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Fathers and mothers with eating-disorder psychopathology: Associations with child eating-disorder behaviors

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Abstract

Objective—A limited literature suggests an association between maternal eating disorders and child feeding difficulties, and notes maternal concern about inadvertently transmitting eating disorders. Thus, parents may be an important target for eating-disorder research to guide the development of clinical programs.

Methods—The current study examined differences in child eating-disorder behaviors and parental feeding practices between a sample of parents (42 fathers, 130 mothers) exhibiting core features of anorexia nervosa, bulimia nervosa, binge-eating disorder, or purging disorder, and a matched sample of parents ($n=172$) reporting no eating-disorder characteristics.

Results—Parents with eating-disorder psychopathology were significantly more likely than parents without eating-disorder characteristics to report child binge-eating and compulsive exercise. Parents with eating-disorder psychopathology reported greater perceived feeding responsibility, greater concern about their child's weight, and more monitoring of their child's eating than parents without eating-disorder characteristics; however, they did not differ significantly in restriction of their child's diet and pressure-to-eat. Child body mass index z -scores did not differ between parents with versus without eating-disorder characteristics.

Conclusion—Our findings suggest some important differences between parents with and without core eating-disorder psychopathology, which could augment clinical interventions for patients with eating disorders who are parents, or could guide pediatric eating-disorder prevention efforts. However, because our study was cross-sectional, findings could indicate increased awareness of or sensitivity to eating-disorder behaviors rather than a psychosocial cause of those behaviors. Longitudinal research and controlled trials examining prevention and intervention can clarify and address these clinical concerns.

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Conflicts of Interest Disclosure

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Keywords

child; eating disorders; fathers; feeding; mothers; parenting

Introduction

Eating-disorder (ED) psychopathology can affect youth and adults across the lifespan, including men and women during the childbearing and child-rearing developmental period (1–4). Because EDs are severe mental illnesses with the capacity to disrupt functioning (5), and tend to aggregate in families (6), examination of parents' ED psychopathology on the parent-child relationship and development of child psychopathology is essential.

Concerns of Mothers with EDs

Much of the research on parents and EDs has focused on mothers (7) and sought to identify their parenting concerns. This had the dual aims of developing clinical interventions for mothers and preventing child EDs, particularly because mothers with EDs *seek* treatment to prevent or address negative effects of their personal eating disorder on their children (1, 6, 8, 9). Although mothers seeking support for parenting skills may be a select group (10), research has consistently shown that some mothers with EDs have significant concerns about parenting tasks related to feeding and body image (1, 3, 8, 9, 11) and the parent-child relationship more generally (1, 10–12). In particular, mothers with EDs report concern about transmitting ED psychopathology to their children by modeling, and also report difficulty managing their own psychopathology during food preparation and feeding (3, 8, 9, 11–13). Mothers' concerns about the impact of their ED psychopathology on the physical and psychosocial development of their children are shared by clinicians, as maternal ED psychopathology does appear to influence young children from infancy through adolescence (4, 8, 12, 14–18).

Feeding Problems with Young Children

Parenting concerns of mothers with EDs underscore the extent to which these mothers care for their children, as well as the absence of malicious intent around feeding difficulties and worry about child weight (1, 3, 10). Evidence suggests these concerns have validity: maternal EDs produce somewhat impaired growth in infants, who are born 200 grams lighter on average than infants of mothers without EDs (1, 2, 6). Smaller birth size persists in very young children (19), although older children do not exhibit this size pattern (4, 20). In addition to their influence on young children's weight, maternal EDs appear to contribute to the development of child ED psychopathology (14).

Longitudinal and cross-sectional studies of mothers with ED psychopathology use varied definitions of EDs to define their population. Some studies have evaluated mothers with current, active EDs at full clinical threshold or subthreshold level (1, 4, 8, 9, 16, 19, 21). Other studies have included mothers with historical EDs (3, 4, 11, 13, 20, 22–24). Still other studies have assessed ED attitudes and behaviors rather than diagnoses (14, 17, 18, 23, 25, 26). Despite this heterogeneity, overall, research consistently reports some negative physical or psychological effects of parent EDs on children. In one prospective study, mothers with

EDs showed some unresponsive feeding practices, including irregular feeding schedules and using food as a reward rather than for nutrition, which was associated with infants' increased eagerness to eat (4). Some studies also report that mothers with EDs have difficulty maintaining breast-feeding, potentially due to embarrassment or insufficient caloric intake to produce breast milk (6, 9, 12). Mothers with EDs also use more dietary restriction than mothers without EDs (1, 8, 15). However, other work has failed to show that mothers with EDs experience difficulty breast-feeding or restrict their child's intake (22).

Transmission of ED Psychopathology

In addition to concerns about the influence of ED psychopathology on feeding, mothers have concerns about passing along their ED psychopathology to their child. Hypothesized mechanisms of the transmission of ED psychopathology include modeling ED attitudes and behaviors, or creating an environmental trigger for a child with a genetic predisposition to developing an eating disorder (6, 8). Behaviorally, mothers with EDs can have difficulty with food preparation, messy eating, and family meals (10, 13), which leads to young children's awareness of maternal EDs (13). Additionally, mealtimes include more negative comments and more parent-child conflict when there is a maternal ED compared with no ED (27), although this does not generalize to other parent-child interactions such as leisure play (6, 28).

Both eating patterns and ED attitudes appear to be influenced by maternal EDs. There is some evidence that with their young children, mothers with EDs attempt to help their children lose weight (4), and regulate their eating to prevent overeating (1). Children ages 3–9 of mothers with EDs show more health-conscious eating patterns than children of mothers without EDs (20). Additionally, children as young as age 10 begin to show dietary restraint when their mothers have similar ED psychopathology, compared with children of mothers without EDs (16), which persists even when mothers are not present (1). These parent-child attitudinal and behavioral links may be learned indirectly (child observation of parent behavior) or directly (child reaction to unresponsive feeding practices).

Restrictive feeding practices among mothers with EDs likely stem, in part, from concern about child weight. Mothers with EDs report greater concern about their child's weight and perceived overeating than mothers without EDs (e.g., 4), and these concerns are communicated to their children (particularly daughters) in the form of encouragement to lose weight (1, 8, 13). Mothers of children with EDs also have more ED characteristics themselves, and a longer history of dieting, although they do not differ from mothers of daughters without EDs in terms of weight or personal weight concerns (17).

Children of mothers with EDs also appear to learn ED attitudes. They show higher body dissatisfaction (29) and weight/shape overvaluation (16) compared with children of mothers without EDs, although it is important to note that the higher scores among children of mothers with EDs were below scores among children with clinical EDs and similar to scores of children with feeding difficulties (16). This is also in line with assessment of children with early-onset eating and feeding disorders and their mothers, which showed more frequent maternal history of EDs among children with feeding disorders compared with EDs (24).

Potential child impairment due to maternal EDs reaches beyond the transmission of ED psychopathology to include increased negative affect overall (4), and increased risk of child psychiatric disorders (30) including both internalizing and externalizing disorders (16, 31). Importantly, there is initial clinical evidence that when parents and children receive treatment, catch-up growth can occur (1), although the potential benefit on child ED and general psychopathology is unknown.

Fathers

To date, strikingly little research has included fathers, despite fathers' expanding role in child-rearing and involvement in child feeding (7). The research that has included fathers has focused on fathers who are part of a family in which the mother has an ED (13, 21), rather than examining fathers' unique contributions. Some studies, building off a general psychiatric literature, have suggested that fathers can have a protective role against the transmission of ED psychopathology from mothers to children, particularly when they actively parent (13). Conversely, paternal psychopathology can also play a negative role in the development of child psychopathology. For example, one study found that paternal psychopathology (obsessive-compulsive disorder and anxiety) together with maternal ED psychopathology was associated with internalizing and externalizing disorders in their children, and also found that maternal depression was only associated with internalizing and externalizing disorders in children when fathers were also found to have psychopathology (21).

Evaluation of fathers' ED psychopathology, although minimal, has shown that fathers have a similar impact on daughters' ED psychopathology to mothers. Both maternal and paternal ED psychopathology appear to be related to increased parental pressure for children to eat (23). Additionally, greater paternal bulimic symptomatology was related to increased use of incentives to encourage eating (23). Other research found that neither fathers' nor mothers' drive for thinness was associated with children's ED attitudes and behaviors (26). Yet other work has shown a unique effect of paternal weight concerns on daughters' weight concerns (18). Fathers' body dissatisfaction may be more related to unresponsive feeding practices for their sons, rather than their daughters, suggesting that ED psychopathology transmission may be most salient in father-son dyads and mother-daughter dyads (32). Conversely, research on binge-eating among parents and children found that daughters were influenced by their fathers' (but not mothers') binge-eating (14). Daughters may be more susceptible to interpersonal influences on binge-eating, whereas sons may be more susceptible to interpersonal influences on overeating (14).

Aim of the current study

The current study sought to examine similarities and differences among child ED behaviors and parental feeding practices between parents who endorsed core features of EDs (anorexia nervosa, bulimia nervosa, binge-eating disorder, or purging disorder) and parents who did not endorse core ED features at diagnostic frequencies (i.e., weekly). The existing literature on parents with EDs has two important gaps that the current study aimed to address within the context of evaluating the relation between parent and child ED behaviors. First, the current study attends to the dearth of information on fathers by including both fathers and

mothers with and without core ED features. Second, the current study bridges the heterogeneity in patient populations within previous studies by including parents with current, core features of EDs. This offers a more distinct comparison with a non-ED group, rather than confounding ED severity (threshold and subthreshold) or timing (current or historical).

An additional aim was to evaluate “unresponsive” parent feeding practices (i.e., practices not in response to child hunger, including restriction and pressure-to-eat), which are associated with maternal (1, 8, 15, 33) and paternal (32) ED psychopathology, and child weight (34), and can be conceptualized as teaching ED behaviors. We examined unresponsive feeding practices related to child weight and obesogenic child ED behaviors (i.e., binge-eating, secretive eating).

Method

Participants

Participants ($N=344$) completed a survey on parents' opinions about weight and eating on the Mechanical Turk (MTurk) website. MTurk provides convenient, high-quality data and samples have greater geographic and demographical diversity than undergraduate samples (35, 36). Recent comparisons have found that the psychometric properties of measures completed by MTurk participants do not differ from traditional recruitment sources in their reliability or validity (36). MTurk has been used in psychological research (37, 38) including research focusing on psychiatric disorders (39, 40) and EDs (41).

Parents endorsing core ED features (ED+; $n=172$) of anorexia, bulimia, binge-eating disorder or purging disorder were identified. Parents not endorsing core ED features (ED−; $n=172$) were matched with the ED+ parents on gender, race, education, and age from a larger sample of participants. Algorithms that built the ED+ and ED− groups are presented in the Measures section.

To be eligible, participants had to be over 21 years old and be primary caregivers for a child 5–15 years old. Demographic characteristics of parents are recorded in Table 1. This study received ethical approval from our university's institutional review board.

Measures

Body Mass Index (BMI)—Parents reported height and weight for themselves and their child. Parent BMI was calculated using these values, as was child BMI z-score and child BMI percentile.

Child Feeding Questionnaire (CFQ)—This measure of parental feeding practices has 31 items rated on five-point scales (34). Items were scored following the model proposed by Anderson and colleagues, which showed superior fit to the original factor structure in diverse community samples (42, 43). Items yielded internally consistent subscale (Perceived Responsibility, Concerns about Child Weight, Restriction, Pressure-to-Eat, Monitoring) scores in earlier work, $\alpha=.65-.91$ (43), and the current study, $\alpha=.78-.91$.

Eating Disorder Examination Questionnaire (EDE-Q)—The EDE-Q retrospectively measures ED psychopathology over the past 28 days (44); we used a brief seven-item version of the full scale that demonstrates psychometric properties in nonclinical (45) and clinical (46) studies that are superior to those from the original measure. Items are scored on seven-point scales. Subscales (Restraint, Overvaluation, Dissatisfaction) were internally consistent in earlier work, $\alpha=.89-.91$ (45), and in the current study $\alpha=.89-.92$. Additionally, EDE-Q items about ED behaviors were adapted for parent report. Adaptations changed “you” to “your child.”

Algorithms—Scoring algorithms used to create ED+ and ED– groups used EDE-Q and QEWP-R (Questionnaire for Eating and Weight Patterns-Revised; 47) items. Parents were considered to exhibit core features of anorexia nervosa if their BMI was less than 18.5 kg/m² and they scored at least “moderately” on overvaluation by weight/shape ($n=15$). Parents with core features of bulimia nervosa endorsed binge-eating (eating an objectively large amount of food while experiencing a subjective loss of control) and purging (inducing vomiting, misusing laxatives or diuretics, or compulsively exercising) at least weekly and also scored at least “moderately” on overvaluation by weight/shape ($n=44$). Parents with core features of binge-eating disorder endorsed binge-eating at least weekly, denied weekly purging, and scored at least “moderate” on distress related to binge-eating ($n=63$). Parents with core features of purging disorder endorsed purging at least weekly, denied weekly binge-eating, and scored at least “moderately” on overvaluation by weight/shape ($n=50$). Parents who did not endorse core features (ED–) also did not meet criteria for the ED+ subgroups described previously.

Statistical Analyses

To evaluate ED psychopathology among fathers and mothers endorsing core ED features and their matched counterparts, we compared scores on the EDE-Q brief version using multivariate analysis of variance (MANOVA). ED+ and ED– parent groups were compared using χ^2 tests evaluating differences in child ED behaviors and MANOVA evaluating differences in parental feeding practices. Subsequent analyses of variance (ANOVAs) compared mothers and fathers within ED+ and ED– subsamples. Logistic regressions evaluated unresponsive feeding practices and child ED behavior and weight in the combined sample.

Results

Comparison of matched samples

Table 1 shows demographic characteristics and group differences between ED+ and ED– parents. EDE-Q subscale scores are presented as support for the algorithms and show expected differences between ED+ and ED– groups on ED variables, and also show gender differences (see Figure 1). MANOVA showed an overall group difference, Wilks' $\lambda=0.755$, $F(9,820.32)=11.17$, $p<.001$, $\eta_p^2=.090$. Univariate ANOVAs were also significant for each subscale, see Table 2. Pairwise tests, using a Tukey correction for multiple comparisons, revealed some between-group differences that primarily reflected differences between ED+ and ED– groups. All significant pairwise tests are indicated in Figure 1.

Child ED behaviors

ED+ parents were significantly more likely than ED– parents to report child binge-eating and compulsive exercise (see Table 3). Differences were non-significant between ED+ fathers and mothers (all $p>.14$), and ED– fathers and mothers (all $p>.13$). Differences were also non-significant between ED+ and ED– parents for secretive eating, vomiting and laxative misuse.

Parental feeding practices

Table 4 shows means scores for parental feeding practices. MANOVA revealed a difference between ED+ and ED– parents for feeding practices, Wilks' $\lambda=0.959$, $F(5,337)=2.91$, $p=.014$, $\eta_p^2=.041$. Univariate subscale results indicated that ED+ parents perceived greater feeding responsibility than ED– parents. This was significant between ED– fathers and mothers ($p<.001$), as well as ED+ fathers and mothers ($p=.004$). ED+ parents were more concerned about their child's weight than ED– parents, and reported more monitoring of their child's eating than ED– parents. Other parental feeding practices and child BMI z-scores had non-significant differences between ED+ fathers and mothers and ED– fathers and mothers.

Multivariate logistic regressions evaluated the role of unresponsive feeding practices (restriction and pressure-to-eat) in child ED behavior and weight (see Table 5). Restriction was significantly associated with binge-eating and child overweight/obesity; pressure-to-eat was inversely associated with child overweight/obesity.

Discussion

This study is among the first to examine fathers exhibiting core ED features along with mothers in the association between parents' and children's ED psychopathology. Our findings suggest some important differences between parents with and without core ED features. Parents with EDs were more likely to report child ED behaviors including binge-eating and compulsive exercise. Parents with EDs also had greater perceived responsibility over feeding, more concern about their child's weight (despite non-significant group differences in child BMI percentiles), and more monitoring of their child's eating than parents without EDs. Differences appeared related to ED status, as there were no gender effects within the separate groups of ED+ and ED– parents. An exception to this pattern occurred with perceived responsibility over feeding, which mothers reported to a greater extent than fathers in both ED+ and ED– subgroups.

Our findings replicate and extend two important areas of parent research, namely, both parental feeding practices and child ED behaviors in children of parents with EDs. Results follow similar, earlier findings: concern about child weight was higher in parents with ED psychopathology than without (e.g., 4, 13). Likewise, child ED behaviors also replicates previous work (14, 16, 20, 24, 48). Prospective research and research with different methodology such as mealtime observation could further extend results of earlier work that was limited to mothers with EDs. In particular, prospective assessment of children of fathers

with EDs is needed to confirm the associations found in the current study, as has been done with the children of mothers with EDs (e.g., 4, 16, 20, 30).

Earlier research has been limited, predominantly, to mothers with anorexia and bulimia nervosa and their subthreshold forms. The current study extends this earlier work by including parents with core features of four EDs: anorexia, bulimia, binge-eating disorder, and purging disorder. Although these are not clinical diagnoses in the current study because participants came from a community-based sample of parents and were not evaluated by clinical interview, algorithms identified parents who endorsed current ED psychopathology to approximate clinical diagnoses. The similarity between our findings and those from earlier research that had smaller, clinical samples of participants (4, 13, 32) suggests a consistency in the associations of core parent psychopathology with child behaviors that warrants further investigation.

Although the concerns of mothers with EDs are relatively well-established (3, 8, 9), it was not known whether fathers shared these concerns, particularly in light of changing gender norms about parenting tasks such as feeding; the current study found that fathers with EDs have similarly greater concern about child weight as mothers with EDs. Two pilot interventions for mothers with EDs (10, 11) have some overlapping content with the differences observed in the current study. These interventions, notably, were designed for parents of young children less than age 3 (11) and 5 (10). To match the developmental stage of the children, interventions focused on parental feeding behaviors more than child ED behaviors, although one intervention did include a module on breaking the ED cycle (11). Children in the current study were all older than age 5, so the findings that parents with and without core ED psychopathology did not differ in terms of restriction or pressure-to-eat suggest that the content of these interventions that focuses on mealtime interactions and preventing unresponsive feeding practices might not be applicable to parents of older children. However, associations between unresponsive feeding practices and child overweight and binge-eating, suggest that interventions focusing on feeding practices might help with child overweight.

Non-significant group differences in child BMI z-scores in the current study and earlier work (4, 20) suggest that the costs of parental EDs are more potent for infants and young children than older children. This is especially notable in the context of other work that has shown unresponsive feeding practices (pressure-to-eat and restriction) are related to ED behaviors in children (8) and adolescents (33). Our extension in parents with and without core ED features found that restriction but not pressure-to-eat was associated with child binge-eating. Taken together with results that show associations between parental ED and child ED behaviors, results suggest that there may be two potential routes for the development of ED behaviors that merit investigation for their potential relevance to clinical work.

One potential bias within the current study is the subjectivity of self-report and parent-report. Although self-report has the benefit of potentially eliciting more honest disclosure of sensitive information, including weight-related attitudes and behaviors (44), surveys are still susceptible to socially-desirable reporting. The online platform used for parent recruitment,

Mechanical Turk, has been shown to provide high-quality data from diverse, internally-motivated participants (35), and has been used in psychological research (37) including research focusing on psychiatric disorders (39, 40) and eating and weight disorders (41). However, the extent to which parent self-reported feeding practices correlate with typical feeding practices is not known among parents with school-aged and adolescent youth. Laboratory and video-recording observational research has found some limited evidence of consistency between maternally-reported feeding practices and child feeding among very young children (49), and between paternally-reported feeding practices and the CFQ (50). Low correlations were potentially due to a lack of parental awareness or socially-desirable reporting, or the effects of being observed (50). Mothers with EDs show evidence of accurate reporting of parent-child feeding interactions (27), although again, this has not been examined with older children. In the current study, it is possible that more frequent ED behaviors in children of parents with EDs than without may be due to increased awareness of or sensitivity to ED behaviors, rather than transmission of ED psychopathology. Observation of child ED psychopathology or corroborative interviews with children or other caregivers could clarify these potential explanations. In addition, other parent and child factors (such as comorbid parent or child psychopathology) could have an influence or mediating effect on child psychopathology and evaluation of these other factors could further identify at-risk children. Likewise, because the current study is cross-sectional, it cannot explain the mechanism by which transmission of EDs might occur. As earlier research has noted, EDs have complex etiology that includes genetic influences, environmental influences, and psychosocial learning processes (6, 8), which the current study did not assess. Nonetheless, the associations found in the current study, together with earlier longitudinal work and gene-environment analyses, suggest that children of parents with EDs may be at increased risk for developing their own ED psychopathology, and thus represent a group that would benefit from secondary prevention programs. Future research on secondary prevention programs, as well as parent and child ED treatments, using longitudinal and experimental designs, could allow for exploration of mechanisms of ED transmission.

We also emphasize that our study was cross-sectional, which precludes any statements about causality. Moreover, measures of ED psychopathology generated *possible* ED categories for parents and ED behaviors for children, which we did not confirm with diagnostic interviews. For these reasons, and because of limited power in some diagnostic groups, we did not analyze the sample by individual ED diagnosis. This may limit the generalizability of findings if an individual diagnosis is more prone to transmission than other ED diagnoses. Thus, additional research should investigate fathers' and mothers' eating disorders by individual diagnosis. The methodological matching strategy we used, which affords greater statistical power for the comparison of parents with EDs, the primary focus of the study, might limit generalizability to the broader community and the proportion of child ED behaviors in the ED–parent group are possibly different than the proportion that might be identified in a population-based study. Despite these limitations, the study had notable strengths: inclusion of fathers with and without ED features (in addition to mothers), inclusion of broad ED psychopathology (i.e., anorexia, bulimia, binge-eating disorder, and

purging disorder), inclusion of parental feeding practices and child ED behaviors, and use of a community sample (i.e., lessening treatment-seeking confounds).

The current study confirmed an association among parental ED features, parental feeding practices, and child ED behaviors. These findings have potential for informing augmentation or refinement of clinical interventions for ED patients who are parents, or for guiding prevention efforts. Research to address this clinical need, which parents with EDs desire, is needed to improve the health of patients and their children. Additionally, findings suggest a need for targeted prevention work to reduce ED psychopathology and potentially the onset of pediatric EDs in this at-risk population. Longitudinal research and controlled trials examining prevention and intervention can clarify and address these clinical concerns.

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References

1. Russell GF, Treasure J, Eisler I. Mothers with anorexia nervosa who underfeed their children: Their recognition and management. *Psychol Med*. 1998; 28:93–108. [PubMed: 9483686]
2. Solmi F, Sallis H, Stahl D, Treasure J, Micali N. Low birth weight in the offspring of women with anorexia nervosa. *Epidemiol Rev*. 2014; 36:49–56. [PubMed: 24025351]
3. Tierney S, Fox JR, Butterfield C, Stringer E, Furber C. Treading the tightrope between motherhood and an eating disorder: a qualitative study. *Int J Nurs Stud*. 2011; 48:1223–1233. [PubMed: 21176902]
4. Agras S, Hammer L, McNicholas F. A prospective study of the influence of eating-disordered mothers on their children. *Int J Eat Disord*. 1999; 25:253–262. [PubMed: 10191989]
5. Klump KL, Bulik CM, Kaye WH, Treasure J, Tyson E. Academy for Eating Disorders position paper: Eating disorders are serious mental illnesses. *Int J Eat Disord*. 2009; 42:97–103. [PubMed: 18951455]
6. Waugh E, Bulik CM. Offspring of women with eating disorders. *Int J Eat Disord*. 1999; 25:123–133. [PubMed: 10065389]
7. Khandpur N, Blaine RE, Fisher JO, Davison KK. Fathers' child feeding practices: a review of the evidence. *Appetite*. 2014; 78:110–121. [PubMed: 24667152]
8. Mazzeo SE, Zucker NL, Gerke CK, Mitchell KS, Bulik CM. Parenting concerns of women with histories of eating disorders. *Int J Eat Disord*. 2005; 37:77–79.
9. Bryant-Waugh R, Turner H, East P, Gamble C. Developing a parenting skills-and-support intervention for mothers with eating disorders and pre-school children part 1: Qualitative investigation of issues to include. *Eur Eat Disord Rev*. 2007; 15:350–356. [PubMed: 17701941]
10. Bryant-Waugh R, Turner H, Jones C, Gamble C. Developing a parenting skills-and-support intervention for mothers with eating disorders and pre-school children: Part 2. Piloting a group intervention. *Eur Eat Disord Rev*. 2007; 15:439–448. [PubMed: 17721917]
11. Runfolo CD, Zucker NL, Von Holle A, Mazzeo S, Hodges EA, Perrin EM, et al. NURTURE: development and pilot testing of a novel parenting intervention for mothers with histories of an eating disorder. *Int J Eat Disord*. 2014; 47:1–12. [PubMed: 23983082]
12. Patel P, Wheatcroft R, Park RJ, Stein A. The children of mothers with eating disorders. *Clin Child Fam Psychol Rev*. 2002; 5:1–19. [PubMed: 11993543]
13. Sadeh-Sharvit S, Levy-Shiff R, Feldman T, Ram A, Gur E, Zubery E, et al. Child feeding perceptions among mothers with eating disorders. *Appetite*. 2015; 95:67–73. [PubMed: 26145278]
14. Goldschmidt AB, Wall MM, Choo TH, Bruening M, Eisenberg ME, Neumark-Sztainer D. Examining associations between adolescent binge eating and binge eating in parents and friends. *Int J Eat Disord*. 2014; 47:325–328. [PubMed: 24105696]

15. Reba-Harrelson L, Von Holle A, Hamer RM, Torgersen L, Reichborn-Kjennerud T, Bulik CM. Patterns of maternal feeding and child eating associated with eating disorders in the Norwegian Mother and Child Cohort Study. *Eat Behav.* 2010; 11:54–61. [PubMed: 19962121]
16. Stein A, Woolley H, Cooper S, Winterbottom J, Fairburn CG, Cortina-Borja M. Eating habits and attitudes among 10-year-old children of mothers with eating disorders: longitudinal study. *Br J Psychiatry.* 2006; 189:324–329. [PubMed: 17012655]
17. Pike KM, Rodin J. Mothers, daughters, and disordered eating. *J Abnorm Psychol.* 1991; 100:198–204. [PubMed: 2040771]
18. Keel PK, Heatherton TF, Harnden JL, Hornig CD. Mothers, fathers, and daughters: Dieting and disordered eating. *Eat Disord.* 1997; 5:216–228.
19. Stein A, Murray L, Cooper P, Fairburn CG. Infant growth in the context of maternal eating disorders and maternal depression: A comparative study. *Psychol Med.* 1996; 26:569–574. [PubMed: 8733215]
20. Easter A, Naumann U, Northstone K, Schmidt U, Treasure J, Micali N. A longitudinal investigation of nutrition and dietary patterns in children of mothers with eating disorders. *J Pediatr.* 2013; 163:173–178. [PubMed: 23333130]
21. Cimino S, Cerniglia L, Paciello M, Sinesi S. A six-year prospective study on children of mothers with eating disorders: The role of paternal psychological profiles. *Eur Eat Disord Rev.* 2013; 21:238–246. [PubMed: 23239014]
22. Hoffman ER, Bentley ME, Hamer RM, Hodges EA, Ward DS, Bulik CM. A comparison of infant and toddler feeding practices of mothers with and without histories of eating disorders. *Matern Child Nutr.* 2014; 10:360–372. [PubMed: 22784046]
23. Blissett J, Haycraft E. Parental eating disorder symptoms and observations of mealtime interactions with children. *J Psychosom Res.* 2011; 70:368–371. [PubMed: 21414457]
24. Watkins B, Cooper PJ, Lask B. History of eating disorder in mothers of children with early onset eating disorder or disturbance. *Eur Eat Disord Rev.* 2012; 20:121–125. [PubMed: 21823212]
25. Kothari R, Barona M, Treasure J, Micali N. Social cognition in children at familial highrisk of developing an eating disorder. *Front Behav Neurosci.* 2015; 9:208–225. [PubMed: 26300753]
26. Thelen MH, Cormier JF. Desire to be thinner and weight control among children and their parents. *Behav Ther.* 1996; 26:85–99.
27. Whelan E, Cooper PJ. The association between childhood feeding problems and maternal eating disorder: a community study. *Psychol Med.* 2000; 30(1):69–77. [PubMed: 10722177]
28. Stein A, Woolley H, Cooper SD, Fairburn CG. An observational study of mothers with eating disorders and their infants. *J Child Psychol Psychiatry.* 1994; 35:733–748. [PubMed: 8040225]
29. Damiano SR, Gregg KJ, Spiel EC, McLean SA, Wertheim EH, Paxton SJ. Relationships between body size attitudes and body image of 4-year-old boys and girls, and attitudes of their fathers and mothers. *J Eat Disord.* 2015; 3:16–25. [PubMed: 25901282]
30. Micali N, De Stavola B, Ploubidis GB, Simonoff E, Treasure J. The effects of maternal eating disorders on offspring childhood and early adolescent psychiatric disorders. *Int J Eat Disord.* 2014; 47:385–393. [PubMed: 24222556]
31. Micali N, Stahl D, Treasure J, Simonoff E. Childhood psychopathology in children of women with eating disorders: Understanding risk mechanisms. *J Child Psychol Psychiatry.* 2014; 55:124–134. [PubMed: 23808622]
32. Blissett J, Meyer C, Haycraft E. Maternal and paternal controlling feeding practices with male and female children. *Appetite.* 2006; 47:212–219. [PubMed: 16735080]
33. Loth KA, MacLehose RF, Fulkerson JA, Crow S, Neumark-Sztainer D. Are food restriction and pressure-to-eat parenting practices associated with adolescent disordered eating behaviors? *Int J Eat Disord.* 2014; 47:310–314. [PubMed: 24105668]
34. Birch LL, Fisher JO, Grimm-Thomas K, Markey CN, Sawyer R, Johnson SL. Confirmatory factor analysis of the Child Feeding Questionnaire: A measure of parental attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite.* 2001; 36:201–210. [PubMed: 11358344]
35. Buhrmester M, Kwang T, Gosling SD. Amazon's Mechanical Turk: A New Source of Inexpensive, Yet High-Quality, Data? *Perspect Psychol Sci.* 2011; 6:3–5. [PubMed: 26162106]

36. Behrend TS, Sharek DJ, Meade AW, Wiebe EN. The viability of crowdsourcing for survey research. *Behav Res Methods*. 2011; 43:800–813. [PubMed: 21437749]
37. Aknin LB, Barrington-Leigh CP, Dunn EW, Helliwell JF, Burns J, Biswas-Diener R, et al. Prosocial spending and well-being: cross-cultural evidence for a psychological universal. *J Pers Soc Psychol*. 2013; 104:635–652. [PubMed: 23421360]
38. Sprouse J. A validation of Amazon Mechanical Turk for the collection of acceptability judgments in linguistic theory. *Behav Res Methods*. 2011; 43(1):155–167. [PubMed: 21287108]
39. Arch JJ. Cognitive behavioral therapy and pharmacotherapy for anxiety: treatment preferences and credibility among pregnant and non-pregnant women. *Behav Res Ther*. 2014; 52:53–60. [PubMed: 24326075]
40. Lebowitz MS, Ahn WK, Nolen-Hoeksema S. Fixable or fate? Perceptions of the biology of depression. *J Consult Clin Psychol*. 2013; 81:518–527. [PubMed: 23379262]
41. Gearhardt AN, Corbin WR, Brownell KD. Development of the Yale Food Addiction Scale Version 2.0. *Psychol Addict Behav*. 2016; 30(1):113–121. [PubMed: 26866783]
42. Anderson CB, Hughes SO, Fisher JO, Nicklas TA. Cross-cultural equivalence of feeding beliefs and practices: The psychometric properties of the child feeding questionnaire among Blacks and Hispanics. *Prev Med*. 2005; 41:521–531. [PubMed: 15917048]
43. Lydecker JA, Simpson C, Kwitowski M, Gow RW, Stern M, Bulik CM, et al. Evaluation of Parent-Reported Feeding Practices in a Racially Diverse, Treatment-Seeking Child Overweight/Obesity Sample. *Child Health Care*. In Press.
44. Fairburn CG, Beglin SJ. Assessment of eating disorders: Interview or self-report questionnaire? *Int J Eat Disord*. 1994; 16:363–370. [PubMed: 7866415]
45. Grilo CM, Reas DL, Hopwood CJ, Crosby RD. Factor structure and construct validity of the eating disorder examination-questionnaire in college students: Further support for a modified brief version. *Int J Eat Disord*. 2015; 48:284–289. [PubMed: 25346071]
46. Grilo CM, Crosby RD, Peterson CB, Masheb RM, White MA, Crow SJ, et al. Factor structure of the eating disorder examination interview in patients with binge-eating disorder. *Obesity*. 2010; 18:977–981. [PubMed: 19798064]
47. Yanovski SZ. Binge eating disorder: Current knowledge and future directions. *Obes Res*. 1993; 1:306–324. [PubMed: 16350580]
48. Cromley T, Neumark-Sztainer D, Story M, Boutelle KN. Parent and family associations with weight-related behaviors and cognitions among overweight adolescents. *J Adolesc Health*. 2010; 47:263–269. [PubMed: 20708565]
49. Farrow C, Blissett J. Breast-feeding, maternal feeding practices and mealtime negativity at one year. *Appetite*. 2006; 46(1):49–56. [PubMed: 16352374]
50. Farrow C, Blissett J, Haycraft E. Does child weight influence how mothers report their feeding practices? *Int J Pediatr Obes*. 2011; 6(3–4):306–313. [PubMed: 21728778]

Highlights

- Parents with eating disorders (EDs) reported more child ED behaviors.
- ED parents report more concern with child weight despite little weight difference.
- Fathers were not significantly different from mothers on most child variables.
- Parental restriction of child diet related to child ED behaviors.

Figure 1.

Mean differences in ED psychopathology among fathers and mothers with and without core ED features.

Note. $N=344$. ED+=parents reporting core eating disorder features; ED-=parents without core ED features. Pairwise tests used a Tukey correction for multiple comparisons.

^A significantly different from ED- mothers at $p<.05$.

^B significantly different from ED+ mothers at $p<.05$.

^C significantly different from ED- fathers at $p<.05$.

^D significantly different from ED+ fathers at $p<.05$.

Table 1

Comparisons of demographic characteristics of parents with and without core ED features.

	<u>ED+ (n=172)</u>	<u>ED- (n=172)</u>	
	<i>n</i>	<i>n</i>	<i>p</i>
Parent gender *			.975
Female	129	130	
Male	42	42	
Parent race/ethnicity *			.999
White	143	149	
Black	10	10	
Hispanic	7	7	
Asian	5	5	
Parent education *			.999
High school/ GED	25	25	
Some college/ Associates	78	78	
College degree	41	42	
Post-college	26	25	
Parent age *	<i>M</i> =34.41 (<i>SD</i> =7.51) years	<i>M</i> =34.38 (<i>SD</i> =6.70) years	.976
Child gender *			1.000
Female	88	88	
Male	82	82	
Child age *	<i>M</i> =9.85 (<i>SD</i> =3.03) years	<i>M</i> =9.77 (<i>SD</i> =2.90) years	.782
Child weight *			
BMI z-score	<i>M</i> =0.53 (<i>SD</i> =1.47)	<i>M</i> =0.60 (<i>SD</i> =1.44)	.653
BMI percentile	<i>M</i> =65.11 (<i>SD</i> =32.62)	<i>M</i> =66.73 (<i>SD</i> =33.01)	.651
Overweight (>85 th BMI percentile)	68	74	.569

Note. *N*=344.

* *n*=1 ED+ parent did not report gender; *n*=7 ED+ and *n*=1 ED- parents did not report race/ethnicity; *n*=2 ED+ and *n*=2 ED- parents did not report their education level; all parents reported their age; *n*=2 ED+ and *n*=2 ED- parents did not report their child's gender; all parents reported their child's age; *n*=5 ED+ and *n*=3 ED- parents did not report their child's height and/or weight. Significance values are from chi-square tests (categorical) or t-tests (continuous).

Table 2

Comparison of mothers and fathers with and without ED features on ED psychopathology

	F	Total df	p	η_p^2
Restraint	10.20	339	< .001	.083
Overvaluation	33.41	339	< .001	.228
Body Dissatisfaction	16.54	339	< .001	.128

Note. Univariate ANOVAs compare EDE-Q subscales across parent groups: ED+ fathers, ED–fathers, ED+ mothers, and ED– mothers.

Table 3

Chi-square tests comparing frequencies of child ED behaviors by parent group.

Child ED Behaviors	ED– Mother	ED+ Mother	ED– Father	ED+ Father	χ^2	p	ϕ
	(n=130) n (%)	(n=129) n (%)	(n=41) n (%)	(n=42) n (%)			
Binge-Eating Episodes	10 (7.7%)	23 (17.8%)	5 (12.2%)	8 (19.0%)	6.45	.011	-.137
Vomiting Episodes	2 (1.5%)	3 (2.3%)	0 (0.0%)	1 (2.4%)	0.68	.410	-.044
Laxative Misuse Episodes	3 (2.3%)	3 (2.3%)	0 (0.0%)	0 (0.0%)	0.00	>.999	.000
Compulsive Exercise Episodes	3 (2.3%)	11 (8.5%)	1 (2.4%)	7 (16.7%)	9.52	.002	-.166
Secretive Eating Episodes	8 (6.2%)	11 (8.5%)	1 (2.4%)	5 (11.9%)	2.12	.146	-.079

Note. Frequencies and proportions of parent-reported child ED behaviors for each parent group with ED features (ED+) or without ED characteristics (ED–). Chi-square tests evaluated differences between ED+ and ED– groups.

Table 4

Mean differences in parental feeding practices and child weight by parent group.

Child Feeding	ED- Mother (<i>n</i> =130)		ED+ Mother (<i>n</i> =129)		ED- Father (<i>n</i> =41)		ED+ Father (<i>n</i> =42)		<i>F</i>	<i>Total df</i>	<i>p</i>	η_p^2
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)				
Perceived Responsibility	4.25	(0.83)	4.36	(0.70)	3.55	(0.89)	3.98	(0.82)	4.19	343	.042	.012
Concern about Child Weight	1.83	(1.16)	2.11	(1.37)	1.71	(0.98)	2.12	(1.24)	5.15	343	.024	.015
Restriction	3.40	(1.37)	3.72	(1.40)	3.71	(1.22)	3.69	(1.06)	3.04	343	.082	.009
Pressure-to-Eat	2.45	(1.16)	2.66	(1.15)	2.81	(0.91)	2.91	(0.97)	2.54	343	.112	.007
Monitoring	3.45	(1.17)	3.71	(1.05)	3.34	(0.98)	3.58	(0.91)	5.02	343	.026	.015
Child BMI z-score	0.47	(1.46)	0.59	(1.36)	1.01	(1.33)	0.37	(1.78)	0.20	336	.653	.001

Note. Mean scores and standard deviations on subscales of the Child Feeding Questionnaire for each parent group with ED features (ED+) or without ED characteristics (ED-). ANOVAs evaluated differences between ED+ and ED- groups.

Table 5

Logistic regressions examining associations between unresponsive feeding practices, child overweight, and obesity-related child ED behaviors.

		Multivariate Logistic Regression: Unresponsive Feeding Practices			IV: Restriction		IV: Pressure-to-eat	
		χ^2	df	p	Nagelkerke R^2	Odds Ratio (95% CI)	Odds Ratio (95% CI)	
Binge-eating		13.66	2	.001	.071	1.65 (1.21–2.23) *	0.89 (0.66–1.18)	
Secretive Eating		2.36	2	.307	.017	1.29 (0.91–1.83)	0.95 (0.66–1.38)	
Child Overweight/ Obesity		18.16	2	< .001	.071	1.35 (1.13–1.60) *	0.78 (0.64–0.96) *	

Note. N=334. Logistic regression models used all ED+ and matched ED- parents.
Significant odds ratios (*) greater than 1 indicate increased likelihood of child ED behavior; odds ratios between 0 and 1 indicate decreased likelihood of child ED behavior.

Table 6

Chi-square tests comparing frequencies of child ED behaviors across age groups

Child ED Behaviors	Children (5–11 yo)	Adolescents (12–15 yo)	χ^2	<i>p</i>	ϕ
	<i>n</i> (%) (<i>n</i> =260)	<i>n</i> (%) (<i>n</i> =84)			
Binge-Eating Episodes	28 (10.8%)	18 (21.4%)	6.23	.013	.135
Vomiting Episodes	3 (1.2%)	3 (3.6%)	2.17	.141	.079
Laxative Misuse Episodes	3 (1.2%)	3 (3.6%)	2.17	.141	.079
Compulsive Exercise Episodes	10 (3.8%)	12 (14.3%)	11.56	.001	.183
Secretive Eating Episodes	15 (5.8%)	10 (11.9%)	3.47	.063	.101

Note. Frequencies and proportions of parent-reported child ED behaviors (occurring weekly or more often) across child age groups.