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Family mealtime emotions and food parenting practices among mothers of young children: Development of the Mealtime Emotions Measure for Parents (MEM-P)

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Abstract

Family mealtimes can be important for supporting children's healthy development, yet the emotional context of mealtimes can vary considerably, likely impacting their overall success and enjoyment. Yet, despite having an important role, little is known about how parents emotionally experience mealtimes with their family. The first aim of the current study was to assess the factor structure of a novel self-report measure to assess parents' emotional responses experienced during family mealtimes (Mealtime Emotions Measure for Parents; MEM-P). The second aim was to examine relationships between maternal mealtime emotions and their food parenting practices. Mothers of children aged between 1.5 and 6 years participated in this study. Mothers were invited to complete an online questionnaire measuring family mealtime emotions, anxiety, depression and food parenting practices. Exploratory factor analysis produced a three-factor solution comprising both positive and negative emotion subscales: MEM-P Efficacy; MEM-P Anxiety; MEM-P Stress and Anger. Mothers' positive mealtime emotions (mealtime efficacy) were related to greater use of practices promoting autonomy, providing a healthy home food environment, and modelling healthy eating. Higher anxiety about mealtimes was related to greater reports of child control over eating, and mealtime stress and anger was associated with greater use of food to regulate emotions. These findings highlight novel relationships between how mothers emotionally experience family mealtimes and the food parenting practices they use with their children. It is important to develop resources to help promote positive maternal experiences of family mealtimes and food-based interactions.

KEYWORDS

anxiety, autonomy, child feeding, family meals, feeding practices, maternal emotions, self-efficacy

1 | INTRODUCTION

The family environment plays an important role in children's eating behaviours (e.g., Wood et al., 2020). For example, frequently eating meals as a family has been linked with better nutritional health (e.g., Dallacker et al., 2019), better diet quality (e.g., Mou et al., 2021), and lower levels of obesity (e.g., Anderson & Whitaker, 2010) in children. Yet despite this, the frequency with which young children eat meals with their family is often low (e.g., Anderson & Whitaker, 2010). Parents have a central role in family mealtimes and are the gatekeepers of both the family table and food choice (Fiese & Schwartz, 2008). Quick and colleagues emphasise the importance of understanding parents' perceptions of family meals in relation to promoting mealtimes and learning more about the mealtime decisions that parents make (Quick et al., 2011), which may impact their children's health (Daniels, 2019; Fiese & Schwartz, 2008).

Family mealtimes are often reported as pleasant, enjoyable occasions which provide a valued time to develop bonds and communicate as a family (e.g., Haines et al., 2019; Quick et al., 2011; Skeer et al., 2018; Verhage et al., 2018). However, some parents describe the experience as stressful, rushed and 'chaotic' (e.g., Kling et al., 2009, p. 229; Skeer et al., 2018) and several challenges with the mealtime logistics have been identified. For example, scheduling a time to eat as a family presents difficulties for some parents due to work or educational commitments (e.g., Jones, 2018; Quick et al., 2011). Additional challenges with family meals reported by parents include a lack of confidence in cooking the family meal, difficulties in making decisions regarding the food served, preparing multiple meals, and receiving complaints about the food (e.g., Fulkerson et al., 2011; Kling et al., 2009; Quick et al., 2011). Challenging child behaviours have also been outlined, both generally at the table (i.e., throwing food and not staying in seats; Quick et al., 2011) and specifically related to eating (i.e., conflict around food preferences and playing with food rather than eating it; Fulkerson et al., 2008; Quick et al., 2011). Among parents of toddlers and young children, additional 'developmental challenges' have also been reported, such as mealtime mess, having children at different developmental stages of eating, and 'picky' eating (i.e., only wanting certain foods; Quick et al., 2011, p. 661). This highlights the complexity and multifaceted nature of managing emotional and physical demands, particularly with preschool-aged children. A chaotic and less positive mealtime atmosphere can undermine the benefits of family mealtimes (Dallacker et al., 2019; Martin-Biggers et al., 2014) and the importance of exploring parents' feelings about family mealtimes has been identified (Skeer et al., 2018). Yet, to date, little is known about the range of emotions parents experience during family mealtimes.

Mothers and fathers interact with their children about food in different ways (e.g., Pulley et al., 2014). Mothers tend to be the primary caregivers of young children (McPhie et al., 2014) and also the main provider of family meals (Woodruff & Kirby, 2013). Consequently, research has focused on exploring maternal factors related to the family food environment, such as affect. In particular, maternal psychopathology has been associated with negative interactions related to mealtimes and feeding (e.g., Blissett et al., 2007). Specifically, within the context of food-based interactions, higher levels of maternal anxiety and depression have been associated with greater use of controlling food parenting practices (i.e., pressure to eat or restriction of foods) with young children (e.g., Farrow & Blissett, 2005; Goulding et al., 2014; Haycraft, 2020). Importantly, elevated use of such food parenting has been linked with unhealthy child eating behaviours (e.g., increased dietary restraint and emotional eating; Carper et al., 2000).

It is well recognised that parents' mealtime actions can affect children's diet and subsequently their weight status (Ventura & Birch, 2008). Food-based interactions can also impact how food-related environments are experienced by parents. For example, among parents of preschoolers, greater levels of feeding control were associated with experiencing more negative emotions specifically related to feeding their young children (although it should be noted that feeding emotions were also significantly related to general affect; Frankel et al., 2015). Furthermore, parental food parenting practices may impact the emotional climate of mealtimes with young children (Hughes et al., 2011). It has been suggested that negative feelings about family mealtimes with preschoolers (e.g., being viewed as 'fraught') may be related to parents wanting to control their child's food intake during that time (Walton et al., 2021, p. 1343). However, importantly, it is *maternal*—and not child—emotions that appear to determine the mealtime emotional climate, and which are also linked with food involvement parenting practices and the child's consumption of healthy foods (Saltzman et al., 2018). This highlights the importance of examining maternal mealtime emotions in relation to parenting around food.

A recent conceptual framework for food parenting has identified three broad domains of behaviours: *Structure* (e.g., monitoring, access/availability of healthy foods); *Coercive Control* (e.g., pressure to eat, using food to regulate emotions); and, *Autonomy Promotion* (e.g.,

Key messages

- Mothers of young children experience a range of positive and negative emotions around family mealtimes.
- Mothers' mealtime emotions are related to the food parenting practices they report using with their children.
- Mothers with more positive emotional experiences of family mealtimes (i.e., greater mealtime efficacy) also reported higher use of food parenting practices which promote autonomy in children (e.g., involvement, balance and variety, teaching about nutrition) and which provide feeding structure (e.g., healthy food environment; modelling healthy eating).
- Some parents may benefit from further support to help them promote more positive mealtime experiences and food-based interactions.

child involvement, encouragement; Musher-Eizenman et al., 2019). The majority of research has focused on examining food parenting practices within the *Coercive Control* domain (e.g., pressure to eat or restriction) in relation to child outcomes and/or parental psychopathology (e.g., Clark et al., 2007; Haycraft et al., 2013). Saltzman et al. (2018) highlight the potential importance of maternal emotions in food parenting practices and a need to explore all three domains of parental behaviours. However, little is known about the relationship between how mothers of young children emotionally experience family mealtimes and the food parenting practices they use with their children.

In summary, mothers, as primary caregivers, face many demands at family mealtimes, especially with preschool children. Little is known about the range of emotions (positive and negative) they experience during this time. Negative affect has been shown to be related to parental feeding interactions with their child, but it remains unclear whether there are specific nuances with respect to how mealtime emotions relate to parent–child food-based interactions. Therefore, the current study, presented as two sections, addresses two aims. The first aim (Section 1) was to adapt an existing adolescent mealtime emotions measure for use with parents of young children to assess parental family mealtime emotions. The second aim (Section 2) was to use the new measure to examine whether family mealtime emotions are related to the food parenting practices used by mothers of young children. It was hypothesised that more positive family mealtime emotions would be associated with greater use of autonomy promotion food parenting practices (e.g., child involvement, building on the findings of Saltzman et al., 2018) and that more negative family mealtime emotions would be associated with greater use of coercive control food parenting practices (e.g., pressure to eat, building on the findings of Frankel et al., 2015). It was also hypothesised that family mealtime emotions would have a relationship with structure-related food parenting practices (e.g., monitoring), although due to a lack of previous literature, no direction was specified.

2 | AIM 1 (SECTION 1): ASSESSING PARENTAL FAMILY MEALTIME EMOTIONS

2.1 | Method

2.1.1 | Participants

Mothers ($N = 275$) of children aged between 1.5 and 6 years were recruited via social media (via parenting groups and researcher connections) and UK childcare and educational settings (i.e., nurseries, preschools and schools). All participants with incomplete responses to the Mealtime Emotions Measure for Parents (MEM-P) were excluded which left a final sample of 246 mothers with a mean age of 30.9 years (range = 19.3 to 48.9 years; SD = 6.29). Mothers' mean BMI was 27.2 ($n = 239$; SD = 6.37), calculated based on self-reported height and weight. Nearly all mothers (92.3%) reported their ethnicity as *White British/White other* and 97.6% reported English as their first language. The majority of mothers were married, in a civil partnership or living with a partner (76.0%) while 18.7% of mothers reported their marital status as single. Most mothers (89.8%) reported receiving education after the age of 16 years, with a mean duration of 4 years ($n = 241$; SD = 3.04).

Over half of the mothers reported having more than one child (55.7%). Where they had more than one child within the study's age range, they were asked to respond for the child who came first alphabetically. The mean child age was 3.3 years (SD = 1.17) and there were roughly equal responses based on sons ($n = 120$) and daughters ($n = 126$). Just over half of the mothers (55.7%) reported eating meals with their child seven or more times during the past week. Mealtimes with the 'whole family' were reported to take place seven or more times during the past week by 40.7% of mothers. A subset of this sample ($n = 186$) was also included to address the second study aim in Section 2.

2.1.2 | Procedure

After institutional ethical approval and participants providing consent, mothers were invited to provide demographic information about themselves and their child, and to complete the following measures online in the order presented below.

Family mealtime frequency

A family meal can be broadly defined as at least one child eating with at least one other at home (Robson et al., 2020). Participants were asked two questions regarding the frequency of family meals when they ate with their child and with the wider family ('During the past week, how many times did you sit down and eat a meal with your child?'; 'During the past week, how many times did your whole family eat a meal together?'). Participants were not provided with a set description of a family mealtime given inconsistency in the literature regarding this (Robson et al., 2020). Participants' responses were entered into a free-text box.

MEM-P

The MEM-P is a 16-item measure which assesses parents' emotional responses to typical family mealtimes. It is an adapted version of the original 13-item Mealtime Emotions Measure for Adolescents (White et al., 2015) which asks individuals to rate the frequency that they experience emotions (e.g., feeling anxious, relaxed) in response to family mealtimes. The original scale was developed based on mealtime literature among adolescents, and in relation to literature from the eating disorders field, where challenges with mealtimes are widely recognised (e.g., Long et al., 2012). The MEM-A comprises two subscales relating to negative mealtime emotions (Anxiety-related mealtime emotions; Anger-related mealtime emotions) and a Positive mealtime emotions subscale. The MEM-P contains three additional items which reflect parent-specific mealtime challenges, not captured within the original adolescent measure. These items were developed in collaboration with psychologists and psychiatrists working in the fields of child feeding, eating disorders and obesity and were based on literature related to parenting around mealtimes. Item 12 ('Prepared [immediate preparation for each specific mealtime]') reflects aspects of

parental mealtime support and challenges reported previously (e.g., Fulkerson et al., 2008). Item 13 ('Confident in dealing with any distress displayed by your child') reflects research highlighting mealtime conflict and uncertainties regarding how to respond to problematic eating behaviour (e.g., Fulkerson et al., 2008; Long et al., 2012). Item 16 ('Comfortable eating alongside your child') reflects the possible difficulties highlighted when eating alongside someone who displays difficult, fussy or problematic eating behaviour (Harris et al., 2018). During development of the additional items, the measure was piloted with a separate sample of parents, and based on their feedback, minor alterations were made to some of the wording to improve clarity. Parents rate the frequency which they experience each of the 16 emotional responses to family mealtimes on a 7-point Likert Scale (1 = Never to 7 = Always). Two items are reverse scored and mean scores are calculated for each subscale.

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)

The HADS is a 14-item self-report measure consisting of two subscales, one relating to Anxiety (7-items) and one to Depression (7-items). It has been used with mothers of young children previously (e.g., Palfreyman et al., 2013). Participants respond to questions regarding how they have been feeling over the past week based on a 4-point Likert scale. Higher scores indicate greater symptoms of anxiety and/or depression. Cronbach's α scores in the current sample were good (Anxiety, $\alpha = 0.85$; Depression, $\alpha = 0.84$).

2.1.3 | Data analysis

Shapiro–Wilk tests indicated that the data were not normally distributed (all $p < 0.05$), and hence, in line with recommendations (Costello & Osborne, 2005), an exploratory factor analysis (EFA) of the MEM-P items was conducted using a Principal Axis Factor extraction. A Promax rotation was used to allow intercorrelation between factors. In accordance with Cattell (1966), the scree plot was examined and factors with an Eigenvalue above 1.0 were retained (Kaiser, 1961). Items loading clearly onto one factor above 0.4 were retained (Field, 2009). The Kaiser–Meyer–Olkin measure of sampling adequacy was good (MSA = 0.872) and indicated that factor analysis was appropriate. The sample size also met Nunnally's (1978) criteria for factor analysis (i.e., 10 cases per item).

2.2 | Results

2.2.1 | Factor structure of the MEM-P

The results of the EFA yielded a three-factor structure comprising all 16 of the MEM-P items (Table 1), which was supported by an analysis of the scree plot (Cattell, 1966). Item 9 loaded above 0.4 on two factors but was retained within Factor 3 as there was a stronger loading there (0.14 difference). Cumulatively, the three factors explained 62.5% of the variance.

TABLE 1 Pattern matrix of the exploratory factor analysis conducted with principal axis factoring using promax rotation on the Mealtime Emotion Measure for Parents (MEM-P) among mothers of young children ($n = 246$)

MEM-P item	MEM-P: Efficacy	MEM-P: Anxiety	MEM-P: Stress and Anger
Comfortable within the physical environment (15)	**0.89**	0.00	0.14
Comfortable with eating alongside your child (16)	**0.75**	−0.21	0.25
In control of your own emotions (14)	**0.74**	−0.03	−0.01
Confident in dealing with any distress displayed by your child (13)	**0.68**	0.10	−0.22
Prepared (immediate preparation for each specific mealtime) (12)	**0.62**	0.03	−0.01
Nervous (5)	−0.03	**0.78**	−0.05
Emotionally confused (8)	−0.11	**0.67**	−0.01
Distressed (7)	0.04	**0.63**	0.18
Embarrassed (6)	−0.00	**0.58**	0.03
Anxious (1)	0.01	**0.49**	0.30
Guilty (3)	−0.03	**0.41**	0.27
Stressed (2)	0.05	0.08	**0.80**
Frustrated (11)	0.17	0.12	**0.78**
Angry (10)	0.11	0.10	**0.65**
Relaxed[a] (4)	0.38	0.04	**−0.55**
Happy[a] (9)	0.41	0.10	**−0.55**
Eigenvalue	6.57	2.27	1.17
Percentage of variance	41.1	14.2	7.30
Cronbach's α	0.85	0.84	0.85

Note: Factor items are indicated in bold.
Item numbers are shown in brackets.
[a]Reverse-scored items.

Factor 1 included five items concerning positive mealtime emotions related to being prepared, comfortable, in control of own emotions and confident in dealing with any child distress. This factor is labelled 'MEM-P Efficacy' and explained 41.1% of the variance. Factor 2 included six items concerned with negative mealtime emotions, such as nervousness and anxiety. This factor explained 14.2% of the variance and is labelled 'MEM-P Anxiety'. This factor includes the same items as the MEM-A Anxiety-related subscale among adolescents (White et al., 2015). The final factor, Factor 3, included five items which also related to negative mealtime emotions, but these were concerned with anger, frustration, not being relaxed and

lower levels of happiness. This factor is labelled 'MEM-P Stress and Anger' and explained 7.30% of the variance.

The three factors were highly correlated. MEM-P Efficacy was significantly negatively correlated with both MEM-P Anxiety ($r = -0.46$; $p < 0.001$) and MEM-P Stress and Anger ($r = -0.53$; $p < 0.001$). Significant positive correlations were also reported between MEM-P Anxiety and MEM-P Stress and Anger ($r = 0.67$; $p < 0.001$).

2.2.2 | Convergent validity of MEM-P

To assess the convergent validity of the MEM-P in relation to general affect, the mealtime subscales were correlated with both HADS subscales. Significant negative associations were found between the MEM-P Efficacy subscale and both HADS Anxiety and Depression respectively ($r = -0.38$; $r = -0.48$; both $p < 0.001$). Similarly, significant positive correlations were reported between both the MEM-P Anxiety and MEM-P Stress and Anger subscales and both HADS Anxiety ($r = 0.44$; $r = 0.42$; both $p < 0.001$), and Depression ($r = 0.37$; $r = 0.38$; both $p < 0.001$).

Good levels of reliability were found within the current sample and convergent validity with general affect (anxiety and depression), supporting the use of the MEM-P for further research with parents.

3 | AIM 2 (SECTION 2): MOTHERS' FAMILY MEALTIME EMOTIONS AND FOOD PARENTING PRACTICES

The second aim of the study built on the first aim by using the new MEM-P measure to examine the relationships between family mealtime emotions and food parenting practices among mothers of young children.

3.1 | Method

3.1.1 | Participants

A subset of the mothers described in Section 1 completed the MEM-P, HADS and an additional measure (see below) to address the second study aim ($N = 186$). Mothers' mean age was 30.7 years (SD = 6.30; range = 19.3–48.9 years) and their mean BMI was 27.6 (SD = 6.61). Most mothers were married or living with a partner (76.3%), most had received two or more years of education after 16 years (86%), almost all had English as their first language (97.3%), and the majority were white British (84%). The mean child age was 3.36 years (SD = 1.18; range = 1.5–5.92).

3.1.2 | Procedure

After institutional ethical approval, participants provided consent and completed an online questionnaire. Following completion of background questions, the MEM-P and the HADS (as described in Section 1), mothers also completed the measure described below.

Comprehensive Feeding Practices Questionnaire (CFPQ; Musher-Eizenman & Holub, 2007)

Food parenting practices were assessed using the CFPQ which is a 49-item self-report measure of parental feeding practices developed for use among parents of young children. Participants were asked to respond to statements related to their approaches to, and concerns regarding, feeding their children, focusing on one specific child. Responses are based on a 5-point Likert scale (1 = Never or Disagree to 5 = Always or Agree). The measure consists of 12 subscales and for the purpose of this study, the subscales have been aligned with one of the three broad feeding constructs recently identified within the food parenting literature (e.g., Musher-Eizenman et al., 2019): *Structure* (CFPQ subscales: Child control; Environment; Modelling; Monitoring), *Coercive Control* (CFPQ subscales: Emotion regulation; Food as reward; Pressure; Restriction for health; Restriction for weight control) and *Autonomy Promotion* (CFPQ subscales: Encourage balance and variety; Involvement; Teaching about nutrition). Cronbach's α scores within the current sample were acceptable and ranged from 0.58 to 0.80.

3.1.3 | Data analysis

Shapiro–Wilk analyses highlighted that the data were not normally distributed and hence nonparametric tests were used where possible. Preliminary Mann–Whitney *U*-tests highlighted no differences in MEM-P, HADS or CFPQ subscales in relation to the sex of the child so the sample was analysed as a whole. Affect has been significantly correlated with emotions related to feeding young children among parents (Frankel et al., 2015) and, similarly, the findings in Section 1 highlighted significant correlations between all MEM-P subscales and HADS Anxiety and Depression (all $p \leq 0.001$). Pearson's partial correlations were therefore used to test the study hypotheses examining the relationships between positive and negative family mealtime emotions (assessed via the MEM-P subscales) and CFPQ subscales, controlling for HADS Anxiety and HADS Depression. Spearman's correlations highlighting the relationships between MEM-P and CFPQ subscales (without controlling for HADS Anxiety and Depression) are shown in the online Supporting Information (Table S1). A significance value of $p \leq 0.05$ was adopted for all analysis.

3.2 | Results

3.2.1 | Characteristics of the sample

Descriptive statistics for the Section 2 sample are presented in Table 2. In general, CFPQ scores were broadly comparable to previous research with mothers of 2–6-year-olds, although child involvement, monitoring and environment were all slightly lower in the current sample (Haycraft et al., 2017). The mean HADS Anxiety and

TABLE 2 Mean values, SD and range scores for mealtime emotions, anxiety, depression and feeding practices among mothers of young children ($N = 186$)

	Mean (SD)	Min–Max
Mealtime Emotions Measure for Parents (MEM-P)		
MEM-P Efficacy	5.28 (1.34)	1.40–7.00
MEM-P Anxiety	1.96 (1.12)	1.00–6.50
MEM-P Stress and Anger	3.10 (1.33)	1.00–7.00
Hospital Anxiety and Depression Scale (HADS)		
HADS Anxiety	7.68 (4.38)	0.00–21.0
HADS Depression	5.69 (4.09)	0.00–21.0
Comprehensive Feeding Practices Questionnaire (CFPQ)		
Structure		
CFPQ Child control	2.58 (0.73)	1.00–4.60
CFPQ Environment	3.71 (0.87)	1.00–5.00
CFPQ Modelling	4.05 (0.87)	1.00–5.00
CFPQ Monitoring	4.01 (0.90)	1.00–5.00
Coercive control		
CFPQ Emotion regulation	1.94 (0.65)	1.00–4.00
CFPQ Food as reward	2.55 (1.20)	1.00–5.00
CFPQ Pressure	2.89 (0.94)	1.00–4.75
CFPQ Restriction for health	3.24 (1.02)	1.00–5.00
CFPQ Restriction for weight control	1.87 (0.54)	1.00–3.88
Autonomy promotion		
CFPQ Encourage balance and variety	4.46 (0.53)	2.00–5.00
CFPQ Involvement	3.41 (1.16)	1.00–5.00
CFPQ Teaching about nutrition	3.59 (0.94)	1.33–5.00

Depression scores are also broadly comparable to existing research with mothers of young children (Haycraft, 2020).

3.2.2 | Associations between mothers' reports of family mealtime emotions and food parenting practices, controlling for levels of anxiety and depression

When controlling for both HADS Anxiety and Depression, significant positive associations were found between MEM-P Efficacy and the following CFPQ subscales: Encourage balance and variety, Environment, Involvement, Modelling and Teaching about nutrition (Table 3). A significant negative association was found between MEM-P Efficacy and CFPQ Emotion regulation. MEM-P Anxiety was significantly positively related to CFPQ Child control and significantly negatively related to CFPQ Involvement. In relation to MEM-P Stress and Anger, a significant positive association was found with CFPQ Emotion regulation, and a significant negative association was found with CFPQ Encourage balance and variety. There were no other significant associations between MEM-P and CFPQ subscales. As can be seen in the online Supporting Information (Table S1), when HADS Anxiety and Depression are not controlled for a number of additional significant relationships between MEM-P and CFPQ subscales are found.

TABLE 3 Two-tailed partial correlations examining the associations between emotional responses to mealtimes and child feeding practices when controlling for both anxiety and depression among mothers of young children ($N = 186$)

	MEM-P Efficacy	MEM-P Anxiety	MEM-P Stress and Anger
Structure			
CFPQ Child control	−0.06	0.15*	0.01
CFPQ Environment	0.20**	0.03	−0.09
CFPQ Modelling	0.26***	0.10	0.01
CFPQ Monitoring	0.10	0.04	−0.01
Coercive control			
CFPQ Emotion regulation	−0.16*	0.08	0.16*
CFPQ Food as reward	−0.11	0.04	0.08
CFPQ Pressure	−0.00	−0.06	0.09
CFPQ Restriction for health	−0.13	−0.05	−0.01
CFPQ Restriction for weight control	−0.04	−0.02	−0.04
Autonomy promotion			
CFPQ Encourage balance and variety	0.16*	−0.12	−0.19**
CFPQ Involvement	0.19**	−0.15*	−0.07
CFPQ Teaching about nutrition	0.18*	−0.02	−0.10

Abbreviations: CFPQ, Comprehensive Feeding Practices Questionnaire; MEM-P, Mealtime Emotions Measure for Parents.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

4 | DISCUSSION

Based on the MEM-A (White et al., 2015), a new measure of parents' emotional responses to family mealtimes was developed. The factor analysis generated a three-factor model highlighting that mothers of young children experience a range of positive and negative emotions during family mealtimes. The subscales MEM-P Anxiety and MEM-P Stress and Anger have similarities with the negative family mealtime

emotion subscales reported previously among adolescents (White et al., 2015), albeit with the inclusion of not feeling happy or relaxed. The positive mealtime emotion subscale relates to mothers' feelings of efficacy regarding family mealtimes. Perceived self-efficacy has been described as a belief in one's capabilities to succeed in a specific situation (Bandura, 1997). This has been explored in relation to mealtimes among parents of young children previously, although with a specific focus on food-based activities (i.e., preparation and execution of meals; Quick et al., 2011). The MEM-P Efficacy subscale extends this to reflect additional novel emotional aspects, such as feeling confident with any child distress and being emotionally controlled within the mealtime environment. Importantly, this highlights the multifaceted nature of family meals and the varied demands of parents within their mealtime role.

The findings of Section 2 highlight that there are relationships between the emotions mothers of young children experience during family mealtimes and the food parenting practices they use with their children (when controlling for anxiety and depression), particularly regarding promoting autonomy and feeding structure. Comparing these results with those in the online Supporting Information highlights that maternal mental health symptoms are important to consider in relation to both child feeding practices (as reported previously by Haycraft, 2020) and mealtime emotions. However, as several significant relationships remained when controlling for general mental health, the main findings highlight that these emotions are likely to be specifically related to their family eating environment. Food parenting practices are linked with key child health outcomes (e.g., adiposity; Clark et al., 2007), hence it is important to understand any maternal factors which may be related to these to help promote positive food-based interactions.

Overall, mothers who reported a more positive emotional experience of family mealtimes (mealtime efficacy) also reported greater use of food parenting practices which promote autonomy (e.g., involvement, balance and variety, teaching about nutrition), certain practices related to feeding structure (healthy food environment; modelling healthy eating), and a lower use of food to regulate emotions (a coercive control practice), irrespective of any existing psychopathology. These findings support the study hypothesis and partially support observational mealtime research by Saltzman et al. (2018) which reported greater levels of child involvement in food among mothers who displayed higher levels of positive emotions during mealtimes. However, while supporting the role of child involvement, the observational based research did not find relationships between maternal positive emotions and other autonomy promotion or structure practices (i.e., environment; monitoring; modelling; balance and variety; Saltzman et al., 2018). These differences with the findings of the current self-report study could suggest that some aspects of the emotional experience of mealtimes cannot be assessed through visual (i.e., observational) methods alone, such as self-efficacy, due to their intrinsic nature. Consequently, the novel and exploratory approach within the current study has enabled further understanding of how maternal mealtime confidence is linked with food parenting practices.

The current findings suggest that mothers' perceptions of their own capability to implement what they view as successful mealtimes might be related to the behaviours they display during this time. It could be that food parenting practices which assist in facilitating autonomy and providing feeding structure are also the practices which mothers feel more able to control and succeed at, such as making healthy food available in the home and teaching about nutrition. It should also be acknowledged that success with using more autonomy promotion practices may also increase mothers' feelings of capability within this situation. While further research is needed, this highlights an important direction for intervention development to focus on, promoting mealtime self-efficacy among parents.

Higher levels of maternal mealtime-specific anxiety were related to allowing the child more control over their eating behaviours (e.g., eating what or when they want) and less involvement in meal preparation. This did not support the study hypothesis related to negative mealtime emotions (related to anxiety) and greater use of coercive control practices (e.g., pressure to eat). However, the current findings build on links between maternal psychopathology and greater child control over eating (Haycraft, 2020) to reflect that, when controlling for maternal mental health symptoms, feeling more nervous and anxious specifically about family mealtimes may be related to the level of child—and maternal—involvement in food-related decisions and preparation. Giving the child more autonomy over how much they eat (via the parent attending to their child's internal signals of hunger and fullness, i.e., responsive feeding) is encouraged to promote healthy mealtime interactions (Black & Hurley, 2017). However, this should be an interactive process with parents setting guidelines regarding structure (i.e., food choices, routines and timings; Black & Hurley, 2017). Many parents of young children offer less autonomy around the amount of food and more influence over types of foods consumed than recommended (Loth, de Brito, et al., 2018). Finding the balance between child autonomy and parental control can be challenging and can result in a negative emotional atmosphere at mealtimes (Wolstenholme et al., 2019). Feeling nervous or uncertain in relation to the child having control of their eating behaviour may reflect concern about the child's food intake; uncertainties over child eating (Moore et al., 2010) and portion size (Curtis et al., 2017) have been reported by parents of young children previously. Furthermore, parents have described the quantity and variety of food their child eats as being a factor in their experience of mealtimes and meal-related stress (Trofholz et al., 2017). Aspects of child's eating behaviour (e.g., child's satiety responsiveness, child's fussy eating) are recognised to influence parental feeding practices (Jansen et al., 2018; Mallan et al., 2018), and these were not explored within the current study. Future research should consider the importance of the child's eating behaviour in relation to mealtime emotions, to understand this relationship. Importantly, mothers may require more information and support in relation to understanding autonomy regarding their child's eating behaviour to help reduce any anxiety regarding mealtimes.

Our findings relating to mealtime emotions and coercive control revealed that higher levels of mealtime stress and anger and lower levels of mealtime efficacy were associated with greater use of food

to regulate emotions, providing partial support for the study hypothesis. Increased levels of emotional overeating have been observed among children whose mothers use food to regulate emotions, specifically within the context of negative mood (Blissett et al., 2010). It is therefore interesting that within the current study, mothers who reported greater use of food to regulate their children's emotions also reported higher levels of *maternal* negative family mealtime emotions. This highlights that mothers' own frustration and negativity at mealtimes may have a role in how they interact with their children to manage their emotions. Avoiding stress or conflict has been outlined as the most important mealtime goal among parents (Snuggs et al., 2019). Exposure to stress can cause food-parenting practices to become coercive or indulgent (Loth, Uy, et al., 2018). This may reflect mothers' uncertainty and lack of confidence with how to manage distress shown by their child around food while also remaining emotionally in control themselves. Consequently, food may be used as a tool with children to regulate their emotions. This again highlights the need to support parents to promote their confidence in managing difficult child behaviour at mealtimes and also to increase awareness of parents' own emotions during this time. Based on the current findings, interventions targeted to increase maternal confidence around family mealtimes (i.e., strategies to help with mealtime preparation, promote confidence in dealing with child distress and to control own emotions) could be beneficial in relation to promoting the use of food parenting practices which encourage the child to develop autonomy around their eating behaviour. Importantly, these findings also highlight that mothers of young children may need further information and support specifically in relation to child involvement in food-related decisions, and regarding how to manage their own emotions, and those displayed by their child. This might help to promote more positive mealtime experiences for mothers and also reduce feelings of anxiety and stress regarding this time.

While this study contributes new information to the field, it is limited by its cross-sectional design and, subsequently, the bidirectional nature of the relationships discussed should be acknowledged. Within the parent–child feeding relationship, both parents and children influence the behaviours and cognitions of each other (Walton et al., 2017). It should be acknowledged that the role of the child in relation to family mealtimes, such as their eating behaviour or other characteristics (e.g., temperament), has not been included in this study which limits interpretation of the findings. Further research should explore how parental mealtime emotions and food parenting practices relate to child factors to help to develop future interventions.

This study is the first to develop and implement a measure of parents' emotional responses to family mealtimes and helps to increase our understanding of how mothers feel about these mealtimes. However, while viewed as a parental measure, the current research only included mothers, and fathers and other caregivers may have different experiences of family mealtimes. Future research should validate the MEM-P with other caregivers to explore their mealtime emotions and how these might relate to food parenting practices. Additionally, it should be acknowledged that alternative research methodology (e.g., mealtime observations and parental interviews about family mealtimes) may identify a wider range of emotions occurring during family mealtimes than those captured within self-report measure used within this study (which is based on a previously validated measure with adolescents; White et al., 2015). Future research may wish to explore a wider range of parental emotions experienced during family mealtimes in relation to food parenting practices, specifically positive emotions as there were a limited number included within the current study. Furthermore, the inclusion of a mainly white British and fairly well-educated sample limits generalisability of the findings, although participants were recruited from a variety of sources to promote diversity in responses. The effect sizes of our results were often quite small and so further work with larger, more diverse samples is needed to replicate these findings.

In conclusion, understanding more about how mothers of young children emotionally experience family mealtimes provides an important and unique insight into the features of mealtimes which they are confident with and those which they find more challenging. This study highlights that mothers of young children experience a range of emotions during family mealtimes and that these emotions are linked to the food parenting practices they use with their children, particularly regarding promoting autonomy and feeding structure. Consequently, this is an important area to focus on to enable the development of targeted resources and interventions to help support mothers to promote positive interactions around food and eating with their young children.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Hannah J. White, Caroline Meyer and Emma Haycraft developed the MEM-P; Hannah J. White, Caroline Meyer, Zoe Palfreyman and Emma Haycraft conceptualised the research studies. Hannah J. White analysed the data and drafted the manuscript. All authors read, contributed critical revision and approved the final version of the manuscript.

DATA AVAILABILITY STATEMENT

Research data are not shared as consent for data sharing was not obtained from participants.

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