



This item was submitted to Loughborough's Institutional Repository (<https://dspace.lboro.ac.uk/>) by the author and is made available under the following Creative Commons Licence conditions.

 **creative commons**
C O M M O N S D E E D

Attribution-NonCommercial-NoDerivs 2.5

You are free:

- to copy, distribute, display, and perform the work

Under the following conditions:

 **Attribution.** You must attribute the work in the manner specified by the author or licensor.

 **Noncommercial.** You may not use this work for commercial purposes.

 **No Derivative Works.** You may not alter, transform, or build upon this work.

- For any reuse or distribution, you must make clear to others the license terms of this work.
- Any of these conditions can be waived if you get permission from the copyright holder.

Your fair use and other rights are in no way affected by the above.

This is a human-readable summary of the [Legal Code \(the full license\)](#).

[Disclaimer](#) 

For the full text of this licence, please go to:
<http://creativecommons.org/licenses/by-nc-nd/2.5/>

CONTROLLING FEEDING PRACTICES AND PSYCHOPATHOLOGY IN A
NON-CLINICAL SAMPLE OF MOTHERS AND FATHERS

Emma Haycraft, PhD. ^{a*} & Jackie Blissett, PhD., C.Psychol. ^b

^a Department of Human Sciences, Loughborough University, Leicestershire, LE11 3TU, UK.

^b School of Psychology, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK.

* Address correspondence to: Dr Emma Haycraft, Loughborough University Centre for
Research into Eating Disorders, Department of Human Sciences, Loughborough University,
Leicestershire LE11 3TU, UK. Email: e.haycraft@lboro.ac.uk
Telephone: +44 (0)1509 22 8160; Fax: +44 (0)1509 22 3940

RUNNING HEAD: CONTROLLING FEEDING AND PSYCHOPATHOLOGY

ABSTRACT

OBJECTIVE: To explore the relationships between controlling feeding practices and a range of mental health symptoms while considering both parent and child gender.

METHOD: Mothers and fathers (N=214) of children aged 18-59 months completed self-report measures of child feeding practices, eating psychopathology and general mental health symptomology.

RESULTS: Feeding practices did not differ across any of the four parent-child gender dyads. Mothers' eating psychopathology scores were significantly higher than fathers' but parents did not significantly differ in the severity of their other mental health symptoms. Associations between disordered eating symptoms and controlling feeding practices were only seen in mothers of daughters and fathers of sons. In general, a range of mental health symptomologies in this non-clinical sample were related to more controlling feeding practices across all four dyads. Psychopathology was most strongly related to controlling feeding practices in parents of girls. **CONCLUSION:** Symptoms of psychopathology may be more likely to associate with controlling feeding practices in parents of daughters due to societal values for slimness in females.

Key words: Pressure to eat, restriction, child feeding, mental health, child gender, fathers.

CONTROLLING FEEDING PRACTICES AND PSYCHOPATHOLOGY IN A
NON-CLINICAL SAMPLE OF MOTHERS AND FATHERS

Psychopathology has been consistently associated with difficulties in parenting (Cummings & Davies, 1994) and, of particular interest, with problems within the domain of child feeding. Research in this domain has tended to focus on a limited selection of mental health problems, namely: symptoms of eating disorders; depression; anxiety; and, recently, obsessive-compulsive disorder (OCD) (Blissett, Meyer & Haycraft, 2007; Coulthard, Blissett & Harris, 2004; Francis, Hofer & Birch, 2001; Patel, Wheatcroft, Park & Stein, 2002; Stein et al., 2001). Previous studies have focussed primarily on mothers, investigating the relationships between maternal psychopathology and children's feeding problems (e.g. Blissett et al., 2007; Lindberg, Bohlin, Hagekull & Palmerus, 1996) and maternal psychopathology and controlling feeding practices with 1-year-old infants (e.g. Farrow & Blissett, 2005; Stein et al., 2001). With the exception of a study by Blissett, Meyer and Haycraft (2006), which examined eating psychopathology and child feeding practices in both mothers and fathers of young children, the relationships between mental health symptomology and child feeding practices in fathers have been scarcely researched. To date, no work has looked at associations between a broader range of psychopathologies and child feeding practices in both mothers and fathers, with their daughters and sons.

Mental health problems can impair parents' responsiveness to, and interactions with, their child, which may manifest in the implementation of more controlling, less sensitive child feeding practices. Controlling child feeding practices (for example, coaxing children to eat certain foods, pressurising them to finish a meal, or withholding food to use as a reward) can be unintentionally detrimental. They have been found to interfere with the child's autonomy regarding feeding and eating (Fisher & Birch, 1999; Johnson & Birch, 1994), and have also

been associated with children demonstrating less ability to self-regulate energy intake (Johnson & Birch, 1994) and with greater likelihood of children eating in the absence of hunger (Birch, Fisher & Davison, 2003; Fisher & Birch, 1999). Two types of controlling feeding practices which have been widely studied in the literature (e.g. Carper, Fisher & Birch, 2000; Fisher & Birch, 1999; Francis et al. 2001; Haycraft & Blissett, 2008; Johnson & Birch, 1994), and will be the focus of this paper, are pressure to eat and restriction. These practices have been found to commonly co-occur, with parents often reporting the use of both pressuring and restrictive feeding practices (e.g. Carper et al., 2000). Restriction of children's food consumption and the application of pressure for children to eat are feeding practices which have both been associated with the development of children's later restrained eating and disinhibition (Carper et al., 2000; Edmunds & Hill, 1999). While greater mental health symptomology has been associated with parents exhibiting both pressuring and restrictive controlling feeding practices (Francis et al., 2001), parents with mental health problems may alternatively exhibit less control over their children's eating by withdrawing from the feeding situation; a behaviour evidenced by mothers with eating psychopathology (Waugh & Bulik, 1999). Previous studies of mothers with bulimia nervosa have noted that mealtimes with a young child can be particularly stressful (Stein & Fairburn, 1989; Stein, Woolley & McPherson, 1999; Waugh & Bulik, 1999) and there may be a tendency for these mothers to distance themselves from the feeding situation for fear that the presence of food will trigger a loss of control, resulting in them bingeing (Patel et al., 2002). Given that the optimum feeding style appears to be characterised by authoritative practices, such as guidance, moderate control over foods that are provided to the child, and modelling of positive and healthy eating behaviours (Hughes, Power, Fisher, Mueller & Nicklas, 2005; Patrick, Nicklas, Hughes & Morales, 2005), mental health symptomology has the potential to promote non-optimal feeding interactions between parent and child via the development of either over or

under control of feeding. Furthermore, there is evidence to suggest that the presence of psychopathology in parents can be related to greater overweight in their children and to parents' perceptions of family mealtimes as less positive and more conflictual (Zeller, Reiter-Purtill, Modi, Gutzwiller, Vannatta & Davies, 2007).

Costanzo and Woody (1985) suggested a theory of domain specificity with regard to parenting behaviours in the context of children's obesity proneness. This theory purports that parents may be more likely to be controlling in areas in which they have concerns or high levels of investment. Thus, a parent with their own eating and weight concerns may be generally more invested in, and controlling with, their children's feeding and eating and may be more concerned about their children's potential for overweight. Costanzo and Woody found mothers with their own issues to perceive their daughters to be at greater risk than their sons in the domain of their own concern and, in turn, to be more likely to implement greater control. Numerous studies have since been conducted which support the theory that greater investment or concern might be related to controlling parenting behaviours and those which focus on the relationships between parents' disordered eating attitudes and behaviours, as well as symptoms of other psychopathologies (specifically depression, anxiety and obsessive-compulsive disorder), with the controlling feeding practices of pressure to eat and restriction, will be outlined below.

Eating psychopathology has been consistently associated with difficult feeding interactions between mothers and children. Parents for whom eating is an issue are more likely to exert control over their children's eating (Tiggemann & Lowes, 2002) and eating psychopathology has been found to interfere with a mother's ability to respond in a child-sensitive manner regarding food and mealtimes, suggesting that inappropriate parental feeding practices may result from a parent's need to maintain control over their children's feeding and eating (e.g. Stein et al., 1999). Indeed, a mother's own investment in weight and

eating issues and high levels of cognitive dietary restraint with her own eating have been related to the use of more controlling child feeding practices (Francis et al., 2001; Johnson & Birch, 1994). Yet eating psychopathology, or excessive dieting, is not always associated with parents reducing their children's intake of foods. Dieting mothers who reported thinking about their own weight status when deciding which foods to eat were found to eat more healthy foods themselves, but fed their children more unhealthy foods, suggesting that dieting women who are limiting their own food consumption may find a release from their desires to eat unhealthy foods by instead feeding them to their children (St John Alderson & Ogden, 1999). Research into fathers' eating psychopathology is sparse, potentially due to its historically low prevalence in men (1:10, males:females in the UK; Eating Disorder Association, 2000). However, a more recent national survey in the US indicated a difference between eating psychopathology prevalence in males and females of 1:3 for anorexia and bulimia nervosa (Hudson, Hiripi, Pope & Kessler, 2007). Furthermore, this study suggested that sub-threshold binge eating disorder was three times more prevalent in men than women in the US. That eating psychopathology prevalence appears to be increasing in men highlights the potential value of including fathers in this study. In addition, a recent study found fathers who reported greater dissatisfaction with their own bodies reported increased monitoring of their sons' but not daughters' food intake (Blissett et al., 2006). Furthermore, research has suggested that extrapolation of eating psychopathology may be particularly prevalent within same gender parent-child relationships (Blissett et al., 2006; Fisher & Birch, 1999), although other studies have suggested that there are also important relationships between fathers and daughters' eating psychopathology (Thelen & Cormier, 1995).

The implementation of insensitive, controlling feeding practices has also been associated with the presence of other psychopathologies. For instance, maternal depression has also been found to relate to greater application of pressure for 5-year-old daughters to eat

(Francis et al., 2001). Depression is neither stable nor uniform, and has been associated with hostility, coercion, withdrawal, and lower parental self-efficacy (Cox, Puckering, Pound & Mills, 1987; Cummings & Davies, 1994; Stein et al., 2001), all of which may influence feeding interactions. Hence, for some parents, depression may relate to hostility in responding to children's signals and interference, such as overt pressure to eat, while for others it may be characterised by a withdrawal from interactions, characterised by parents' reduced involvement in feeding situations. Although limited, research evidence has found fathers' depressive symptoms, such as irritability and pessimism, to associate with less nurturing and more punitive parenting (Leinonen, Solantus & Punamäki, 2003) and it is suggested that these practices may extend into the feeding domain, with depressed fathers displaying less nurtured, more disciplined feeding practices, exemplified by greater feeding control.

Anxiety has also been related to controlling feeding practices. Anxious parents may be overly concerned with how much, how little or what type of food their child is eating which may result in pressurising or restrictive feeding practices or intrusive monitoring (Farrow & Blissett, 2005; Francis et al., 2001). Anxiety has also been associated with negative mealtime interactions particularly for mothers of boys (Blissett et al., 2007). If parents are anxious about feeding their child, mealtimes may become stressful or aversive and parental anxiety surrounding food and mealtimes may make parents less sensitive and/or responsive. This may in turn promote the child to exhibit challenging eating behaviours (such as food refusal or fussiness) which elicit parents' controlling feeding practices or the restriction of certain foods (Farrow & Blissett, 2005). Similarly, greater reported obsessive-compulsive symptomology has also been linked to greater maternal use of restriction of their children's food intake one year postpartum (Farrow & Blissett, 2005). Children's developing autonomy regarding self-feeding can be difficult and messy. For parents who report anxiety

or obsessive-compulsiveness this may be a stressful time, which culminates with them needing to re-take control over the feeding situation by implementing controlling feeding practices.

Although much of the research to date has focussed on a few specific aspects of mental health it is likely that other elements of psychological distress may associate with more difficult feeding interactions, resulting in more problematic mealtimes and more maladaptive feeding practices. Based on the findings of studies looking at eating psychopathology, depression, anxiety and OCD it is likely that the presence of other types of psychopathological symptoms will relate to the use of more controlling feeding practices. Farrow and Blissett (2005) examined a broader range of psychopathologies using a non-clinical sample of mothers with 1-year-old infants and found the presence of various mental health symptoms to relate to greater restriction of their children's food intake. Specifically, they found that somatization, paranoid ideation and overall levels of psychological distress, in addition to anxiety and OCD symptoms, were associated with restrictive feeding practices in mothers of these infants. The current study expanded on this by considering a sample of mothers and fathers with young children over the age of 18 months. Children over 18-months-old are weaned, and parents' use of feeding strategies with these young children, who are more autonomous feeders, may differ from those implemented with infants.

The present study sought to recruit a sample of mother-father pairs of young children in order to build on previous works by including fathers in addition to mothers. Despite the fact that mothers have been established to spend more time than fathers in direct interactions with their children, including mealtimes (McHale, Crouter, McGuire & Updegraff, 1995), and that mothers tend to report more responsibility for feeding their child, and more monitoring of their child's food consumption than fathers do (Blissett et al., 2006; Francis et al., 2001), fathers have been found to play an important role in child feeding (Johannsen, Johannsen &

Specker, 2006) and research has called for the inclusion of fathers in studies within the child feeding domain (Blissett et al., 2006; Johannsen et al., 2006; Patel et al., 2002). Moreover, numerous works have identified different patterns of relationships within the child feeding domain for parents of daughters and parents of sons (Blissett et al., 2006; Carper et al., 2000; Costanzo & Woody, 1985; Fisher & Birch, 1999; Johnson & Birch, 1994; Tiggemann & Lowes, 2002). Societal pressures, such as the high value placed on thinness, especially for women, may play a role in encouraging greater restriction of food intake for daughters than sons, and may instil more concern in parents about their daughters' food consumption and weight than their sons' (Johnson & Birch, 1994; Tiggemann & Lowes, 2002). In contrast, societal pressures for boys to be 'big and strong' may encourage greater application of pressure for sons to eat more, and less restriction of foods consumed by parents of sons. Indeed, Klesges and colleagues found that boys aged 1-3 were presented with food more often than girls (Klesges et al., 1983). Because these findings suggest that there may be different patterns of relationships between feeding practices and predictive variables dependent on the child's gender, we considered the relationships separately for girls and boys in this study.

Based on the associations between restriction and pressure to eat with the development of children's later restrained eating and disinhibition (Carper et al., 2000; Edmunds & Hill, 1999), the current study focussed on these two controlling feeding practices. It aimed to discover whether a broad range of psychopathological symptoms in parents were related to the use of these feeding practices in mothers of daughters, mothers of sons, fathers of daughters and fathers of sons. This study was exploratory but based on previous studies of mothers using a more limited range of psychopathologies a series of a priori hypotheses were made. It was hypothesised that eating psychopathology would relate to the use of more controlling feeding practices in mothers of daughters and fathers of sons and, specifically, that the presence of bulimia symptoms would be associated with restriction in mothers of

daughters. It was also predicted that greater reported mental health symptomology would relate to the use of more controlling feeding practices. In particular, it was expected, based on findings from previous studies, that higher levels of depression would relate to greater application of pressure to eat (Francis et al., 2001), that higher levels of OCD would be associated with more restrictive feeding practices (Farrow & Blissett, 2005), and that higher levels of anxiety would associate with greater pressure and restriction, especially in mother of boys (Blissett et al., 2007). Moreover, an examination of the relationships between parents' feeding practices and psychopathology was required for each of the four parent-child gender dyads (mother-daughter, mother-son, father-daughter, father-son) and differences between parents' reports of controlling feeding practices were considered across the four groups. While it was expected that the pattern of relationships would vary between the four groups, with the strongest relationships between psychopathology and control being evident in same gender dyads, it was not expected that mothers' and fathers' controlling feeding practices with daughters and sons would differ significantly. Furthermore, because of the increased prevalence of eating psychopathology in women, differences between mothers' and fathers' psychopathology scores were also examined, with mothers expected to score more highly than fathers in their reported eating disorder symptoms.

METHOD

Participants

One hundred and seven mothers and 107 fathers of children aged between 18-59 months were recruited through nurseries in Cambridgeshire and the West Midlands in the UK. The mean age of the mothers was 35 years (*SD* 4.28, range 22-46 years) and the mean age of the fathers was 37 years (*SD* 5.35, range 23-53 years). The sample of children comprised 65 girls (mean age 41 months, *SD* 10.53, range 18-59 months) and 42 boys (mean age 42 months, *SD* 11.09, range 19-59 months). Fifty-two percent of the participants gave details of

their education level and socio-economic status (using the National Statistics Socio-Economic Classification, self-coded method; Office for National Statistics, 2005), which found them to be generally highly educated and primarily in ‘managerial and professional occupations’ (of those who reported data, 46% of mothers and 51% of fathers had more than five years of education post-16, and 80% of mothers and 84% of fathers were in ‘managerial and professional occupations’). Measures of socio-economic status and education level were omitted from the first batch of questionnaires distributed and hence these data are not available for all respondents. While ethnicity data were not collected, the nurseries involved in this study served primarily white neighbourhoods. The mothers and fathers who participated in this study co-habited and lived with the child whom they reported data on. Data received from non-cohabiting parents (e.g. divorced families) were excluded from the dataset prior to analysis. If parents had more than one child in the requisite age range they were asked to report on the oldest child. Of the parents who reported details of child birth order, most (74%) of the children had one or more siblings and 64% of children in this study were their parents’ first born.

Measures and procedure

Following Institutional Review Board ethical approval, and after giving informed written consent, mothers and fathers completed the following self-report measures separately and self-reported their own and their child’s heights and weights. Questionnaires were returned using prepaid envelopes and an identifier code was used to match completed returned questionnaires from the mother and father of the same child.

Child Feeding Questionnaire (CFQ; Birch et al., 2001)

The Child Feeding Questionnaire is a 31-item self-report measure of parents' feeding practices. In this study, only the pressure to eat and restriction subscales were administered, which respectively assess: parental strategies to get their children to eat more food (e.g. "If my child says "I'm not hungry", I try to get her/him to eat anyway"); and parents' tendencies to restrict particular foods from their children (e.g. "I intentionally keep some foods out of my child's reach"). Responses are made on a 5-point Likert scale, with response options for these two subscales ranging from 1 (Disagree) to 5 (Agree). The CFQ has been successfully used in numerous other studies (e.g. Carper et al., 2000), including studies on fathers (e.g. Blissett et al., 2006). It has previously been found to display adequate validity (Birch et al., 2001) and Cronbach's alpha tests of reliability conducted on this sample's data found the subscales to have the following alpha levels: pressure to eat α .69; restriction α .77, indicating acceptable reliability. Furthermore, parental reports of their feeding practices using the CFQ have been found to correlate with practices observed during mealtimes (Haycraft & Blissett, 2008).

Eating Disorder Inventory-2 (EDI-2; Garner, 1991)

The EDI-2 is a 91-item measure of eating psychopathology based on the original EDI. Three subscales measure behaviours and attitudes towards eating, weight and body shape, and eight subscales assess general psychological characteristics associated with eating disorders. In this study only the three eating subscales were used: Drive for Thinness; Bulimia; and Body Dissatisfaction. These subscales were chosen for parsimony; they are the three specific eating cognition and behaviour related subscales. They have previously been related to the use of controlling feeding practices in non-clinical samples (e.g. Blissett et al., 2006). The EDI-2 is useful in non-clinical samples (e.g. Berman, Lam & Goldner, 1993) and has good internal consistency, reliability, and good test-retest reliability, with appropriate content,

convergent, and discriminant validity (Garner, 1991). It has also been validated for use with men (Spillane, Boerner, Anderson & Smith, 2004).

Brief Symptom Inventory (BSI; Derogatis, 1993)

The BSI is a widely used measure of current, point-in-time, psychological symptom status, consisting of 53 questions, divided into nine symptom dimensions: Somatization; Obsessive-Compulsive symptomology; Interpersonal Sensitivity; Depression; Anxiety; Hostility; Phobic Anxiety; Paranoid Ideation; and Psychoticism. There are also three global dimensions, only one of which is used in this study: the Global Severity Index (GSI), which measures current or past level of symptomology and is the most sensitive single indicator of the respondent's distress, combining information about intensity of distress with number of symptoms reported (Derogatis, 1993). Higher scores indicate a greater experience of the symptom. T-scores are calculated from the raw scores, using the norm scores for non-clinical male and female respondents outlined in the BSI manual (Derogatis, 1993), to allow for comparison across subscales. The author reports good internal consistency, and there is other support for the reliability and validity of the measure (e.g. Derogatis & Melisaratos, 1983; Morlan & Tan, 1998).

Data analysis

A Kolmogorov-Smirnov test for normal distribution established the dataset to be primarily non-normally distributed, and hence one-tailed Spearman's correlations were used to test this study's directional hypotheses. Kruskal-Wallis and Mann-Whitney U tests were also used to test for differences between the study's groups. Analyses were run separately for each of the four parent-child dyads. Child age, parent age and parent BMI did not correlate significantly with the feeding practices tested in this study, and so were not controlled for in

these analyses. Child BMI was significantly negatively related to pressure to eat ($r = -.270$, $p < .01$). As this was the only significant relationship and due to the non-normal distribution of the data, it was not controlled for. However, the findings were interpreted cautiously with this association in mind.

RESULTS

Table 1 ABOUT HERE

The mean pressure to eat and restriction scores presented in Table 1 were in line with those from another study using mothers and fathers of preschool-age children (Blissett et al., 2006). There were no significant differences found between parents of daughters and sons in their use of controlling feeding practices.

Table 2 ABOUT HERE

Mothers' scores on the EDI, as presented in Table 2, were broadly comparable with data from normal adult samples (e.g. Berman et al., 1993; Blissett et al., 2007). Although comparison EDI data for non-clinical males are limited, the fathers' data appeared to be in line with previous findings from a student sample of males and females, which found males' scores to be lower than females' (Spillane et al., 2004). Mean subscale scores for mothers and for fathers were all lower than the clinical norms for those with anorexia or bulimia nervosa but, as was hypothesised, mothers' scores were significantly higher than fathers' scores on all three EDI subscales. Nine women (8% of the mothers) but none of the men had drive for thinness scores higher than the clinical anorexia nervosa norms, and one man (1% of the fathers) but none of the women had bulimia scores greater than the clinical bulimia nervosa

norms. Scores for mothers and fathers on the BSI subscales were broadly comparable with those of non-clinical adults given in the BSI manual (Derogatis, 1993) where T-scores of around 50 are indicative of average reports of mental health problems. Eighteen mothers (17% of the sample of mothers) and 17 fathers (16% of the fathers) obtained GSI T-scores of 63 or more, the cut-off for clinical concern or “caseness” (Derogatis, 1993, p.32). With the exception of a significant difference which suggested that fathers’ depression scores were higher than mothers’, mothers and fathers were similar in their reports on the BSI subscales.

 Table 3 ABOUT HERE

Table 3 presents the correlations between parents’ feeding practices and psychopathology.

Mothers of daughters

Higher maternal bulimia scores correlated with greater restriction of daughters’ food intake. No other significant associations were found between maternal eating psychopathology and feeding practices. Maternal depression, hostility, psychoticism and Global Severity Index scores were all positively related to pressure for daughters to eat. General maternal psychopathology was unrelated to mothers’ use of restriction with daughters.

Mothers of sons

Maternal eating psychopathology was unrelated to their feeding practices with their sons. Maternal reports of greater interpersonal sensitivity and Global Severity Index scores were positively related to pressure for their sons to eat, while increased maternal phobic anxiety scores correlated with greater restriction of their sons’ food intake.

Fathers of daughters

Fathers’ eating psychopathology was unrelated to their feeding practices with their daughters. Higher paternal somatization, obsession-compulsion, interpersonal sensitivity, anxiety,

hostility, paranoid ideation and Global Severity Index scores were positively related to fathers' use of pressure with their daughters. Lower phobic anxiety scores and greater somatization, obsession-compulsion, psychoticism and Global Severity Index scores were all related to paternal restriction of their daughters' food intake.

Fathers of sons

Reports of pressure to eat in fathers of sons were unrelated to any psychopathology scores. Greater bulimia scores associated with less restriction in fathers of sons, while higher somatization, obsession-compulsion, paranoid ideation and Global Severity Index scores were all positively correlated with paternal use of restriction with their sons.

DISCUSSION

The current exploratory study aimed to test for associations between controlling feeding practices and a range of psychopathologies in mothers of daughters, mothers of sons, fathers of daughters and fathers of sons. It also aimed to test for differences in the use of controlling feeding practices across the four types of dyad, and differences between mothers' and fathers' psychopathology scores. In general, the study's hypotheses were partially supported.

Significant associations between eating disorder symptomology and child feeding practices were only found in mothers of daughters and fathers of sons, which accords with our predictions and with previous work suggesting that the extrapolation of eating and weight concerns is particularly prevalent within the same gender parent-child relationships (Blissett et al., 2006; Fisher & Birch, 1999). In the current study, mothers who scored higher on the EDI bulimia subscale reported greater restriction of their daughters' food intake. Clinical work has found mothers with bulimia to report restricting unhealthy foods from their children (Stein, Woolley, Cooper & Fairburn, 1994) and the current study has found similar, though perhaps more moderate, associations in this non-clinical sample. These mothers may perceive

themselves to have more difficulty controlling their own eating but may strive to maintain control of their daughters' food consumption instead. This relationship is in accordance with other work involving maternal use of restrictive practices with daughters (Francis et al., 2001), and with Costanzo and Woody's (1985) domain specificity theory that parents with their own issues about food and eating may be more controlling with their children. That a relationship was found between maternal eating disorder symptoms and their feeding practices with daughters but not sons reflects the literature which suggests that the mother-daughter relationship in the transmission of feeding and eating issues may be particularly important (Tiggemann & Lowes, 2002).

For fathers of sons, higher levels of reported symptoms of paternal bulimia related to less reported restriction of their son's food intake and it is interesting that this relationship is the inverse of that found for mothers of daughters. However, this association supports the idea that parents with eating disordered symptoms may not feel able to impose control over their children's eating and one mechanism by which this may be avoided is to withdraw from feeding interactions (Patel et al., 2002). These avoidance behaviours have already been established in clinical samples of women with bulimia nervosa but to our knowledge, this is the first study that has identified bulimic symptomology in a non-clinical sample of fathers as potentially influential in their child feeding practices. It is acknowledged that in this sample bulimia scores were low for both mothers and fathers and the inferences that can be made involving eating psychopathology are thus limited. However, what the relationships in this study may show is that even mild levels of bulimic symptomology can be associated with the feeding practices that both mothers and fathers use. These somewhat contradictory patterns of results between bulimic symptoms in mothers and fathers and their use of restrictive feeding practices suggest that eating issues may exert their effects differently for different individuals and that these different effects may be a function of traditional gender roles.

Given the tendency for mothers to be primarily responsible for feeding their children even in dual income households (Blissett et al., 2006), a mother with eating disorder symptoms cannot as easily withdraw from the feeding situation as can a father with similar symptoms. She may therefore manage her distress by imposing more restrictive practices upon her child, rather than withdrawing or reducing her control as a father might. Furthermore, the fact that significant associations were only found involving bulimic symptomology could be a reflection of the fact that bulimia is the most dysfunctional of the three EDI subscales administered in this study. Hence, amongst generally low EDI scores in this non-clinical sample, it is not surprising that maladaptive feeding practices were associated with the least adaptive of the eating psychopathology subscales.

A further goal of the current study was to consider associations between child feeding practices with a broader range of psychopathologies in both mothers and fathers. In general, all of the BSI subscales (which reflect general psychological distress in the respondents) were related to pressure to eat and/or restrictive feeding practices in at least one of the parent-child dyads. With just one exception, greater psychopathology related to more controlling feeding, which supports the idea that mental health symptomology can impair parents' use of adaptive feeding practices. Furthermore, it is noteworthy that many of these significant relationships were evidenced in parents of daughters, with fewer relationships seen in parents of sons. For example, mothers who reported a greater tendency to pressurise their daughters to eat also reported more depression, hostility and psychoticism and had higher overall mental health symptom scores. Previous work has linked mothers' general psychopathological symptoms with the implementation of restrictive feeding practices with their 1-year-old infants (Farrow & Blissett, 2005) and thus the relationships in this study extend previous findings to suggest that mothers' general psychopathological symptoms may be linked to their use of pressurising feeding practices with older, preschool-age daughters. Based on their work with mothers with

eating psychopathology (e.g. Stein, Woolley, Cooper & Fairburn, 1994; Stein et al., 1999), Stein and colleagues (2001) proposed that parents' more general mental state may be related to their use of control, with which the present findings concur. However, these cross-sectional data are insufficient to ascertain causality or direction in these relationships, necessitating further longitudinal work into parents' feeding practices and psychopathology.

For fathers of daughters, reports of numerous psychopathological symptoms were associated with the application of both pressure and restriction of their daughters' food intake. This study provides the first evidence that the presence of more general psychological distress is associated with reports of more controlling feeding practices in fathers as well as mothers. That greater reports of obsessive-compulsive symptoms in fathers related to greater application of pressure and a higher use of restriction with their daughters extends previous work which has found OCD symptoms to be related to maternal feeding practices (Farrow & Blissett, 2005). Moreover, that such a large number of relationships were seen in fathers of daughters supports research which has found that the father-daughter relationship in feeding may be particularly important (e.g. Thelen & Cormier, 1995) and future research in the child feeding domain should continue to consider both parent and child gender.

There were comparatively few associations between psychopathology and feeding practices found for parents of sons. Relationships between psychopathological symptoms and controlling feeding practices were more commonly seen, and appeared to be stronger, in mothers and fathers of daughters, which may be related to societal pressures for slimness in females. Overly controlling feeding practices with daughters have previously been suggested to be a response to pressure for females to conform to the thin ideal (Carper et al., 2000; Johnson & Birch, 1994). These societal pressures may play a role in encouraging parents to control food intake more for daughters than sons, and to be more worried about their daughters' food consumption and weight than their sons' (Johnson & Birch, 1994; Tiggemann

& Lowes, 2002). The presence of psychopathological symptoms has previously been associated with insensitive parenting and feeding practices (e.g. Stein et al., 2001). It is possible that for parents with mental health problems, greater anxiety about societal values concerning acceptable weight, body shape or behaviour, or concern about others' perceptions of their parental competence, compounded by potentially insensitive parenting, may contribute to parents' use of excessive control over what their daughters are eating. Further work is required to examine whether there may be interactions between mental health symptoms, insensitive parenting and controlling feeding practices.

There were no significant differences in the child feeding practices reported across all four parent-child gender dyads, in line with predictions and previous studies (Blissett et al., 2006). These findings suggest that despite the fact that fathers tend to be less responsible for, or involved in, feeding than mothers are (Blissett et al., 2006; Francis et al., 2001), these mothers and fathers are similar in their implementation of controlling feeding practices, irrespective of their child's gender. It is noted that although this finding is in accordance with previous works, this lack of difference in the feeding practices with sons and daughters is not in line with the potential notion that parents may pressure their sons to be 'big and strong' and restrict their daughters, in accordance with the thin ideal. Thus, it is possible that other factors are more salient in determining the use of feeding practices with girls and with boys. Children's weight status or BMI may be influential, or it might be that the parents' own weight status influences their feeding practices, in line with Costanzo and Woody's (1985) suggestion that parents are controlling in areas where they are highly invested. Furthermore, given the non-clinical nature of our participant group, the range of psychopathology expressed is limited. In a clinical sample, parents who are more greatly invested in weight or shape issues may be more likely to express gender specific concerns and to demonstrate gender specific feeding practices. Further research is required to examine this suggestion.

However, as predicted, mothers and fathers differed significantly on all three subscales of the EDI, with mothers scoring more highly than fathers. This finding can be explained by the difference in eating disorder prevalence rates for females and males, with eating psychopathology being considerably less common in males.

Despite previous studies which have implicated depression in the feeding domain, in the current study depression was only seen as a significant correlate of feeding practices for mothers of daughters. Greater maternal depression scores related to greater application of pressure for daughters to eat, which accords with Francis et al. (2001) and our prediction, and perhaps reflects less sensitive, more coercive feeding practices in these mothers. It is also noteworthy that, unexpectedly, fathers reported significantly more depression than mothers, and an investigation of the respondents' scores indicates that there were a small number of fathers in this non-clinical sample with very high depression scores who had driven this difference. Despite the fact that fathers' depression scores were, on average, higher than the mothers' scores, no relationships were found involving depression in fathers. Obtaining further clinical data would be beneficial in order to ascertain whether feeding practices differ in fathers with and without depressive symptomology. Additionally, phobic anxiety, a subtype of anxious psychopathology, was related to greater application of restriction in mothers of boys, which lends some support to our hypothesis and to previous work which found anxiety to be associated with negative mealtime interactions in mothers of boys (Blissett et al., 2007).

The reliance on self-report data is a limitation of this study which should be acknowledged. However, this study was exploratory and self-report methods are a particularly useful and effective method for obtaining data (Whelan & Cooper, 2000). The CFQ is a widely used measure which has been demonstrated to show good levels of validity, with relationships seen between independent assessments of children's weight status and

parents' reports on this measure (Birch et al., 2001). It has recently been shown that fathers' reports of their feeding practices, using the CFQ subscales of pressure and restriction, are reliable, with fathers' self-reported feeding practices mapping onto observations of these behaviours at mealtimes (Haycraft & Blissett, 2008). Furthermore, that the parents were predominantly well-educated may prevent the generalisability of these findings to broader socioeconomic groups. Similarly, these findings may not extend to the feeding practices of a clinical sample of parents with mental health problems. The inclusion of exclusively two parent families also prevents these findings being applicable to single parent's feeding interactions with their children, but it would be interesting to examine a sample of single parents to see if the presence or absence of psychopathological symptoms is associated with feeding practices in the same way. It is possible that being part of a cohabiting couple may provide a protective buffer for the potential effects of any mental health symptoms on feeding interactions.

In conclusion, greater reported mental health symptomology in both mothers and fathers in this non-clinical sample was found to relate to greater application of pressure to eat and restriction with their children. It has been suggested that mental health symptoms may impair sensitive, responsive parenting and we propose that, in combination with societal values for slimness in females, these parents may be even more likely to implement controlling feeding practices. This study has demonstrated value in considering both parent and child gender by supporting the notion of the extrapolation of eating concerns within same gender parent-child relationships and further highlighting the father-daughter relationship as important in associations between controlling feeding practices and general psychopathology. Future work should continue to include fathers in addition to mothers in the examination of parental influences on the development of unhealthy eating behaviours and attitudes.

REFERENCES

- Berman, K., Lam, R. W., & Goldner, E. M. (1993). Eating attitudes in seasonal affective disorder and bulimia nervosa. *Journal of Affective Disorders, 29*, 219-225.
- Birch, L. L., Fisher, J. O., Grimm-Thomas, K., Markey, C. N., Sawyer, R., & Johnson, S. L. (2001). Confirmatory factor analysis of the Child Feeding Questionnaire: A measure of parental attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite, 36*, 201-210.
- Birch, L. L., Fisher, J. O., & Davison, K. K. (2003). Learning to overeat: Maternal use of restrictive feeding practices promotes girls' eating in the absence of hunger. *American Journal of Clinical Nutrition, 78*, 215-220.
- Blissett, J., Meyer, C., & Haycraft, E. (2006). Maternal and paternal controlling feeding practices with male and female children. *Appetite, 47*, 212-219.
- Blissett, J., Meyer, C., & Haycraft, E. (2007). Maternal mental health and child feeding problems in a non-clinical group. *Eating Behaviors, 8*, 311-318.
- Carper, J. L., Fisher, J. O., & Birch, L. L. (2000). Young girls' emerging dietary restraint and disinhibition are related to parental control in child feeding. *Appetite, 35*, 121-129.
- Costanzo, P. R. & Woody, E. Z. (1985). Domain-specific parenting styles and their impact on the child's development of particular deviance: The example of obesity proneness. *Journal of Social and Clinical Psychology, 3*, 425-445.
- Coulthard, H., Blissett, J., & Harris, G. (2004). The relationship between parental eating problems and children's feeding behavior: A selective review of the literature. *Eating Behaviors, 5*, 103-115.
- Cox, A. D., Puckering, C., Pound, A., & Mills, M. (1987). The impact of maternal depression in young children. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 28*, 917-928.

Cummings, E. M. & Davies, P. T. (1994). Maternal depression and child development.

Journal of Child Psychology and Psychiatry, 35, 73-112.

Derogatis, L. R. (1993). *Brief Symptom Inventory: Administration, scoring and procedures*

manual. (4th ed.) Minneapolis: National Computer Systems.

Derogatis, L. R. & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory

report. *Psychological Medicine*, 13, 595-605.

Eating Disorder Association (2000). Eating disorders in the United Kingdom: Review of the provision of health care services for men with eating disorders. Presentation by J.

Copperman for the EDA, 14 February 2000. [http://www.b-](http://www.b-eat.co.uk/NewsEventsPressMedia/PressMediaInformation/Someststatistics)

[eat.co.uk/NewsEventsPressMedia/PressMediaInformation/Someststatistics](http://www.b-eat.co.uk/NewsEventsPressMedia/PressMediaInformation/Someststatistics) [On-line].

Edmunds, H. & Hill, A. J. (1999). Dieting and the family context of eating in young

adolescent children. *International Journal of Eating Disorders*, 25, 435-440.

Farrow, C. V. & Blissett, J. M. (2005). Is maternal psychopathology related to obesigenic

feeding practices at 1 year? *Obesity Research*, 13, 1999-2005.

Fisher, J. O. & Birch, L. L. (1999). Restricting access to foods and children's eating. *Appetite*,

32, 405-419.

Francis, L. A., Hofer, S. M., & Birch, L. L. (2001). Predictors of maternal child-feeding style:

Maternal and child characteristics. *Appetite*, 37, 231-243.

Garner, D. M. (1991). *Eating Disorders Inventory 2: Professional manual*. Odessa, FL:

Psychological Assessment Resources.

Haycraft, E. & Blissett, J. (2008). Maternal and paternal controlling feeding practices:

Reliability and relationships with BMI. *Obesity*. doi:10.1038/oby.2008.238

Hudson, J. I., Hiripi, E., Pope, H. G. Jr., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication.

Biological Psychiatry, 61, 348-358.

- Hughes, S. O., Power, T. G., Fisher, J. O., Mueller, S., & Nicklas, T. A. (2005). Revisiting a neglected construct: Parenting styles in a child-feeding context. *Appetite, 44*, 83-92.
- Johannsen, D. L., Johannsen, N. M., & Specker, B. L. (2006). Influence of parents' eating behaviors and child feeding practices on children's weight status. *Obesity Research, 14*, 431-439.
- Johnson, S. L. & Birch, L. L. (1994). Parents' and children's adiposity and eating style. *Pediatrics, 94*, 653-661.
- Klesges, R. C., Coates, T. J., Brown, G., Sturgeon-Tillisch, J., Moldenhauer-Klesges, L. M., Holzer, B. et al. (1983). Parental influences on children's eating behavior and relative weight. *Journal of Applied Behavior Analysis, 16*, 371-378.
- Leinonen, J. A., Solantaus, T. S., & Punamäki, R. (2003). Parental mental health and children's adjustment: The quality of marital interaction and parenting as mediating factors. *Journal of Child Psychology and Psychiatry, 44*, 227-241.
- Lindberg, L., Bohlin, G., Hagekull, B., & Palmerus, K. (1996). Interactions between mothers and infants showing food refusal. *Infant Mental Health Journal, 17*, 334-347.
- McHale, S. M., Crouter, A. C., McGuire, S. A., & Updegraff, K. A. (1995). Congruence between mothers' and fathers' differential treatment of siblings: Links with family relations and children's well-being. *Child Development, 66*, 116-128.
- Morlan, K. K. & Tan, S. Y. (1998). Comparison of the Brief Psychiatric Rating Scale and the Brief Symptom Inventory. *Journal of Clinical Psychology, 54*, 885-894.
- Office For National Statistics (2005). *The National Statistics Socio-Economic Classification user manual*. (http://www.statistics.gov.uk/methods_quality/ns_sec).
- Patel, P., Wheatcroft, R., Park, R. J., & Stein, A. (2002). The children of mothers with eating disorders. *Clinical Child and Family Psychology Review, 5*, 1-19.

- Patrick, H., Nicklas, T. A., Hughes, S. O., & Morales, M. (2005). The benefits of authoritative feeding style: Caregiver feeding styles and children's food consumption patterns. *Appetite, 44*, 243-249.
- Spillane, N. S., Boerner, L. M., Anderson, K. G., & Smith, G. T. (2004). Comparability of the Eating Disorder Inventory-2 between women and men. *Assessment, 11*, 85-93.
- St John Alderson, T. & Ogden, J. (1999). What do mothers feed their children and why? *Health Education Research: Theory and Practice, 14*, 717-727.
- Stein, A. & Fairburn, C. G. (1989). Children of mothers with bulimia nervosa. *British Medical Journal, 299*, 777-778.
- Stein, A., Woolley, H., Cooper, S. D., & Fairburn, C. G. (1994). An observational study of mothers with eating disorders and their infants. *Journal of Child Psychology and Psychiatry, 35*, 733-748.
- Stein, A., Woolley, H., & McPherson, K. (1999). Conflict between mothers with eating disorders and their infants during mealtimes. *British Journal of Psychiatry, 175*, 455-461.
- Stein, A., Woolley, H., Murray, L., Cooper, P. J., Cooper, S., Noble, F. et al. (2001). Influence of psychiatric disorder on the controlling behaviour of mothers with one-year-old infants: A study of women with maternal eating disorder, postnatal depression and a healthy comparison group. *British Journal of Psychiatry, 179*, 157-162.
- Thelen, M. H. & Cormier, J. F. (1995). Desire to be thinner and weight control among children and their parents. *Behavior Therapy, 26*, 85-99.
- Tiggemann, M. & Lowes, J. (2002). Predictors of maternal control over children's eating behaviour. *Appetite, 39*, 1-7.
- Waugh, E. & Bulik, C. M. (1999). Offspring of mothers with eating disorders. *International Journal of Eating Disorders, 25*, 123-133.

Whelan, E. & Cooper, P. J. (2000). The association between childhood feeding problems and maternal eating disorder: a community study. *Psychological Medicine, 30*, 69-77.

Zeller, M. H., Reiter-Purtill, J., Modi, A. C., Gutzwiller, J., Vannatta, K., & Davies, W. H. (2007). Controlled study of critical parent and family factors in the obesigenic environment. *Obesity, 15*, 126-136.

Table 1: Descriptive statistics for mothers and fathers of daughters and sons in their reported feeding practices, and Kruskal-Wallis tests of difference

	Mothers of daughters (n=65)	Mothers of sons (n=42)	Fathers of daughters (n=65)	Fathers of sons (n=42)	Kruskal- Wallis test
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Pressure to Eat	2.72 (0.93)	3.02 (0.95)	2.98 (0.82)	2.88 (0.93)	3.72 (NS)
Restriction	3.28 (0.79)	3.44 (0.85)	3.44 (0.75)	3.40 (0.83)	2.06 (NS)

(NS) Non-significant difference across the four groups

Table 2: Descriptive statistics for mothers' and fathers' eating psychopathology and general mental health scores (measured by EDI subscales and the BSI), and Mann-Whitney U tests of difference between mothers' and fathers' scores.

	Mothers (n=107)	Fathers (n=107)	Mann-Whitney U
	Mean (SD)	Mean (SD)	Z scores
Eating psychopathology (EDI)			
Drive For Thinness	3.12 (4.63)	1.06 (1.62)	-3.05**
Bulimia	0.95 (1.86)	0.59 (1.78)	-2.18*
Body Dissatisfaction	8.22 (10.42)	4.83 (5.00)	-5.35***
General psychopathology (BSI)			
Somatization	49.46 (8.09)	48.97 (8.11)	-1.66
Obsession-Compulsion	55.32 (10.26)	55.12 (12.06)	-0.23
Interpersonal sensitivity	53.02 (10.10)	53.01 (10.11)	-0.49
Depression	51.07 (9.84)	51.49 (10.10)	-2.15*
Anxiety	50.61 (9.47)	49.71 (9.65)	-1.48
Hostility	56.42 (9.68)	54.85 (9.27)	-0.68
Phobic Anxiety	48.65 (6.88)	49.35 (5.92)	-1.78
Paranoid Ideation	51.89 (9.05)	52.79 (10.22)	-1.13
Psychoticism	52.32 (9.46)	51.36 (8.72)	-0.69
Global Severity Index	52.70 (9.96)	51.99 (10.96)	-0.61

* p<.05, ** p<.01, *** p<.001

Table 3: 1-tailed Spearman's correlations between child feeding practices with eating psychopathology and psychopathology scores for mothers and fathers of daughters and sons separately

	Mothers of daughters		Mothers of sons		Fathers of daughters		Fathers of sons	
	Pressure to Eat	Restriction	Pressure to Eat	Restriction	Pressure to Eat	Restriction	Pressure to Eat	Restriction
EDI								
Drive For Thinness	.028	.125	.084	.207	.124	.073	.004	.006
Bulimia	.083	.323**	.079	-.016	-.013	-.001	.037	-.261*
Body Dissatisfaction	.033	.065	.120	-.048	-.147	.090	.076	.227
BSI								
Somatization	-.081	-.091	-.127	.058	.231*	.226*	.112	.307*
Obsession-Compulsion	.187	.024	.156	.062	.253*	.218*	.132	.304*
Interpersonal sensitivity	.188	-.089	.268*	.119	.273*	.044	.052	.116
Depression	.262*	-.011	.203	.120	.059	.155	.040	.167
Anxiety	.200	.074	.018	.161	.233*	.041	.017	.159
Hostility	.234*	.138	.203	.090	.241*	.160	-.021	.174
Phobic Anxiety	.134	.125	-.170	.288*	.068	-.227*	.022	-.073
Paranoid Ideation	.164	-.124	.202	.160	.300**	.165	.106	.324*
Psychoticism	.306**	.070	.238	.141	.206	.210*	.224	.175
Global Severity Index	.270*	.004	.302*	.211	.325**	.319**	.142	.308*

* p<.05, ** p<.01 EDI: Eating Disorder Inventory; BSI: Brief Symptom Inventory