and those for mother-reported emotional feeding are below.

## 5.2. Preliminary analyses

Table 1 displays means, standard deviations, and correlations of all study variables. Emotional eating showed significant, positive associations with preoccupied coping, avoidant coping, daughter-reported emotional feeding, and mother-reported emotional feeding. Mother and daughter reports of emotional feeding were significantly correlated with each other. Preoccupied and avoidant coping strategies also showed a significant positive correlation with each other. Daughters' retrospective reports of emotional feeding were significantly related to both preoccupied coping and avoidant coping, whereas mothers' retrospective reports of emotional feeding were significantly related to daughters' preoccupied coping but not to daughters' avoidant coping. Daughters' age, but not BMI percentile, was significantly and positively correlated with self-reports of emotional eating.

## 5.3. Mediation analyses

The two path models had a null chi-square and degrees-of-freedom; therefore, no fit indexes were reported. All path coefficients and standard errors are presented in Fig. 1.

### 5.3.1. Daughter-report model

In the daughter-report model (see Fig. 1's top panel), results showed significant paths from emotional feeding to both preoccupied coping and avoidant coping. Path estimates supported a significant effect of preoccupied coping on emotional eating but did not support a significant effect of avoidant coping on emotional eating. In terms of mediation hypotheses, bootstrapped confidence intervals showed that the indirect effect of emotional feeding on emotional eating through preoccupied coping (i.e., emotional feeding → preoccupied coping → emotional eating) was significant (95% CI = 0.05 to 0.30). By contrast, the indirect effect of emotional feeding on emotional eating through avoidant coping was not significant (95% CI = -0.01 to 0.08). Although not shown in the figure, emotional eating was not significantly related to either of the control variables (i.e., adolescents' age or BMI percentile).

### 5.3.2. Mother-report model

In the mother-report model (see Fig. 1's bottom panel), results supported a significant path from emotional feeding to preoccupied coping but not from emotional eating to avoidant coping. Path estimates supported a significant effect of preoccupied coping on emotional eating but did not support a significant effect of avoidant coping on emotional eating. In terms of mediation hypotheses, bootstrapped confidence intervals supported a significant indirect effect of emotional feeding on emotional eating through preoccupied coping (i.e., emotional feeding → preoccupied coping → emotional eating; 95% CI = 0.05 to 0.34). By contrast, the indirect effect of emotional feeding on emotional eating through avoidant coping was not significant (95% CI = -0.05 to 0.09). Although not

shown in the figure, emotional eating was not significantly related to either of the control variables.

## 6. Discussion

There are three noteworthy contributions of this study. First, to our knowledge, this was the first study that examined how early childhood feeding experiences are associated with emotional eating during adolescence. The current findings extended previous work that has typically focused on the influence of parental feeding on children's eating during early childhood (e.g., Blissett et al., 2010; Braden et al., 2014; Farrow et al., 2015; Tan & Holub, 2014). Second, these findings highlight coping styles as one mechanism that may underlie the association between early childhood feeding experiences and later emotional eating. Third, this study utilized both parent and adolescent reports of early parental feeding practices, which provided stronger support for the linkages among the focal variables than the typical single-reporter design used in past research (e.g., Blissett et al., 2010; Braden et al., 2014; Tan & Holub, 2014). Overall, findings from the current study highlighted the importance of childhood feeding experiences in relation to adolescents' emotional eating.

### 6.1. Parental emotional feeding

In support of our hypothesis, we found that mothers' and daughters' recollections of emotional feeding were positively associated with daughters' current emotional eating. Findings from the current study were consistent with prior work demonstrating that controlling feeding (Galloway et al., 2010) and emotional feeding (Tan, Ruhl, Chow, & Ellis, 2016) were associated with emotional eating, further emphasizing the important role of early childhood feeding experiences with respect to later eating outcomes.

### 6.2. The mediating roles of maladaptive coping behaviors

To our knowledge, this study is the first to examine potential mechanisms underlying the associations between childhood feeding experiences and emotional eating during adolescence. The associations between emotional feeding (mother- and daughter-report) and emotional eating were mediated by preoccupied coping. These findings are consistent with prior work with adults, such that adults who use preoccupied or emotion-focused coping engage in more emotional eating than adults who use adaptive coping (e.g., problem-focused; Spoor et al., 2007). It is also important to note that the mediating role of preoccupied coping with respect to emotional feeding and emotional eating was significant for both mother- and daughter-report, suggesting that these associations were not spurious. Overall, these findings illustrate that emotional feeding during childhood may teach girls to soothe their emotions using food, which may not be adaptive. Additionally

**Table 1**  
Means (M) and standard deviations (SD) and correlations of all study variables.

|                             | M     | SD    | 1     | 2      | 3      | 4      | 5      | 6     |
|-----------------------------|-------|-------|-------|--------|--------|--------|--------|-------|
| 1 Adolescent BMI percentile | 64.93 | 27.40 | –     |        |        |        |        |       |
| 2 Adolescent age            | 14.37 | 2.29  | –0.02 | –      |        |        |        |       |
| 3 Emotional feeding (M)     | 1.89  | 0.80  | 0.11  | 0.03   | –      |        |        |       |
| 4 Emotional feeding (D)     | 1.92  | 0.73  | –0.09 | 0.24*  | 0.30** | –      |        |       |
| 5 Preoccupied coping (D)    | 2.21  | 0.80  | 0.08  | 0.35** | 0.35** | 0.46** | –      |       |
| 6 Avoidant coping (D)       | 2.40  | 0.64  | 0.10  | 0.14   | 0.14   | 0.26*  | 0.35** | –     |
| 7 Emotional eating (D)      | 2.05  | 0.86  | –0.12 | 0.29** | 0.26*  | 0.53** | 0.52** | 0.23* |

Notes. M = mother report, D = daughter report. \* $p < 0.05$ , \*\* $p < 0.01$ .



concerning, emotional feeding might teach girls maladaptive coping strategies more broadly, leading to an ineffective repertoire of tools for handling negative emotions.

Avoidant coping did not mediate the associations between emotional feeding and emotional eating, and these findings were consistent with those of Raspopow et al. (2013). Avoidance involves emotional suppression or distraction, whereas preoccupied coping involves becoming over-engaged with one's negative emotions. The current findings suggest that adolescents' emotional eating may be a form of over-engagement with, or "wallowing in," negative emotions rather than a form of distraction from negative emotions.

### 6.3. Limitations

This study utilized a retrospective design in which both mothers and their daughters reported on their recollections of childhood feeding experiences. Mothers' and daughters' recollections of early childhood feeding experiences may be a predictor of, or a reaction to, adolescents' current eating behaviors, which limits the interpretability of the study's findings. Nonetheless, in line with prior studies (e.g., Galloway et al., 2010), we found concordance between mothers' and daughters' recollections of parental feeding behaviors during childhood. Despite the limits of a retrospective design, these results provide insight into early childhood feeding experiences and emotional eating in adolescence. Findings from this study indicate a need for more research on the role of early childhood feeding experiences in determining at-risk eating behaviors in adolescence, including emotional eating, external eating, binge eating, and loss of control over eating. Future research should also consider exploring the directionality of these relationships with longitudinal designs.

The study's cross-sectional design has prevented us from making causal inferences among the variables. For instance, though the current model proposed that coping may precede emotional eating, it is also possible that adolescents who engage in emotional eating develop more maladaptive coping styles. Nevertheless, the current model was supported by previous experimental research by Evers, Marijn Stok, and de Ridder (2010), who demonstrated that individuals instructed to employ a maladaptive coping strategy (suppression) in response to a negative mood induction consumed more "comfort food" than individuals instructed to employ an adaptive coping strategy (reappraisal). Future research, however, should consider using multiple methods to understand parental feeding behaviors, adolescents' coping behaviors, and emotional eating. For instance, future research may consider using behavioral observations to measure parents' emotional feeding, as well as adolescents' coping and emotional eating.

Another limitation of the current study is the examination of only mother-daughter dyads. The influence of fathers' feeding on children's eating and weight outcomes has gained attention recently, as some work suggests that paternal control of child feeding may be higher for daughters with higher body fat percentage (Johannsen, Johannsen, & Specker, 2006). Most studies on paternal feeding and child outcomes have only focused on early childhood. Thus, less is known about the influence of fathers' feeding behaviors on adolescents' eating behaviors. Future research should examine the roles of fathers, along with mothers, to better understand adolescents' emotional eating.

## 7. Conclusion and clinical implications

Despite its limitations, the current study underscores the role of emotional feeding in the development of emotional eating among youth by examining how maladaptive coping behaviors may explain the link from emotional feeding to emotional eating.

Specifically, parents who feed their children for emotion regulation may teach their children passive, maladaptive strategies for coping with distress, leading to emotional eating in adolescence. Though adolescents' emotional eating was not associated with weight status in the current study, emotional eating in adulthood has been associated with higher body mass, greater adiposity, and overweight or obese status (Konttinen, Männistö, Sarlio-Lähteenkorva, Silventoinen, & Haukkala, 2010; de Lauzon-Guillain et al., 2006; van Strien, Herman, & Verheijden, 2009). Understanding pathways to emotional eating is thus essential for the creation of effective interventions that target youth emotional eating and its sequelae, including obesity, disordered eating, and binge eating (Geliebter & Aversa, 2003; Nguyen-Michel et al., 2007; Stojek et al., 2016). Findings from this study lend support to a comprehensive intervention program that targets both children and their parents. Goals of this program would be to (1) educate parents about the impact of early feeding practices on adolescents' emotional eating, (2) teach parents effective feeding practices, and (3) teach adolescents adaptive coping strategies such as problem-solving and seeking social support. Moreover, practitioners could create cost-effective intervention programs for obesity and disordered eating by targeting families at risk, including those with adolescents who have a preoccupied coping style and those in which parents have used food to soothe their child's emotions.

Emotional eating likely has multiple origins, including factors not examined in this study. Emotional eating among children and adolescents has been associated with parents' own emotional eating (Kral & Rauh, 2011), low maternal support (Snoek et al., 2007), high maternal psychological control (Snoek et al., 2007), and adolescents' perceived stress and worries (Nguyen-Rodriguez et al., 2009). Therefore, youth interventions for disordered eating and obesity should target factors beyond those supported by the current study, such as global parenting behaviors, parental modeling of eating behaviors (including emotional eating), and youth internalizing symptoms.

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