

Maternal clinical perfectionism and use of controlling child feeding practices

Running Head: Maternal perfectionism and child feeding practices

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Submitted in partial fulfillment of the Doctorate in Clinical Psychology

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1st July 2013

Word Count: 38, 089

Abstract

Maternal use of controlling feeding practices (pressure, restriction and monitoring) is understood to influence a child's developing food preferences and relationship with food. Several associations have been found between maternal psychopathology and use of controlling feeding practices, yet the mechanisms that underpin these relationships are unclear. The current study investigates the role of the transdiagnostic process of perfectionism and maternal use of controlling feeding practices. The study was in two parts. The first part of the study was a cross-sectional questionnaire design. One hundred and two mothers of young children aged between 18 and 47 months completed self-report measures assessing maternal perfectionism, mood and use of controlling feeding practices. For the second part of the study, mothers who reported scores in the upper and lower quartiles on the perfectionism measure were invited to participate in a recorded observation of a mealtime with their child. A between groups design was used to compare those in the upper ($n=8$) and lower ($n=14$) quartiles on their observed use of controlling feeding practices. Self-reported pressure to eat was significantly related to both maternal self-reported perfectionism and maternal self-reported depression. The relationship between maternal self-reported perfectionism and use of pressure to eat was robust when controlling for self-reported depression. Furthermore, self-reported depression was not related to pressure to eat when controlling for self-reported perfectionism. In the second part of the study, no significant differences were found between the two groups on observed use of controlling feeding practices. However, mothers in the upper quartile were observed to make more positive comments about food. The findings tentatively support the hypothesis that clinical perfectionism may play an important role in maternal use of controlling feeding practices.

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Acknowledgements

Firstly, I would like to thank the un-named mother who unknowingly inspired this research by sharing her own reflections on parenting young children. I would like to thank all the busy mums who took the time to complete my questionnaires, and to those who so generously welcomed me into their homes.

I would like to express my sincere gratitude to my supervisor Dr. Sian Coker, for her enthusiasm, advice and practical support throughout the course of the research, and in particular for her thorough and thoughtful revisions while writing up the thesis. I would like to thank fellow trainees for their support, in particular Dr. Laura Pass for her ongoing encouragement and help with coding observations.

Thank you to my family for understanding my absences in the past few months. Finally, very special thanks to my husband, Jamie, for his unwavering support and pragmatism, and for reminding me to be mindful (and of course for his love of statistics).

Chapter 1. Introduction

1.1 Chapter Overview

Previous research has indicated that maternal mealtime management strategies may influence a child's developing food preferences and relationships with food, and in some cases may contribute to the development and/ or maintenance of child feeding difficulties (e.g., Aldridge, Dovey, Martin, & Meyer, 2010; Douglas, 2002; Farrow & Blissett, 2006). As a basis for understanding these relationships, the chapter begins with a brief overview of child feeding from the perspective of normal development from conception to age 3 years. This provides the necessary context for discussing the definition and aetiology of problematic feeding in young children from a theoretical and empirical perspective. This includes an introduction to the potential role of maternal psychopathology and associated child feeding styles that may contribute to the development and/ or maintenance of feeding difficulties in young children. The final section introduces perfectionism, proposing that this transdiagnostic process may be one possible mechanism implicated in maternal use of controlling feeding practices. The chapter concludes with a summary and rationale for the present study, including details of the study hypotheses.

1.2 Feeding Development in Children

The successful development of feeding skills in children is dependent upon a complex interaction between physiological, neurophysiological, environmental, social and cultural factors (Stevenson & Allaire, 1991). To understand how difficulties in feeding may arise, it is useful to first consider the predictable, sequential patterns of development that most children follow without substantial difficulty (Dovey & Martin, 2011; Stevenson & Allaire, 1991; Woolston, 1991). The brief overview presented below begins at conception and concludes at age three

years, when the normally developing child will be able to feed autonomously, and will be learning the more social aspects of behaviour at mealtimes, such as table manners (Wolke, Skuse, & Reilly, 2006). Despite obvious exceptions, the available literature discussed in this chapter reflects the fact that mothers tend to be the primary caregivers for babies and infants (Blissett, Meyer, & Haycraft, 2006).

Although more recently the focus has broadened to consider the key role of fathers in this relationship (e.g., Atzaba-Poria et al., 2010; Blissett et al., 2006; Haycraft & Blissett, 2008a, 2011), this will not be the primary focus in this review. For the purposes of the current discussion, unless otherwise specified, the term “infant” refers specifically to the period before the age of one year (Carr, 2006). Alternative terminology will be used where relevant to individual pieces of research or specific diagnoses, with definitions or clarifications provided as necessary.

The physiological features necessary for feeding, along with the cough, gag, and suck reflexes are developed in utero (Delaney & Arvedson, 2008). Physiological features include the oral cavity, the pharynx, which is necessary for swallowing, and the oesophagus, which leads to the stomach (Wickenden, 2011). From birth to 3 months, feeding primarily involves the suck reflexes, yet more complex skills are developed in rapid succession (Reilly, Skuse, & Wolke, 2006). For example, a newborn baby learns to control the speed and timing of intake during either bottle or breast-feeding (Reilly et al., 2006). At the same time, the social context provided by the mother begins the development of communication skills and is considered to be early “conversation” (Arvedson, 2006; Wickenden, 2011, p. 11).

From 3 to 6 months, infants learn to communicate hunger and satiety to their mother. They adopt a more upright position while feeding, complementing physical changes at this stage (Wickenden, 2011). Usually towards the end of this period, in

line with government recommendations, infants will begin the weaning process (NHS, 2013; Reilly et al., 2006). This critical period in feeding development lasts for several months and involves the ongoing introduction of an increasing variety of solid foods, allowing the infant to gradually build up tolerance to new textures and tastes (Arvedson, 2006). At the same time, infants' physiological development allows for control of saliva, and with movement of the jaw and tongue learns chewing and biting (Wickenden, 2011). As the infant approaches the age of one year, it begins to learn more complex self-feeding skills (Reilly et al., 2006).

The period following weaning is of particular interest in the present study. With the appropriate support, it is the time at which a young child begins to develop autonomy in feeding, reaching associated developmental milestones such as the use of a spoon (Hagan, Shaw & Duncan, 2008). Wickenden (2011) emphasises that the exploration of new foods is an agreeable experience for the child when they are provided in an environment in which the young child is permitted to experience an appropriate level of control and autonomy. The caregiver's recognition of hunger patterns and food preferences at this time are an important influence on future feeding behaviour and on the development of appetite (Wolke et al., 2006). Up to age three, young children continue to master eating and drinking skills, and will begin to verbally express preferences and learn the more social aspects of eating, such as table manners (Wolke et al., 2006).

1.3 Feeding Difficulties in Children

Feeding and eating serves a number of functions for the developing child, not least to consume adequate nutrients to allow them to survive both physically and mentally (Cooper & Stein, 2006). Feeding difficulties in early childhood not only disrupt early development, but have been linked to later deficits in cognitive

development, behavioural problems, as well as anxiety and eating disorders during childhood, adolescence, and into early adulthood (Emde et al., 2005). Therefore, it is important to develop an understanding of factors that may influence the development of feeding difficulties in early childhood. The description of normal feeding development provides a useful context in which to consider the development of problematic feeding behaviours in early childhood. However, before discussing the development of feeding difficulties, it is first of all necessary to consider the problem of definition, which has contributed to difficulties in clearly advancing knowledge in this area (Dovey & Martin, 2011).

1.3.1 Definition of feeding difficulties. There are a number of complexities in defining feeding difficulties or feeding problems in young children. As part of normal development children may experience disruptions in feeding. For example, they may experience food neophobia (refusing to try new foods), or limit the types of food that they are prepared to eat (Black & Hurley, 2007). In general, these stages will be transient and issues will be resolved without significant intervention (Black & Hurley, 2007). However, these difficulties occur on a spectrum, and for some children these difficulties persist, leading to significant health risks (Williams, Field, & Seiverling, 2010). Factors that may influence the transient nature of such difficulties to progress to more persistent problems are the focus of the current research.

The complex nature of both normal and disrupted feeding development in children has led to the inconsistent and conflicting use of terminology for clinically significant feeding difficulties across healthcare professions, and also within the research literature (Bryant-Waugh, Markham, Kreipe, & Walsh, 2010). In part this reflects the complexity and heterogeneous nature of feeding problems observed in

young children (Vaz & Piazza, 2001). This has been exacerbated by an absence of a single internationally recognised and accepted classification system for clinically significant feeding difficulties (Bryant-Waugh et al., 2010; Davies et al., 2006). The following section provides an overview of several existing classification systems, and the associated controversies.

1.3.1.1. Diagnostic and Statistical Manual of Mental Disorders and International Classification of Disease. In the years preceding the recent release of the Diagnostic and Statistical Manual of Mental Disorders V (DSM-V; American Psychiatric Association, 2013), there has been ongoing debate regarding the most appropriate structure and content for the classification of feeding disorders, which it is useful to discuss before introducing the recently released new criteria (Bryant-Waugh et al., 2010; Davies et al., 2006). Furthermore, the International Classification of Diseases (ICD-10; World Health Organization, 1993) categories remain unchanged at present in the United Kingdom (UK).

The DSM-IV and the ICD-10 list “feeding disorder of infancy or early childhood”, “pica” and “rumination” as formal diagnoses within the category of “feeding and eating disorders of infancy or early childhood” (American Psychiatric Association, 1994; World Health Organization, 1993). In turn this is placed within the broader category of “disorders usually first diagnosed in infancy, childhood and adolescence” (Bryant-Waugh et al., 2010). These “disorders” are considered independent to eating disorders that are usually diagnosed in adulthood, such as Anorexia Nervosa (AN) and Bulimia Nervosa (BN). Although included in this childhood category, pica, characterised by the ingestion of non-food substances, and rumination could be diagnosed across the lifespan and are not of primary interest in the present study (Bryant-Waugh et al., 2010). Feeding disorder by definition has

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onset before the age of six years and is defined as a “feeding disturbance manifested by persistent failure to eat adequately, with significant failure to gain weight or significant loss of weight over at least 1 month; the disturbance is not due to an associated gastrointestinal or other general medical condition; the disturbance is not better accounted for by another mental disorder or by lack of available food” (American Psychiatric Association, 1994; World Health Organization, 1993).

Each of the diagnostic criteria outlined above has been criticised for not being sufficiently operationalised. For example, the extent of weight loss required for diagnosis is not specified, nor does it consider that children can display significant difficulties, such as food selectiveness, refusal or fussiness, whilst maintaining weight with sufficient intake of preferred foods (Steinberg, 2007). A more common criticism is that the system implies that feeding difficulties result from factors solely within the child, without taking account of other mechanisms that may contribute to the development or maintenance of feeding difficulties in children (Bryant-Waugh et al., 2010). Davies et al. (2006) summarise that the approach fails to take account of the “feeding relationship”, a “complex interaction that takes place between parent and child as they engage in food selection, ingestion, and regulation” (Satter, 1986, p.353). For this feeding relationship to result in successful feeding development, there needs to be an adequate balance of communication and control for both child and mother (Davies et al., 2006). Reflecting this viewpoint, Davies et al. (2006) made specific recommendations for inclusion of the term “feeding relationship” in the DSM-V criteria. Further suggestions for improving the criteria were to assess the relative impact of various factors, including the child’s physical, social and emotional development, and interaction with the primary caregiver as well as overall family functioning (Bryant-Waugh et al., 2010).

The category outlined above has recently been replaced in the DSM-V with “avoidant/ restrictive food intake disorder” (ARFID) under the broader category of “Feeding and Eating Disorders” (American Psychiatric Association, 2013). The diagnostic criteria for ARFID can be found in Appendix A. Although for the time being “feeding disorder of infancy or early childhood” remains in the ICD-10, recommendations have been made for the inclusion of this diagnostic category in the ICD-11, which is due for publication in 2015 (Bryant-Waugh, 2013; Uher & Rutter, 2012). The introduction of this new category aims to improve clinical utility by adding more detail about the characteristics of eating disturbances (Bryant-Waugh, 2013). It reflects the lifespan, developmental approach of the DSM-V, which means that the criteria no longer apply only to young children (Bryant-Waugh, 2013). However, it appears that many of the criticisms outlined above remain for the DSM-V criteria. For example, the amount of weight loss needed for diagnosis remains a matter for clinical judgment (American Psychiatric Association, 2013). There is no reference to the feeding relationship in the diagnostic criteria, yet the accompanying notes acknowledge that some parent-child interactions may contribute to disruptions in feeding, and identifies that risk factors for development include family anxiety and maternal psychopathology, particularly eating disorders (American Psychiatric Association, 2013).

1.3.1.2 Alternative diagnostic criteria. The Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood-Revised (DC: 0-3R; Zero to Three, 2005) is a developmentally based diagnostic manual designed to complement the DSM-IV and the ICD-10 (Bryant-Waugh et al., 2010). It provides clinical criteria to facilitate the diagnosis of mental health and developmental disorders in infants and young children up to age 3 years (Emde et al.,

2005). The DC: 0-3R attempts to classify childhood disorders on a number of axes, taking account of clinical diagnosis, parent-child relationships, medical and developmental disorders and conditions, psychosocial stressors, and emotional and social functioning (Emde et al., 2005).

A revised edition of the manual published in 2005 included several sub-classifications of “Feeding Behaviour Disorders” modified from a detailed classification system developed by Chatoor and colleagues (Bryant-Waugh et al., 2010; Chatoor et al., 1997). These categories are Feeding Disorder of State Regulation; Feeding Disorder of Caregiver-Infant Reciprocity (elsewhere termed Feeding Disorder with Attachment Problems); Infantile Anorexia (elsewhere termed Individuation Disorder); Feeding Disorder Associated with Concurrent Medical Condition; and Feeding Disorders Associated with Insults to the Gastrointestinal Tract (elsewhere termed post-traumatic feeding disorder) (Dunitz-Scheer & Scheer, 2011; Emde et al., 2005). This system has been commended by some authors as it sub-classifies feeding disorders according to various organic and non-organic causes, thus acknowledging the complex aetiology of feeding difficulties (Steinberg, 2007). However, there is currently limited empirical support for the sub-categories, and they are not widely used (Bryant-Waugh et al., 2010).

Several other classification systems are summarised by Bryant-Waugh et al. (2010) as follows. The Complex Bio-Behavioural Pediatric Feeding Disorders system (Burklow, Phelps, Schultz, McConnell, & Rudolph, 1998) considers both biological and behavioural factors in the classification of feeding disorders. The Behavioural Paediatric Feeding Problems classification system (Crist & Napier-Phillips, 2001) utilises a standardised questionnaire to identify five common patterns of problematic feeding reliant upon behavioural components only (Bryant-Waugh et

al., 2010). The Food Refusal Behaviours system (Dovey, Farrow, Martin, Isherwood, & Halford, 2009) operationalises five subtypes of food refusal, incorporating the work of Chatoor and colleagues. Finally, in addition to the identified classification systems, Bryant-Waugh et al. (2010) outline several other feeding difficulties that are characterised by the avoidance of food, or restriction of food intake. In a detailed summary, they identify three main subtypes: Presentations characterised by inadequate food intake, such as food avoidance emotional disorder (FAED; Higgs, Goodyer, & Birch, 1989); presentations characterised by restricted range of food intake; and presentations characterised by avoidance due to a specific fear.

Several of the systems outlined are of clinical interest, yet have not been sufficiently validated (Bryant-Waugh et al., 2010). The number and variety of diagnostic criteria pose difficulties in developing a clear definition for the present study, and for summarising the existing research. In part, this reflects the heterogeneous nature of problematic feeding and the multiple factors that may influence their development (Vaz & Piazza, 2011). Therefore, for the purposes of the present study, the term “feeding difficulties” will be used to refer to any patterns of behaviour that result in limited, inadequate or inappropriate food intake, regardless of whether this results in significant weight loss. This may include examples such as food selectiveness (or fussiness), or food refusal (Bryant-Waugh et al., 2010; Douglas, 2002). Specific diagnostic terms will be used where relevant to individual research findings.

1.3.1.3 Obesity and overweight. When considering the development of feeding and eating habits in children, it is also important to consider that they may develop feeding patterns and habits that may lead to the weight gain, and in extreme cases that children may become obese. Obesity is a medical condition where the

amount of fat on the body is likely to have an adverse impact on health. In children, obesity is calculated using centile charts. There is considerable evidence that childhood obesity can be linked with numerous long-term and immediate health risks, including cardiovascular disease, diabetes, stroke, and bone and joint problems, as well as stigmatisation and low self-esteem (Centre for Disease Control; CDC, 2011). Therefore, the patterns of dietary intake that may result in obesity is an important additional consideration when discussing feeding difficulties in young children.

1.3.2 Prevalence of feeding difficulties in children. Given the lack of consensus in the definition of feeding difficulties in childhood, establishing an accurate prevalence rate is challenging (Douglas, 2002). Problems with feeding are amongst behaviours most commonly reported by parents of preschool-age children with estimated prevalence at approximately 25% in otherwise normally developing young children (Essex & Woolliscroft, 2011; Manikam & Perman, 2000). The figure can rise up to 80% when considering children with developmental disabilities (Chatoor & Ganiban, 2003). However, many studies estimating prevalence rely upon parental report, and given the transient nature of many feeding difficulties in young children as outlined above, identifying problems of clinical significance is a challenge. However, available evidence suggests that between 3 – 10% of reported difficulties in infants and young children become persistent (Essex & Woolliscroft, 2011). Diagnosable feeding problems are estimated to be present in 1-2% of infants in the first year of life (Aldridge et al., 2010; Dahl & Sundelin, 1986). Skovgaard et al. (2007) examined the prevalence of feeding disorders according to DC: 0-3 criteria (Zero to Three, 2005) from a cohort study in Denmark, reporting a prevalence of 2.4% among otherwise healthy children (Skovgaard et al., 2008).

Given the clearer definition of obesity, identifying prevalence rates for children is less challenging. The Health Survey for England Report in 2011 (NHS Information Centre, 2011), found that 12% of children between the age of 2 and 10 years could be considered overweight, whereas 13% were obese. This figure rises to 21% overweight and 25% obese when including children between the ages of 2 and fifteen years. This indicates that the problem of obesity is a significant issue in the UK, particularly given the associated health implications, as noted above (CDC, 2011).

1.4 Aetiology of Feeding Difficulties

Section 1.3.1 (Definition of feeding difficulties) has already highlighted some of the key factors that are understood to contribute to the development and maintenance of feeding difficulties in young children. While much research has focussed on identifying diagnostic criteria for feeding difficulties, resulting in the complex diagnostic systems outlined above, there has been much less consideration of the processes by which feeding difficulties are developed and maintained (Cooper & Stein, 2006; Dovey & Martin, 2011). The following section provides an overview of current understanding, leading to a rationale for the present study.

1.4.1 Risk periods. Risk periods for development of feeding difficulties coincide with developmental stages, with usual onset occurring between the ages of 6 months and 4 years (Aldridge et al., 2010). It is understood that if a child presents with feeding difficulties over the age of 6 years, that these are likely to be long-standing but previously unidentified problems (Aldridge et al., 2010; Bryant-Waugh, 2013). Although the age limitation of occurrence before the age of six years has been removed from the DSM-V criteria for ARFID, the notes that accompany the criteria acknowledge this developmental trajectory, indicating that the disorder will most

commonly develop in infancy or early childhood and persist into adulthood (American Psychiatric Association, 2013).

These developmental stages coincide with changes in feeding style and dietary intake (Birch, 1999). The first developmental stage that may pose a significant risk for the development of feeding difficulties is the weaning period, where an infant makes the transition from a liquid diet to the consumption of solid foods, usually around the age of 6 months. Difficulties generally relate to the necessary physical or behavioural changes required to succeed at this stage (Aldridge et al., 2010). For example, solid foods and textures pose an initial challenge to infants who have not previously experienced food other than milk (Aldridge et al., 2010; Manikam & Perman, 2000).

Of particular interest to the present study are the developmental stages that begin between the ages of 1 and 3 years (Satter, 1990). This is a developmental stage of separation and individuation, where a young child develops autonomy and independence from a primary caregiver (Satter, 1990). This is reflected in feeding behaviours, as the child develops self-feeding skills, expresses individual food preferences, and overcomes sensitivity to new foods as a wider variety of foods are introduced (Aldridge et al., 2010; Wickenden, 2011). During this time, learning to walk coincides with the development of food neophobia (an aversive response to new foods), thought to be an evolutionary mechanism to prevent ingestion of harmful foods during this exploratory phase (Aldridge et al., 2010; Pliner & Hobden, 1992). These developmental changes results in significant changes to the mother- child relationship, and an appropriate balance between autonomy and control between mother and child is particularly important at this time for successful transition (Aldridge et al., 2010; Satter, 1986). Factors that may impede a mother's ability to

allow appropriate levels of autonomy and control at this time are of particular interest in the present study.

1.4.2 The development of problematic feeding. The complex biopsychosocial processes required for the successful development of normal feeding patterns in infants provides a useful context in which to consider the nature of disruptions that can occur during early childhood (Batchelor, 1999; Wickenden, 2011). The developmental perspective outlined above indicates that although children will usually follow a consistent pattern of development in feeding and eating, difficulty can occur at various stages along this trajectory (Douglas, 2002). Significant feeding difficulties can arise due to a complex interaction of factors that may include medical background, oral-motor difficulties, child's appetite and temperament, developmental and environmental factors, and factors relating to the primary caregiver (Blissett & Harris, 2002; Bryant-Waugh et al., 2010). The latter is the focus in the present study.

As already discussed, there is not always a clear distinction between "normal" and "difficult" feeding, yet there are some groups whose feeding difficulties may have clear underlying causes. For example, children who experience different types of developmental delay may present with similar types of feeding difficulties that have resulted from associated learning pathology (Dovey & Martin, 2011). Similarly, from a biological or physiological perspective, there are factors that influence a child's ability to sense food in different ways, or impact on motor ability to carry out functions such as sucking, biting, chewing and swallowing (Dunitz-Scheer & Scheer, 2011). Consequently, children who present with a clear underlying medical cause to their feeding difficulties, for example those who have chronic diseases or gastroenterological disorders, are not generally categorised in the same way as

children whose difficulties are understood to have more psychological or social causes, because the aetiology is clearly different (Aldridge et al., 2010).

Research investigating psychological and social factors that may influence the development and maintenance of feeding difficulties in children have typically considered the role of child temperament and caregiver (usually maternal) characteristics (Farrow & Blissett, 2006). For example, it has been shown that mothers who report that their child has feeding difficulties also report their children to be more difficult and demanding, or to be shy or unsociable in their temperaments (Farrow & Blissett, 2006; Lindberg, Bohlin, Hagekull, & Thunström, 1994; Pliner & Loewen, 1997). Notwithstanding the significance of each of the factors already discussed, parenting characteristics also play an important role in the aetiology and maintenance of feeding difficulties in children (Aldridge et al., 2010), and are the focus of the present study. Douglas (2002) summarises that although parental characteristics cannot be considered as a single causative factor in the development of child feeding difficulties, complex developmental pathways may include parental characteristics and practices that interact with other risk factors.

1.4.3 The role of parenting styles. In general, mothers are responsible for providing the context in which their child eats, in addition to making age-appropriate food choices (Blissett, Meyer & Haycraft, 2006; Davies et al., 2006). Consequently, although fathers undoubtedly also play a key role (e.g., Atzaba-Poria et al., 2010; Blissett et al., 2006; Haycraft & Blissett, 2008a, 2011), this will not be the primary focus in this review. Research in the area of parenting in the feeding context has tended to focus on the impact of maternal parenting styles on the development of healthy eating patterns in young children. Parenting styles are patterns of childrearing characterised by a parent's general approach to responding to their

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child's behaviour (Azizi & Besharat, 2011). Diana Baumrind introduced one of the most influential and accepted typologies of parenting styles in the 1960s (Hughes, Power, Orlet Fisher, Mueller, & Nicklas, 2005). The model outlines four distinct classifications assessed on the basis of two dimensions: Demandingness and responsiveness (Baumrind, 1966; Hughes et al., 2005). The authoritative style (high demandingness/ high responsiveness) is described by parental involvement, nurturance, reasoning, and structure; the authoritarian style (high demandingness/low responsiveness) is characterised by restrictive, punitive, rejecting, and power-assertive behaviors; the indulgent style (low demandingness/high responsiveness) reflects warmth and acceptance along with a lack of monitoring of the child's behavior; and finally the uninvolved style (low demandingness/low responsiveness) features limited control and involvement with the child (Hughes et al., 2005). Research has generally demonstrated that an authoritative parenting style is associated with the most positive child outcomes (Darling & Steinberg, 1993).

Costanzo and Woody (1985) proposed that parents do not have a single, consistent parenting style, but that they differ both across domains, and also between children (Costanzo & Woody, 1985). For example, parents may respond differently in a play situation to the way that they respond whilst feeding their child. Similar to the general parenting conceptualisation, parental feeding style refers to the patterns of behaviour that occur between a parent and child during a feeding interaction (Black & Hurley, 2007). These feeding styles can similarly be categorised within dimensions of nurturance and structure, defined as sensitive/ responsive (similar to authoritative), controlling (similar to authoritarian), indulgent, and uninvolved feeding styles (Black & Hurley, 2007; Hughes et al., 2005). This conceptualisation is outlined in Figure 1. As with the more general parenting styles, a parent feeding style

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is considered to be most appropriate if it reflects the authoritative style, characterised by sensitivity and responsiveness to child's signals of, for example, hunger or satiety (Brown, Thoyre, Pridham, & Schubert, 2009).

Figure 1: Patterns of parenting and feeding styles (Black & Hurley, 2007).

		NURTURANCE	
		HIGH	LOW
STRUCTURE	HIGH	AUTHORITATIVE <ul style="list-style-type: none"> • Involved • Nurturing • Structured Sensitive/ Responsive Feeding Style	AUTHORITARIAN <ul style="list-style-type: none"> • Forceful • Restrictive • Structured Controlling Feeding Style
	LOW	INDULGENT <ul style="list-style-type: none"> • Involved • Nurturing • Unstructured Indulgent Feeding Style	UNINVOLVED <ul style="list-style-type: none"> • Unengaged • Insensitive • Unstructured Uninvolved Feeding Style

The developmental age of interest in the present study reflects a time at which a child begins to develop autonomy and to separate from their primary caregiver, usually their mother (Davies et al., 2006). Consequently, maternal general parenting styles at this time are of particular relevance and importance. Reflecting this broader developmental stage, this is also a time at which a child develops increasing autonomy and control in the feeding context and maternal response can either support or impede this process (Wickenden, 2011). In particular, adopting a more controlling feeding style, where mothers use forceful or restrictive strategies to control mealtimes may pose significant challenges at this time, impacting on the feeding relationship and development of child feeding behaviours (Black & Hurley,

2007; Davies et al., 2006). This controlling feeding style is considered in relation to its effect on the overall tone or context of mealtimes, and the effect that it has on a child's developing relationships with food (Haycraft, Farrow, & Blissett, 2013; Hughes et al., 2011). Maternal use of controlling feeding practices associated with a controlling feeding style is the specific focus of the current study.

1.4.3.1 Controlling feeding practices and association with child feeding.

Parenting practices are specific responses to child behaviours that are related to broader parenting style (Birch et al., 2001). The current study considers practices that reflect an authoritarian or controlling feeding style that may be associated both theoretically and empirically with the development and maintenance of feeding difficulties, problematic food preferences and obesity in young children (e.g., Davies et al., 2006; Wolke et al., 2006). These practices are commonly referred to as “controlling feeding practices” (Haycraft et al., 2013). Such feeding practices have been defined in many different ways, which limits generalisability of some findings across studies. One of the most commonly used definitions of such practices has developed from the work of Birch and colleagues (Birch et al., 2001), who have described three primary feeding practices that reflect a controlling feeding style, namely restriction, pressure to eat, and monitoring. In a recent literature review of maternal correlates of child feeding practices, the Child Feeding Questionnaire (CFQ; Birch et al., 2001), which is a self-report measure of parental use of controlling feeding practices, was identified as the most frequently used measure of maternal child feeding practices (McPhie, Skouteris, Daniels, & Jansen, 2012). “Pressure to eat” is the extent to which mothers use pressure to encourage their child to eat more food. “Restriction” refers to restrictive practices that control and monitor intake of a particular food, such as those that are high in fat and sugar, and are

desirable to young children (Birch & Fisher, 1998). “Monitoring” relates to keeping track of the amount and types of food that a child eats (Birch et al., 2001). Although not all studies have used these definitions, they provide a useful structure to guide the following discussion.

One of the primary areas of interest in the present study is the extent to which mothers use pressure to encourage their child to eat more food. Within the context of a controlling feeding style, the practices occur on a spectrum ranging from verbal prompts to more extreme pressuring behaviours such as force-feeding. They may include, for example, using coercion in feeding interactions, and pressuring a child to eat more when they express satiety, either verbally or physically (Black & Hurley, 2007; Blissett, Meyer, Farrow, Bryant-Waugh, & Nicholls, 2005; Hughes et al., 2005). Previous research has indicated an association between the use of maternal pressure for a child to eat, and feeding difficulties in young children. For example, in a case study of a two-year-old child with moderately severe feeding difficulties including food-fussiness and food refusal, Blissett and Harris (2002) observed insensitivity in the mother-child feeding relationship characterised by coaxing and force-feeding. This was a single case study, and so no control was included for comparison, nor was a specific diagnosis given for the feeding difficulties outlined.

Several other observational studies have compared the feeding interactions of mothers of children with clinically diagnosed feeding difficulties (e.g., food refusal, non-organic failure to thrive, feeding disorder), with control groups of mothers of children without significant feeding problems. Observations are particularly important as they can indicate the extent to which pressuring feeding practices also contribute to an overall negative (and therefore potentially aversive) tone of the mealtime. The use of a variety of different schedules of measurement for both

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identification of feeding difficulties, and assessment of pressuring feeding practices, renders cross-comparison difficult. Notwithstanding these limitations, studies have consistently reported that mothers of children with clinically significant feeding difficulties are observed to display patterns of controlling and pressuring practices. Studies have included infants and children up to the age of 6 years (Atzaba-Poria et al., 2010; Hutcheson, Black, & Starr Jr, 1993; Lindberg, Bohlin, Hagekull, & Palmerus, 1996; Sanders, Patel, le Grice, & Shepherd, 1993). These specific behaviours have been observed in the context of a controlling feeding style that is characterised by hostility and negativity. A further observational study of mothers of nursery children in a non-clinical sample found an association between problematic feeding behaviour and maternal use of pressuring feeding practices (Whitehouse & Harris, 1998).

Research in the area of child obesity offers some indication of the potential impact of pressuring feeding practices on the development of child food preferences. In particular this research has focused on developing preferences for high fat and sugar-laden foods in non-clinical samples, yet the findings also have relevance more generally in relation to the development of food preferences. In a non-clinical sample of mothers of 5-year-old girls, self-reported use of pressure to eat was negatively associated with girls' self-reported consumption of fruit and vegetables (Fisher, Mitchell, Smiciklas-Wright, & Birch, 2002). The authors conclude that pressure to eat may discourage consumption of fruit and vegetables, however this is interpreted with caution, as there was no specification that the use of pressure was directly related to the consumption of fruit and vegetables. It is also important to acknowledge that mothers reporting more use of pressure also consumed less fruit

and vegetables, highlighting maternal modelling as another important factor in the development of eating behaviours in young children (Fisher et al., 2002).

The studies presented so far are cross sectional, making the direction of influence difficult to establish. To address this, longitudinal studies in non-clinical samples have also been carried out. In a self-report study of mothers of girls aged 7 who were subsequently followed up when the child was aged 9, maternal self-reported use of pressure to eat with their child at age 7 was negatively associated with fruit and vegetable consumption at age 9 when mothers also perceived their daughters to be “picky” eaters (based on mothers’ perception of their child’s willingness to eat at a mealtime; Galloway, Fiorito, Lee, & Birch, 2005). This indicates that pressure to eat may exacerbate existing difficulties with feeding, such as picky eating. Alternatively, mothers of children who they consider to be picky eaters may be more likely to adopt strategies to encourage their child to eat.

A recent self-report longitudinal study of mothers of children aged between 2 and 4 years found that maternal self-reported pressure to eat was negatively associated with maternal report of child’s interest in food one year later (Gregory, Paxton, & Brozovic, 2010), indicating that children who are pressured to eat certain foods may later develop dislike for those foods. This study reported on general pressure to eat and limited interest in food, rather than considering one specific type of food. However, in an experimental manipulation, preschool children given verbal pressure to eat a particular food subsequently made significantly more negative comments and reported dislike for the food when compared to a control group who had not been pressured to eat (Galloway et al., 2006). This indicates that pressure can have negative effects on both a child’s intake and also their expression of dislike for certain foods. Together these studies suggest that pressuring feeding practices

may impact on child food-choices and acceptance of the foods that they are pressured to eat.

Other feeding practices that are associated with a more controlling feeding style are “restriction” and “monitoring” (Birch et al., 2001; Black & Hurley, 2007). Although there are extreme cases whereby restriction of food results from inadequate financial resources, or due to significant neglect, the definition in the child feeding literature usually refers to parental restriction of a child’s access to certain foods (Birch et al., 2001; Birch, Zimmerman, & Hind, 1980; Douglas, 2002; Pugliese, Weyman-Daum, Moses, & Lifshitz, 1987). It may also include strategies such as withholding “bad” foods (such as those high in fat, salt and sugar) as punishment, or using them as rewards (Birch, 1999). In several studies that have used the Child Feeding Questionnaire, the Monitoring subscale has not been included (e.g., Farrow & Blissett, 2005; Haycraft & Blissett, 2008b), yet the reason for this is unclear. It is possible that this is because monitoring has previously been conceptualised as a covert form of restriction (Birch & Fisher, 2000).

In a study of beliefs about strategies to enhance consumption of desired foods (e.g., healthy foods), parents considered such restrictive practices as a good way to get their children to dislike foods (Casey & Rozin, 1989). However, restriction has been demonstrated to enhance preference for the restricted food and to increase intake, particularly when those foods are freely available (Birch, 1999; Clark, Goyder, Bissell, Blank, & Peters, 2007).

Parental use of restriction has consequently been studied primarily in research related to the development of obesity. The association between restriction and feeding difficulties characterised by a reduction in intake of food is not clearly defined, yet the use of restrictive feeding practices is associated with a more overall

controlling feeding style (Black & Hurley, 2007). Use of restrictive practices, particularly in relation to use of incentives and conditions to encourage a child to eat, may also contribute to a more negative overall tone of a mealtime, which in extreme cases may be aversive (Black & Hurley, 2007; Haycraft et al., 2013). The next section of this chapter introduces relevant psychological theory that can be useful in conceptualising the relationship between use of controlling feeding practices and the development and maintenance of feeding difficulties in young children. This will include discussion of the developmental mechanisms that are considered important in the relationship between restriction and over-eating.

1.4.3.2 Psychological theory. Given the complexity and diversity of feeding difficulties in children, it is necessary to consider a number of different psychological theories to understand their aetiology (Douglas, 2002).

Acknowledging that there are a number of factors associated with the development of feeding difficulties, the discussion relates specifically to the contribution of maternal controlling feeding style characterised in part by the use of controlling feeding practices. The theoretical understanding of the role of controlling feeding styles in the development and maintenance of child feeding difficulties are primarily conceptualised in relation to their potential for providing a feeding context that is aversive, or as impacting on the feeding relationship between mother and child.

A behavioural perspective is key to conceptualising the relationship between maternal use of controlling feeding practices and the development, maintenance or exacerbation of feeding difficulties. In particular, this may include the conditioned avoidance of food in children who have experienced unpleasant associations during feeding from, for example, extreme cases of adverse parenting experiences such as force-feeding (Douglas 2002; Pavlov, 1927). These negative experiences may extend

to include a range of emotional or physical experiences resulting from, for example, feeding styles that are of interest in the present study (Douglas, 2002). Extrapolating further, when a food has been paired with an aversive stimulus (e.g., force feeding), subsequent presentation of related stimuli, (e.g., the cutlery, high chair) may also result in behavioural responses, with the potential for aversion to any feeding situation (Harris & Booth, 2006). Furthermore, inappropriate response to a child's cues of dislike of a food or expression of satiety may increase negative behavioural expression by the child, leading to a perpetuating cycle as mother exerts more control (Harris & Booth, 2006). Observations are therefore important in researching the potential impact of use of controlling feeding practices on the overall tone or context in which a child is fed, as this is unlikely to be easily captured within a self-report measure.

Psychological theories have consistently conceptualised the development of feeding difficulties in young children within the context of a relationship, usually with mother as the primary caregiver (Davies et al., 2006). Consequently, many of the ideas are interconnected and overlapping, beginning with early psychodynamic understandings of development of childhood psychopathology. Anna Freud (1965) described several developmental stages through which a child must systematically and successfully pass in order to reach autonomy in eating, known as "rational eating" (p. 69) that reflect this relational context. For example, following the introduction of solid foods, difficulties with food expulsion may occur as a result of the child's anger and rejection of his mother. Avoidance of certain foods or textures may occur as a defense against anal trends, or avoidance may result from fear of oral impregnation or pregnancy. Freud's theory postulated that the equating of mother with food (the food-mother equation) leads the mother to experience food refusal as

aimed at her personally, creating anxiety in the feeding interactions. As a consequence, Freud suggested that mealtimes become a “general battleground on which the difficulties of the mother-child relationship can be fought out” (Freud, 1965; p. 70).

Although psychodynamic theories have undoubtedly evolved over time, many of Freud’s early descriptions are reflected in more recent psychodynamic understanding of childhood feeding difficulties. In particular, more contemporary psychodynamic theory has considered that feeding follows a sequential pattern, identifying stages of homeostasis, attachment, and separation and individuation during and after the weaning period (Chatoor, Schaefer, Dickson & Egan, 1984). Particularly at the age of interest in the present study, difficulties can arise as the child develops autonomy in the transition to self-feeding (Briggs & Priddis, 2011). For success at this stage, the mother is required to allow the child appropriate levels of autonomy, and consequently maternal control over feeding may reflect an inability to allow independence, with a child’s rejection of food reflecting a desire for either attention or autonomy (Chatoor et al., 1984; Briggs & Priddis, 2011). Recent psychodynamic theory has re-emphasised the importance of a mother providing a “holding environment” in which the child is able to develop a sense of self and feel secure, which may be compromised when a mother is unable to respond appropriately to her child’s expressed needs and wishes (Briggs & Priddis, 2011; Winnicott, 1960).

Attachment theory focuses on the quality of the relationship between mother and child from the early days of life and has been described as the “principal key to the mental health of the next generation” (Bowlby, 1988, p. 1; Douglas, 2002). A secure attachment relationship is characterised by both parties being able to

“understand” and to respond appropriately to one another (Dovey & Martin, 2011, p. 99). In order to develop a secure attachment, mother must be able to empathise, understand and respond appropriately to her child’s demands, including within the feeding relationship (Dovey & Martin, 2011). A limited capacity to respond appropriately and sensitively to a child’s cues can lead to inappropriate responses, that may lead to disruption in normal feeding development. Douglas (2002) highlights that although feeding problems can occur within organised and secure attachments, insecure attachments may intensify feeding problems and lead to longer-term difficulties (Douglas, 2002). Furthermore, a secure attachment is attributed to a child’s ability to understand their “inner world”, which includes recognition of body signals, such as hunger (Dovey & Martin, 2011; Rees, 2005). There has been little empirical research investigating the role of attachment in child feeding difficulties (Bryant-Waugh, et al., 2010). However in a comparison study, young children aged between 18 and 37 months with the specific diagnosis of infantile anorexia exhibited a higher rate of insecure attachment relationships (as measured by the Ainsworth Strange Situation; Ainsworth, Blehar, Waters & Wall, 1978) when compared to selective eaters or controls (Chatoor, Ganiban, Colin, Plummer, & Harmon, 1998). However, as outlined above, infantile anorexia is a controversial diagnosis that has not been well validated.

A final theoretical perspective from the obesity literature considers the impact of controlling feeding practices on the development of food preferences in young children. There is no evidence to suggest that children have an innate preference for certain foods, yet they are predisposed to learn to prefer foods that are energy-dense, and therefore satisfying (Birch, 1999). Consequently, they will develop preferences for the types of foods that some parents are more likely to

restrict, for example, sugary and fatty foods. By controlling a child's food intake, restrictive and pressuring feeding practices are understood to override a child's natural ability to regulate their energy intake (Birch, Johnson, Andresen, Peters, & Schulte, 1991). Therefore they may develop poor self-regulation of energy intake, leading to the consumption of food beyond the point of satiety, contributing to overweight and obesity (Birch & Fisher, 1998).

1.5 Maternal Psychopathology and Controlling Feeding Practices

From this theoretical and empirical perspective, the following section considers maternal characteristics that have been associated with use of controlling feeding practices. Belsky's theory of parental competence proposes that the presence of multiple risk factors increases the risk for parenting problems, which include; parental personal resources and mental health, child characteristics such as temperament and health problems, and family difficulties, including isolation and poor resources (Belsky, 1984; Douglas, 2002). Notwithstanding the relevance of other factors and their interacting effects, of particular interest in the present study is the relationship between maternal psychopathology and controlling feeding styles.

Several associations have been found between maternal psychopathology and child feeding problems. For example, postnatal depression has consistently been associated with feeding difficulties in infants (Dennis & McQueen, 2007, 2009; Hellin & Waller, 2007; Watkins, Meltzer-Brody, Zolnoun, & Stuebe, 2011; Wright, Parkinson, & Drewett, 2006). However, the findings are less consistent when considering children up to the age of 2 years and comparing mothers of children with diagnosed feeding difficulties and those who have not (Dunne, Sneddon, Iwaniec, & Stewart, 2007; O'Brien, Heycock, Hanna, Jones, & Cox, 2004; Singer, Song, Hill, & Jaffe, 1990). Both anxiety and depression have also been implicated in the

maintenance of feeding difficulties (Coulthard & Harris, 2003). There are associations between maternal eating disorders and child feeding difficulties, yet this relationship is complex as it considers the possibility of an “intergenerational transmission” of psychopathology (Coulthard, Blissett, & Harris, 2004). Research investigating this relationship is limited given the small numbers of women diagnosed with eating disorders who have children. Several early studies reporting “significant” or clinical feeding problems in young children have found elevated levels of eating disorder psychopathology such as dietary restraint in mothers when compared to mothers of children without feeding difficulties (McCann, Stein, Fairburn, & Dunger, 1994; Stein, Stein, Walters, & Fairburn, 1995; Stice, Agras, & Hammer, 1999; Whelan & Cooper, 2000).

To investigate the possible contributory role of maternal use of controlling feeding practices in these relationships, the electronic databases BNI (1985 onwards), EMBASE (1980 onwards), MEDLINE from PubMed (1950 onwards), and PsychINFO (1806 onwards) were searched using the online NHS Evidence Library. Appendix B shows the Boolean searches that were used to search titles and abstracts. Further additional references were identified in the reference section of identified papers. All studies up to April 2013 were included in the review.

Several studies have investigated whether there is a relationship between general maternal distress or psychopathology and the use of controlling feeding practices in non-clinical samples. Cross-sectional studies have found a positive relationship between maternal self-reported psychological distress and self-reported use of forceful or controlling feeding practices in mothers of infants, and children up to the age of 59 months (Haycraft & Blissett, 2008b; Hurley, Black, Papas, & Caufield, 2008; Lindsay, unpublished, 2011). To address the limitations of these

cross-sectional designs, a longitudinal study found that self-reported controlling feeding practices when children were aged 1 year were predicted by several factors, including general maternal psychopathological symptoms at 6 months, indicating that maternal psychopathology may precede use of controlling feeding practices (Blissett & Farrow, 2007). The sections that follow discuss more specific areas of maternal psychopathology that have been associated with the development of feeding problems in children, and more specifically the associations with use of controlling feeding practices that reflect a controlling feeding style.

1.5.1 Maternal mood. It is generally accepted that maternal depression is a significant risk factor in the development of psychosocial difficulties in young children (Rutter, 1990). Depression may limit a mother's sensitivity and responsiveness to her child and may lead to maladaptive parenting styles, for example being either more authoritarian or disengaged (Pelaez, Field, Pickens, & Hart, 2008). Observations of parental behaviour not specific to feeding interactions indicate that depressed mothers are more hostile and impatient, resulting in negative parent-child interactions (Lovejoy et al., 2000). Much of the research in the child feeding literature has been undertaken in non-clinical samples where "depression" is primarily identified using self-report screening measures. The discussion is therefore focused more broadly on maternal mood, referring to diagnosis where relevant to individual studies.

Looking specifically at use of controlling child-feeding practices, research has been carried out entirely with non-clinical samples, including older children up to the age of eight years. Several cross sectional community studies have identified correlations between maternal self-reported depressive symptomatology and self-reported use of controlling feeding practices in a range of ages. Francis, Hofer, and

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Birch (2001) found a significant relationship between maternal self-reported depressive symptoms and use of restriction and pressure to eat (as measured by the CFQ) in mothers of 5-year-old daughters. Similarly in a sample of older children aged between 5 and 8 years, maternal self-reported depressive symptoms were related to both restriction and pressure to eat (Mitchell, Brennan, Hayes, & Miles, 2009). This study also included an assessment of feeding styles assessed using the Caregiver's Feeding Styles Questionnaire, finding that self-reported authoritarian feeding style (characterised by controlling and unresponsive behaviours such as punishing, coercion and rejection), were also associated with maternal self-reported depressive symptoms, which indicates that mealtimes may also be more negative. Lindsay (unpublished, 2011) found a correlation between maternal self-reported depressive symptoms and self-reported use of restriction and pressure (measured using the CFQ) in a sample of children aged between 12 months and 3 years.

In younger children, mothers of infants aged under 12 months reported a relationship between self-reported depressive symptoms and use of a forceful feeding style measured using an adapted scale for younger children (e.g., I have to push the nipple or spoon into my baby's mouth to get her to eat"). However in the same study, there was no relationship between maternal self-reported depressive symptoms and use of restriction (e.g., do you carefully control how much your baby eats?: Hurley et al., 2008). Therefore, cross sectional studies in non-clinical samples have consistently found an association between maternal self-reported depressive symptoms and use of pressure to eat, and less consistently for restriction.

However, Farrow and Blissett (2005) carried out a longitudinal study and found no relationship between maternal depressive symptoms measured at 6 or 12

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months postnatally and self-reported pressure and restrictive practices measured using the CFQ at year 1. This study indicated that depression did not predict later or current use of pressure to eat or restriction. The authors also hypothesise that this may be because mothers with depressive symptoms may withdraw from interactions with their child, yet this has not been shown consistently in other studies. Finally, there is some evidence again for gender specificity as maternal depressive symptoms were associated with pressure (but not restriction) in daughters but not sons (Haycraft & Blissett, 2008b).

Research investigating the relationship between maternal depressive symptoms and use of controlling feeding practices has primarily focused on self-report data. The available observational data has reported mixed findings. Lindsay (unpublished thesis, 2011) found no relationship between maternal self-report of depression and observed use of controlling feeding practices in a non-clinical sample. However this study had a small sample size of 19 participants and concluded that power may have been too low to detect any significant associations. A recent observational study with 54 mothers of children aged between 3 and 4 years, using a measure developed based on the CFQ found that mothers who reported greater symptoms of depression were observed to use more verbal and physical pressure for their child to eat, and to offer more incentives or conditions for their child to eat. However there was no relationship between maternal self-reported depression and observed use of restriction (Haycraft et al., 2013). This may have resulted from restriction being less easy to observe at a one off mealtime. Furthermore in a laboratory setting, mothers may have felt that the food they were offering was how much they should be feeding their child, therefore making them more likely to pressure a child to eat rather than restrict. This study identified a positive correlation

between maternal self-reported depressive symptoms and both positive and negative comments made during the mealtime, highlighting that mothers who score higher on a self-report measure of depression also demonstrate more expressed emotion at mealtimes, which has been reported elsewhere (Haycraft et al., 2013; Stein et al., 1994).

The existing evidence in non-clinical samples indicates more consistent use of pressure to eat, and a less consistent association between maternal depressive symptoms and use of restriction in older children. One possible explanation for the varied finding in relation to restriction is the different ages of children included in the study. Restriction of foods may be more relevant as a child gets older and is more able to make independent choices about food. These studies also highlight that researching different feeding practices requires a combination of both self-report (e.g., restriction) and observational data (e.g., pressure).

1.5.2 Anxiety. Fewer studies have considered the relationship between maternal anxiety and use of controlling feeding practices, and the findings have been mixed. In the study outlined above, self-reported anxiety in a sample of mothers of infants under the age of one year was significantly related to self-reported use of controlling (restrictive, forceful) and uninvolved feeding styles (Hurley et al., 2008). This is an interesting finding as forceful and uninvolved are not closely associated, although they both indicate low nurturance. However, the measure used in this study was developed specifically for this study and therefore has not been well validated. The same cross-sectional self-reported pattern of relationship between anxiety and use of restriction and pressure has been shown in a sample of mothers of 124 older children with a mean age of 6.46 years (Mitchell et al., 2009).

However, in a longitudinal study, no significant correlations were found between maternal phobic anxiety during pregnancy, at 6 months or at 12 months postpartum, and maternal self-reported restriction or pressure to eat at 1 year. However, maternal use of restriction at 1 year was predicted by prenatal maternal anxiety, with somatization and anxiety at 6 months, and with obsessive-compulsiveness at 1 year (Farrow & Blissett, 2005). Obsessive-compulsive symptoms have also been linked to use of restrictive feeding practices in community samples of children aged between 2 and 6 years (Farrow & Blissett, 2009). This indicates that there may be some specificity between the type of anxiety, and the relationship to use of controlling mealtime management strategies.

However, other community samples of similar ages to those participating in the present study have found no significant relationship between maternal self-reported anxiety and maternal self-reported use of controlling feeding practices (Lindsay, 2011). These discrepancies may be accounted for by mothers' preoccupation with anxieties rather than being over involved in child's eating (Lindsay, 2011). There has been very limited observational research investigating this relationship. Lindsay (2011) found no relationship between maternal self-report of anxiety and use of controlling feeding practices. However this study had low power due to a small sample size. Further observational research will be of significant added value.

1.5.3 Maternal eating disorders. It may be anticipated that feeding a child may pose significant difficulties for mothers with eating pathology. Lacey and Smith (1987) interviewed 20 mothers who had been diagnosed with bulimia nervosa and had a child in the past year, finding that three had attempted to "slim down" their baby, four had restricted intake of carbohydrates, and five had restricted intake of

sugary foods. Similarly, Russell, Treasure, and Eisler (1998) identified a sample of eight mothers with anorexia nervosa who had children with identified growth problems, and found that mothers reported having intentionally underfed their children. However, these studies included extremely small sample sizes, and did not include a control group for comparison.

In community samples, self-report studies using measures such as the Eating Disorders Inventory (EDI; Garner, Olmsted, & Polivy, 1983) have been inconsistent in identifying a relationship between maternal eating disorder psychopathology and use of restriction and monitoring (but not pressure to eat). A recent large-scale community survey of mothers of younger children aged between 6 and 12 months found maternal self-reported eating style (including assessment of restraint, emotional eating and external eating) was related to maternal feeding style (Brown & Lee, 2011). This study adopted a median split on maternal self-reported eating style, and found significantly higher levels of restriction and monitoring in the higher scoring group (Brown & Lee, 2011). However, Whitehouse and Harris (1988) found no significant differences in maternal self-reported controlling feeding style (measured using the Feeding Assessment Form) when comparing an eating disordered group with a non-clinical control (Harris & Booth, 1992). Furthermore, mothers' self reported eating disorder psychopathology during pregnancy, at 6 or 12 months postpartum was not associated with self-reported use of controlling feeding practices at year one (restriction or pressure to eat) in a non-clinical sample (Farrow & Blissett, 2005). Finally, associations have been identified between restriction or monitoring in mothers and daughters (not mothers of sons), indicating some gender specificity to this relationship (Blissett et al., 2006; Blissett, Meyer, & Haycraft, 2007; Haycraft & Blissett, 2008b; Tiggeman & Lowes, 2002).

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In a series of observational studies of mothers and their children aged 6-36 months diagnosed with the specific diagnosis of non-organic failure to thrive or infantile anorexia (IA), interactional conflict (including a controlling feeding style) was found to be higher in this group compared to control, and was correlated with maternal eating attitudes (Ammaniti, Ambrozzi, Lucarelli, Cimino, & D'Olimio, 2004; Ammaniti, Lucarelli, Cimino, D'Olimpio, & Chatoor, 2010). Cooper, Whelan, Woolgar, Morrell, and Murray (2004) identified nursery aged children with feeding difficulties using maternal self-report, verified with an observation. When compared with two other groups (children with behavioural problems and control), they found mealtimes for children in the feeding problems group characterised by “maternal strong control and disharmony” (characterised by physical interventions, strong verbal directives and overall disharmony). Furthermore, these two characteristics mediated the relationship between maternal symptoms of eating disorder and child feeding difficulties.

Finally, in a recent study, Blissett and Haycraft (2011) used an observational assessment to investigate the relationship between maternal self-reported eating disorder psychopathology and use of controlling feeding practices in a non-clinical sample. In mothers, drive for thinness was associated with observed pressure to eat and use of physical prompts, bulimia related to observed pressure, and body dissatisfaction related to pressure and restriction (Blissett & Haycraft, 2011). Therefore observational studies have indicated that pressure to eat may be elevated in mothers with eating disorders, and that mealtimes are characterised by disharmony.

1.5.4 Possible underlying mechanisms. Given the relationships outlined above, another area of interest has been to consider features common in these

psychopathologies that may underlie the relationships between maternal psychopathology and use of controlling feeding practices or reported child feeding problems (Blissett et al., 2005; Farrow & Blissett, 2006). These mechanisms may also account for some of the discrepancies found in the relationship between maternal psychopathology and use of controlling feeding practices. For example, Blissett et al. (2005) found a relationship between maternal core beliefs as measured by the Young Schema Questionnaire (Young & Brown, 1994) and perceived feeding difficulties (reported mealtime negativity, food fussiness and food refusal) in mothers of girls aged between 7 and 64 months. In particular, abandonment, failure to achieve, dependence and incompetence, enmeshment and defectiveness, and shame beliefs were associated with increased reports of feeding difficulties in girls. In contrast, emotional deprivation and subjugation beliefs were associated with maternal reports of food fussiness and food refusal in boys. The authors concluded that further research was required to investigate this relationship, but that individual core beliefs did appear to be related to how mother reported their child's feeding.

A second study that examined the role of core beliefs in observed feeding interactions during infancy found that higher levels of self-reported prenatal emotional deprivation and entitlement core beliefs as measured by the Young Schema Questionnaire (Young & Brown, 1994), were implicated in maternal report of child feeding difficulties. Postnatal social isolation beliefs were also associated with maternal reports of feeding problems in infants at 6 months of age (Farrow & Blissett, 2006). However, in an observation as part of the same study, these core beliefs were not associated with observed food refusal. The authors concluded that "certain maternal core beliefs... are of paramount importance in the development of feeding problems, and are more influential than traditionally implicated maternal

psychopathologic symptoms” (Farrow & Blissett, 2006, p. 133). The researchers extended this research to identify that the relationship between certain core beliefs and reported feeding difficulties is mediated by maternal eating disorder psychopathology in mothers of girls, but not boys (Blissett & Meyer, 2006).

In relation to controlling feeding practices, more recent research has focussed on underlying mechanisms, or transdiagnostic processes. For example, one study in a non-clinical sample found that the relationship between self reported negative affectivity and self reported use of controlling feeding practices in mothers of three-year-old children was mediated by external locus of control, hypothesising that those who perceived little control over their child’s eating would exert more control (Ystrom, Barker, & Vollrath, 2012). Underlying transdiagnostic processes are an interesting area for future research, and are the specific focus of the present study.

1.6 Clinical Perfectionism

One such process that has been implicated in the development and maintenance of various psychopathologies is the construct of perfectionism (Egan, Wade, & Shafran, 2011). Perfectionism has been defined and measured from different theoretical perspectives across studies for many years, providing a complex picture of inconsistencies and differences (Steele, O’Shea, Murdock, & Wade, 2011). Early descriptions proposed a unidimensional construct that inferred “demanding of oneself or others a higher quality of performance than is required by the situation” (Hollender, 1965, p. 94). Definitions included a separation between “normal” or “neurotic” perfectionism (Hamachek, 1978), which indicates a separation between what may be considered “functional” or “dysfunctional” perfectionism. Furthermore, there are ongoing debates in the literature about whether perfectionism is a personality characteristic, a set of cognitive-behavioural features, a symptom of

psychopathology, or a process defined as an “aspect of cognition or behaviour that may contribute to the maintenance of a psychological disorder” (Egan et al., 2011, p.204). The relevance and importance of the relationship between perfectionism and psychopathology will be discussed in detail in the next section, however it is useful first of all to consider current controversies in defining the construct of perfectionism.

For many years, the dominant perspective has viewed perfectionism as a multidimensional personality characteristic (Steele et al., 2011). The multidimensional constructs have primarily been studied using two measures; the 35-item Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990) and the 45 item Hewitt Multidimensional Perfectionism Scale (HMPS; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991). The FMPS was developed from theoretically based items plus items from existing measures of perfectionism, including the Burns Perfectionism Scale, and a perfectionism scale from the Eating Disorders Inventory (Egan et al., 2011; Burns, 1980; Garner et al., 1983). The subscales, which relate to specific domains of perfectionism, are: Concern over Mistakes (reacting negatively to mistakes and equating them with failure); Doubts about Actions (a sense of doubt about the quality of one's performance); Personal Standards (setting excessively high standards that cannot be met, and over-valuing these standards for self-evaluation leaving little room for mistakes); Parental Expectations (perceiving that one's parents have high expectations, and that performance is linked to approval or disapproval); Parental Criticism (perceiving one's parents as being excessively critical); and Organisation (overemphasising the importance of order and organisation) (Egan et al., 2011, p. 204; Frost et al., 1990).

The Hewitt MPS includes the following subscales as summarised by Egan et al. (2011), many of which correspond to those outlined in the FMPS. “Self-Oriented Perfectionism” involves setting high standards for oneself and closely monitoring performance. This sub-scale includes a motivational component for striving to attain perfection to avoid failure, resulting in self-criticism and self-punishment when this is not achieved. “Other-Oriented Perfectionism” involves having unrealistically high standards for the behaviour of significant others. Finally, “Socially Prescribed Perfectionism” involves the perception that others have unrealistically high standards for the self, leading to critical evaluation and pressure for them to be perfect (Egan et al., 2011, p.204).

Despite many years of research, the constructs of multidimensional perfectionism have been criticised for remaining poorly defined and understood, leading to few advances in diagnosis and treatment (Shafran, Cooper, & Fairburn, 2002). The multidimensional approach has been further criticised for including constructs related to perfectionism rather than describing features of perfectionism itself (Shafran et al., 2002). For example, the “parental expectations” and “parental criticism” sub-scales from the FMPS are argued to relate to the aetiology of perfectionism, rather than being a core feature of perfectionism. Consequently, the majority of research into associations between psychopathology and perfectionism has found relationships between individual sub-scales of the multidimensional measures, rather than the total sub-scale scores (Egan et al., 2011).

To address issues of the limited clinical relevance of this perspective and these measures, a cognitive-behavioural conceptualisation of “clinical perfectionism” has recently been proposed (Shafran et al., 2002) and subsequently refined (Egan et al., 2011; Shafran, Egan, & Wade, 2010). The proposed cognitive-behavioural model

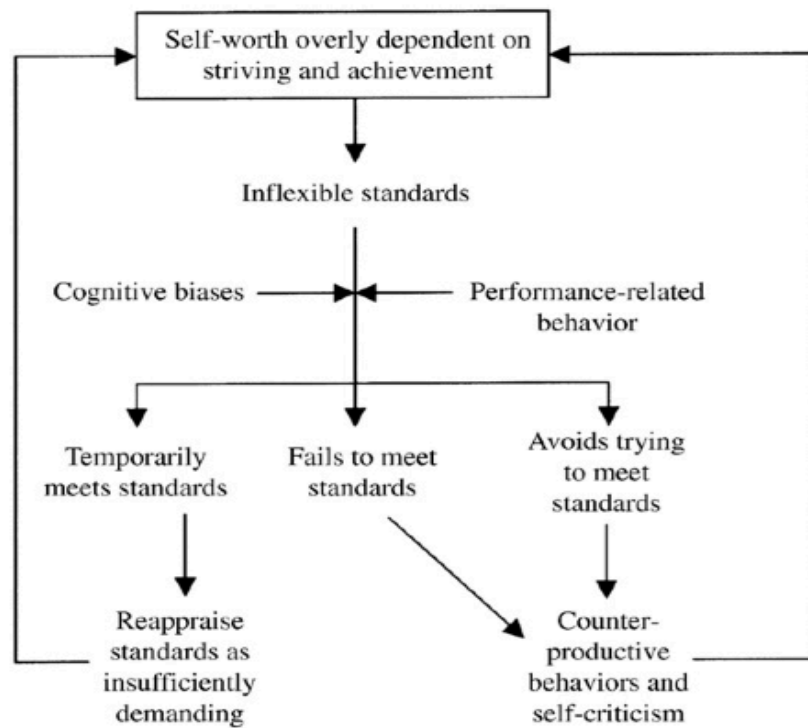
of clinical perfectionism is defined as “the overdependence of self-evaluation on the determined pursuit of personally demanding, self imposed standards in at least one highly salient domain, despite adverse consequences” (Shafran et al., 2002, p. 778).

This core psychopathology is accompanied by three features: Self-imposed dysfunctional standards, continual striving, and significant adverse consequences as a result of such striving. Finally, Shafran et al. (2002) hypothesise that clinical perfectionism is maintained by at least six mechanisms: Reacting to failure with self-criticism, absence of positive reaction to success, cognitive biases, setting of and adherence to strict rules, avoiding challenging tasks for fear of failure, and escape from situations where failure is imminent. The cognitive-behavioural model was updated in 2010 to emphasise the role of performance-related maintaining factors, including performance checking, avoidance and procrastination (Egan et al., 2011; Shafran et al., 2010). A diagrammatic representation of the updated cognitive-behavioural model of clinical perfectionism can be seen in Figure 2.

The proposed model is not without criticism. Firstly, the proponents of the multidimensional model have argued that “clinical perfectionism” does not capture the whole construct of perfectionism (Hewitt, Flett, Besser, Sherry, & McGee, 2003). However, Shafran and colleagues present a convincing argument that the model was developed based on the relevant components of perfectionism that have been directly and empirically related to clinical psychopathology (Shafran et al., 2002). Consequently, they argue that the construct of “clinical perfectionism” is restricted to components of multidimensional perfectionism that have clinical relevance, and that can become specific treatment targets in therapy (Shafran, Cooper, & Fairburn, 2003). It has been highlighted that close inspection of the dimensions of multidimensional perfectionism that are related to other

psychopathology are those that are most closely linked to the construct of clinical perfectionism.

Figure 2: The revised cognitive-behavioural model of clinical perfectionism, reproduced from Shafran et al. (2010).



Secondly, Dunkley, Blankstein, Masheb and Grilo (2006) suggest that by focussing on the “pursuit of...demanding standards” (Shafran et al., 2002, p.778), the cognitive behavioural model of clinical perfectionism ignores the fact perfectionism can itself be functional, and therefore should not be considered the most important feature of what has variably been termed “dysfunctional” or “maladaptive” or “negative” or “neurotic” perfectionism (Egan, Piek, Dyck, & Rees, 2007; Hamachek, 1978). This highlights that perfectionism can in some cases be functional, adaptive, positive or normal perfectionism. Negative perfectionism is associated with high emotional distress whereas positive perfectionism is associated with positive affect and lower levels of distress (Egan et al., 2011). In a response to Dunkley et al.

(2006), however, Egan et al. (2011) emphasise that the model emphasises that there is “nothing maladaptive in striving for excellence in itself, rather it is when someone bases their sense of self-worth almost exclusively on striving for standards... when perfectionism becomes a “clinical” problem” (p.208). Furthermore, research is emerging on cognitive factors that may distinguish positive and negative perfectionism as proposed in the model. For example, a study with Australian undergraduates using the self report Positive and Negative Perfectionism Scale (PANPS; Haase et al, 1999, 2002) which was developed from a number of other measures of perfectionism identified dichotomous thinking as the variable most predictive of negative perfectionism, with weaker association to positive perfectionism.

Since its development, efforts have been made to validate the model, and as outlined, it has been recently refined (Egan et al., 2011; Shafran et al., 2010). A qualitative research study carried out with patients who were considered to characterise the conceptualisation of clinical perfectionism obtained descriptions largely consistent with the model (Riley & Shafran, 2005). In particular, self-imposed dysfunctional standards, continual striving and adverse consequences appeared to be key features of those people who had the core psychopathology of clinical perfectionism compared to those who did not. A single case study, case series and small randomised-controlled trial evaluating interventions based on the model have shown promising results (Glover, Brown, Fairburn, & Shafran, 2007; Riley & Shafran, 2005; Riley, Lee, Cooper, Fairburn, & Shafran, 2007; Shafran, Lee, & Fairburn, 2004; Steele et al., 2011) but further empirical research is required. A recent study validated clinical perfectionism as a separate construct to multidimensional perfectionism, demonstrating that the construct accounted for

variance in levels of depression and anxiety beyond both the HMPS and negative affectivity (Chang & Sanna, 2012).

1.6.1 Perfectionism and psychopathology. Perfectionism has been associated with the maintenance of several psychopathologies, and in some circumstances has also been implicated in their development (Stairs, Smith, Zapolski, Combs, & Settles, 2012). In a recent review, Egan et al. (2011) provided a useful summary and overview of the literature identifying perfectionism as a “transdiagnostic” process. This means that in addition to co-occurring with psychopathologies such as depression, anxiety and eating disorders, perfectionism has been implicated as both a risk and maintaining factor for psychopathology (Egan et al., 2011). Furthermore, there is some evidence that treatment of perfectionism can lead to reductions in associated psychopathology. The cognitive-behavioural model of perfectionism considers that clinical perfectionism may be a problematic presentation in its own right, but may also be understood as a specific feature in the development or maintenance of other psychopathologies (Shafran et al., 2010). The features of clinical perfectionism (rather than measured using the multidimensional measures) have yet to be researched thoroughly in relation to other psychopathologies. However, previous research using the multi-dimensional measures indicate that the features that are most closely associated with the construct of clinical perfectionism (i.e., personal standards and concern over mistakes) have been most consistently implicated in the relationship between psychopathology and perfectionism.

The association between perfectionism and eating disorders, is undisputed, and the Eating Disorders Inventory, a widely used self-report measure of eating disorders includes a measure of perfectionism (Garner et al., 1983). Comparisons

between clinical samples with eating disorders (AN and BN) and non-clinical controls have consistently shown elevated levels of both personal standards and concern over mistakes in clinical samples (e.g., Bardone-Cone et al., 2007; Bastiani, Rao, Weltzin, & Kaye, 1995; Halmi et al., 2005; Lilenfeld et al., 2000). One study including a recovered sample of patients diagnosed with AN found elevated levels of concern over mistakes persisted in the absence of significant eating disorder psychopathology (Srinivasagam et al., 1995), indicating that perfectionism may persist beyond other active symptoms. It has also been demonstrated that concern over mistakes was higher in eating disordered patients than those with obsessive-compulsive disorder or major depression (Sassaroli et al., 2008). There is some evidence that perfectionism may precede eating disorders, although the majority of research in this area is retrospective (Bardone-Cone et al., 2007; Fairburn, Cooper, Doll, & Welch, 1999; Fairburn et al., 1998).

Depression has also been associated with increased levels of perfectionism, in particular concern over mistakes. For example, a clinical sample of patients diagnosed with major depressive disorder had significantly higher levels of concern over mistakes than non-clinical controls (Sassaroli et al., 2008). There have been varied findings on the relationship between depression and doubts about actions subscales of the FMPS (Sassaroli et al., 2008). A comprehensive review of the literature recently indicated that no studies with clinical samples of depressed patients have demonstrated elevations in personal standards (Sassaroli et al., 2008). However, no studies have considered whether perfectionism predicts depressive disorders (Bardone-Cone et al., 2007).

Perfectionism is understood to have a “robust association” with anxiety disorders (Egan, Wade, & Shafran, 2011). In particular, an association between OCD

and perfectionism has been reported for over 100 years (Egan et al., 2011; Frost, Novara, & Rheume, 2002). Similar to depression, OCD has been most closely associated with concern over mistakes, rather than personal standards. Studies comparing OCD patients and patients with other anxiety disorders have found that concern over mistakes and doubts about actions are higher among OCD patients and social phobia patients (Bardone-Cone et al., 2007). However, to date no studies have considered whether perfectionism predicts anxiety disorders (Bardone-Cone et al., 2007).

Egan et al. (2011) highlight that the relationship between perfectionism and other psychopathology goes beyond simple associations and that as a “transdiagnostic process” acts as both a risk and maintenance factor for depression and anxiety, and eating disorder psychopathology, and is one possible explanation for co-occurrence of disorders. Scrutiny of the existing literature indicates that perfectionism is related to the same components of psychopathology as have been, albeit sometimes inconsistently, related to maternal use of controlling feeding practices. For example, it is of particular interest that the specificity of perfectionism in the anxiety disorders (i.e., to OCD, e.g., Farrow & Blissett, 2009) reflects possible specificity of associations with use of controlling feeding practices. For this reason, perfectionism is the main focus of the investigation in the present study. It is hypothesised that perfectionism may be an underlying process that is implicated in the relationship between maternal psychopathology and use of controlling feeding practices, and may account for inconsistencies in findings across previous studies.

1.6.2 Perfectionism and parenting. Much of the research focussed on parenting in the perfectionism literature has considered the relationship between parenting styles and the development of perfectionism in children (e.g., Clark &

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Coker, 2009; Kawamura, Frost, & Harmatz, 2002). Perfectionism has been identified as an emerging area of interest in the parenting literature yet to date there has been very little published research, and a proposed construct of “parenting perfectionism” has yet to be validated (Lee, Schoppe-Sullivan, & Kamp Dush, 2012; Snell, Overbey, & Brewer, 2005). Using an adapted version of the HMPS (Snell et al., 2005), Lee et al. (2012) investigated the relationship between “parental perfectionism” and parent self-efficacy using longitudinal data from 182 couples. They found that societal-oriented parenting perfectionism (measured on the HMPS) in mothers was associated with lower parenting self-efficacy, but self-oriented parenting perfectionism was associated with higher parenting satisfaction (Lee et al., 2012). This indicates that there may be some difficulties in adjusting to the parenting role in parents that score high on an adapted measure of perfectionism.

Research has indicated a relationship between perfectionism and authoritarian parenting styles. For example, in a large sample of parents of high school children, perfectionism measured by the Tehran Multidimensional Perfectionism Scale (Besharat, 2007) was positively correlated with self-reported authoritarian parenting style as measured by the Parental Authority Questionnaire (Azizi & Besharat, 2011; Buri, 2010). This relationship was found across domains on the TMPS, which is an adapted version of the Hewitt MPS. In the domain of feeding in young children, a relationship has been found between authoritarian parenting styles and use of controlling feeding practices, yet exploration of the direct association between maternal perfectionism and use of controlling feeding practices has yet to be explored (Black & Hurley, 2007; Hughes et al., 2005). Although no research has considered the role of clinical perfectionism in parenting practices, parenting is one domain in which it may be salient (Shafran et al., 2010).

1.7 Rationale for the present study

Feeding difficulties and obesity in early childhood can not only disrupt early development, but have been linked to later deficits in cognitive development, behavioural problems, as well as anxiety disorders and eating disorders during childhood, adolescence, and young adulthood (Emde et al., 2005). Consequently it is important to identify, understand, and treat emerging feeding problems. While much of the previous research has focussed on identifying diagnostic criteria for feeding difficulties, rather less has considered the processes by which feeding difficulties are developed and maintained (Cooper & Stein, 2006; Dovey & Martin, 2011).

Recent research has begun to consider contextual factors that may impact on the disruption of normal feeding development and a child's development of food preferences, particularly in early childhood when a child begins to strive for autonomy in its relationships from its mother (Satter, 1986). This includes maternal characteristics that may impede a mother's ability to sensitively respond to her child's cues for autonomy, which may lead to adopting a more controlling feeding style. Several studies have reported associations between maternal psychopathology and use of controlling feeding practices, yet the findings are inconsistent, suggesting that the relationships may be more complex. The current study aims to investigate the potential role for clinical perfectionism as a transdiagnostic process that might account for these discrepancies and may underpin the relationship between different psychopathologies and maternal use of controlling feeding practices.

The study will investigate the relationship between maternal perfectionism and use of controlling feeding practices. It will also consider the potential relationship between maternal mood (depression and anxiety), perfectionism, and use of controlling feeding practices. Empirical research consistently reports that

eating disorders are characterised by elevated levels of perfectionism, which endures after recovery, and also appears to have possible predispositional significance for the development of eating disorders (Bardone-Cone, et al., 2007). Therefore, in order to explore clinical perfectionism as an independent transdiagnostic construct, mothers with a past or current diagnosis of an eating disorder will not be included in the study. In order to fully explore this relationship, the study will utilise both self-report and observational measures. The study hypotheses follow in the next section.

1.8 Hypotheses

Hypothesis 1: Mothers who score higher on self-report measures of perfectionism will report a more controlling feeding style

Hypothesis 2: Mothers who score higher on a self-report measure of depression will report a more controlling feeding style

Hypothesis 3: Mothers who score higher on a self-report measure of anxiety will report a more controlling feeding style

Hypothesis 4: When controlling for depression, there will be a significant positive relationship between maternal perfectionism and controlling feeding style

Hypothesis 5: When controlling for anxiety, there will be a significant positive relationship between maternal perfectionism and controlling feeding style

Hypothesis 6. Mothers reporting higher scores on a measure of perfectionism will be observed to use more pressure than mothers reporting lower scores.

Hypothesis 7. Mothers reporting higher scores on a measure of perfectionism will be observed to use more restrictive feeding practices than mothers reporting lower scores.

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Hypothesis 8. Mothers reporting higher scores on a measure of perfectionism will be observed to use more incentives/ conditions to encourage their child to eat than mothers reporting lower scores.

Hypothesis 9. The overall tone of mealtimes will be more negative in observations of mothers scoring higher on a self-report measure of perfectionism than in observations of mothers reporting lower scores.

The study methodology is presented in the following chapter.

Chapter 2. Methodology

2.1 Chapter Overview

This chapter provides details of the methods used in the present study. It begins with a summary of the two-stage design of the research. Then follows details of participants, including discussion of inclusion and exclusion criteria, and power calculations highlighting required sample sizes. The next section provides a detailed overview of the measures used at each stage of the study, including details of their psychometric properties. After this, there is a summary of the procedure adopted during the data collection phase, and a discussion of the ethical considerations. The chapter concludes with a plan for data analysis in the next chapter.

2.2 Design

The study was conducted in two parts. Part 1 adopted a questionnaire- based, cross sectional, correlational design to investigate the relationship between maternal perfectionism and use of controlling feeding practices. Mothers of young children were invited to complete a number of self-report questionnaires providing scores of clinical perfectionism and use of controlling feeding practices (CFP; monitoring, restriction and pressure to eat) during mealtime interactions with their child. Given the established associations between depression and perfectionism, anxiety and perfectionism, and between mood and the use of CFP, a screening measure for depression and anxiety was included so that clinical perfectionism could be investigated as an independent predictor variable for use of CFP (Chang & Sanna, 2012; Egan et al., 2011; Farrow & Blissett, 2005; Haycraft & Blissett, 2008b). In addition to providing preliminary information regarding the relationship between self-reported clinical perfectionism and CFP, Part 1 of the study also served as a screening assessment for identifying participants for Part 2 of the study.

Part 2 of the study involved an observation of a typical mealtime with mothers and their child. To establish two groups for comparison, participants were separated into four quartiles based on their ranked score on the measure of clinical perfectionism. Using an independent between groups design, mothers identified as scoring within the upper quartile on the measure of clinical perfectionism were compared to those scoring within the lower quartile on the measure of clinical perfectionism on their observed use of CFP. All participants falling within the upper quartile (indicating higher scores of perfectionism within the group), and those in the lower quartile (indicating lower scores of perfectionism within the group) who had provided consent were invited to take part in the observation. Proponents of both psychodynamic and behavioural approaches to understanding the aetiology of feeding problems in young children advocate the importance of observation of feeding interactions and that, as much as possible, observations should be carried out in the environment in which it normally occurs (Briggs, 1998; Vaz & Piazza, 2011). Furthermore, the reliability of maternal self-report in the context of CFP has not been well established (Haycraft & Blissett, 2008a). The observational part of the study also allowed investigation of the tone of the mealtime, in addition to use of specific feeding practices.

2.3 Participants

The study initially aimed to recruit participants who were mothers of pre-school children aged between 18 months and three years whose main source of nutrition was from solid foods. Eighteen months was considered to be an age at which most children could be expected to have completely weaned onto solid foods, and at which they are likely to have started to make independent choices about the types and quantities of food that they consumed (Department of Health, 2008). It

was also the age at which children are developing autonomy, and therefore a time at which control is an important issue in the feeding relationship (Satter, 1999; Wickenden, 2011). It was also an age at which both of the measures used in the study in relation to child feeding practices have been used and validated. It was initially hoped to include only first time mothers given that previous parenting experience, or the presence of another child may result in different patterns of adjustment to parenting (Fleming, Ruble, Flett, & Shaul, 1988)

2.3.1 Inclusion and exclusion criteria. To reduce variability within the sample, the study aimed to recruit mothers only. Consequently, this excluded fathers, grandparents, nannies, childminders, and foster carers. Participants were required to be over the age of 18, as parenting during teenage years presents its own challenges that may have been significant in the current investigation (Hanna, 2001). Ability to complete the questionnaires required participants to have a good understanding of the English language. Furthermore for the purposes of the observation phase, participants were required to communicate with their child in the English language so that the researcher could effectively record comments made by the mother during the mealtime. Given the complexity of the relationship between perfectionism and eating disorders as outlined in the introduction (see e.g., Franco-Paredes, Mancilla-Diaz, Vazquez-Arevalo, Lopez-Aguilar, & Alvarez-Rayon, 2005; Garner et al., 1983), those with a current or past diagnosis of any eating disorder were not included in the study. Furthermore, given the low rates of eating disorders with lifetime prevalence between 1 and 2%, it would not have been possible to investigate this fully (Smink, Hoeken & Hoek, 2012).

2.3.2 Sample size.

2.3.2.1 Part 1: Correlational analyses. No previous research has investigated the relationship between maternal clinical perfectionism and use of CFP. However, perfectionism is considered to be a risk and maintaining factor associated with depression, anxiety and eating disorders (Egan et al., 2011) with large effect sizes found in the relationship between perfectionism and associated symptomatology (depression, anxiety, eating disorders; see e.g., Sassaroli et al., 2008). Given that medium effect sizes also have also been found in relationships between pressure to eat and depression ($r=.24$) and anxiety ($r=.26$; Mitchell et al., 2009), it was hypothesised that there would be a correlation with medium effect size between maternal perfectionism and CFP. GPower 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) was used to estimate required sample size. For a medium effect size ($r = 0.3$) with a one tailed significance level of 0.05 and power of 0.80, an estimated sample size of 67 was required for the questionnaire phase of the study. Using a guideline equation outlined by Tabachnick and Fidell (2013), to carry out a multiple regression to establish perfectionism as a predictor of CFP independent of both depression and anxiety, the estimated sample size with 3 predictor variables for Part 1 of the study was 105 (Tabachnick & Fidell, 2013). Accordingly, the target sample size was 105.

2.3.2.2 Part 2: Between groups analysis. The chosen observational measure has identified differences in pressure to eat with large effect sizes between mothers of girls and boys, and over- versus underweight children (Farrow, Blissett, & Haycraft, 2011). It has also shown correlations with medium effect size between maternal report of eating disorder symptomatology and use of pressure and physical prompts (Blissett & Haycraft, 2011). The method of selection for inclusion in Part 2

(participants that fall in the upper and lower quartile when ranked on the perfectionism measure) was chosen over a median split in order to maximise effect size. Furthermore, there are currently no specified clinical cut-off scores for the measure of perfectionism. This method is called the extreme groups approach (EGA) and its use is considered acceptable to increase power in order to make efficient use of a given sample (Preacher, Rucker, MacCallum, & Nicewander, 2005). GPower 3.1 (Faul et al., 2007; Faul et al., 2009) was used to calculate estimated required sample size. For a large effect size ($d = 0.8$) with one-tailed significance of 0.05 and power of 0.80, an estimated total sample size of 42 was required (21 per group).

2.4 Assessments and Measures

Outlined below is a detailed description of items that constituted the questionnaire pack that was administered to each participant in the study, and a description of the coding measure utilised to analyse observational recordings in Part 2 of the study.

2.4.1 Demographic, contact and screening information. Before completing the questionnaires, participants were asked to sign a consent form demonstrating that they had understood the purpose of the study and agreed to take part. A copy of the consent form can be found in Appendix C. The demographic screening questions can be found in Appendix D. Participants were requested to provide their age, marital status, and the age at which that they left full time education along with their highest qualification. They were asked to state their ethnic group from choices outlined in the census data collection in 2011 (Office of National Statistics, 2011). In order to establish eligibility for the study, participants were asked to state their child's date of birth, whether their child had started eating solid foods, and whether they themselves had ever been diagnosed with an eating disorder. Participants were asked to state

whether the child involved in the study was their only child. They were asked to provide their contact details and indicate whether they would like to be contacted regarding participation in Part 2 of the study, and if so to state their preferred method of contact (e.g., email, telephone). Finally they were asked whether they would like to be entered into the prize draw to win £30 worth of shopping vouchers.

2.4.2 Measures of perfectionism. Two measures have traditionally been used in the study of perfectionism, namely the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990) and the Hewitt Multidimensional Perfectionism Scale (HMPS; Hewitt et al., 1991). Following recent debates in the literature as detailed in the introduction, the current study focuses specifically on the concept of Clinical Perfectionism, a form of psychopathology maintained by specific cognitions and behaviours as defined by Shafran and colleagues (Shafran et al., 2002). Consequently, it was important to use the measure developed based on the components of the model, namely the Clinical Perfectionism Questionnaire (CPQ; Unpublished as cited in Riley et al., 2007; Appendix E). In keeping with the definition of Clinical Perfectionism, the CPQ is a 12-item questionnaire that aims to identify the “overdependence of self-evaluations associated with personally demanding standards of performance” (Chang & Sanna, 2012, p. 103). Participants are asked to consider the past month and to rate their agreement to items on a Likert Scale constituting four options: “not at all”, “some of the time”, “most of the time” or “all of the time”. The questionnaire takes approximately five minutes to complete. There are two items that are reverse scored (questions 2 & 8). The CPQ total score is generated from the sum of all 12 items. Participants’ scores on the CPQ were used for the quartile split to identify participants for Part 2, the observational stage of the study.

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Until recently, the validity of the CPQ has been based solely on findings from published studies that demonstrated significant change on the measure following an individual or group-based cognitive-behavioural intervention for clinical perfectionism (Glover et al., 2007; Riley et al., 2007; Steele et al., 2012). This indicates that the measure is sensitive to clinical change. There was also reference to an unpublished thesis that demonstrated that the scale could differentiate between clinical and nonclinical samples, that scores on the measure are stable over a 2-week period, and that it is correlated with clinician ratings of clinical perfectionism (Riley as cited in Glover et al., 2007). More recently, the CPQ has been shown to have good internal consistency in a number of studies of both clinical and non- clinical samples ($\alpha=.70$ to $.83$; Chang & Sanna, 2012; Steele et al., 2011; Steele et al., 2012).

Two studies have specifically assessed the psychometric properties of the measure in large samples of college students aged 18-30 years. One of the studies investigated the factor structure of the CPQ, identifying two subscales within the measure (Dickie, Surgenor, Wilson, & McDowall, 2012). These two scales demonstrated high concurrent validity with subscales from the widely used FMPS (Personal Standard (PS), and the combined Evaluative Concerns: EC, sum of Concern over Mistakes, and Doubt about Actions). The CPQ scales had lower internal consistency (CPQ Scale 1 $\alpha = .710$; CPQ Scale 2 $\alpha = .709$) and test-retest reliability (CPQ Scale 1 $r = .491$, $p<.001$) compared with FMPS factors PS ($\alpha = .82$, and $r=.74$) and EC ($\alpha = .90$, $r=.80$). Consequently the authors raised questions about the “competing merits of using the CPQ as opposed to already existing multidimensional measures” (Dickie et al., p. 868). The second study, however considered the predictive validity of the CPQ on several measures of maladjustment

(depression, anxiety, and stress), finding that the CPQ accounted for variance over and above a measure of negative affectivity and the FMPS (Hewitt et al., 1991). This suggests that the CPQ measures a separate construct over and above what is measure by existing assessments (Chang & Sanna, 2012; Hewitt et al., 1991). Similarly, Steele et al. (2011) indicated that in a sample of eating disordered patients, CPQ scores were uniquely associated with depression over and above scores on the FMPS.

Given some of the questions that have been raised regarding the utility of the CPQ over and above more established measures, the CPQ was supplemented with three subscales from the FMPS (Frost et al., 1990) that are considered to be related to the construct of clinical perfectionism and to allow further investigation. The FMPS is a 35 item self-report measure, which asks participants to rate their agreement to statements on a 5-point Likert scale (strongly disagree to strongly agree). The questionnaire uses more global statements representing aspects of a stable personality style rather than a form of psychopathology maintained by specific cognitions and behaviours, which is the aim of the CPQ (Dickie et al., 2012). The FMPS is made up of a total of six subscales assessing the dimensions of perfectionism proposed by Frost et al. (1990); Concern over Mistakes (CM), Doubts about Actions (DA), Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC) and Organisation (O). These subscales were identified in Frost's original factor analysis and showed good internal consistency in non-clinical samples ($\alpha \geq .77$; Frost et al., 1990). Various subsequent studies have corroborated these findings in clinical and non-clinical samples, including mothers (see e.g., Clark & Coker, 2009; Dickie et al., 2012; Parker & Adkins, 1995; Purdon, Antony, & Swinson, 1999). As outlined by Frost et al. (1990), satisfactory convergent and

discriminant validity of the FMPS has been demonstrated through its significant positive correlations with several other measures of perfectionism (e.g., the Burns Perfectionism Scales (Burns, 1980) is positively associated with the subscale of interest CM ($r=.866$), PS ($r=.529$), DA ($r=.473$); and the Perfectionism Scale from the Eating Disorder Inventory (Garner et al., 1983) CM ($r=.569$), PS ($r=.440$), DA ($r=.338$).

There have also been questions raised about the original 6-factor structure of the measure, suggesting that a 4-factor model is more appropriate. However, the subscales of interest in this study have remained robust in the revised factor structure (Stöber, 1998). The CM and DA subscales have been shown to load onto the same factor, which has subsequently been referred to as “Evaluative Concerns (EC)”, and the PS factor has generally remained unquestioned as an independent construct (Cox, Enns, & Clara, 2002; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005; Stöber, 1998). These subscales are of particular interest in this study as they contain items that are consistent with the conceptualisation of clinical perfectionism. Items from each of the subscales can be found in Appendix F. The subscales take approximately 10 minutes to complete. Several published studies have opted to use these selected scales as a way of measuring dysfunctional or clinical perfectionism in the absence of an alternative well-validated measure (see e.g., Clark & Coker, 2009; Riley et al., 2007; Steele et al., 2011; Steele et al., 2012).

2.4.3 Measure of maternal psychopathology. The Hospital Anxiety and Depression Scale (HADS; Snaith & Zigmond, 1994) was designed as a screening tool for use in medical settings, yet has subsequently been validated for use in community and primary care settings (Snaith, 2003). The HADS comprises two subscales: HADS-D (depression) and HADS-A (anxiety) each containing 7 items

(See Appendix G). Subscale scores for depression and anxiety are derived from the sum of these 7 items. Participants are required to rate their agreement to a number of statements, which provides separate scores for depression and anxiety. These scores can subsequently be interpreted as falling within a “normal”, “mild”, “moderate” or “severe” range. Scores falling in the moderate range or above are considered to indicate probable presence (“caseness”) of anxiety or depression (Snaith, 2003). The measure was considered appropriate for the present study due to its robust psychometric properties, and also because it takes only 2-5 minutes to complete. In a review, most factor analyses identified two factors in agreement with the subscales (Bjelland, Dahl, Haug, & Neckelmann, 2002). Internal consistency measured using Cronbach’s alpha for HADS-A varied from .68 to .93 (mean .83) and for HADS-D from .67 to .90 (mean .82), sensitivity and specificity for both subscales was approximately 0.80, and correlations between the HADS and other commonly used questionnaires were in the range of $r=.49$ to $r=.83$ (Snaith, 2002).

2.4.4 Self-report measure of controlling feeding practices. As outlined earlier, the study is interested in specific parenting practices used during mealtimes, that correspond to a controlling feeding style. The term “parenting practice” implies a behavioural strategy used by parents to socialise their children (Ventura & Birch, 2008). In a recent literature review of maternal correlates of child feeding practices, which included 17 studies, the Child Feeding Questionnaire (CFQ; Birch et al., 2001; Appendix H) was identified as the most frequently used measure of maternal child feeding practices (McPhie et al., 2012). Although the measure was originally developed to assess parental use of controlling feeding practices and beliefs about child weight in obesity research, relevant subscales of the CFQ have been used

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widely including studies investigating feeding difficulties in children as outlined in the introductory chapter (e.g., Gregory et al., 2010).

The CFQ is a self-report measure consisting of a total of 31 items, however only subscales relating to the use of controlling feeding practices were relevant to the research questions. The CFQ subscales consist of 8 items that relate to “restriction” of food intake, 4 items that constitute “pressure to eat” and 3 items that relate to “monitoring”. Participants are asked to rate on 5-point Likert scale, ranging from 1 (Disagree) to 5 (Agree). The subscale score is calculated by taking the mean of all of the individual items on that subscale. Higher scores represent greater reporting of these individual feeding practices. Although the monitoring subscale has not always been included in previous studies, it was included in the present study for exploratory purposes.

Initial validation of the measure came from a sample of 394 mothers and fathers using factor analysis, finding internal consistency to be adequate for pressure to eat ($\alpha=.70$), restriction ($\alpha=.73$) and good for monitoring ($\alpha=.92$) (Birch et al., 2001). The measure was initially validated for use with children between the ages of 2 and 11 years of age (Birch et al., 2001) yet has been used successfully in published research with children as young as 1 year (see e.g., Brown & Lee, 2011; Farrow & Blissett, 2005). In a study involving mothers and fathers of children aged from 18 months, internal consistency on the pressure to eat subscale ($\alpha=.69$) and the restriction subscale ($\alpha=.77$) were acceptable (Haycraft & Blissett, 2008a); and a study involving 168 mothers of children from 18 months, internal consistency was good on the monitoring ($\alpha=.87$), pressure to eat ($\alpha=.71$) and restriction subscales ($\alpha=.76$) (Haycraft & Blissett, 2010). The subscales take approximately 5 minutes to complete and therefore the overall completion time of the questionnaire is

approximately 20- 25 minutes. Furthermore, the observation measure that was chosen for Part 2 of the study was developed directly from this measure and consequently provides consistency across the study.

2.4.5 Observational measure of maternal controlling feeding practices.

The Family Mealtime Coding System (FMCS; Haycraft, 2007; Haycraft & Blissett, 2008a) was developed as an observational measure of parental use of controlling feeding practices. The subscales of particular interest in the present study were those developed from the relevant subscales of the CFQ. The verbal “pressure to eat” and “physical prompt” subscales on the FMCS relate to the “pressure to eat” subscale on the CFQ, while the observed “physical restriction” and “verbal restriction” and “use of incentives/ conditions” subscales were derived from the CFQ’s “restriction” subscale (Haycraft, 2007; Haycraft & Blissett, 2008a). Analysis of video recorded mealtimes involves the use of the coding system to count the number of instances of behaviours in a typical mealtime. A brief overview of the subscales is outlined below, and full operational definitions for the measure can be found in Appendix I.

“Pressure to eat” includes any verbal encouragement from the parent for the child to eat, including gentle coercion. A “physical prompt” from the parent is defined as encouragements to get the child to eat by offering food. “Restriction” is defined as limiting the child’s consumption of foods and has separate subscales for measuring physical and verbal restriction. The final variable is the “use of incentives or conditions”, defined as “verbal use or bargaining in an attempt to increase children’s food consumption” (Haycraft, 2007; Haycraft & Blissett, 2008a, p. 1554). The FMCS also allows for coding of various additional maternal behaviours that may contribute to the tone of the mealtime (e.g., positive and negative comments

towards the child, and positive and negative comments about food; Haycraft, 2007; Haycraft & Blissett, 2008a).

To date studies using the FMCS have included children aged from 18 months (Blissett & Haycraft, 2011; Farrow et al., 2011; Haycraft & Blissett, 2008a). In a previous study using the observational measure, inter-rater reliability across variables ranged from 86.57- 100% agreement, indicating a good level of reliability (Haycraft & Blissett, 2008a). On another study, intra-class correlations to establish inter-rater reliability on the pressure to eat and restriction subscales were 0.95 and 0.97 respectively (Farrow et al., 2011) indicating excellent levels of agreement.

2.5 Procedure

2.5.1 Procedure for Part 1: Questionnaire study. Due to the large number of participants required for Part 1 of the study, a broad approach was taken to recruitment. The researcher made initial contact via email with managers or leaders of toddler groups including parent- and church-led groups and Sure Start Centres in the Cambridgeshire area. The email included a brief overview of the study, details of the recruitment strategy and a request to discuss further.

Recruitment was carried out at toddler groups who consented for the researcher to attend in Cambridgeshire between November 2012 and May 2013. At the toddler groups, potential participants were usually approached on an individual basis or in small groups. In some cases, the group leader introduced the researcher to potential participants individually or as a whole group. The researcher introduced herself and gave a brief overview of the study before providing the potential participant with an information sheet (Appendix J), if they were interested in reading more. When they had had sufficient time to read the information sheet, the researcher approached them to ask whether they would be interested in participating.

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Those that were interested were invited to complete the questionnaires for Part 1 of the study in one of two ways.

1. The information sheet included a link to an online questionnaire battery (Survey Monkey). Participants could also choose to provide an email address to the researcher to send an information sheet including the link to the online questionnaires.
2. Participants could opt to complete paper questionnaires available from the researcher in person. These could be returned by post in a stamped addressed envelope provided by the researcher, or completed at the time and returned via a posting box provided by the researcher.

Information about the study was displayed on posters (Appendix K) at several groups with details of how to contact the researcher by email for further information. Those that responded to a poster advert were sent an information pack either by post or email that would include an information sheet and a questionnaire pack. Following recruitment at one particular toddler group, the researcher also attended the affiliated nursery. After visiting this group, it was recognised that attempting to make contact with busy mothers as they collected their children was not a successful recruitment strategy and the focus returned to toddler groups. Details of response rates for each of the methods of data collection can be found in the results section (Section 3.2.1).

2.5.2 Procedure for Part 2: Mealtime observation. To identify participants for Part 2, the mealtime observation, anonymised participant identification numbers for mother scoring in the upper or lower quartiles were extracted by the researcher from the anonymised data set. CPQ scores were then removed before matching participants to their contact details. This provided a combined list of participants

falling in both the upper and lower quartile and it was not possible for the researcher to identify to which group they were assigned. Participants who fell within the upper and lower quartiles on their score on the CPQ were invited to take part in a mealtime observation with their child. Upon completion of the observations, those that did not fall within the top and bottom quartiles were sent a letter thanking them for their participation, advising them that they would not be contacted to participate in the observation phase of the study (Appendix L). For those who were to be included in Part 2, the researcher used the participant's chosen method to contact them regarding the second part of the study. When this preferred method was by email, an information sheet was also sent. By telephone, the researcher reminded the participant of the purpose and requirements of the study and offered to email a copy of the information sheet.

For participants who agreed to participate further, the researcher arranged to visit them at home at a mutually convenient time to record a typical mealtime as defined by the participant. To facilitate analysis, and reduce confounding variables, where relevant and possible this was with the mother and their child alone. For example, previous research has indicated that maternal interactions with their child are reduced with the presence of the father (Haycraft & Blissett, 2008a). The researcher offered participants a further copy of the information sheet (Appendix J), highlighting salient points and answering any questions that the participant might have before asking them to sign a consent form asking them to participate in Part 2 of the study (Appendix M). They could also choose to receive a summary of the research findings using a tick box on the consent form. Observations for Part 2 were made in the home using digital video recording to minimise intrusiveness, and to make the observation as natural and as close to real life as possible. Participants were

instructed to proceed with the mealtime as they would typically, and to let the researcher know when they had finished. The researcher turned on the recording system and left the room. Whilst recording, the researcher remained in the house but in a different room. Upon completion, the researcher answered any further questions before thanking them for their time.

2.6 Ethical Considerations

The University of East Anglia (UEA) Faculty of Medicine and Health Sciences Research Ethics Committee granted ethical approval for the study. A letter confirming initial ethical approval, and approval of amendments to the protocol made in April 2013, can be found in Appendix N.

2.6.1 Informed consent. The recruitment process ensured that all participants had the opportunity to read an information sheet outlining details of the study (Appendix J). This was provided in person by the researcher, or by request via email. Consequently, the link to the online questionnaire could not be obtained without also obtaining a copy of the information sheet. The information sheet recommended that the participant take time to consider whether they wanted to take part. They were encouraged to ask the researcher any questions or points for clarification, and contact details (email) were provided. A consent form for Part 1 of the study (Appendix C) was provided with the questionnaire pack or at the beginning of the online survey. For the paper version of the questionnaire, participants were required to sign to indicate consent, whereas for the online version, they were instructed that by continuing with the completion of questionnaires, they were consenting to participate in the study.

Given the time lapse between Part 1 and Part 2 of the study, the researcher provided a further copy of the information sheet and answered any questions that

participants may have at this stage. When fully satisfied that the participant understood their involvement in the study, they were asked to sign a consent form for participation in Part 2, the observational phase of the study (Appendix M). It was made clear to the participant at both stages that they were free to withdraw from the study at any time without giving a reason. It was planned that should this occur, the data would be removed from the data set and original copies destroyed (This procedure was not followed as no participants withdrew from the study). All participants in Part 2 were offered the opportunity to receive a summary of the study findings by ticking a box on the consent form, and the information sheet outlined that those in Part 1 could also request a summary of the study results from the researcher.

2.6.2 Confidentiality and anonymity. Collection of personally identifying information (name and contact details) was necessary so that participants could be contacted for Part 2 of the study. Personal information was stored on an encrypted memory stick. Paper copies of personal information was separated from questionnaire responses and stored securely in a locked filing cabinet at the UEA. Information collected via the online survey through Survey Monkey is sent via encrypted email accessible to the researcher only by password. All digital information, including digital recordings, was stored securely on an encrypted memory stick or on CDs stored in a locked filing cabinet. Original recordings are to be deleted 5 years after completion of the study. During these 5 years, the data will be securely stored at the UEA. Responses from paper questionnaires and demographic sheets will be transferred to the electronic database and original copies will be shredded upon completion of the examination process.

It was made clear to participants in the Information Sheet that information collected during the course of the research would remain confidential, unless the researcher was given any reason to believe that they or another person might be at risk. Where appropriate this would be discussed with the participant first, before discussion with the researcher's supervisor and an appropriate plan of action agreed and documented. However, no risk issues were identified during the course of the study and therefore the procedure was not followed.

Participants were made aware that their anonymised information and video recordings would be seen by supervisory staff and colleagues at the UEA to assist with data analysis. They were also made aware that the findings of the research would be submitted as a thesis for assessment and that it was hoped that findings would be published in an academic journal and distributed to professionals that may find the results useful. It was further outlined that any of the information that is made public in this way will be completely anonymous and it will not be possible to identify individuals involved in the study.

2.6.3 Distress. It was not anticipated that the study would cause significant distress to the participants. For Part 1 of the study, it was outlined in the information sheet and at the end of the questionnaire pack that should participants have been distressed or concerned by the issues raised that they should contact their GP. In cases where significant problems were identified during Part 1 of the study, more specifically where scores on the screening measure for anxiety and depression indicated scores within the severe range, a sensitive letter was sent indicating this and suggesting that should they wish to pursue this further, they may wish contact their GP who could advise them of the options available to them (Appendix O). In some cases child-feeding problems were highlighted to be a concern of the mothers

who were approached, and in these cases, they were advised to discuss this with their health visitor and/ or their GP. None of these mothers chose to participate in the study.

For Part 2, a plan was in place that should participants become distressed at any point during the observation, the researcher would re-enter the room, stop the recording and attempt to establish the source of the distress and counsel the participant appropriately. If necessary they would be given the opportunity to discontinue the observation phase of the study. Where appropriate participants would be advised to contact their GP to discuss this further. The information sheet included contact details for whom participants should contact should they wish to make a complaint. However, none of these issues were raised by the participants during the course of the study.

2.7 Analysis plan

Data were entered into the Statistical Package for Social Science for Mac, version 19 (SPSS, 2009). The raw data were screened for errors and for missing values. Outliers were identified using box plots in SPSS and errors corrected where appropriate. As recommended by the copyright holders of the HADS, where single data points were missing for an individual participant the score was inferred from the mean of the other 6 items on the subscale (GL Assessments, 2013). Similarly, missing data points from the CFQ were replaced with the mean sample score for the item as recommended by the author (L. Birch, personal communication 20th May 2013). Where a participant had failed to complete a questionnaire, they were excluded from any analysis involving that measure.

2.7.1 Testing for assumptions. The first assumption for parametric data analysis is that data are measured at the interval or ratio level. The majority of the

data collected in the questionnaire stage included subscale and total scores that were the sum of several Likert items. There is ongoing debate in the literature regarding whether Likert data should be treated at the ordinal or interval level, and consequently whether they meet the assumptions of parametric tests (Carifio & Perla, 2008; Field, 2013). However, using non-parametric tests risks Type 1 error as they have less sensitivity and power (Carifio & Perla, 2008). Based on a thorough review of the statistical literature, Carifio and Perla (2008) conclude that if more than a single Likert item is analysed, parametric tests can be used providing that the data meet the remaining assumptions.

All of the raw data for the individual subscales and totals were assessed for normality in a number of ways. Data plots were explored for shape and the Shapiro-Wilks test carried out for confirmatory statistical analysis. The Shapiro-Wilks test was chosen to assess for normality as it has been identified as the most powerful statistical test of normality, and is suitable for sample sizes up to $n=2000$ (Razali & Wah, 2011). If the significance value of the Shapiro-Wilk Test is > 0.05 , the data are normal; if it is < 0.05 , the data are considered to deviate significantly from a normal distribution (Field, 2013). To consider this further, values of kurtosis and skewness were divided by their standard error to produce a Z score. Data were identified as significantly different from a normal distribution when this Z score was significantly different from normal (Z is > 1.96 or < -1.96 ; Field, 2013). Data were considered non-normally distributed if they violated any of the normality tests. Data for normality testing can be found in Appendix P.

2.7.2 Hypothesis testing. Hypotheses for Part 1 of the study were explored using correlational analyses. Scatter plots were inspected to assess for linearity and homoscedasticity (Field, 2013). Pearson's product moment correlation co-efficients

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were used to explore associations. Where data were not normally distributed (including when there were significant outliers), the bootstrap function was used to give percentile bootstrap confidence interval (bias corrected and accelerated) for the correlation co-efficient (DiCiccio & Efron, 1996; Field, 2013). The bootstrap test is robust to outliers, and is unaffected by the standard assumptions of normality (Field, 2013; Wright, 2011). The bootstrap used 2000 samples, and bias corrected and accelerated (BCa) bootstrap 95% confidence intervals are presented in square brackets throughout the results (Field, 2013). The result of the test is considered to be significant if the confidence intervals do not include zero (i.e., indicating no relationship between the variables). Results from parallel Spearman's Rho correlations are presented in Appendix Q for comparison. Partial correlations were carried out where possible to consider the relationship between clinical perfectionism and use of controlling feeding practices independent of maternal psychopathology (depression or anxiety). For Part 2, the planned analysis between groups on each of the subscales the FMCS was to use a t-test, replaced with a Mann-Whitney U test where assumptions for parametric testing were violated and data could not be usefully transformed.

Chapter 3. Results

3.1 Chapter Overview

This chapter presents the results of the study. The chapter begins by discussing Part 1, the questionnaire phase of the study. This includes an overview of the process of data collection and the treatment of missing data. Then follows a summary of the data collected, including demographic information and individual questionnaire data. An overview of preliminary data analysis is given before exploring data in relation to specific hypotheses. The chapter then moves on to discuss Part 2, the observational phase of the study. Following a similar structure, this includes a summary of the data collection process, and of the data collected. It provides an overview of the mealtimes observed before presenting a summary of the observational data. This section then summarises findings in relation to the specific hypotheses. The chapter ends with an overall summary of the findings from both stages of the research.

3.2 Part 1. Questionnaire Study

3.2.1 Summary of data collection. Full details of the data collection method can be found in the Method Section (Section 2.5.1). An Internet search engine was used to initially identify toddler groups in the Cambridgeshire area. Further groups were identified by toddler group leaders, and through poster and flyers obtained once recruitment had begun. In total, 70 toddler group leaders in Cambridgeshire were contacted by email with a brief overview of the study and a request for the researcher to meet to introduce the study, or to discuss with mothers who may be interested in participating. Of these, 25 (36%) did not respond. Seventeen (24%) declined to take part citing various reasons (e.g., owing to their involvement in other research projects, because they considered that they would have too few eligible participants,

or because they felt that the research was inappropriate due to the vulnerability of families attending the groups). Five declined to be involved in the study but agreed to display posters with information about the study and contact details for the researcher. Twenty-three (33%) group leaders agreed for the researcher to attend the group to discuss participation with mothers in attendance.

Overall, 242 information sheets were distributed at the toddler groups. In total 107 (44%) mothers completed and returned questionnaires. Sixty-six (62%) mothers completed the questionnaires on the same day at the toddler group. Eighty took questionnaire packs to complete at home, with a total of 24 (30%) of these being returned in the stamped addressed envelope provided. Finally, 17 (16%) chose to complete the questionnaires online, following the link from the information sheet.

Of the 107 who completed the questionnaires, three (2.8%) identified a current or past diagnosis of an eating disorder and were manually excluded from further analysis following the pre-determined exclusion criteria. In the early stages of the study, two (1.9%) mothers completed questionnaires relating to their children who were over the age of four years, which was outside of the age range to be included in the study. These participants were manually excluded from the analysis and an upper age limit of three years was emphasised when discussing the study with subsequent potential participants. With the exclusion of these 5 (4.7%) cases, a total of 102 participants were included in Part 1 of the study representing 95% of respondents.

3.2.1.1 Treatment of missing data. Completed questionnaires were screened for missing data. As the Frost Multidimensional Scale (FMPS) was added to the questionnaire pack for comparison shortly after the start of data collection, FMPS data were unavailable for seven participants (6.9%). A further two (2%) participants

did not complete the HADS. Therefore, these participants were excluded from analysis involving these measures using SPSS. One participant missed a single item from the HADS and a further two participants missed a single item from the CFQ. As recommended by the copyright holders for the HADS and the author of the CFQ, these scores were inferred from the mean of the other items on the relevant subscales (GL Assessments, 2013; L. Birch, personal communication 20th May 2013).

Inclusion of demographic information of mothers (level of education, ethnicity, and marital status) in addition to maternal age was included following an amendment to the study protocol. Furthermore, three (2.9%) mothers who did not consent to the observational stage of the study chose not to provide demographic information in Part 1, the questionnaire stage. Consequently all demographic information was not available for 24 (24%) participants, nor was it appropriate to substitute this information.

3.2.2 Demographic characteristics.

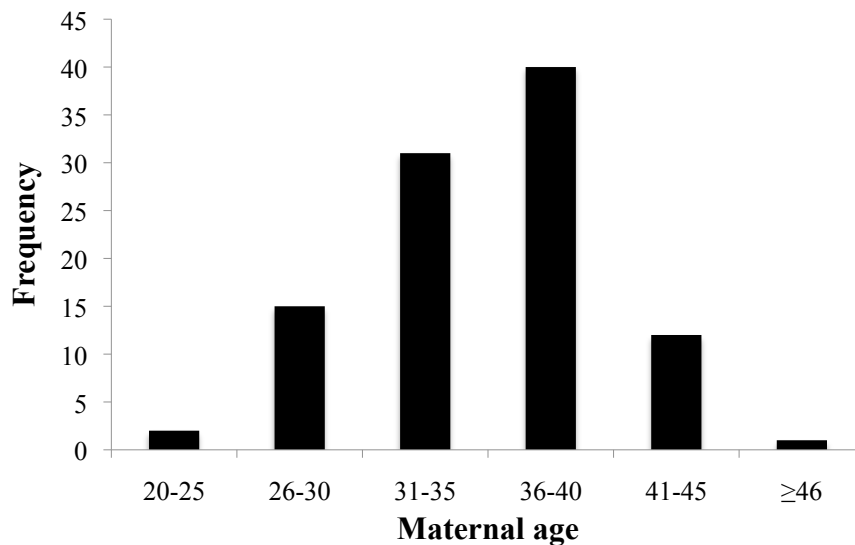
3.2.2.1 Mothers. One mother chose not to disclose her age. The mean age of mothers was 35.27 years ($SD=4.80$ range; 23-50 years; see Figure 3). The modal age range in the sample was 36 – 40 years.

Information on marital status was available for 75 participants. Of these, 60 (80%) were married or in a civil partnership. Two (3%) were single, and 13 (17%) were cohabiting. Of the 76 participants who provided information of their education, 5 (7%) did not complete any post-compulsory education; 8 (11%) completed A-Levels, HND, Diploma, BTEC or NVQ; and 25 (33%) had been educated to degree level. The remaining 38 (50%) had received a further postgraduate degree or qualification (including PGCE, MSc, MA or PhD). Therefore, this was much higher than the general population in the UK, where an estimated 27% are educated to

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degree level (Office of National Statistics, 2011). This will be discussed further in Chapter 4 (Section 4.4.3). Sixty-six (89%) mothers identified themselves as White British, 7 (10%) were White Other and one “other” (1%).

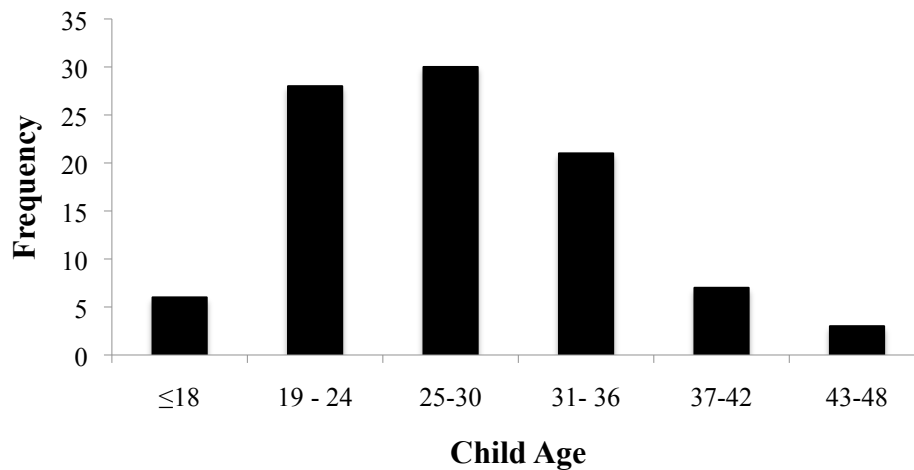
Figure 3. Graph showing frequency of mothers' age



3.2.2.2 Children. The gender of the children and exact age based on date of birth and date of questionnaire completion was available for 95 children. There were slightly more boys ($n=50$) than girls ($n=45$). The frequency and distribution of child age is displayed in Figure 4. Data for child age were not normally distributed. Where data are not normally distributed, the median is presented alongside the mean for comparison. The mean age of children was 27.79 months ($SD = 6.72$; range: 17- 47; $Mdn = 27.00$ months). Data on whether a child was an only child were available for 100 children. Thirty-three were only children (33%), while 67 (67%) had siblings. Following the identification of extreme ages in the early stages of data collection resulting in exclusions, additional efforts were made to emphasise inclusion age (up to and including age 3 years), and therefore it was assumed that the missing data for ages of children fell within the required range

although this could not be confirmed for those that were not involved beyond Part 1, the questionnaire stage of the study.

Figure 4. Graph showing frequency of child age in months



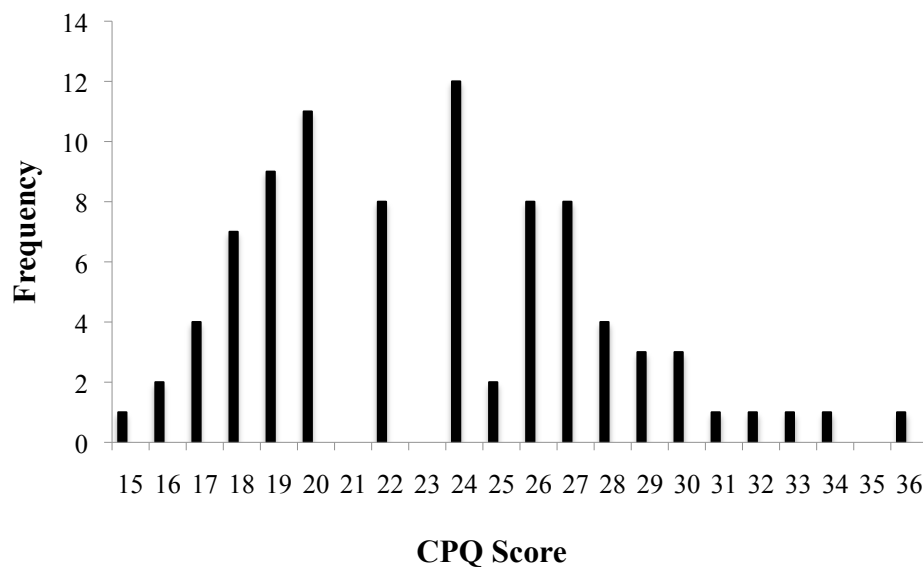
3.2.3 Summary of questionnaire data

3.2.3.1 Clinical Perfectionism Questionnaire (CPQ). CPQ data were available for all participants (n=102). The internal consistency of the measure in the current study was adequate (Cronbach's $\alpha = .73$). One outlier was found in the inspection of the box plots, which was identified as a rare event and the data were significantly skewed (see Appendix P). Figure 5 shows the frequency of scores on the CPQ ($M = 23.04$; $SD = 4.32$; $Mdn = 22.00$; range 15-36). These scores are similar to two samples of undergraduate college students (aged between 18 and 32 years) where the mean score was 25.10 and 26.40 (Chang & Sanna, 2012; Dickie et al., 2012). As outlined, a clinically significant cut-off has yet to be identified for the CPQ, although those deemed to have clinical perfectionism in a treatment study for clinical perfectionism reported pre-treatment mean score of 35.52 ($SD = 5.36$). This indicates that very few participants in the present study approached the scores that

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were reflective of those found in clinical populations in intervention studies specifically targeting clinical perfectionism.

Figure 5. Graph showing distribution of scores on the CPQ (n=102)



3.2.3.2 Frost Multidimensional Perfectionism Scale (FMPS). The internal consistency of the subscales on the FMPS for the current study were either good or excellent, with Cronbach's α ranging from .79 to .91. Scores on the personal standards subscale on the MPS were normally distributed, while concern over mistakes, doubts about actions and the summed evaluative concerns subscales were non-normally distributed (See Appendix P). Descriptive data for subscales are presented in Table 1. To the author's knowledge there have been no studies investigating perfectionism in mothers of young children, however the scores are similar to those found in non-clinical samples of college students (e.g., Frost, Lahart, & Rosenblate, 1991).

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Table 1

Descriptive Data for the Frost Multidimensional Perfectionism Scale (FMPS)

(N=95)	Mean (<i>SD</i>)	Median	Range
Concern over mistakes (CM)	20.83 (7.68)	21	9-45
Personal standards (PS)	20.79 (5.43)	21	9-35
Doubts about actions (DA)	9.31 (3.70)	9	4-18
Evaluative concerns (EC)	30.14 (10.41)	30	13-60

3.2.3.3 Hospital Anxiety and Depression Scale (HADS). The HADS-

Anxiety (HADS-A) (Cronbach's $\alpha = .83$) subscale had good reliability, while the HADS-Depression (HADS-D) was low or poor (Cronbach's $\alpha = .61$). Table 2 presents descriptive data for the HADS, including the total number of participants categorised as reporting normal, mild, moderate or severe levels of depression or anxiety symptoms (Snaith & Zigmond, 1994).

Table 2

Descriptive Data for the HADS

(n=100)	Mean (<i>SD</i>)	Median	Range	Normal (n)	Mild (n)	Moderate (n)	Severe (n)
HADS - Anxiety	7.06 (3.65)	6.5	1 – 19	59	25	14	2
HADS - Depression	3.77 (2.33)	4	0 – 10	92	8	0	0

Neither of the subscales (anxiety or depression) was normally distributed (see Appendix P). Furthermore there were outliers on each of the subscales that were considered rare events. Normative data for the HADS in a UK sample of women

indicates that a score of 7 on the HADS-A falls on the 52nd-61st percentile, a score of 4 on the HADS-D falls between the 52nd and 61st percentile and a total score of 10 falls between the 51st and 56th percentile (Crawford, Henry, Crombie, & Taylor, 2001). The median scores therefore appear representative of a non-clinical sample. The scores on the depression subscale are somewhat lower than has been found in similar samples of mothers ($M = 7.76$, $SD = 5.28$; Haycraft et al., 2013). Details on the procedure adopted for those scoring in the severe range of on the HADS-A can be found in Section 2.6 of the Methodology.

3.2.3.4 Child Feeding Questionnaire (CFQ). The internal consistency of the restriction (Cronbach's $\alpha = .73$) subscale was adequate, good for the monitoring subscale (Cronbach's $\alpha = .87$), and somewhat questionable for the pressure subscale (Cronbach's $\alpha = .69$) indicating that some of the subscale items may not have been reliable. Scores on the restriction subscale were normally distributed, while scores for the remaining two subscales were non-normally distributed. Descriptive data for the CFQ is summarised in Table 3.

Table 3

Descriptive data for the Child Feeding Questionnaire (CFQ)

n=102	Mean (<i>SD</i>)	Median	Range
Restriction	3.28 (.76)	3.38	1-4.88
Pressure to eat	2.58 (.99)	2.50	1-5
Monitoring	4.09 (.95)	4.33	1-5

These scores are similar to those reported elsewhere in non-clinical samples within a similar age range (Blissett & Farrow, 2007; Haycraft & Blissett, 2008a).

3.2.4 Preliminary analysis.

3.2.4.1 Assumption Testing. All data, as well as demographic data were assessed for outliers using box plots. All outliers were checked within the data set and identified as rare events rather than errors in data entry (Field, 2013). Results from normality testing for all data for Part 1 and Part 2 can be found in Appendix P. Given that that the majority of the data were non-normally distributed and outliers were present, for consistency bootstrapped confidence intervals are presented with all correlations. Spearman's correlations for significant results can be found in Appendix Q for comparison.

3.2.4.2 Exploratory analysis. Several potential confounding child variables were explored to establish whether they needed to be controlled for in subsequent analysis. As previously outlined in section 3.2.2.2, there were several children (n=11) included in Part 1 of the study who were aged 36 months or older, which was above the preferred cut off for inclusion in the study up to age 3 years. A correlation investigated the relationship between child age and maternal reported use of controlling feeding practices. Table 4 shows correlation co-efficients and bootstrapped confidence intervals, indicating that there was not a significant relationship between child age and maternal reported use of the controlling feeding practices (restriction, pressure and monitoring). Consequently this was not controlled for in subsequent analysis.

Table 4

Pearson's Correlations Coefficients Between Child Age and Subscales of the CFQ

N=95	Restriction	Pressure	Monitoring
Child age	.17 [-.02, .38]	.14 [-.06, .34]	.035 [-.18, .26]

[BCa 95% confidence intervals reported in square brackets]

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Subsequent analysis also considered whether there was a significant difference between reported feeding practices with boys and girls as differences have been observed previously in relation to maternal eating disorder psychopathology (Blissett et al., 2006). Data from the restriction subscale of the CFQ were normally distributed for both boys and girls. Homogeneity of variance was assessed using the Levene's test, and variances were equal ($F(1, 93) = .58, p = .45$). Therefore, a t-test could be carried out to establish whether there was a difference between the use of restriction depending on the gender of the child. For restriction, there was no significant difference in the scores for boys ($M = 3.30, SD = .73$) and girls ($M = 3.19, SD = .84$); $t(93) = .66, p = .51$. Given that the data for the monitoring and pressure subscales were not normally distributed and could not be transformed (see Appendix P) a Mann-Whitney-U test was used. Pressure in boys ($Mdn = 2.75$) also did not differ significantly from girls ($Mdn = 2.25$), $U = 1021.5, z = -.77, p = .44, r = -.08$. Monitoring in boys ($Mdn = 4.00$) did not differ significantly from girls ($Mdn = 4.33$), $U = 1090.5, z = -.26, p = .79, r = -.03$.

Finally, originally at the start of the study it was planned to include only first-born children, however, due to difficulties with recruitment, the study expanded entry criteria to include children with siblings. The data for the individual subscales of the CFQ were not normally distributed, and could not be transformed (see Appendix P) for both boys and girls, and therefore a Mann-Whitney-U test was carried out to establish whether there were significant differences between only children and children with siblings. Monitoring in only children ($Mdn = 4.00$) did not differ significantly from monitoring in children with siblings ($Mdn = 4.33$), $U = 1090.5, z = -.26, p = .80, r = -.027$. Pressure in only children ($Mdn = 2.50$) also did not differ significantly from pressure in children with siblings ($Mdn = 2.50$),

$U=1021.5$, $z=-.77$, $p=.44$, $r=-.08$. Finally, restriction in children ($Mdn=3.13$) did not differ significantly from restriction in children with siblings ($Mdn=3.5$), $U=1076.5$, $z=-.36$, $p=.72$, $r=-.04$.

3.2.5 Hypothesis Testing

Given that very few of the subscales on the questionnaire produced normally distributed data (see Appendix P), Pearson's correlation coefficients were calculated along with 95% bias corrected bootstrapped confidence intervals. The bootstrap test is robust to outliers, and is unaffected by the standard assumptions of normality (Field, 2013; Wright, 2011). Results of Spearman's correlations for significant findings can be found in Appendix Q.

3.2.5.1 Hypothesis 1: Mothers who score higher on self-report measures of perfectionism (CPQ and subscales of the FMPS) will report more use of controlling feeding practices (as measured by the individual subscales of the CFQ). Hypothesis 1 was explored using the total CPQ score and individual subscale scores from the FMPS. The analysis included all 102 participants for the CPQ, and 95 participants for the FMPS. There was a significant positive relationship between clinical perfectionism as measured by the CPQ and pressure to eat ($r=.33$, 95% BCa CI [.15, .50] $p<.01$) indicating that mothers scoring higher on a self-report measure of perfectionism were more likely to report use of pressuring child feeding practices. No further associations were found between the CPQ and the use of restriction or monitoring indicating that the relationship is confined to one specific type of controlling feeding practice. The doubts about actions (DA) and combined evaluative concerns (EC) subscales from the FMPS were also correlated with pressure to eat, indicating more reporting of use of pressure to eat in those that scored higher on the DA and EC of the perfectionism measure. This indicates that

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there may be specific components of multidimensional perfectionism that are related to maternal use of pressure. Results of the correlations are shown in Table 5.

Table 5

Correlations Coefficients Showing Relationships Between Perfectionism Subscales and Reported Use of Controlling Feeding Practices.

	CPQ (n=102)	CM (n=95)	PS (n=95)	D (n=95)	EC (n=95)
Restriction	.06 [-.17, .26]	.22 [-.04, .44]	.09 [-.17, .32]	.19 [-.05, .40]	.23 [-.04, .46]
Pressure	.33** [.15, .50]	.19 [-.02, .38]	.19 [-.03, .40]	.24* [.06, .41]	.22* [.03, .42]
Monitoring	-.01 [-.22, .20]	-.01 [-.23, .27]	-.04 [-.25, .15]	-.10 [.34, .13]	-.02 [-.28, .23]

[95% Bootstrapped Confidence intervals]

*p<.05, **p<.01, ***p<.001 (2-tailed)

3.2.5.2 Hypothesis 2: Mothers who score higher on a self-report measure of depression (HADS-D) will report more use of controlling feeding practices (as measured by the individual subscales of the CFQ). This analysis excluded two participants who did not complete the HADS (n=100). A positive relationship was found between the HADS-D and use of pressure to eat ($r=.22$, 95% BCa CI [.05, .39], $p=.01$). This indicates a weak association between maternal self-report of depressive symptoms and the use of pressuring feeding practices. This suggests that mothers reporting higher levels of depressive symptoms may adopt feeding practices representative of a more authoritarian or controlling parenting style.

No relationships were found between scores on the HADS-D and either monitoring or restriction subscales. This suggests that the relationship between

maternal self-report of depressive symptoms was related to only one specific type of controlling feeding practice and therefore Hypothesis 2 is only partially supported.

3.2.5.3 Hypothesis 3: Mothers who score higher on a self-report measure of anxiety (HADS-A) will report more use of controlling feeding practices (as measured by the individual subscales of the CFQ). This analysis excluded two participants who did not complete the HADS (n=100). No significant relationships were found between the HADS-A and subscale scores on the CFQ. This indicates that in the current sample, there is no significant reported relationship between maternal anxiety symptoms and the use of the controlling feeding practices (restriction, pressure to eat, and monitoring). Accordingly, Hypothesis 3 is not supported.

3.2.5.4 Hypothesis 4: When controlling for scores on a self-report measure of depression (HADS-D), there will be a significant relationship between perfectionism (CPQ and subscales of the FMPS) and subscale scores on the CFQ. Exploration of this hypothesis was limited to relationships between maternal psychopathology (perfectionism and depression) and the pressure subscale as no further significant associations were found. This indicates that both maternal self-report of depressive symptoms, and perfectionism were associated with reporting of one specific type of controlling feeding practice. A partial correlation was carried out to establish whether a significant relationship remained between the maternal self-report of perfectionism and use of pressure when controlling for maternal self-reported depressive symptoms.

The results indicated that the relationship between the CPQ and pressure to eat remained significant ($r = .28$, 95% BCa CI [.06, .46], $p < .01$) when controlling for depression. This means that although there has been a reduction in the amount of

variance shared between the CPQ and pressure ($R^2=.11$) when controlling for scores on the HADS-D ($R^2=.08$), a significant amount of the variance is accounted for by self-reported clinical perfectionism alone. This again implies a more complex relationship between self-reported depression symptoms, perfectionism and use of pressure to eat, which will be discussed in the final chapter. This process was repeated with the subscales from the FMPS, yet the relationship between EC and pressure, and DA and pressure was no longer significant when controlling for symptoms of depression. This indicates that the CPQ is measuring a unique feature of perfectionism that is not accounted for by the subscales of the FMPS, nor depressive symptoms.

For comparison, the relationship between self-reported depression and use of pressure to eat was assessed whilst controlling for perfectionism. When controlling for scores on the CPQ, there was no longer a significant correlation between the HADS-D and use of pressure to eat ($r= .16$, 95% BCa CI $[-.04, .36]$, $p=.11$). This was also the case when controlling for the MPS-D ($r= .20$, 95% BCa CI $[-.00, .40]$, $p=.06$) and the MPS-EC ($r= .19$, 95% BCa CI $[-.04, .41]$, $p<.01$). In terms of variance, this indicates that there has been a reduction in the variance shared between scores on the HADS-D and the pressure to eat subscale when controlling for perfectionism. For example, when controlling for CPQ scores there is a reduction in the variance from 4.9% ($R^2=.05$) to 2.6% ($R^2=.03$). Although small, this is a significant reduction and indicates that self reported depression symptoms alone does not explain some of the variation in use of pressure to eat, and that there is a more complex relationship between self-reported depression symptoms, perfectionism and use of pressure to eat.

3.2.5.5 Hypothesis 5: *When controlling for scores on a self-report measure of anxiety (HADS-A), there will be a significant relationship between perfectionism (CPQ and subscales of the FMPS) and subscale scores on the CFQ.*

As already discussed, no significant relationships were found between the HADS-A (self-reported symptoms of anxiety) and reported use of controlling feeding practices, therefore no further analysis was appropriate.

3.2.6 Additional analyses. Correlational analyses were carried out to establish whether there were significant relationships between individual subscales of the CFQ. Table 6 shows that there were significant relationships between restriction and pressure to eat, and between restriction and monitoring (Spearman's correlations presented in Appendix Q for comparison). However, monitoring and pressure to eat were not related. This indicates that mothers may adopt different patterns of feeding practices, and that use of one does not necessarily imply that they will adopt others.

Table 6

Pearson's Correlation Co-efficients and Bootstrapped Confidence Intervals for Individual Subscales of the CFQ.

	Restriction	Pressure	Monitoring
Restriction	—		
Pressure	.31** [.12, .47]	—	
Monitoring	.41** [.19, .58]	.12 [-.05, .29]	—
[95% BCa Bootstrapped Confidence Intervals]			

*p<.05, **p<.01, ***p<.001 (2-tailed)

3.2.6.1 Relationships between predictor variables. The literature review presented in the Introduction highlighted that a relationship would be predicted between each of the independent variables (measures of perfectionism and maternal psychopathology). Table 7 shows a correlation matrix for each of the independent predictor variables. The matrix shows that all of the independent variables are significantly correlated apart from the personal standards subscale from the FMPS and the depression subscale of the HADS. This reflects previous findings that in most cases associations between perfectionism and depression do not include personal standards (Sassaroli et al., 2008). Bootstrapped Confidence Intervals for the correlation co-efficient are reported in Appendix R and the Spearman's correlations are reported in Appendix Q for comparison.

Table 7

Bootstrapped Pearson's Correlation Coefficients Showing the Relationship Between Independent Variables (scores on the Clinical Perfectionism Questionnaire, individual subscales of the Frost Multidimensional Perfectionism Scale; FMPS, and subscales of the Hospital Anxiety and Depression Scale; HADS).

	CPQ	CM	PS	D	EC	HADS-A	HADS-D
CPQ	—						
CM	.37**	—					
PS	.46**	.49**	—				
D	.42**	.63**	.22*	—			
EC	.42**	.96**	.42**	.83**	—		
HADS-A	.46**	.48**	.32**	.41**	.50**	—	
HADS-D	.23**	.32**	.16	.33**	.35**	.47**	—

CPQ= Clinical Perfectionism Questionnaire total score; *CM*= Concern over mistakes (FMPS); *PS*=Personal standards (FMPS); *D*= Doubts about actions (FMPS); *EC*=Evaluative Concerns (FMPS); *HADS-A*= Hospital Anxiety and Depressions Scale: Anxiety; *HADS-D*= Hospital Anxiety and Depression Scale: Depression.

* $p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed)

The subscales of the FMPS considered to be most closely associated with the CPQ are the Concern Over Mistakes and Personal Standards (S. Shafran, personal communication, 12th January 2012). In the present sample, however, doubts about actions and the combined evaluative concerns were more highly, positively correlated.

3.3 Part 2: Observational Study

3.3.1 Summary of data collection. In total, 72 (71%) participants that completed questionnaires for Part 1 of the study agreed to be contacted regarding Part 2. A Mann-Whitney test indicated that scores on the CPQ in those that consented to be contacted for Part 2 ($Mdn=22.00$) and those that did not consent ($Mdn=23.00$) were not significantly different ($U=856.50$, $z=124.48$, $p=.68$, $r=-12.33$). Participants in the current sample scoring in the upper and lower quartiles of scores on the CPQ were considered and selected for participation in Part 2, the observational phase of the study. A total of 49 participants were contacted via one or more of their preferred contact methods (email or telephone). Twenty-five from the upper quartile were contacted. Of these, 11 declined further participation in the study at the point of being contacted about the observational study and two (8%) were unable to find a convenient time to meet with the researcher, despite repeated efforts. The researcher was unable to establish contact with a further four (16%) participants in this group scoring in the upper quartile despite several attempts using their preferred method of contact. Subsequently, a total of eight (36%) observations were carried out with participants scoring in the upper quartile of scores on the CPQ. Twenty-four were contacted from the lower quartile group, six (25%) of whom declined. One (4%) was unable to participate as they did not speak English at home, and one (4%) could not find a convenient time for the researcher to visit. The

researcher was unable to establish contact with a further two (8%) participants. A total of 14 (64%) observations were carried out in the lower quartile group. Detailed consideration of the low recruitment to Part 2 of the study is given in the Discussion.

3.3.2 Demographic Characteristics.

3.3.2.1 Mothers. Twenty-two dyads participated in Part 2 of the study.

Mothers' mean age was 35.23 years ($SD = 6.11$; range 24- 50; $Mdn = 35.00$). Fifty-nine percent ($n = 13$) of mothers had completed a postgraduate qualification and 27% ($n = 6$) had completed a degree. The remaining individual participants had completed GCSEs, an NVQ or a diploma. The majority of participants were married or in a civil partnership ($n = 19$, 86%), two (9%) were co-habiting and one was single (5%). Finally, 19 (86%) participants were White British, and three (14%) were White-Other.

3.3.2.2 Children.

The total number of children that took part in the observation was 22. Child's mean age in Part 2 of the study was 30 months ($SD = 7.43$; range: 18-47; $Mdn = 29.50$). There were 13 (59%) boys and 9 (41%) girls. Seven (32%) were only children, seven (32%) were the oldest with a younger sibling, seven (32%) had older siblings, and one (4%) was a twin.

3.3.3 Mealtime characteristics.

A total of 22 mealtime observations were carried out. A summary of the mealtime characteristics can be found in Figures 6- 8.

Thirteen (59%) observations were carried out at lunchtime and nine (41%) were evening meals (Figure 6). In 14 (64%) cases, the mother and child were alone, while the remaining eight (36%) had a younger sibling or a twin present. In two cases, (9%) the child's father arrived at the end of the recording but was not involved in the mealtime. Eighteen children (82%) sat at a dining room or kitchen table, 13 (60%) of whom sat in a high chair or booster seat. Two children (9%) had chairs with

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tray tables, and three (14%) used high chairs with trays (one of whom was positioned next to the dining table; see Figure 7). However, one child (5%) spent the majority of time sat in her mother's lap.

Figure 6. Pie chart showing proportion of mealtime observations carried out at lunchtime and evening meal

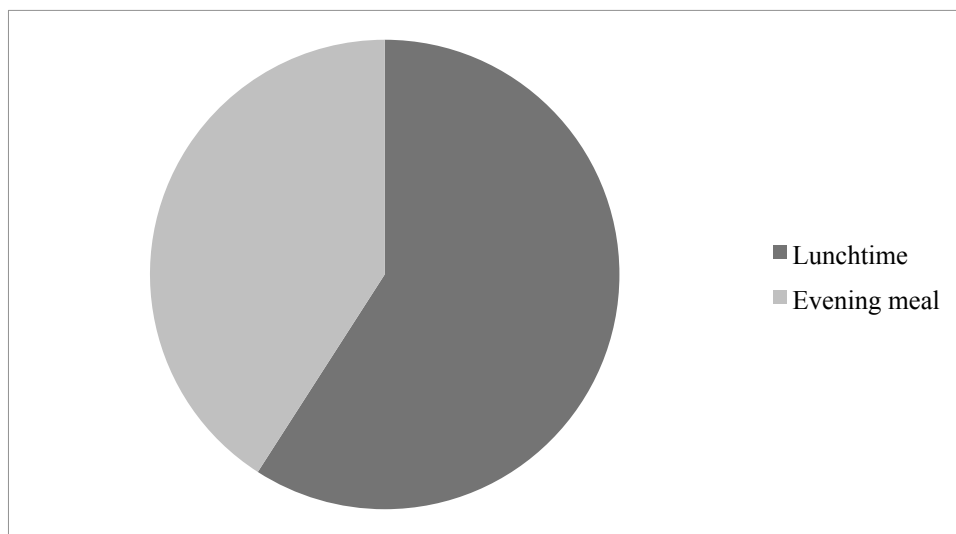
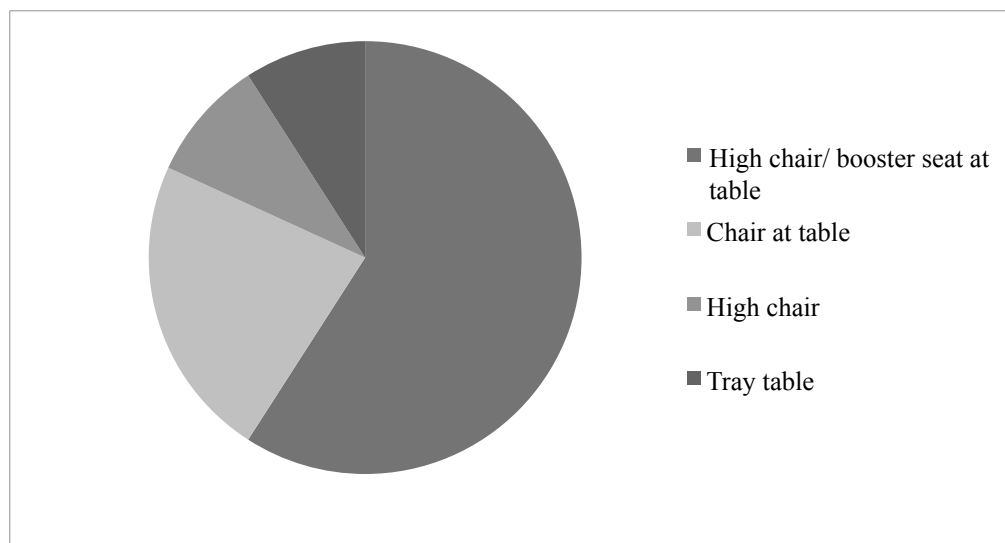


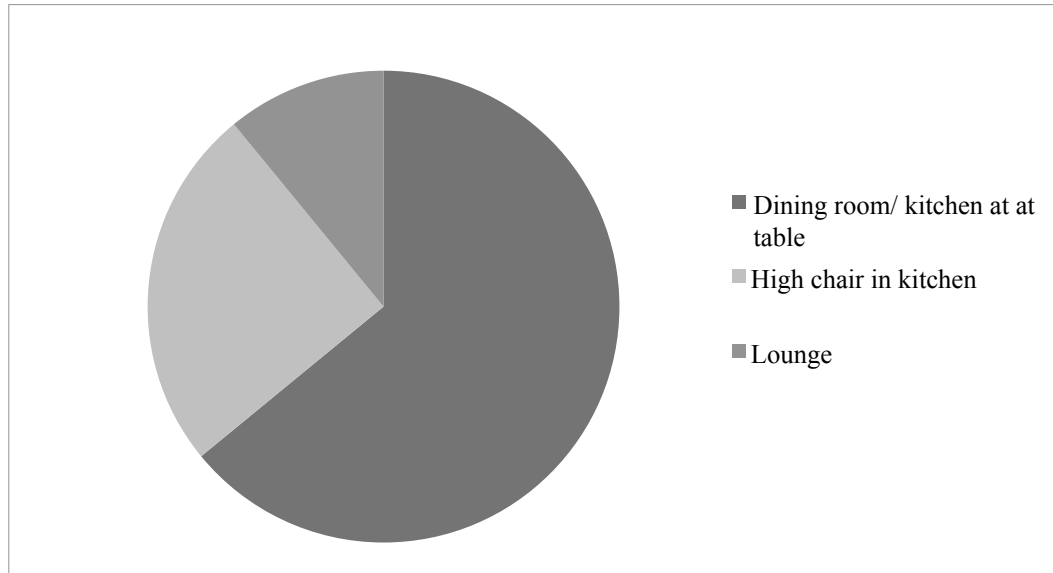
Figure 7. Pie chart showing child's position at mealtimes.



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The majority (18; 82%) sat at a dining room or kitchen table, while two (9%) sat in a high chair away from the table, and two (9%) sat in the lounge area. The television was playing during three (14%) observations (see Figure 8).

Figure 8. Pie chart showing location for mealtimes.



Length of mealtime from when food was placed in front of the child until all food was removed was documented from recordings, along with the total length of time that the mother sat directly with their child. The mean length of mealtime was 23.67 minutes (range: 8 – 42 minutes), and the mean length of time that mother was present was 20 minutes (range: 4 – 41 minutes). Fourteen (64%) of mothers ate with their child. Total number of mouthfuls was recorded for 21 children (missing for 1 child due to an obstruction where the camera was placed). The mean number of mouthfuls was 57.1 ($SD= 2.74$; range: 21 – 88 mouthfuls). A previous observational study in a non-clinical sample of 3 and 4 year old children reported mean number of mouthfuls as 49 ($SD=18.41$; range 20-104; Haycraft et al., 2013) indicating the range of acceptance and consumption at this age.

3.3.4 Summary of Observational Data

3.3.4.1 Family Mealtime Coding System (FMCS). Descriptive data for the upper and lower quartile perfectionism groups can be found in Table 8. The majority of the data were not normally distributed (see Appendix P) and therefore both means and medians are presented.

Table 8

Frequency Statistics for Mothers' Use of Controlling Feeding Practices (Measured by the FMCS) Observed During the Mealtime

	Upper quartile perfectionism (n=8)			Lower quartile perfectionism (n=14)		
	Mean (<i>SD</i>)	Median	Range	Mean (<i>SD</i>)	Median	Range
Verbal pressure	5.75 (4.27)	4.5	1 - 14	5.71 (5.72)	4	0 - 19
Physical pressure	1.13 (1.55)	0.5	0 - 4	3.93 (5.57)	.5	0 - 18
Incentives	2.63 (2.33)	2	0 - 7	1.64 (1.95)	1	0 - 6
Verbal restriction	.38 (.52)	0	0 - 1	.21 (.27)	0	0 - 1
Physical restriction	.13 (.35)	0	1	.07 (.58)	0	0 - 2

The use of verbal pressure (defined as verbal encouragement to eat more food) was observed in the majority of participants (n= 20; 91%). The two mothers who did not use verbal pressure were in the lower quartile group. Physical pressure (defined as any physical encouragements to get the child to eat) was observed in half of the mothers, seven from the lower quartile group (50%) and four from the upper quartile group (50%). Use of incentives or conditions (defined as verbal use of incentives or bargaining in an attempt to increase food consumption) was observed in 15 mothers in total, 8 (57%) from the lower quartile group and 7 (88%) in the

upper quartile. Finally, both verbal restriction (verbally limiting children's consumption of food) and physical restriction (physically limiting children's consumption) was rare. In total 5 (22%) of mothers used verbal restriction, three from upper quartile and two from the lower. Three (14%) used physical restriction, 1 in the upper quartile, and 2 in the lower.

3.3.4.2 Additional Observations. As outlined, the study considered specifically maternal behaviours during the mealtime. Therefore child characteristics were not coded, which are required to assess the overall tone of the mealtime as defined in the FMCS (Appendix I). To assess the emotional tone of the mealtime, additional subscales as outlined in the FMCS were used for exploratory purposes (Appendix I). This included negative and positive comments made towards the child, as well as positive and negative comments made by the parent about food. Negative comments towards the child include any vocalisations spoken with a negative tone (e.g., "sit down!" or "I told you not to do that!") while positive comments include praise (e.g., "Well done!" or "Good boy!")

It was noted during coding that many of the negative comments made towards children were instructions to the child, some of which were related to mealtime rules, such as "eat with your mouth closed", "don't throw food on the floor" and "keep your bottom on your seat". An additional new exploratory factor was added to consider the enforcement of rules or instructions given at the mealtime, which may illustrate an authoritative parenting style or high standards related to perfectionism. For this category, the tone did not have to be negative. Examples of rules coded can be found in Appendix S. Rules that were negative were also coded in the negative comments factor, as outlined in the FMCS (Appendix I).

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Descriptive data from each of these additional measures can be found in Table 9. Only one parent was observed to make a negative comment about food (“eurghh...yuck”), and so this factor was not included in the table, and was not explored in subsequent analyses.

Table 9

Frequency Statistics for Mothers’ Positive and Negative Comments Observed During the Mealtime

	High perfectionism (n=8)			Low perfectionism (n=14)		
	Mean (<i>SD</i>)	Median	Range	Mean (<i>SD</i>)	Median	Range
Total negative comments made by mother towards the child	7.13 (5.99)	10	0 – 13	9.14 (14.50)	5.5	0 - 57
Total positive comments (praise) by mother towards the child	2.88 (1.36)	2.5	1 – 5	9.00 (9.22)	6.5	0 - 33
Total positive comments about food made by the mother	7.38 (3.53)	7	2 – 14	4.29 (4.51)	3.5	0 - 18
Total rules stated by mother	7.62 (6.23)	6.5	1 – 21	9.86 (10.02)	6	0 - 35

Negative comments include any vocalisations spoken with a negative tone, and include telling off or reprimanding the child, as defined in the FMCS (Appendix I). Seventeen mothers (77%) made at least one negative comment (range 0 – 57). Twelve (86%) of the lower quartile group and five (63%) the upper quartile perfectionism group made at least one negative comment. All but one participant in lower quartile group gave a direct positive comment to the child, while all in the

upper quartile group praised their child at least once. Similarly only two (14%) mothers in lower quartile group made no positive comments about food. Finally, all participants apart from one mother in lower quartile group gave a child an instruction or rule at some point during the mealtime.

3.3.5 Preliminary Analysis

Given the small sample size in the observational phase of the study, all results are to be considered with caution. This is will be discussed in detail in the discussion.

3.3.5.1 Inter-rater reliability. Table 10 shows inter-rater reliability for the five main subscales of the FMCS. The intra-class correlations are based on seven mealtimes that were coded by a second researcher who was blind to participant group, and show excellent correspondence between raters.

Table 10

Intra-class correlation co-efficients for FMCS subscales

FMCS Subscales	Intra-class correlation co-efficient
Verbal pressure	.91
Physical pressure	.96
Incentives	.91
Verbal restriction	1.00
Physical restriction	1.00

Table 11 shows intra-class correlations for the additional subscales of the FMCS, also indicating excellent correspondence. The intra-class correlations are based on 7 mealtimes that were dual coded by a second researcher who was blind to participant group.

Table 11

Intra-class correlation co-efficients for additional FMCS subscales and additional measure of rules and instructions

FMCS Subscales	Intra-class correlation co-efficient
Total negative comments	.90
Total positive comments (praise)	.89
Positive comments about food	.94
Total negative comments	.90
Total rules *Based on 4 coded tapes	.90

3.3.5.2 Exploratory analysis. Scores on the CPQ in Part 1 (Questionnaire Study) were used to define the upper and lower quartile groups for Part 2 (Observational Study). A substantial number of participants scored either 20 ($n=11$) at the lower end of the CPQ, or 26 ($n=8$) at the upper end and therefore the quartile range fell within these values. Initially it was hoped to include only those that fell outside of the values on the CPQ. However, response rates for the observational study were low, particularly from those scoring in the upper quartile and therefore some that fell on the cusp were contacted for inclusion. Although all participants falling on the cusp were contacted from both groups, five (36%) scoring 20 on the CPQ consented to participation, while none of those scoring 26 agreed to take part. Preliminary analysis was carried out to ensure that the two groups were significantly different on their scores on the CPQ. Testing for normality indicated that the CPQ scores in the two groups were not normally distributed (see Appendix P) and could not be transformed. A Mann-Whitney U test was carried out to compare the two groups. Clinical perfectionism in the upper quartile ($Mdn=27.50$) was significantly

different than that in lower quartile group ($Mdn=19.00$), $U=.000$, $z= -.3.89$, $p<.01$, $r= -.19$.

Exploratory analysis was carried out to establish whether the two groups differed on their self-reported use of controlling feeding practices. Data for the subscales of the CFQ were normally distributed in both the upper and lower quartile groups (see Appendix P). A Levene's test for homogeneity of variance indicated equal variance between the groups on restriction ($F(1, 20) = 1.15$, $p=.45$), pressure $F(1, 20) = .100$, $p=.76$) and monitoring ($F(1, 20) = .74$, $p=.40$). Therefore, a t-test was carried out to establish whether there was a significant difference between the upper and lower quartile on self-reported use of CFP. For restriction, there was no significant difference in the reported use between those in the upper quartile ($M= 3.19$, $SD= .95$) and those in the lower quartile ($M=3.21$, $SD= .77$); $t(20) = -.07$, $p= .94$. This indicates that there were no significant differences between mothers' self-reported use of restriction in mothers scoring in the upper quartile on a measure of perfectionism, and those scoring in the lower quartile. For pressure to eat, there was no significant difference in the reported use between those upper quartile ($M= 2.47$, $SD= .89$) and those in lower quartile ($M=2.16$, $SD= .86$); $t(20) = .80$, $p= .43$). This indicates that there were no significant differences between mothers' self-reported use of pressure to eat in mothers scoring in the upper quartile on a measure of perfectionism, and those scoring in the lower quartile. Finally, for monitoring, there was no significant difference in the reported use between those in the upper quartile ($M= 4.00$, $SD= 1.13$) and those in the lower quartile ($M=4.07$, $SD= .78$); $t(20) = .18$, $p= .86$) This indicates that there were no significant differences between mothers' self-reported use of monitoring in mothers scoring in the upper quartile on a measure of perfectionism, and those scoring in the lower quartile. Therefore, mothers' self

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reported of use of different controlling feeding practices did not differ between the two groups.

Finally, given the variation in ages, a comparison was drawn between the upper and lower quartile groups. The data for child age in both quartiles were normally distributed (see Appendix P). Homogeneity of variance was assessed using the Levene's test, and variances were equal ($F(1, 20) = .28, p = .60$). On average, the age in months of children in the upper quartile ($M = 26.38$) was younger than the lower quartile ($M = 32.07$). However, the difference was not significant $t(20) = -1.82, p = .08$.

Length of mealtime and the time mother was present was correlated with a number of items measured using the FMCS and the additional observations. Much of the data from all observations was not normally distributed (see Appendix P). For consistency, bootstrapped confidence intervals are presented for each correlational analysis. For significant results, Spearman's correlations are reported in Appendix Q for comparison. Length of mealtime was positively correlated with the total number of negative comments made towards the child ($r = .41, 95\% \text{ BCa CI } [.27, .76], p = .06$) and the total number of rules ($r = .41, 95\% \text{ BCa CI } [.12, .73], p = .06$). In these cases, the bootstrapped confidence intervals indicate a significant relationship, despite the significance value being greater than .05. This result indicates that when mealtimes are longer, mothers are more likely to make negative comments and to use rules and instructions. The total time that mother was present at the table was positively correlated with the total amount of verbal pressure used ($r = .40; 95\% \text{ BCa CI } [.05, .81], p = .06$) and the total number of negative comments made to the child ($r = .42; 95\% \text{ BCa CI } [.04, .80], p = .06$).

Use of verbal pressure was associated with total amount of praise ($r=.68$; 95% BCa CI [.18, .88], $p=.00$) and positive comments about food ($r=.57$; 95% BCa CI [.03, .82], $p=.01$). The total amount of physical pressure was positively correlated with total amount of praise ($r=.43$; 95% BCa CI [.01, .87]; $p=.05$). Finally, total negative comments to child was associated with total rules ($r=.78$; 95% BCa CI [.41, .93], $p=.00$).

3.3.6 Hypothesis testing. Where data were normally distributed, or could be transformed, a t-test was carried out to establish if there was a significant difference between the two groups. Where data from items on the FMCS were not normally distributed and could not be transformed (see Appendix P), Mann Whitney U tests were carried out to establish whether there was a significant difference between the two groups. Results from each of these analyses are outlined below. Once again, all findings are interpreted with caution given the small sample size.

3.3.6.1 Hypothesis 6. Mothers scoring in the upper quartile on the CPQ will be observed to use more pressure than mothers scoring in the lower quartile.

Data for verbal pressure were normally distributed in the upper quartile, but not in the lower quartile. A square root transformation was performed to normalise data in the lower quartile. So that comparisons could be made, a square root transformation was also performed on the upper quartile scores, and this data remained normal. A Levene's test for homogeneity of variance indicated equal variance between the upper and lower quartile on transformed verbal pressure data ($F(1, 20) = 1.02$, $p=.32$). Therefore a t-test was carried out to compare observed verbal pressure between the two groups. Data from the physical pressure subscales were not normally distributed and could not be successfully transformed, and so a Mann-Whitney test was carried out. There were no significant differences between the two

groups on the use of verbal or physical pressure to eat, indicating that mothers scoring in the upper quartile on the measure of perfectionism were not observed to use more pressure than those in the lower quartile. Therefore, there was no relationship found between perfectionism and the observed use of pressure to eat and Hypothesis 6 is not supported.

It has been proposed that the accumulation of negativity within a mealtime regardless of time may be far greater when there is one incident within a short space and therefore that adjusting for meal length may remove some of these more subtle effects (Haycraft & Blissett, 2008a). However, for exploratory purposes, as the total amount of incidences of verbal pressure that mothers used was also related to the amount of time that they were present, analysis was carried out to account for time. The total count of incidences of pressure was divided by length of time that mother was present. Statistical analysis revealed no significant difference on use of pressure when accounting for time, indicating that there were no associations between perfectionism and pressure to eat, irrespective of length of mealtime.

3.3.6.2 Hypothesis 7. Mothers scoring in the upper quartile on the CPQ will be observed to use more restriction than mothers scoring in the lower quartile.

Data for verbal and physical restriction were not normally distributed in the 2 groups and could not be transformed, therefore Mann Whitney tests were performed. There were no significant differences between the two groups on the use of verbal or physical restriction, indicating that mothers scoring in the upper quartile on the measure of perfectionism were not observed to use more restriction than those in the lower quartile. Therefore, there was no relationship found between perfectionism and the observed use of restriction and Hypothesis 7 is not supported.

3.3.6.3 Hypothesis 8. Mothers scoring in the upper quartile on the CPQ will be observed to use more incentives/ conditions than mothers scoring in the lower quartile. Data for maternal observed use of incentives/ conditions were not normally distributed in the two groups and could not be transformed, therefore Mann Whitney tests were performed. There were no significant differences between groups on the use of incentives/ conditions, indicating that mothers scoring in the upper quartile on the measure of perfectionism were not observed to use more incentives than those in the lower quartile. Therefore, there was no relationship found between perfectionism and the use of incentives and Hypothesis 8 is not supported.

3.3.6.4 Hypothesis 9. The overall tone of the mealtime will be more negative in the upper quartile group than in the lower quartile group. Total negative comments in the upper quartile were not normally distributed and could not be transformed. Total positive comments, total rules and positive comments about food in the two groups were all transformed to normality using a square root transformation. A Levene's test for homogeneity of variance indicated homogeneity between groups on each of these factors, except positive comments (praise) to the child ($F(1, 20) = 6.40, p = .02$). There was a significant outlier in the positive comments about food subscale in the low perfectionism group. Therefore a t-test was used to compare the upper and lower quartile on total rules using transformed data. Mann Whitney tests were used to compare the upper and lower quartiles on positive comments about food, positive comments towards the child, and total negative comments.

There were significantly more positive comments about food in the upper quartile group ($Mdn = 7.00$) than in the lower quartile group ($Mdn = 3.50$), $U = 26$, $z = -2.06$, $p = .04$, $r = -.44$., indicating that mothers who scored within the upper quartile on

the measure of perfectionism were more likely to make positive comments about food. No further significant differences were found between mothers in the low or high perfectionism groups on observed use of positive or negative comments, total rules, or positive comments about food. Number of negative comments and use of rules was related to the length of mealtime. After accounting for time, there were no significant differences between the groups. This indicates that there is little variation in the overall tone of the mealtime between the upper scoring and lower scoring quartile, and therefore Hypothesis 9 is not supported.

3.4 Summary of Results

For Part 1, the questionnaire phase of the study, statistical analysis identified a significant relationship between maternal self-report of depression symptoms and perfectionism, and the reported use of pressure to eat. A partial correlation revealed that the relationship between clinical perfectionism and use of pressure to eat remained significant when controlling for depression. No significant relationships were found between anxiety and use of controlling feeding practices.

For the observational phase of the study, no significant differences were observed in use of controlling feeding practices between mothers in the upper quartile group and those in the lower quartile on the measure of clinical perfectionism. Mothers in the upper quartile used significantly more positive comments about food, the implications of which are discussed in detail in the following chapter.

Chapter 4: Discussion

4.1 Chapter Overview

The chapter begins with a discussion of the findings of the current study in relation to the available literature. Then follows a critical evaluation of the design and methodology adopted in the study, including suggestions for how this could be improved for future research in this area. The next section outlines theoretical and clinical implications of the key findings, and recommendations for future research. The chapter ends with an overall summary of the research and a final conclusion.

4.2 Results in Relation to Study Hypotheses and Relationship to Previous Research

The main aims of the present study were to investigate whether there was a relationship between maternal self-reported clinical perfectionism and the use of controlling feeding practices (CFP) with their young children (Birch et al., 2001; Shafran et al., 2002). Findings are considered in relation to previous studies investigating the relationship between maternal psychopathology (depression and anxiety) and the use of CFP. The results are presented in relation to the individual hypotheses presented in previous chapters.

4.2.1 Hypothesis 1: Mothers who score higher on self-report measures of perfectionism (CPQ and subscales of the FMPS) will report more use of controlling feeding practices (as measured by the individual subscales of the CFQ). Several measures of perfectionism were explored in relation to use of controlling feeding practices. Significant associations were found between the CPQ scores and reported pressure to eat, and between the Doubts about Actions and Evaluative Concerns subscales of the FMPS and reported pressure to eat. This

indicates a relationship between self-reported maternal perfectionism and self-reported use of controlling mealtime management strategies. The relationship between maternal perfectionism and use of controlling feeding practices has not previously been explored and therefore this is a unique finding from the present study. This relationship was hypothesised on the basis of previous research identifying perfectionism as a potential transdiagnostic process in depression, anxiety and eating disorder psychopathology in mothers (Egan et al., 2011). In the present study, maternal self-reported anxiety symptoms were not associated with pressure to eat, although perfectionism was, indicating that perfectionism may be an independent predictor of maternal use of pressure.

However, maternal report of perfectionism was not related to the use of reported restrictive feeding practices, nor were either self-reported depression or anxiety. Previous research has found associations between maternal psychopathology and use of restriction with similar samples using self-report methodology (e.g., Francis et al., 2001; Lindsay, 2011; Mitchell et al., 2009). The findings are similar, however to a study of mothers of younger children under the age of one year where maternal reported depressive symptoms were associated with self-reported forceful (pressuring) feeding style, but not with the use of restriction (Hurley et al., 2008). In the study by Hurley et al. (2008), the relationship between maternal self-reported symptoms of depression and use of restrictive practices varied according to maternal perceptions of infant temperament. Consideration of the interaction between child and maternal characteristics would be a useful and important extension to the present study to further explore the interaction between these factors. Further discussion of possible measures are outlined below in Section 4.4.4.5.

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As outlined in the discussion, some of the variation in maternal reported use of restriction may have been accounted for by child age. For example, “I intentionally keep some food out of my child’s reach” could be considered more relevant to an older child who is more mobile and able to access food independently. However, there is also inconsistency in maternal report of use of restriction even in infants. For example, self-report studies have found associations between maternal eating disorder psychopathology or anxiety and use of restriction in studies including mothers of infants as young as 6 months old (Brown & Lee, 2011; Farrow & Blissett, 2005). The differences across ages was an important consideration in the present study as the final sample included children who were older than was originally intended (i.e., over 36 months). The present study included children between the ages of 18 and 48 months, yet the relationship between child age and maternal self-reported use of restriction (or pressure or monitoring) was not statistically significant.

Few studies have assessed the relationship between maternal psychopathology and use of monitoring, however the findings of the current study are consistent with those that have. Self-reported general mental health (as measured by the Brief Symptom Inventory; Derogatis, 2001) did not predict self-reported monitoring in mothers of children aged 2-5 years in a non-clinical community sample, but was associated with child’s emotional eating and lower child sociability (Haycraft & Blissett, 2011). This suggests that maternal use of monitoring may be more closely linked to child characteristics, which were not the focus of the present study.

No further associations were found between the assessed maternal characteristics and reported use of monitoring in the current study. There are a

number of possible explanations for this that may also be applicable in other samples. Firstly, there was not a great deal of variation in the scores for monitoring. For example, 75 (74%) of participants reported a mean score of between 4 or 5 on the monitoring subscale (range 1-5) indicating that monitoring was consistently high in this sample. Although this could be accounted for by the limited number (3) of items that contribute to this subscale, it indicates consistency in reported use of monitoring across individuals in this sample. One possible explanation is that these items are particularly sensitive to social desirability as they relate specifically to keeping track of the amount of high fat, sweet and snack foods a child eats. In addition, the highly educated sample of participants in this study were likely to be aware of government recommendations to monitor snack food intake and provide healthy options for their children e.g., Change4Life (National Health Service, 2013; Food Standards Agency, 2006). This point may also be relevant to self-reported use of restriction. Given the consistency of this finding, monitoring will not be discussed in relation to the remaining hypotheses.

4.2.2 Hypothesis 2: Hypothesis 2: Mothers who score higher on a self-report measure of depression (HADS-D) will report more use of controlling feeding practices (as measured by the individual subscales of the CFQ). As expected, a positive correlation was found between the HADS-D and the reported use of pressure to eat. This supports previous findings that have consistently found similar relationships in self-report studies in non-clinical samples across age groups (Francis et al., 2001; Hurley et al., 2008; Lindsay, 2011; Mitchell et al., 2009). It is also reflective of findings in the broader parenting literature suggesting that depression may impair a mother's ability to attune and respond effectively to her child, adopting a more authoritarian parenting style (Pelaez et al., 2008). It is

generally accepted that maternal depression is a significant risk factor in the development of psychosocial difficulties in young children, and therefore this relationship is particularly important when considering the mechanisms through which feeding difficulties may be transmitted to the child (Rutter, 1990).

Perhaps surprisingly, depression was not associated with maternal self-reported use of restriction, which has been reported in previous studies (e.g., Francis et al., 2001; Lindsay, 2011; Mitchell et al., 2009). However, as discussed above, it does reflect one finding where pressure to eat but not restriction were predicted by maternal depressive symptoms (Hurley et al., 2008). This may be accounted for by the reasons outlined above when discussing the relationship between perfectionism and restriction. The limited associations may also be accounted for by the low levels of self-reported depressive symptoms in the sample. All mothers scored either within the “normal” or “mild” range for depression, indicating limited variability in the present study. However, previous studies that have found a significant relationship also reported low levels of depression within the sample. For example, Mitchell et al. (2009) reported mean scores on the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995) of 1.88 with a range from 1 – 12 (where the potential range is 0 – 21).

4.2.3 Hypothesis 3: Mothers who score higher on a self-report measure of anxiety (HADS-A) will report more use of controlling feeding practices (as measured by the individual subscales of the CFQ). No relationships were found between maternal anxiety and reported use of controlling feeding practices. Previous research has indicated a relationship between maternal self-reported generalised anxiety and use of restriction and/or pressure to eat in non-clinical samples of older (Mitchell et al., 2009) and younger children (Hurley et al., 2008). Similar findings to

the current study were reported in an unpublished thesis in a similar population (Lindsay, unpublished 2011). It is possible that these discrepancies could be partly due to the focus or content of a mother's anxieties, which may not be associated with the child's eating (Lindsay, unpublished 2011). For example, financial worries or concerns about life events may be distracting, while concerns about parenting competency may result in a more intrusive, controlling style. It is also important to consider more specific types of anxiety. For example, in a non-clinical sample of mothers of 1-year-old children maternal self-reported obsessive-compulsive but not generalised anxiety symptoms were associated with restrictive feeding practices (Farrow & Blissett, 2005). Therefore future studies may wish to consider the use of a general measure of psychopathology that includes assessment of specific types of anxiety, such as the Brief Symptom Inventory (Derogatis, 2001). Furthermore, previous studies included a measure of stress, in addition to depression and anxiety, which may also be an important consideration and is important to consider in future research.

4.2.4 Hypothesis 4: When controlling for scores on a self-report measure of depression (HADS-D), there will be a significant relationship between perfectionism (CPQ and subscales of the FMPS) and subscale scores on the CFQ. Given the limited associations found in the exploratory phases of the study outlined above, Hypothesis 6 could only be explored in relation to maternal self-reported symptoms of depression and reported use of pressure to eat. The relationship between self-reported clinical perfectionism measured by the CPQ and pressure to eat remained significant when controlling for reported symptoms of depression. Furthermore, when controlling for perfectionism (CPQ, Doubts about Actions, and Evaluative Concerns), a partial correlation showed that there was no

relationship between maternal self-reported depressive symptoms and reported use of pressure to eat. This suggests that maternal perfectionism may be independently associated with maternal use of pressure to eat. Maternal perfectionism within the domain of feeding practices has not previously been researched and therefore this is an original finding. The theoretical and clinical implications of these findings will be discussed in the relevant sections below.

The CPQ was the only perfectionism measure that maintained a robust relationship with maternal self-reported use of pressure to eat. When controlling for depression, there was no longer an association between Doubts about Actions or Evaluative Concerns and reported use of pressure to eat. This indicates that the novel characteristics of the CPQ that are included in the other measures of perfectionism are of importance. This is an interesting finding because previous investigations have drawn different conclusions about the relative utility of the CPQ over and above what could be adequately assessed by subscales of the existing multidimensional perfectionism measures (Chang & Sanna, 2012; Dickie et al., 2012). This may indicate that the CPQ is a more useful measure of clinical perfectionism. The implications of this finding will be discussed in more detail below.

4.2.5 Hypothesis 5: When controlling for scores on a self-report measure of anxiety (HADS-A), there will be a significant relationship between perfectionism (CPQ and subscales of the FMPS) and subscale scores on the CFQ. Further investigation was not possible as there was no relationship between maternal self-reported anxiety and use of controlling feeding practices. As outlined, one possible reason for this is that the relationship between anxiety and reported use of controlling feeding practices may be restricted to more specific domains of anxiety, for example obsessive-compulsive disorder (Farrow & Blissett, 2005). This

would be interesting to explore further particularly in relation to clinical perfectionism, which also appears to have specific influence in the domain of orderliness and cleanliness in OCD (Egan et al, 2011; Shafran et al., 2002).

4.2.6 Findings from Part 2 (Observational study: Hypotheses 6-9). Given the small sample size, the findings from Part 2 of the study are interpreted with caution. This will be discussed in detail below. Mothers that scored in the upper quartile on the CPQ were observed to use more positive comments about food than those in the lower quartile. This indicates that mothers in the upper quartile may use more positive comments about food to encourage their child to eat. It is also possible that they may show increased tendency to display higher levels of emotional expression during a mealtime than those in the lower quartile, which has previously been observed in mothers reporting depressive symptoms and eating disorder psychopathology (Haycraft et al., 2013; Stein et al., 1994). However, in Haycraft et al.'s (2013) observational study, mothers also used more negative comments, which was not the case in the present study. One mother in the upper quartile discussed how she had felt compelled to talk to her daughter, yet had little to discuss other than the food. This could suggest that mothers in the upper quartile on the CPQ scale felt more pressure to display socially desirable behaviour and therefore made additional attempts to engage with their child in a positive way during the observation.

To the author's knowledge, no previous research has investigated the relationship between maternal perfectionism and observed use of controlling feeding practices. Given the relationship between maternal self-reported perfectionism and use of pressure to eat found in Part 1 of the study, we may have expected to observe significant differences in the observed use of pressure to eat between those in upper and lower quartile groups. When comparing those falling in the upper and lower

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quartiles for the whole sample, there were significant differences on self-reported use of pressure to eat. However, statistical analysis indicated that there were no significant differences in self-reported use of pressure to eat in those in the upper quartile that took part in the observational study and those in the lower quartile who took part in the observational part of the study. Therefore, this self-selected sample did not differ on their self-reported or observed use of controlling feeding practices, despite significant differences in self-report for the whole sample. This may have been because those that scored higher (or lower) on both of the measures were those that chose not to take part. It may also have been due to the inclusion of some in the lower perfectionism group who fell on the cusp of scores within the lower quartile (i.e., those that scored 20 on the CPQ).

No significant differences in use of controlling feeding practices were found between the upper and lower quartile groups on either self-report or observational data. However, given the small sample size in Part 2 of the study, it is not possible to conclude that maternal self-report of use of controlling feeding practices was associated with observed use in this group. Furthermore, a correlational analysis revealed no significant relationships between maternal self-reported use of pressure to eat and observed use of pressure to eat (verbal or physical) in the sample. Previous research investigating the reliability of self-report of use of controlling feeding practices have been mixed. Some studies have found no significant relationship between maternal self-report and observed practices (Haycraft & Blissett, 2008a; Lindsay, unpublished 2011; Sacco, Bentley, Carby-Shields, Borja, & Goldman, 2007). However, some studies with a larger sample size of observations have found a significant positive relationship between self-reported and observed feeding practices (Farrow & Blissett, 2005; Whelan & Cooper, 2000). Therefore, a larger sample size

for Part 2 would be needed to confirm the reliability of self-report in relation to maternal perfectionism.

Finally, the division of groups in to quartiles was done using the CPQ scores for Part 1 of the study. As with all psychological phenomena, the score on the CPQ is to be likely susceptible to fluctuations over times and therefore may not have been representative at the timepoint of Part 2, the observational phase of the study. There is some evidence from the temporal consistency of the CPQ in a sample of college students, and in wait-list control groups from a clinical sample (Dickie et al., 2012; Riley et al., 2007). However, the design of the study could have been improved by repeating the measure before the observation, both to comment on the temporal consistency, and also to evaluate any relationships between clinical perfectionism and use of controlling feeding practices at a given time-point. However, this is also balanced with the demands placed upon participants at a time when they are preparing and managing a mealtime with a young child.

4.3 Additional findings

In Part 1 of the study, relationships were found between maternal self-reported feeding practices (pressure to eat and restriction; restriction and monitoring). This has also been shown in an observational study investigating the relationship between maternal self-reported depressive symptoms and use of controlling feeding practices in a non-clinical sample (Haycraft et al., 2013). This suggests that mothers are likely to use a more overall or collective controlling feeding style, rather than demonstrating individual controlling feeding practices, such as pressure to eat or restriction. Future research could further investigate other types of feeding styles in addition to a controlling style, for example indulgent, responsive or uninvolved feeding styles (Haycraft et al., 2013; Hurley et al., 2008).

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Pressure to eat and monitoring were, perhaps surprisingly, not correlated, however. Pressure to eat focuses on encouraging the child to eat more, while the monitoring subscale relates to monitoring the consumption of snack foods, sweets and high fat foods. It would seem logical, however that monitoring would be more closely related to the restriction of snack foods, in addition to those that are high in sugar and fat.

In Part 2 of the study, perhaps not surprisingly, several of the items on the FMCS were significantly related to the amount of time spent at the table. The length of mealtimes ranged from eight to 42 minutes, ($M=23.67$ minutes) with the length of time that the mother was present ranging from four to 41 minutes ($M=20.00$ minutes). Length of mealtime was also related to number of rules and number of negative comments made towards the child. Furthermore the amount of time that mother was present at the table was positively related to the amount of verbal pressure used. These findings indicate that a mealtime may become more negative the longer the duration of the mealtime. Although there were exceptions, in general negative comments made towards children were in response to the child's behaviour and were considered to be appropriate. However this may also suggest that for children in this age range, the expectation to remain in their seat, or not to become distracted for this length of time is unrealistic. This supports Harris and Booth's (2006) recommendation as part of a proposed intervention for feeding problems in children that a mealtime should be limited to twenty minutes in order that parents are able to "relinquish lengthy feeding techniques" (p. 106).

4.4 Critique of the Methodology

Before considering the broader implications of the study findings, it is necessary to consider the strengths and weaknesses of the methodology used in this

research. The following section provides a critical appraisal of the study design, assessment measures used, recruitment methods and procedure.

4.4.1 Design.

4.4.1.1 Part 1. The first stage of the study utilised self-report questionnaires in a cross-sectional, correlational design. This allowed an investigation of the relationships between maternal characteristics and self-reported use of controlling feeding practices. The large sample size for Part 1 of the study was a considerable strength of the research, giving enough power to perform more complex analysis beyond simple correlations (e.g., partial correlations).

Cross sectional, correlational designs are appropriate and useful for preliminary hypothesis testing and exploratory studies to guide future research. However, there are a number of limitations that must be taken into account when interpreting the findings. The first consideration is that the study relies upon self-report, which was chosen as a practical, efficient and inexpensive way of collecting large amounts of exploratory data (Paulhus & Vazire, 2007). The key strengths of self-report measures are that they permit access to phenomenological data, providing insight into an individual's perception of themselves and their world that is otherwise unobtainable (Barker, Pistrang, & Elliot, 2002). From a practical perspective, questionnaires provide a robust alternative when more in-depth assessments are not possible due to time constraints (Paulhus & Vazire, 2007). Seventy-two per cent of participants who completed questionnaires agreed to be contacted for the observation, indicating that just over a quarter of the total sample were happy to complete a questionnaire but not to be observed.

However, self-report measures are susceptible to a number of biases. This includes social desirability and the fear of disclosure to a third party (Morsbach &

Prinz, 2006; Tourangeau, Rips, & Rasinski, 2000). These issues may be particularly salient when reporting parenting practices and mental health (Morsbach & Prinz, 2006). To reduce bias, steps were taken to ensure that mothers understood that their responses would remain confidential, providing relevant details in the information sheet. Anonymity was not possible due to the requirement of identifying participants for the observational stage of the study, which could potentially have led to under-reporting.

The second consideration is the cross-sectional nature of the design. As with all psychological phenomena, actual and reported symptoms of psychopathology (e.g., depression, anxiety and perfectionism) are likely to fluctuate to some degree in relation to current circumstances, representing a limitation of the cross-sectional design. Furthermore, questionnaires were completed considering slightly different timepoints, for example the HADS specifies consideration of the “past week” and the CPQ asks specifically about the “past month”. The CPQ has shown adequate test-retest reliability over a period of four months (Dickie et al., 2012), however it may have been useful to repeat the measure for those that participated in the later observational stage of the study (which was up to 3 months from originally completing the self report questionnaires) to consider potential changes over time. Longitudinal and repeated measures designs could be considered to assess the temporal stability of the relationships found in the present study. However, once again this was balanced with the additional demand that this would have placed upon participant. Furthermore, the study sample was drawn from a non-clinical population, highlighting problems in attempting to assess psychopathology in a sample where levels of the variables of interest are much lower than clinical samples, or indeed absent. This was particularly evident in the present study where maternal

self-reported symptoms of depression were ‘low’ or ‘normal’. These problems limit the generalisability of the findings to clinical populations.

Finally, the study used correlational analysis to interpret findings. It is not possible to infer causation from a correlational study, that is, it is not possible to conclude that perfectionism *causes* a mother to use more pressuring feeding practices. An interesting extension to the study would consider a longitudinal design to investigate whether perfectionism precedes the use of pressuring feeding practices. This potentially could involve screening during pregnancy, or before the child is weaned, with follow up on feeding practices later in the infant’s life.

4.4.1.2 Part 2. The second part of the study involved a mealtime observation of mothers who reported scores of perfectionism within the upper or lower quartiles from the questionnaire sample. Observations are a rich data source and are considered the gold standard in both the assessment of feeding difficulties and behavioural research (Harris & Booth, 2006; Vaz & Piazza, 2011). Behavioural observations carried out in the environment in which they normally occur rather than in a laboratory setting are considered “experience near”, preserving ecological validity and highlighting a key strength of the present study (Briggs & Priddis, 2011, p. 79). This ecological validity is balanced however with inherent inconsistencies that could bias behaviours observed; for example whether a sibling was present during the observation, the types of food that the child was offered, and factors such as whether the child was permitted to watch the television while they ate.

The addition of the observational stage of the study in part aimed to account for some of the biases associated with self-report (Paulhus & Vazire, 2007). However, there are also unavoidable biases associated with the use of observational measures. The primary concern is that participants may act in a socially desirable

way, or in a way that is pleasing to the researcher based on the participant's understanding of the researcher's hypotheses (Lipinski & Nelson, 1974; Patterson, 1977). The study sought to minimise such sources of bias by presenting only necessary information about the study prior to the mealtime, and only providing more detailed information of specific research questions and hypotheses upon request after the observation was completed. However, it is possible that the participants had some insight into the aims based on the questionnaires that they had already completed in Part 1 of the study.

Given the limitations of time, it was only possible to carry out one observation with each participant. Previous research has demonstrated that eating behaviour of children aged one year varies across mealtimes, which in turn could influence the strategies that a mother may use at a mealtime (Young & Drewett, 2000). Although many mothers in the current study described their observed mealtimes as "typical", there were exceptions that highlighted the potential for differences across mealtimes. For example, one mother discussed her frequent use of a specific strategy using incentives that had not been necessary on the observed occasion as she had been satisfied with her child's food intake.

There may also have been some bias introduced by the mother's choices regarding the observations. Several mothers commented that they had chosen their child's "favourite" food to ensure that they ate well during the observed mealtime. The types of foods that are referred to in the restriction subscale of the CFQ (e.g., snack foods, sugar, fat) were largely absent from mealtimes that were observed and therefore may have influenced the study findings. Restriction therefore would seem to operate when choosing foods to offer the child, rather than once the meal has been presented. In addition, there may have been differences at different mealtimes, for

example in relation to fatigue and the types of food that are eaten. Where possible, future studies should consider observing more than one mealtime to account for these variations and inconsistencies across time, and could specify the same mealtime for all participants. However, again this must also be balanced against the demands and level of commitment placed upon the mother and child to take part in the research, and how this may potentially reduce desirability for participation in the study.

To reduce observer effects, as far as was possible the researcher aimed to become a neutral stimulus (Lipinski & Nelson, 1974). In this case, a camera was used as it was considered less intrusive than the presence of the researcher, on the reasoning that a participant would more quickly habituate to the presence of a camera rather than the researcher being physically present (Lipinski & Nelson, 1974). This reduced the possibility of interaction with the researcher during the mealtime, and also allowed for inter-rater reliability analysis to be completed. In some cases, it was evident that the children did not fully habituate to the camera throughout the course of the mealtime. Several children commented on the presence of the camera, or questioned where the researcher had gone. However, this tended to be a brief rather than prolonged distraction and did not seem to unduly impact on their food consumption.

Observational measures can also be prone to bias from the researcher. Steps were taken to ensure as far as possible that the researcher remained blind to whether participants were in the upper or lower quartile perfectionism group during the filming of the mealtime and the scoring of the observational data. The following procedure was adhered to; anonymised participant identification numbers for mother scoring in the upper or lower quartiles were extracted by the researcher from the

anonymised data set. CPQ scores were then removed before matching participants to their contact details. This provided a combined list of participants falling in both the upper and lower quartile and it was not possible to identify to which group they were assigned for recording and scoring of the mealtime. In the latter stages, the researcher was required to match the individual participants to groups in order to consider whether it was necessary to include those whose scores of the CPQ fell on the cusp of the quartiles. For this reason, the researcher was un-blinded to group allocation for the final few ($n=5$) observations. A second rater who was blind to the level of perfectionism carried out inter-rater reliability coding on a small number of the recordings ($n=7$; 32%), demonstrating overall good levels of reliability. This will be discussed in detail in section 4.3.4.2.

4.4.2 Recruitment. Several successful strategies were employed to maximise response rates for questionnaires. Previous research has indicated that response rate is higher when participants have had direct contact with the researcher prior to a request to complete questionnaires (Edwards et al., 2002). For this reason, the primary recruitment strategy was for the researcher to attend toddler groups and speak to potential participants in person, giving them the opportunity to raise any questions or concerns that they may have about the study. The effectiveness of this strategy is exemplified by the high overall response rate for the return of questionnaires. Furthermore, only one person responded to posters advertising the study, suggesting that this was a much less effective strategy for data collection. Additional strategies that were used in the study included the option to be included in a prize draw, and the provision of a stamped addressed envelope for those that wished to return paper questionnaires by post (Edwards et al., 2002). Further improvements in recruitment may have been achieved by increasing the financial

incentive, and by including colour to make posters more visible, and to make information sheets and questionnaires more attractive (Edwards et al., 2002). It may also have been beneficial to collect email addresses with permission and send a direct link to questionnaires for those who wished to complete questionnaires online.

Recruitment for Part 2 the observational phase of the study was much more challenging and consent to participation was low. The final number that participated in the study was 22 participants and was far below what had been intended. It was also much lower than the number in the upper and lower quartiles that had consented to be contacted regarding participation in the observation (N=49). Accordingly, the low power to detect differences between the two groups is a significant weakness of the study and must be taken into account when interpreting the findings. Given that sufficient numbers were recruited in Part 1, it is interesting to consider factors that led to the shortfall for Part 2. These factors included practical limitations related to finding a mutually convenient time (despite researcher flexibility), or difficulties with contacting participants where only one method of contact had been provided. The design of the study also meant that there was a lag of up to 3 months between the time that the first participant completed the questionnaire and the time that the person was contacted to participate in the observation. This was necessary as there were no clinical cut offs specified for the measure and therefore a substantial dataset was required before contacting participants for Part 2 of the study. This could be overcome in future studies by specifying cut-off scores for high and low levels of psychopathology. At present there are no clinically meaningful cut-offs associated with the CPQ, indicating a key area for development (Dickie et al., 2012). For non-clinical samples, these cut-offs could be based on the range of scores found in previous samples, including the present study (e.g., Chang et al., 2012; Dickie et al.,

2012). Potential participant characteristics relating to non-consent for Part 2 are discussed in the following section.

4.4.3 Participants. For practical purposes and due to time constraints imposed by the period of data collection, all participants were recruited at mother and toddler groups in the Cambridgeshire area. The geographical location and characteristics of the group meant that the majority of participants were White British (89%), and educated at least to undergraduate university level (83%). The 2011 census indicated that in the UK, 27% of adults had completed a degree or above (Office of National Statistics, 2011). Therefore this represents a highly educated sample, limiting the generalisability of the findings to other populations. However, it provides a useful comparison to previous research carried out in similar populations (e.g., Haycraft & Blissett, 2008b, 2010; Lindsay, 2011). The relationship between perfectionism and ethnicity, and educational level is unclear and warrants comparison in future research.

Further bias was introduced as those included in the study were a self-selected sample, although this is inevitable and unavoidable due to the voluntary nature of participation in research studies (Hammer, du Prel, & Blettner, 2009). However, it is interesting to consider the characteristics of those that chose not to participate beyond Part 1, as the recruitment rate for the initial phase of the study was high. Information was not systematically gathered on the reasons why participants chose not to participate in the observational phase of the study. However, the most frequently cited reasons in discussion with the researcher were that the mother perceived that their child had some difficulties with feeding, or that they had concerns about being judged. This was of particular interest in the present study in relation to perfectionism and a concern about evaluation by others (Dickie et

al., 2012). There were, however, no significant differences on the CPQ scores between those that consented to contact for Part 2 and those that did not, as outlined in the results section.

It was also notable that of mothers who initially consented to contact for Part 2 of the study, a higher proportion of those scoring in the upper quartile range for perfectionism subsequently declined participation in the observational phase of the study. Eight participants in total scored over 30 on the CPQ, which is approaching scores of clinical samples of clinical perfectionism (e.g., Riley et al., 2007; $M = 35.52$; $SD = 5.36$). Of these, two took part in the observational study, and four more that had originally agreed to be contacted regarding the observational study subsequently declined when re-contacted with a view to taking part. For comparison, in the lower quartile, the lowest scoring participants ($n = 7$) scored 17 or below. Of these 7, only one who had originally expressed an interest in Part 2 subsequently declined. Given the very small numbers, it is not possible to draw any firm conclusions. However, it is possible to speculate that mothers scoring higher on the measure of clinical perfectionism may have subsequently withdrawn for fear of exposure in an uncontrolled situation where they may not have been able to meet their high standards, together with a fear of evaluation by others. A Chi-Squared analysis indicated that declining participation (for any reason, including failed contact) was not significantly different between those that had originally consented in the upper and lower quartile ($\chi^2(1, N=49) = 3.43, p = .06$), although it approached significance and therefore would be an area of interest in larger research studies that have sufficient power to detect more subtle differences.

4.4.3.1 Inclusion criteria. The initial aim was to include children between the ages of 18 months and three years only in order to reduce variability. An upper age

limit was not specified in the information sheet and therefore questionnaire responses included some children over the age of 3 years and two who were aged 17 months. Following the exclusion of two children who were over the age of 4 years, exploratory analysis concluded that maternal reported use of controlling feeding practices was not associated with child age in this sample. Therefore those children between the ages of 36 and 48 months remained in the study. Furthermore it was hoped to include mothers with only one child, however due to difficulties with recruitment a decision was taken to include mothers with more than one child. No significant differences were observed on reported use of controlling feeding practices between those that had one child and those that had two or more children.

4.4.4 Measures

4.4.4.1 Demographics. All items of demographic information were available for only 76 participants (75%) due to an omission in the early stages of recruitment for part 1 of the study. Although this is a weakness of the current study, the limited diversity was evident across groups and therefore the subsample is likely to be representative of participants as a whole. An item relating to the age at which a participant left full time education caused some confusion for those participants who returned to education following a period of absence, and therefore was considered unreliable and omitted from the analysis. Finally, the question “is this your only child?” was originally included as a screening question for eligibility. This question could have been adapted to allow the reporting of data on birth order following the amendment to include children with siblings.

4.4.4.2 Maternal psychopathology. Given the population being studied (mothers with young children) and the potential competing demands on their time, one aim was to keep the questionnaire pack as brief as possible and to limit as many

potential confounding variables using exclusion criteria (Edwards et al., 2002). For example, pragmatically mothers were asked a screening question about whether they had a past or current eating disorder rather than including a screening questionnaire. Likewise, the HADS was chosen as it is a brief questionnaire that incorporates both depression and anxiety and has consistently demonstrated good reliability and validity across studies (Bjelland et al., 2002). In the present study, the HADS-A (Cronbach's $\alpha = .83$) demonstrated good internal consistency, yet this was poorer for the HADS-D (Cronbach's $\alpha = .61$). This is somewhat lower than has been found in previous studies, which have reported alpha values of between .67 and .9 (mean .82) (Bjelland et al., 2002), including in a sample of mothers of three to four year olds ($\alpha = .75$) (Haycraft et al., 2013). Inter-item correlations indicated that the internal consistency of the HADS-D would have increased to $\alpha = .66$ with the removal of item 8 ("I feel as if I am slowed down"). It is possible that in a sample of mothers with young children, this item may have been skewed by fatigue rather than representing a depressive symptom. Furthermore, all mothers scored in either the "normal" or "mild" range for depression and it is possible that the limited variability of scores may have impacted on the internal consistency. This is also a consideration in the applicability of the findings beyond samples including only low levels of self-reported depressive symptoms.

The purpose of the present study was to investigate the relationship between maternal perfectionism and use of controlling feeding practices, and the screening measure of depression and anxiety symptoms was included so that they could be controlled for in the analysis. However, no relationship was found between maternal self-reported anxiety symptoms and use of controlling feeding practices, which limited further investigation. One possible explanation for this finding is that the

HADS-A measures only general anxiety symptoms. Future studies may include measures that screen for different types of anxiety that may be more closely associated with use of controlling feeding practices (see below for further discussion). An example is the Brief Symptoms Inventory, which assesses a broad range of psychopathological distress and functioning, including different types of anxiety such as obsessive-compulsive symptoms and phobias (Derogatis, 2001).

4.4.4.3 Perfectionism. The CPQ demonstrated adequate reliability in the present study (Cronbach's $\alpha = .73$), which is similar to findings from previous studies (Chang & Sanna, 2012; Dickie et al., 2012). Item-total correlations indicated that some of the individual items did not correspond well with the total, yet removal of these items would not have significantly increased the reliability. Two of the four items that did not correlate well with the total were the two reverse-scored items. Mothers that expressed interest in the study often commented that they considered themselves to be either a perfectionist or not, which may have introduced a self-presentational bias (Barker et al., 2002).

Without careful consideration of each question, it is possible that the reverse scored items reflect a tendency for participants to concentrate on one response side of questions (i.e., responding "not at all" or "all of the time"). Careful observation of the histogram presented in Figure 3 (see Results) demonstrates that no participants scored 21 or 23, which could possibly reflect this tendency to consistently respond to items on one side of the scales. Although there are no formal clinical cut-offs that have been identified for the CPQ, very few of the mothers scored close to the mean for participants taking part in a study evaluating an intervention for clinical perfectionism ($M = 35.52$, $SD = 5.36$ in clinical sample (Riley et al., 2007) $M = 23.04$; $SD = 4.32$, range 15-36 in the current sample.) Therefore, overall the sample should

be tentatively considered as reporting low levels of perfectionism and it is therefore important to consider that those scoring in the upper quartile in the current study should not be considered a high perfectionism group.

The remaining questions that did not correspond well with the total score related to perceptions of failure (Q4: Over the past month have you felt a failure as a person because you have not succeeded in your goals; Q12: Over the past month have you avoided any tests of your performance (at meeting your goals) in case you failed?). There are some interesting issues to consider in relation to these questions and the cognitive behavioural model of clinical perfectionism. First, the model states that fear of failure is “often at the heart of perfectionism” (Shafran et al., 2010) and as such it might be anticipated that responses on these items would closely correspond to the total. Secondly, the 2010 revision of the model makes explicit the role of performance related behaviour, including performance checking, avoidance and procrastination in maintaining the cycle of clinical perfectionism (Egan et al., 2011; Shafran et al., 2010). It is possible that Question 4 does not adequately capture this maintaining factor and potentially requires some revision. It may also be that a specific “Goal” is difficult to identify in relation to parenting, whereas with other domains it may be easier (for example, deadlines at work, weight).

The internal consistencies of the subscales on the FMPS were good, with Cronbach’s α scores ranging from .79 to .91. This was comparable to that found in the original validation study for the FMPS (Frost et al., 1990). The lowest score was found on the Doubts About Actions subscale and may have been related to the small number of items found on that subscale. The CPQ was also correlated with each of the subscales of the FMPS, indicating some overlap in the constructs assessed by the

two measures. This will be discussed further below in relation to the key findings from the study.

4.4.4.4 Self-report measure of controlling feeding practices. The Child Feeding Questionnaire (CFQ; Birch et al., 2001) was chosen for its brevity, demonstrated adequacy of validity and reliability, and because it has been used in similar UK populations allowing for direct comparison of findings (Haycraft & Blissett, 2008b, 2010). Furthermore the observational measure used in Part 2 was developed to reflect subscales of the CFQ and therefore provided consistency across the study.

The internal consistency of the restriction (Cronbach's $\alpha = .73$) and monitoring subscales (Cronbach's $\alpha = .87$) in the present study were good, and adequate for the pressure subscale (Cronbach's $\alpha = .69$). These are comparable to the initial validation of the measure which found adequate internal consistency for the pressure to eat ($\alpha = .70$) and restriction ($\alpha = .73$) subscales, and good for monitoring ($\alpha = .92$) (Birch et al., 2001). For the pressure subscale, the inter-item correlations indicated that a significant improvement in the internal consistency would be observed with the removal of item 9 ("My child should always eat all of the food on his/ her plate"). The remaining items on this subscale relate to ensuring that the child has eaten a sufficient amount. This may indicate that the amount of food presented to a child is not necessarily the amount that a child is expected to eat. However, presenting more food than is required may also reflect a desire to ensure that the child eats enough. There may be a balance between ensuring sufficient consumption and allowing the child a degree of choice over what and how much they eat. The discrepancy in this item is accounted for in the use of the subscale mean for analysis, yet the replacement or removal of this item could be considered in future studies.

4.4.4.5 Observational measure of controlling feeding practices. All of the subscales defined in the Family Mealtime Coding System (FMCS) had strong or excellent levels of agreement between coders, as demonstrated by intra-class correlation co-efficients ranging from .89 to 1.00 based on seven (32%) observations. This reflects findings reported in previous published studies using the measure (Haycraft & Blissett, 2008a; Haycraft et al., 2013). As found in previous studies, some practices were observed more frequently than others. In particular, pressure to eat was observed more frequently than use of restriction (Haycraft et al., 2013). One possible explanation for the limited observation of restrictive feeding practices is that mothers may restrict the types of food offered to their child at the mealtime, rather than presenting it and then restricting consumption. It is also possible that social desirability impacted on the food choices offered at the observed mealtime, as most children were presented with healthy and balanced options, such as fruit and vegetables.

As noted in the results section, it was not possible to use the current definition of “overall tone of entire mealtime” as defined in the FMCS because only subscales relating to maternal behaviours were of interest in the present study. Specific subscales from the FMCS were used to as an indication of mothers’ contribution to the overall tone of the mealtime (e.g., positive and negative comments), and there was overall strong levels of agreement on these items. There was no specification for how mothers defined a “typical” mealtime in the present study, which led to some variation in how much a mother interacted with her child. In some cases, mother and child interacted very little, yet this did not reflect a negative tone of the mealtime. Furthermore, in general there was little variation in the mealtimes observed in terms of negativity from the child, possibly reflecting the

self-selected nature of participants who felt that their children were “good eaters” and/ or were given their favourite foods.

An attempt was made to add an additional measure of the use of “mealtime rules” during the observations. This was something that was observed in the initial viewings of the recordings and it was hypothesised that this may relate to high standards that are typically found in perfectionism (Shafran & Mansell, 2001). The intra-class correlations for this subscale were good (.90). It was hypothesised that mothers in the upper quartile may have enforced more rules than those in the lower quartile, yet no significant differences were found between those in the upper and lower quartiles. This subscale may be of interest in future studies investigating maternal perfectionism and expectations of their children.

The present study aimed to assess maternal use of controlling feeding practices, and the FMCS remains an appropriate and reliable measure for this purpose. However, the observations highlighted a number of important components of the mealtime interaction that may contribute to the development of feeding difficulties in children that are not captured by the measure. In particular, this related to the suggestion that feeding difficulties should be considered and assessed within a relational context, which takes account of both parent and child characteristics, and the interaction between the two (Davies et al., 2006). This is echoed in recent studies using the FMCS, suggesting that further research is needed to assess the emotional quality of parent-child relationships in addition to food specific parenting practices (Haycraft et al., 2013).

Including some assessment of the parent-child interaction was considered as a possible extension in the current study. However, there were specific issues that meant this was beyond the scope of the study. First, as the study was not set up

specifically to consider these interactions, it had limited capacity to do so retrospectively. For example, it was not always possible to see the mother's facial expressions due to the angle of the camera, which would be important in accurately considering the emotional tone of the mealtime. Furthermore, the definition of a "typical" mealtime was different for each family. In some cases this meant that the mother did not join the child to eat, or spent little time directly interacting with the child.

Several other measures could be considered in future studies investigating the feeding interaction. The Feeding Interaction Scale looks at a range of maternal and child behaviours, and is used as a clinical assessment tool and has been used in published research (Harris & Booth, 2006; Lindberg et al., 1996; Wolke, 1986). Similarly, the Mealtime Observation Schedule looks at a range of child and maternal behaviours during a mealtime and has been used in clinical samples of children with feeding problems and non-clinical controls in the age range of interest in the present study (Sanders, Turner, Wall, Waugh, & Tully, 1997). An observational measure adapted from the Feeding Problems and Eating Disorders Interview Schedule includes assessment of mother- child discord and harmony (Cooper, 2004). Each of these measures looks at short time intervals (e.g., 2 minutes) of recordings and accounts for presence or absence of various factors within that timeframe. However, these measures have not been consistently validated, and many of the subscales do not directly assess the interaction between mother and child, rather than observing maternal and child behaviours independently (e.g., mother's negative comments, child's negative comments). To account for this, one previous study also considered the interaction between mother and child more closely using the Ainsworth Sensitivity Scales (Ainsworth, Blehar, Waters, & Wall, 1978; Lindberg et al., 1996).

Another alternative for consideration would be frequency of mother-infant physical contact, or counts of interactional conflict (Stein et al., 1994).

4.5 Implications of the results

To the author's knowledge this is the first known study to investigate the relationship between maternal perfectionism and child feeding practices. It is a largely exploratory study and the observational phase of the study is limited by significant recruitment difficulties, therefore any conclusions drawn are tentative, and further studies are required to corroborate findings. Future research should also address the methodological difficulties outlined. Based on the discussion above, conclusions cannot be drawn reliably from the observational stage of the study, and therefore the theoretical and clinical implications are based primarily on the findings from the questionnaire data, although some very tentative indications from the observational study are offered. The findings must also be considered in the context of the limited variability in the demographic characteristics of the sample and low reported levels of perfectionism and depressive symptoms.

4.5.1 Theoretical implications. Developing appropriate feeding skills in childhood relies upon a number of factors including physiological, neurophysiological, environmental, social and cultural factors (Stevenson & Allaire, 1991). In general, mothers play a key role in facilitating this development by providing the context in which a child eats, which can either support the development of appropriate eating behaviours and weight, or conversely contribute to development and maintenance of feeding difficulties (Davies et al., 2006). The present study complements and extends previous findings indicating that maternal psychopathology may impair a mother's ability to implement adaptive feeding strategies in a sensitive and responsive manner (Haycraft & Blissett, 2008b). A key

novel finding is the relationship identified between maternal perfectionism and the use of pressuring feeding practices. Previous research has indicated a relationship between perfectionism and authoritarian parenting styles, and between authoritarian parenting styles and use of controlling feeding practices, yet exploration of the direct association has previously not been explored (Azizi & Besharat, 2011; Black & Hurley, 2007; Hughes et al., 2005). The current study takes a tentative step towards offering interesting findings in this area.

Maternal use of controlling feeding practices have previously been shown to reduce the extent to which children respond to their internal cues of satiety and to reduce a child's future preference for certain foods (Galloway et al., 2005; Galloway et al., 2006). In extreme cases, use of controlling feeding practices may contribute to a mealtime environment that is aversive to the child, and may result in food refusal or avoidance behaviours in the child (Douglas, 2002; Haycraft et al., 2013; Hughes et al., 2011). Furthermore, inappropriate response to a child's cues may increase negative behavioural expression by the child, leading to a perpetuating cycle as mother exerts more control (Harris & Booth, 2006). Therefore the increased use of controlling feeding practices reported by mothers scoring higher on the measure of perfectionism may result in an increased risk of the development or maintenance of disrupted eating behaviour in young children

The cognitive-behavioural model of clinical perfectionism allows for a hypothetical and speculative explanation of this relationship that could be the focus of future research. The model indicates that clinical perfectionism often involves a pattern of "all or nothing" thinking characterised by judging standards by two, often extreme, examples (e.g., achieved or failed, good or bad; Shafran et al., 2010). It is this style of thinking that is considered to distinguish positive striving and unhelpful

or dysfunctional perfectionism (Egan et al., 2007; Shafran et al., 2010). Some researchers have indicated that perfectionist parents have high expectations for both themselves and their children, although this has yet to be thoroughly researched (Azizi & Besharat, 2011; Enns, Cox, & Clara, 2002). This could mean that mothers that are high perfectionists could be more rigid in the rules that they apply for their children.

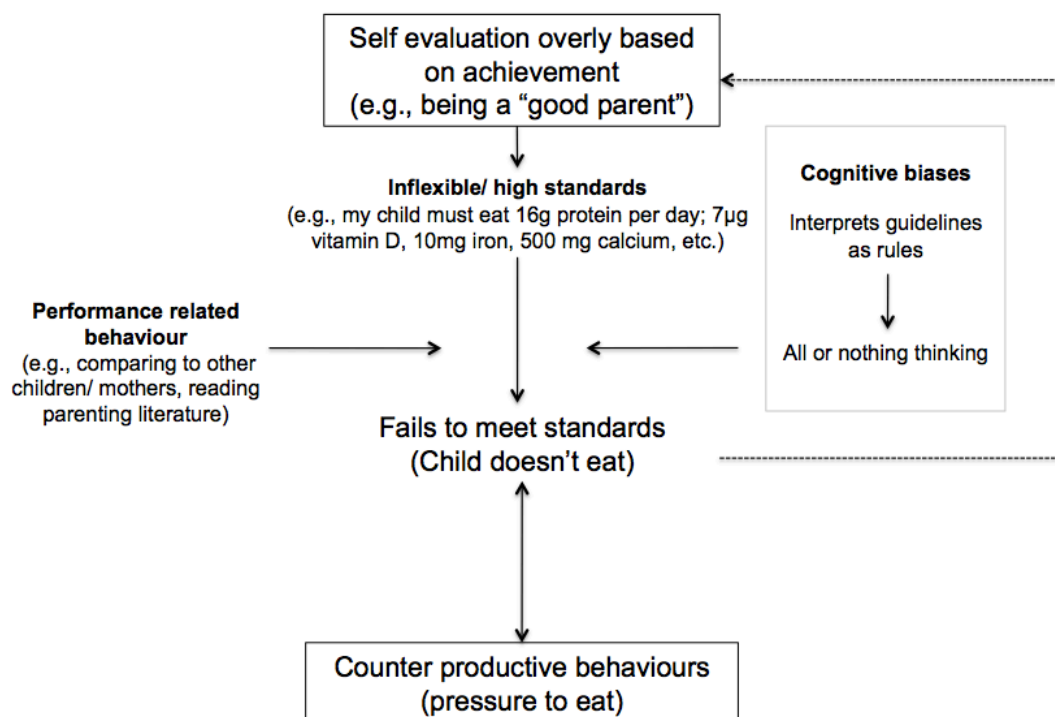
A hypothetical example in the context of feeding is presented in Figure 9. This may involve a mother having rigid rules or expectations about the amount and types of food that should be consumed, and a compulsion to adhere to rigid standards may encourage use of controlling feeding practices. Further research could consider the acquisition of beliefs about feeding and food consumption in mothers and the extent to which recommendations develop into rigid rules. For example, this may be from drawn from guidelines and recommendations about the amount and types of food that a child should consume that are taken as inflexible rules, leading to all or nothing thinking. Furthermore, inappropriate response to a child's cues of dislike of a food or expression of satiety may increase negative behavioural expression by the child, leading to a perpetuating cycle as mother exerts more control (Harris & Booth, 2006).

The potential applications of this conceptualisation are particularly relevant for young children between the ages of 1 and 3 years, which was the age of interest in the present study. This is a time at which a child develops autonomy in the transition to self-feeding (Briggs & Priddis, 2011). At this stage, parents maintain responsibility for the "what, when and where" of feeding, while children remain responsible for the "how much and whether" (Davies et al., 2006). For success at this stage, the child must be given appropriate levels of autonomy, and maternal control

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over feeding may reflect inability to allow the independence required (Chatoor et al., 1984; Briggs & Priddis, 2011) to fully negotiate this transition. Consequently, any factors such as clinical perfectionism that may potentially reduce a mother's ability to promote autonomy in the child are important areas for consideration, assessment and investigation.

Figure 9: Hypothesised Cognitive Behavioural Conceptualisation of Maternal Perfectionism and Use of Controlling Feeding Practices.



One further interesting finding was the relationship between perfectionism and depression and its association with maternal use of pressure to eat. It is possible to speculate that maternal perfectionism may play an intrinsic role in the relationship between maternal depressive symptoms and use of pressuring feeding practices. Any interpretation of this finding is speculative as levels of self-reported symptoms of depression and clinical perfectionism were low. The current study indicates that further exploration of perfectionism as a transdiagnostic process would be

interesting. Although the present study was limited to exploring depression, it would be interesting to consider more specific types of anxiety, in particular OCD, and eating disorder psychopathology. Perfectionism has been identified as a core related construct to each of these disorders, and both ED and OCD have also been associated with the use of maladaptive and controlling mealtime management strategies (Egan et al., 2011; Farrow & Blissett, 2009).

A final consideration concerns the intergenerational transmission of perfectionism. There are conflicting findings on the relationship between parental perfectionism and the development of perfectionism in children, ranging from no significant associations to strong relationships (Ablard & Parker, 1997; Chang, 2000; Clark & Coker, 2009; Frost et al., 1991; Soenens et al., 2005). Previous research has indicated that factors other than simple modelling may be implicated in the intergenerational transmission, including maternal criticism and maternal use of control (Clark & Coker, 2009; Kenney-Benson & Pomerantz, 2005). A single study has investigated the relationship between maternal control and child perfectionism. In a non-clinical sample, the study found that children of mothers using heightened control had increased perfectionistic concerns (Kenney-Benson et al., 2005). Furthermore, child depressive symptoms were mediated by these perfectionistic concerns. The current study did not find any significant differences between the upper and lower quartile groups on their observed use of control, yet the sample size makes it difficult to draw any firm conclusions. Therefore, maternal use of control and intergenerational transmission of perfectionism is another area for consideration in future research.

4.5.1.1 Additional findings. Finally, there are a number of possible theoretical implications in relation to the construct of clinical perfectionism as a

transdiagnostic process. As expected from previous findings, clinical perfectionism in the present study was correlated with a measure of depression. The CPQ was the only measure of perfectionism that maintained a robust relationship with pressure to eat when controlling for the effects of depression. Although tentative, this indicates support for the contention that clinical perfectionism is a separate construct to multidimensional perfectionism, which has previously been a source of debate (Chang & Sanna, 2012; Dickie et al., 2012). This supports findings in a previous study where a hierarchical regression analysis demonstrated that the CPQ accounted for significant amounts of additional variance on independent measures of psychopathology over and above the Hewitt Multidimensional Perfectionism Scale (Chang & Sanna, 2012). The CPQ was designed specifically to assess cognitive and behavioural elements of perfectionism that are thought to be central to the development and maintenance of the more dysfunctional aspects of perfectionism, and which in the current study may be linked to maternal use of pressure to eat (Chang & Sanna, 2012; Shafran et al., 2002).

4.5.2 Clinical implications. The findings support the view that assessment of maternal mental health should be a core feature of the assessment of infant feeding difficulties, in particular depression (Lindsay, 2011; Whitehouse & Harris, 1998), and potentially clinical perfectionism. In clinical settings where problematic feeding has been identified, one of the most common approaches to treating children with feeding difficulties is to adopt a behavioural approach. The early stages of such interventions include components focused on reducing parental anxiety and to allowing the child to have some control in the mealtime (Harris & Booth, 2006). Findings from this and previous studies indicate that the assessment of maternal

mental health psychopathology may be important when considering the capacity for a parent to relinquish some control to the child.

The exploratory findings in the current study indicate that clinical perfectionism may potentially underpin the relationships previously observed between maternal depressive symptoms and use of controlling feeding practices. Further research is required before clear recommendations could be made regarding the role of clinical perfectionism, yet such factors could be considered within a broader assessment of maternal psychopathology, and as a transdiagnostic process. Previous research has indicated that perfectionism may impede treatment for depression, and therefore it may be important to consider perfectionism from this perspective (Egan et al., 2011). For example, it may be possible to identify core cognitive and behavioural features associated with the key features of clinical perfectionism. This may include recognising the importance of achievement, particularly in the domain of parenting (of which feeding is a key component) identifying fear of failure, or dichotomous thinking, and recognition of counter-productive behaviours such as performance checking and reassurance seeking (Egan et al., 2011). It may also be useful to acknowledge that behavioural change may also be more difficult in mothers who have adopted rigid perfectionist beliefs and associated behaviours.

In addition to assessment of maternal mental health in clinical settings, assessment of maternal mental health symptoms should also be considered by healthcare professionals involved in the identification of emerging feeding difficulties in young children (Lindsay, 2011). The model of clinical perfectionism is predicated on cognitive and behavioural maintenance factors and there is emerging evidence for the reductions in symptoms of clinical perfectionism following

cognitive behavioural intervention (e.g., Glover et al., 2007; Riley & Shafran, 2005; Riley et al., 2007; Shafran et al., 2004; Steele et al., 2011). The effectiveness of cognitive behavioural interventions for postnatal depression delivered by trained health visitors has been demonstrated in a large clinical trial (Morrell et al., 2009), which indicates one potential route for preventative interventions targeting clinical perfectionism to be delivered. In particular targeted interventions could potentially be useful in introducing flexibility in the feeding relationship.

It is also proposed that balanced information should be provided about recommendations and guidelines in relation to parenting in general, and particularly in relation to child feeding. It is tentatively suggested based on the findings of this study and the cognitive behavioural model proposed that maternal perfectionism may interfere with a mother's ability to adopt a flexible approach to general parenting recommendations, and because they may internalise guidelines as rules. It has previously been postulated that "the current trend to bombard mothers with parenting advice... may undermine the confidence of mothers who are naturally competent in their role" (Howlett, Kirk, & Pine, 2011, p. 443). In relation to perfectionism, it is possible that guidelines offered may be accepted or interpreted as inflexible rules that are required to be followed. Accordingly such recommendations could be clearly presented as guidelines, which imply a degree of flexibility. Therefore a broader approach to guidance and strategies for appropriate mealtime management including alternative strategies may be important. For example, there is research outlining the importance of modeling appropriate feeding practices as useful strategies in helping a child to make healthy food choices (Palfreyman, Haycraft, & Meyer, 2012, 2013).

4.6 Recommendations for future research

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The relationships explored in the present study focused primarily on maternal characteristics and use of controlling feeding practices. However, child feeding behaviours and the development of feeding problems should always be considered in relations to aspects of the mother, the child and their relationship (Davies et al., 2006; Hurley et al., 2008). Areas for future research and consideration include child characteristics such as age (not significant in current study), gender, developmental stage, temperament, and birth order, and attachment. Particularly relevant in the field of feeding practices is weight status, and maternal perception of this (e.g., Faith et al., 2004; Francis et al., 2001).

Maternal characteristics for further investigation include more specific types of psychopathology (e.g., OCD). Longitudinal designs would be useful to help develop a clearer understanding of the trajectory of feeding difficulties, and the interacting influence of both maternal and child characteristics. For example, there was a lot of variation in the amount of food consumed at mealtimes and this would be an interesting area for further consideration. Paternal feeding practices are also of interest, as are maternal characteristics and behaviours in the context of romantic relationships and the presence of a partner (Blissett et al., 2006; Haycraft & Blissett, 2010). Future studies could also consider broader categories of feeding style other than controlling such as responsive, indulgent and uninvolved feeding styles (Hurley et al., 2008).

Given that empirical research has consistently reported that eating disorders are characterised by elevated levels of perfectionism (Bardone-Cone, et al., 2007), mothers with past or currently eating disorders were excluded from the study. However, having established that there is a potential relationship between maternal perfectionism and use of controlling feeding practices, a key area for future research

would be to consider the relationship between eating disorder psychopathology, clinical perfectionism and the use of controlling feeding practices. This would be particularly interesting in relation to the potential domain specificity of perfectionism, and how this may be associated with both personal and child feeding experiences.

Many of the limitations of the present study have also been reflected elsewhere in research in this area, and therefore are indicative of areas for development in the field of child feeding difficulties. For example, the development of robust valid and reliable measures that account for assessment of feeding interactions in addition to individual characteristics and behaviours of both mothers and their children. Acknowledging the inherent difficulties, there is a requirement for more research beyond self-report data, particularly in clinical samples. This would include more observational and longitudinal research with large sample sizes and where possible should include clinical samples of both clinically significant maternal psychopathology, and child feeding problems. This would allow for further exploration of (bi) directionality of the relationship between the development and maintenance of maternal psychopathology and child feeding difficulties. The difficulties in recruitment for the present study highlight that such projects should be tackled on a larger scale.

Finally, there are a number of areas for further development within the perfectionism literature. In particular, further research is needed to validate the cognitive behavioural model. This includes possible adaptations to the CPQ to more accurately reflect the maintaining factors outlined in the model, e.g., all or nothing thinking. The areas of parenting perfectionism and the intergenerational transmission of perfectionism are also key areas that future research should address, particularly

with the emerging evidence of the important role that perfectionism plays in the development and maintenance of psychopathology.

4.7 Overall summary and conclusions

This is a single small-scale exploratory study, parts of which were underpowered due to the difficulties in recruiting to the observational phase of the study. Accordingly, the findings need to be interpreted with caution and subsequently replicated in larger clinical samples and in non-clinical samples that demonstrate greater variability in both demographic characteristics and self-reported psychopathology. However, the findings tentatively support the hypothesis that clinical perfectionism may play an important role in maternal use of controlling feeding practices and more speculatively potentially increase risk of development and maintenance of feeding difficulties in young children. Although exploratory, the findings indicate directions for further research investigating the complex relationship between maternal mental health symptomatology, possible transdiagnostic mechanisms, and the development and maintenance of child feeding difficulties.

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Appendix A

**Diagnostic Criteria for Avoidant/ Restrictive Food Intake Disorder (ARFID;
American Psychiatric Association, 2013)**

- A. An eating or feeding disturbance (e.g., apparent lack of interest in eating or food; avoidance based on the sensory characteristics of food; concern over aversive consequences of eating) as manifested by persistent failure to meet appropriate nutritional and/ or energy needs with one (or more) of the following:
1. Significant weight loss (or failure to achieve expected weight gain or faltering growth in children).
 2. Significant nutritional deficiency.
 3. Dependence on enteral feeding or oral nutritional supplements.
 4. Marked interference with psychosocial functioning.
- B. The disturbance is not better explained by lack of available food or by an associated culturally sanctioned practice.
- C. The eating disturbance does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way in which one's body weight or shape is experienced.
- D. The eating disturbance is not attributable to a concurrent medical condition or not better explained by another mental disorder. When the eating disturbance occurs in the context of another condition of disorder, the severity of the eating disturbance exceeds that routinely associated with the condition or disorder and warrants additional clinical attention.

Appendix B

Search terms for literature review (Maternal psychopathology and controlling feeding practices)

1. (Mother* OR matern* OR parent*)
2. depression OR depressive OR “depress*” OR “mood” OR “anxiety” OR anxious OR psychopathol* "eating disorder" OR bulim* OR anorex* OR "eating attitude*" OR "eating pathology" OR "eating psychopathology" OR "feeding psychopathology" OR "eating habit"
3. "infant feeding" OR "child feeding" OR "feeding practice*" OR "feeding interaction" OR "feeding relationship" OR "management style" OR “feeding style” OR control*

Papers were included based on the following criteria:

- A measure of maternal psychopathology (diagnosis or self-report measure)
- An observation or self-report measure of child feeding practices
- Peer reviewed, English language, quantitative studies

Appendix C: Consent form for Part 1

Questionnaire Study

Maternal Characteristics and Child Feeding Styles

You are being invited to participate in a research study investigating the ways in which mothers manage their children's mealtimes in relation to various personal characteristics.

Please initial box

1. I confirm that I have had the opportunity to read and understand the information sheet dated 19th August 2012 (version 3) for the study. ☐
2. I consent to this information being used for research purposes ☐
3. I consent to being contacted for participation in Part 2 of the study which will involve observation via video recording of a typical mealtime with my child. ☐
4. I understand that our participation is voluntary and that I am free to withdraw at any time without giving any reason, without my legal rights being affected. ☐

Signature _____

Print name _____

Date _____

Participant Identification Number (added by researcher):

Appendix D

Demographic Information/ Screening Form

Child's name _____

Child's date of birth _____ (Your child must be 18 months or older to participate in the study)

Is this your only child? Yes ____ No ____

Has your child started eating solid foods? Yes _____ No _____

Do you have a current or past diagnosis of any kind of eating disorder? Yes__ No
__

Please provide details of how we can contact you regarding participation in Part 2 of the study:

Home address:

Telephone number:

Email address:

Please tell us by which method you would most like us to contact you and when are the best times to contact you to discuss participation in Part 2 of the research study

Would you like to be included in our prize draw for a chance to win £30 worth of shopping vouchers? Yes _____ No _____

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

What is your marital status?

- ☐ Single
- ☐ Cohabiting
- ☐ Married
- ☐ Same-sex civil partnership
- ☐ Other, please state

Your Age _____

At what age did you leave full time education? years

What is your highest qualification? (e.g. CSE, O Level, A level, NVQ, BSc, PhD).

.....

What is your ethnic group? (please tick)

E. White

- ☐ English / Welsh / Scottish / Northern Irish / British
- ☐ Irish
- ☐ Gypsy or Irish Traveller
- ☐ Any other White background, write in

B. Mixed / multiple ethnic groups

- ☐ White and Black Caribbean
- ☐ White and Black African
- ☐ White and Asian
- ☐ Any other Mixed / multiple ethnic background, write in

C. Asian / Asian British

- ☐ Indian
- ☐ Pakistani
- ☐ Bangladeshi
- ☐ Chinese
- ☐ Any other Asian background, write in

F. Black / African / Caribbean / Black British

- ☐ African
- ☐ Caribbean
- ☐ Any other Black / African / Caribbean background, write in

G. Other ethnic group

- ☐ Arab
- ☐ Any other ethnic group, write in:

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

Appendix E

Clinical Perfectionism Questionnaire

Participant Identification Number (added by researcher): INSTRUCTIONS This questionnaire is concerned with “perfectionism”. By perfectionism, we mean trying to meet really high standards whether or not you actually succeed in reaching them. In this questionnaire we are only concerned with perfectionism that affects areas of life other than your eating, weight, or appearance.					
Have you been trying to achieve high standards over the past month <u>whether or not you have succeeded</u> (excluding standards for your eating, weight or appearance)? Please circle YES or NO. <div style="text-align: center;">YES / NO</div>					
If so, in what areas of your life (other than eating, weight or appearance) has this applied? - for example, it might have been in your performance at work, at sport, at music, at home, etc. Please note these below:					
Now, please place a ‘X’ in the column below which best describes you over the past month. Remember, do not count standards for your eating, weight or appearance.					
		Not at all	Some of the time	Most of the time	All of the time
	Over the past month.....				
1	Over the past month, have you pushed yourself really hard to meet your goals?				
2	Over the past month, have you tended to focus on what you <u>have</u> achieved, rather than on what you have not achieved?				
3	Over the past month, have you been told that your standards are too high?				
4	Over the past month, have you felt a failure as a person because you have not succeeded in meeting your goals?				
5	Over the past month, have you been afraid that you might not reach your standards?				
6	Over the past month, have you raised your standards because you thought they were too easy?				

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

	Over the past month	Not at all	Some of the time	Most of the time	All of the time
7	Over the past month, have you judged yourself on the basis of your ability to achieve high standards?				
8	Over the past month, have you done just enough to get by?				
9	Over the past month, have you <u>repeatedly</u> checked how well you are doing at meeting your standards (for example, by comparing your performance with that of others)?				
10	Over the past month, do you think that other people would have thought of you as a “perfectionist”?				
11	Over the past month, have you kept trying to meet your standards, even if this has meant that you have missed out on things?				
12	Over the past month, have you avoided any tests of your performance (at meeting your goals) in case you failed?				

Appendix F**Subscales of the Frost Multidimensional Perfectionism Scale**

Please rate how much you agree with each of the following statements

	1- Strongly disagree	2	3	4	5 – Strongly agree
1. If I do not set the highest standards for myself, I am likely to end up a second-rate person					
2. It is important to me that I be thoroughly competent in everything I do					
3. If I fail at work/ school, I am a failure as a person					
4. I should be upset if I make a mistake					
5. I set higher goals than most people					
6. If someone does a task at work/ school better than I, then I feel like I have failed the whole task					
7. If I fail partly, it is as bad as being a complete failure					
8. I am very good at focusing my efforts on attaining a goal					
9. Even when I do something very carefully, I often feel that it is not quite right					
10. I hate being less than the best at things					
11. I have extremely high goals					
12. People will probably think less of me if I make a mistake					
13. If I do not do as well as other people, it means I am an inferior human being					

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

	1- Strongly disagree	2	3	4	5 – Strongly agree
14. Other people seem to accept lower standards from themselves than I do					
15. If I do not do well all the time, people will not respect me					
16. I usually have doubts about the simple everyday things I do					
17. I expect higher performance in my daily tasks than most people					
18. I tend to get behind in my work because I repeat things over and over					
19. It takes me a long time to do something “right”					
20. The fewer mistakes I make, the more people will like me					

Concern over mistakes – items 3, 4, 6, 7, 10, 12, 13, 15, 20


Personal standards – items 1, 2, 5, 8, 11, 14, 17

Doubts about action – items 9, 16, 18, 19

Evaluative concerns – sum ‘concern over mistakes’ and ‘doubts about actions’.

Appendix G

Hospital Anxiety and Depression Scale



GL

ASSESSMENT

the measure of potential

HADS

This questionnaire is designed to help the researcher to know how you feel. Read each item below and **underline the reply** which comes closest to how you have been feeling in the past week. Ignore the numbers printed at the edge of the questionnaire.

Don't take too long over your replies, your immediate reaction to each item will probably be more accurate than a long, thought-out response.

A	D			A	D				
		I feel tense or 'wound up'	I feel as if I am slowed down						
3		Most of the time	Nearly all the time		3				
2		A lot of the time	Very often		2				
1		From time to time, occasionally	Sometimes		1				
0		Not at all	Not at all		0				
		I still enjoy the things I used to enjoy	I get a sort of frightened feeling like 'butterflies' in the stomach						
0		Definitely as much	Not at all		0				
1		Not quite so much	Occasionally		1				
2		Only a little	Quite often		2				
3		Hardly at all	Very often		3				
		I get a sort of frightened feeling as if something awful is about to happen	I have lost interest in my appearance						
3		Very definitely and quite badly	Definitely		3				
2		Yes, but not too badly	I don't take as much care as I should		2				
1		A little, but it doesn't worry me	I may not take quite as much care		1				
0		Not at all	I take just as much care as ever		0				
		I can laugh and see the funny side of things	I feel restless as if I have to be on the move						
0		As much as I always could	Very much indeed		3				
1		Not quite so much now	Quite a lot		2				
2		Definitely not so much now	Not very much		1				
3		Not at all	Not at all		0				
		Worrying thoughts go through my mind	I look forward with enjoyment to things						
3		A great deal of the time	As much as I ever did		0				
2		A lot of the time	Rather less than I used to		1				
1		Not too often	Definitely less than I used to		2				
0		Very little	Hardly at all		3				
		I feel cheerful	I get sudden feelings of panic						
3		Never	Very often indeed		3				
2		Not often	Quite often		2				
1		Sometimes	Not very often		1				
0		Most of the time	Not at all		0				
		I can sit at ease and feel relaxed	I can enjoy a good book or radio or television programme						
0		Definitely	Often		0				
1		Usually	Sometimes		1				
2		Not often	Not often		2				
3		Not at all	Very seldom		3				
Now check that you have answered all the questions									
				TOTAL	<table border="1" style="display: inline-table; width: 40px;"> <tr> <td style="width: 50%;">A</td> <td style="width: 50%;">D</td> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> </table>	A	D		
A	D								

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Appendix H**Child Feeding Questionnaire**

Using the scale below, please circle one number for each question which best corresponds to your answer. Please answer about your child who is in our study.

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree
1. I have to be sure that my child does not eat too many sweets (candy, ice cream, cake or pastries).	1	2	3	4	5
2. I have to be sure that my child does not eat too many high fat foods.	1	2	3	4	5
3. I have to be sure that my child does not eat too much of his/ her favourite foods.	1	2	3	4	5
4. I intentionally keep some foods out of my child's reach.	1	2	3	4	5
5. I offer sweets (candy, ice cream, cake, pastries) to my child as a reward for good behaviour.	1	2	3	4	5
6. I offer my child his/ her favourite foods in exchange for good behaviour.	1	2	3	4	5
7. If I did not guide or regulate my child's eating, s/he would eat too many junk foods.	1	2	3	4	5
8. If I did not guide or regulate my child's eating, s/he would eat too much of his/ her favourite foods.	1	2	3	4	5
9. My child should always eat all of the food on his/ her plate.	1	2	3	4	5
10. I have to be especially careful to make sure my child eats enough.	1	2	3	4	5
11. If my child says "I'm not hungry", I try to get him/ her to eat anyway.	1	2	3	4	5
12. If I did not guide or regulate my child's eating, s/he would eat much less than s/he should.	1	2	3	4	5

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

Using the scale below, please circle one number for each question which best corresponds to your answer. Please answer about your child who is in our study.

	Never	Rarely	Sometimes	Mostly	Always
13. How much do you keep track of the sweets (candy, ice cream cake, pies, pastries) that your child eats?	1	2	3	4	5
14. How much do you keep track of the snack food (potato chips, Doritos, cheese puffs) that your child eats?	1	2	3	4	5
15. How much do you keep track of the high fat foods that your child eats?	1	2	3	4	5

Restriction subscale: Items 1 – 8

Pressure to eat subscale: Items 9 - 12

Monitoring subscale: 13- 15

Appendix I

Family Mealtime Coding System

FAMILY MEALTIME CODING SYSTEM: OPERATIONAL DEFINITIONS

Haycraft (2007); Haycraft & Blissett (2008)

Note: all variables are coded separately for each parent/caregiver present during the observed mealtime. Coding for both parents/caregivers can occur simultaneously.

Variable coded	Recipient	Definition
Pressure to eat – from either parent	Target child	Parental <u>verbal</u> encouragement to consume more food, such as: “eat a little bit more”, “have some peas” or “eat three more mouthfuls”. Includes gentle use of coercion, such as: “just eat the meat”, or “try a mouthful”.
Prompt, physical – from either parent	Target child	Parental use of <u>physical</u> encouragements to get child to eat, usually by offering food to the child. Includes placing food on the spoon/fork and offering it to the child, or putting food on the cutlery ready for the child to pick up and eat.
Verbal restriction ^ – from either parent	Target child	<u>Verbally</u> limiting children’s consumption of foods, for example, by not letting them have any more cheese or garlic bread, or by restricting the amount of biscuits the child is allowed to eat. An example could be: “you can’t have any more” or “you’ve had enough of that”.
Physical restriction ^ – from either parent	Target child	<u>Physically</u> limiting children’s consumption of foods, for example, by not letting them have any more cheese or garlic bread, or by restricting the amount of biscuits the child is allowed to eat. This could be by moving the garlic bread away or taking a food away from the child/table. Note: this does not refer to controlling or limiting portion sizes which are given to the child.
Use of incentives / conditions – from either parent	Target child	Verbal use of incentives or bargaining in an attempt to increase children’s food consumption. For example, “Mummy will be so happy if you eat your beans”, or “eat this and then you can have some pudding”.
Pressure to eat – from either parent	Other child(ren)*	As for parent to target child.
Prompt, physical – from either parent	Other child(ren)*	As for parent to target child.
Restriction – from either parent	Other child(ren)*	As for parent to target child. Can be subdivided into verbal and physical restriction.
Use of incentives / conditions – from either parent	Other child(ren)*	As for parent to target child.

^ A composite ‘restriction’ variable can be created by merging these two variables.

Haycraft, E. (2007). Child feeding practices in fathers and mothers of young children. *Unpublished PhD Thesis, University of Birmingham.*

Variable coded	Recipient	Definition
Negative comments – from either parent	Target child	Vocalisations spoken with a negative tone. Involves telling child off, or reprimanding them (“James, don’t do that!”). Also includes ordering the child to do things (“pass that”, “sit down”), or to stop doing things (“enough now”), and negative statements (“I told you not to do that”). Tone of words spoken to child must be negative. Can include comments about food.
Neutral comments – from either parent	Target child	General comments to child, about things such as what they have done that day, instructions for things to do, comments on nursery. Also includes questions, such as “have you brushed your hair?”, “have you been to the toilet?”. Tone is neither negative nor positive. Can include comments about food, such as “please pass the salt”.
Positive comments – from either parent	Target child	Anything said in a positive tone or praise for the child. Examples include “well done” or “your teacher said you worked really hard at nursery today”. Can include comments about food, such as “well done for trying that broccoli”.
Negative comments – from either parent	Other child(ren)*	As for parent to target child.
Neutral comments – from either parent	Other child(ren)*	As for parent to target child.
Positive comments – from either parent	Other child(ren)*	As for parent to target child.
Negative comments – from either parent	Other parent	Words spoken with a negative, hostile tone, including some form of criticism or disagreement, for example “what did you do that for?” or “leave him, he can feed himself”.
Neutral comments – from either parent	Other parent	General comments to other parent, including talking about day to day matters, work, school, children, plans for the weekend. Also, asking questions such as “please can you pass the salad?”.
Positive comments – from either parent	Other parent	Praise or positive comments made from one parent to the other. Includes comments such as “this meal is delicious” and “thanks for doing that”.
Cleans/wipes – by either parent*	Anyone/anything	Coded whenever a parent wipes or cleans, either with cloth, baby wipe, towel, tissue. Includes tables, surfaces, child and utensils. <i>Included for the potential to analyse relationships between cleaning during the mealtime and OCD symptoms.</i>

* If applicable

Variable coded	Recipient	Definition
Negative comments – from target child	About food	Anything negative said about food or mealtime, such as “don’t like it”, “don’t want any more”, “I’m not eating it!”, “no more”, “I don’t like lamb”.
Neutral comments – from target child	About food	Neutral comments, neither positive nor negative, about food or the mealtime, such as “can I have more bread?”, “please pass the peas”, “I’ll just have one more mouthful”, “I’ve had enough now”, “what’s for pudding?”. Must be said without a negative tone.
Positive comments – from target child	About food	Positive, enthusiastic comments about food or the mealtime. Examples include: “this food is yummy”; “more please!”, “I like carrots!”, “look Mummy I ate it all up”, “I love ice cream!”.
Give or offer food – by either parent	Target child	Code adapted from the BCI, reflects each offering of food to the target child by either parent. An offer involves parents putting food onto cutlery and offering it to the child’s mouth, offering the child food with their fingers, or scraping out a yoghurt pot and putting the spoonful of yoghurt in the child’s mouth.
Mealtime duration	Duration	Duration of entire mealtime, from when target child seated/meal begins until when meal is finished or parents indicate as such.
Food <u>AND</u> child present	Duration	Duration when child is at the table <u>and</u> there is food in front of them which they can eat (and when they have not indicated that they have finished their meal).
Child plays*	Duration	Duration of time that child is playing during the mealtime. Play counted as playing with food, a toy, or being distracted by games or other activities. Does not include playful methods of getting child to eat – for example, counting fingers to equate to number of mouthfuls – as there is purpose to this.
Child wipes*	Anyone/thing	Coded whenever child wipes or cleans, either with cloth, baby wipe, towel, tissue. Includes tables, surfaces, child, parent, sibling(s) and utensils.
Child at table*	Duration	Duration of time child is at the table during the meal. Coded as not at the table when leaves to, for example, get pudding, go to the toilet or get a toy.
Mother present	Duration	Duration of mealtime for which mother is at the table
Father present	Duration	Duration of mealtime for which father is at the table
* If applicable		

Haycraft, E. (2007). Child feeding practices in fathers and mothers of young children. *Unpublished PhD Thesis, University of Birmingham.*

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

Family Mealtime Coding System 4

Variable coded	Recipient	Definition
Overall tone of entire mealtime (predominantly)	N/A	<ul style="list-style-type: none"> 1 = less enjoyable – more arguments, more pressure, less laughter, generally more negative. 2 = neutral – functional mealtime, good discussion, some laughter, good interaction. 3 = enjoyable – excellent interaction between parents and with child, lots of laughter and conversations.
How difficult/easy target child is to feed	N/A	<ul style="list-style-type: none"> 1 = difficult – much resistance to offers of food, refusal to eat. Disagreements regarding food consumed. Tantrums. Disliking or refusing foods given/offered. 3 = moderate – sometimes eats nicely and without difficulty, but sometimes refuses foods, is fussy or slow, or requires prompts or encouragements. 5 = easy – usually autonomous feeder, who eats what given, with little protest or conflict. May request more food. Usually uses correct implements, or eats well with fingers. <p>2 and 4 used for when child falls within these guidelines - i.e. is more difficult (=2) or more easy (=4) than 'moderate'.</p>
How difficult/easy <u>other</u> child is to feed*	N/A	<p>Coded as for target child:</p> <p>1 = hard; 3 = moderate; 5 = easy</p>
* If applicable		

Notes:

The frequency of observed behaviours is scored by logging / recording each instance of a particular type of observed behaviour.

- Observed "pressure to eat" and "physical prompt" from the FMCS relate to the "Pressure to Eat" subscale of the Child Feeding Questionnaire (CFQ; Birch et al., 2001, *Appetite*).
- Observed "restriction" (verbal, physical) and "use of incentives/conditions" FMCS subscales relate to the CFQ's "Restriction" subscale.

As "Monitoring" (another commonly used CFQ subscale which looks at parents keeping track of foods eaten) is a practice primarily related to behaviours not typically observable during a mealtime context, the FMCS does not code for such behaviours.

Haycraft, E. (2007). Child feeding practices in fathers and mothers of young children. *Unpublished PhD Thesis, University of Birmingham.*

FMCS publications

Published works, to date (October 2011), have been with parents of children aged under 6 years and have tended to use some/all of the following variables:

Variable

- Pressure to eat (verbal) – from mothers/fathers/parents/caregivers to target child
- Prompt, physical – from mothers/fathers/parents/caregivers to target child
- Restriction – from mothers/fathers/parents/caregivers to target child
- Use of incentive/conditions – from mothers/fathers/parents/caregivers to target child
- Mealtime duration
- Duration for which food AND child present at mealtime
- Overall tone of entire mealtime (predominantly)[†]

[†] All variables coded as part of this coding system contribute to the allocation of this score.

Publications / references

To date, the **Family Mealtime Coding System (FMCS)** has been used in the following:

Haycraft, E. (2007). Child feeding practices in fathers and mothers of young children. *Unpublished PhD Thesis, University of Birmingham*.

Haycraft, E. & Blissett, J. (2008). Maternal and paternal controlling feeding practices: Reliability and relationships with BMI. *Obesity, 16*(7), 1552-1558.

Blissett, J. & Haycraft, E. (2011). Parental eating disorder symptoms and observations of mealtime interactions with children. *Journal of Psychosomatic Research, 70*, 368-371. doi:10.1016/j.jpsychores.2010.07.006.

Farrow, C., Blissett, J. & Haycraft, E. (2011). Does child weight influence how mothers report their feeding practices? *International Journal of Pediatric Obesity, 6*, 306-313. DOI: 10.3109/17477166.2011.575160.

To reference the FMCS, please cite Haycraft (2007) and Haycraft and Blissett (2008).

For any questions, please contact Emma Haycraft: E.Haycraft@lboro.ac.uk. Thank you.

Haycraft, E. (2007). Child feeding practices in fathers and mothers of young children. *Unpublished PhD Thesis, University of Birmingham*.

Appendix J

Participant Information Sheet

Maternal Characteristics and Child Feeding Styles

We would like to invite you to take part in a research study. Before you decide if you would like to take part, please read the following information, which explains why the research is being done and what it would involve for you. Take some time to think about whether or not you would like to take part.

Why are we doing the research?

A Trainee Clinical Psychologist, Jude Gittins, from the University of East Anglia (UEA), is undertaking this study for educational purposes and to add to research that has looked at maternal characteristics that contribute to the strategies used when feeding their children. This study aims to investigate whether one particular characteristic, known as perfectionism, is related to the strategies that mothers use.

Why have I been invited?

The researcher is hoping to recruit more than 100 mothers with an **child aged 18 months or older whose primary source of nutrition is from solid food**. We regret that we can only include mothers who are over the age of 18 and able to speak and understand the English language.

What will happen to me if I take part?

The study is in two parts. All mothers who choose to take part will be asked to complete some questionnaires and we will be asking a smaller group to give us permission to record a typical mealtime with their infant. Selection for inclusion in this part of the study would in no way be a reflection of you or your child. If you decide to take part, we will ask you to sign a consent form to ensure that you have understood what the study is about and that you are happy to take part.

Questionnaires: We will be asking all mothers involved in the study to complete a number of questionnaires, which should take approximately 25 minutes.

Mealtime recording: A smaller number of mothers will be asked to take part in a video-recorded observation of one of their child's mealtimes. If you agree, this will be arranged at a time convenient to you and ideally in your home to keep the setting as natural as possible. The researcher will set up a small video camera and leave the room to minimise distractions during the mealtime. If you would prefer not to have us visit you at home we will do our best to identify an alternative location.

What are the advantages and disadvantages of taking part?

We hope you will enjoy taking part in the study. We cannot say that there will be direct benefits for individuals taking part in this study, but we hope that the information will contribute to our knowledge on the influence of maternal characteristics on feeding practices. If you agree, your name will be entered into a prize draw to win £30 worth of vouchers for a shop or supermarket of your choice. We do not anticipate any disadvantages or risks to taking part, however if we identify any elevated scores on the questionnaires we will contact you to advise you to discuss this with your GP. If your responses in the questionnaires give you cause for concern, we recommend that you contact your GP to discuss this further.

What will happen to my information?

It is necessary to collect some identifying information so that we can contact some people to invite them to take part in the mealtime recording. We will keep all information about you private and safe, in line with UEA and National Research Ethics Service guidelines. Digital video recordings and personally identifying information will be stored securely on a memory stick that is encrypted for additional security, and questionnaire responses will only be identifiable to the researchers by a unique identification number. Information collected through the online survey will be password protected. Anonymised information and video recordings will be seen by supervisory staff and colleagues at the UEA to assist with data analysis and data will be stored securely at the UEA for 5 years upon completion of the study. In the unlikely event the researcher is given reason to believe that you or any other person is at risk then confidentiality may be broken. In most cases, this will be discussed with you first, and then between the researcher and her supervisor where it will be decided and documented whether information needs to be shared with relevant agencies.

What will happen if I don't want to carry on with the study?

You may withdraw from the study at any time, without giving a reason. Your data can be removed and destroyed if you wish and will not be included in the final analysis.

What if there is a problem?

If you have a concern about this study, you can speak to the researchers who will do their best to answer your questions (see below). If you remain unsatisfied and wish to complain formally you can do this by contacting the Associate Dean for Research in the Faculty of Medicine and Health Sciences, UEA, by telephone: 01603 456161.

What will happen to the results of the research study?

Findings will be submitted as a thesis to UEA for assessment. It is hoped that they also will be published in an academic journal. Any information that is made public in this way will be completely anonymous and it will not be possible to identify you/ members of your family. If you are interested to know more, you may request a summary of the outcomes, which will be sent to you on completion of the study.

Who has reviewed the study?

The study design has been approved by the UEA as part of a thesis project. The UEA Faculty of Medicine and Health Sciences Research Ethics Committee have reviewed this study.

What happens next?

If you would like to take part:

- i) Jude will be joining you at _____ on _____ to answer your questions and hand out/ collect questionnaires. You can return questionnaires during the group via the posting box, or Jude can give you an SAE that you can post at any time that is convenient to you.
- ii) An online version of the questionnaires is available at **<https://www.surveymonkey.com/s/feedingstyles>**. If you prefer, you can leave your email address and Jude will send all the information including the link to the survey directly to you.

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

Further information and contact details

If you have any questions, please contact Jude Gittins: judith.gittins@uea.ac.uk
Alternatively, you can contact the research supervisor, Dr Sian Coker: email: s.coker@uea.ac.uk ; phone: 01603 593544; Faculty of Medicine and Health Sciences, Elizabeth Fry Building, University of East Anglia, Norwich, NR4 7TJ.

Thank you for reading this information sheet.

Appendix K

Recruitment poster



University of East Anglia

Are you a mother with a child aged 18 months or older?

We are looking for a large number of participants for a research study investigating maternal characteristics and child feeding practices.

This will involve completing some questionnaires, which should take about 25 minutes. We will also ask a smaller number of participants whom have completed questionnaires to take part in a recorded observation of a typical mealtime with their child.

We are looking to recruit mothers with an only child who is 18 months or older, and whose primary source of nutrition is from solid foods.

Mothers should be over the age of 18 and in order to be able to complete questionnaires should have a good understanding of the English language. Mothers should communicate with their child in English for the observational phase of the study.

If you are interested in taking part in the study further information is available from Jude Gittins (Researcher) at [Group] on [Days]

You can also request an information pack via email – please take a tab below with contact details.

All participants will be entered into a prize draw to win **£30 of vouchers** for a shop or supermarket of your choice

Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk	Judith Gittins Judith.gittins@uea.ac.uk
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Appendix L

Thank You Letter

Participant Name
Address

Date

Dear...

You recently participated in a research study investigating maternal characteristics and infant feeding styles.

As outlined, it is only possible to invite a small number of mothers and children to participate in part 2 of the study. Recruitment of mothers and children for the second stage of the study is now complete and regrettably we will not be asking you to take part at this time.

I would like to take this opportunity to thank you for participating in Part 1 of the study and remind you that you will still be entered into the prize draw for £30 of vouchers for a shop or supermarket of your choice. I would also like to remind you that selection is by no means a reflection of you or your child.

If you are interested in receiving details of the findings from the study, you can request this by contacting me on the email address below.

Thank you again for participating in the study.

Yours sincerely,

Jude Gittins
Trainee Clinical Psychologist
judith.gittins@uea.ac.uk

Appendix M

Consent Form (Part 2) Recorded observation of a typical mealtime.

Participant Identification Number:

Maternal Characteristics and Child Feeding Styles

Please initial box

1. I confirm that I have read and understand the information sheet dated 15th June 2012 (version 1) for the above study. I have had the opportunity to consider the information and ask questions and have had these answered satisfactorily.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my legal rights being affected.

☐

3. I agree to myself and my child being video recorded.

☐

4. I understand that the information will be kept confidential and secure. I understand that data and recordings will be securely stored at the University of East Anglia for 5 years after the research has been completed.

☐

5. I agree to take part in the above study.

☐

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Researcher	Date	Signature

Please tick this box if you would like to receive a summary of the research findings

☐

Appendix N

Ethical Approval

Faculty of Medicine and Health Sciences Research Ethics Committee



Judith Gittins
C/o University of East Anglia
Room 2.30 Elizabeth Fry Building
Norwich
NR4 7TJ

Research & Enterprise Services
West Office (Science Building)
University of East Anglia
Norwich Research Park
Norwich, NR4 7TJ

Telephone: +44 (0) 1603 591574

Fax: 01603 591550

Email: fmh.ethics@uea.ac.uk

Web: www.uea.ac.uk/researchandenterprise

17th August 2012

Dear Judith


Maternal Perfectionism and Infant Feeding Practices. Reference: 2011/2012-52

The amendments to your above proposal have been considered by the Chair of the Faculty Research Ethics Committee and we can confirm that your proposal has been approved.

Please could you ensure that any further amendments to either the protocol or documents submitted are notified to us in advance and also that any adverse events which occur during your project are reported to the Committee. Please could you also arrange to send us a report once your project is completed.

The Committee would like to wish you good luck with your project

Yours sincerely

A handwritten signature in blue ink, reading 'Yvonne Kirkham', is written over a horizontal line.

Yvonne Kirkham
Project Officer

MATERNAL PERFECTIONISM AND CHILD FEEDING PRACTICES

Faculty of Medicine and Health Sciences Research Ethics Committee



Judith Johnston
C/o University of East Anglia
Room 2.30 Elizabeth Fry Building
Norwich
NR4 7TJ

Research & Enterprise Services
West Office (Science Building)
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Telephone: +44 (0) 1603 591574
Fax: 01603 591550
Email: fmh.ethics@uea.ac.uk

Web: www.uea.ac.uk/researchandenterprise

25th April 2013

Dear Judith,

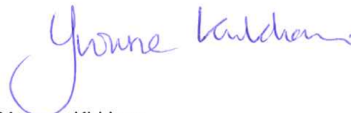
Maternal Perfectionism and Infant Feeding Practices. Reference: 2011/2012-52

The amendments to your above proposal have been considered by the Chair of the Faculty Research Ethics Committee and we can confirm that your proposal has been approved.

Please could you ensure that any further amendments to either the protocol or documents submitted are notified to us in advance and also that any adverse events which occur during your project are reported to the Committee. Please could you also arrange to send us a report once your project is completed.

The Committee would like to wish you good luck with your project

Yours sincerely

A handwritten signature in blue ink, reading 'Yvonne Kirkham'.

Yvonne Kirkham
Project Officer

Appendix O

Risk Letter

Participant Name
Address

Date

Dear...

You recently participated in a research study investigating maternal characteristics and infant feeding styles.

A screening measure in Part 1 of the study was used to identify indicators of symptoms of depression and anxiety. It was noted by the researchers that your scores on the anxiety/ depression measure were elevated.

It is recommended that should you wish to investigate this further, or access support, that you should speak to your GP who can provide information on your available options.

Thank you again for participating in the study.

Yours sincerely,

Jude Gittins
Trainee Clinical Psychologist

Appendix P: Normality Data
 Part 1: Table showing results of normality testing for correlational data analyses

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Outcome
CPQ	.01	-.03 (-.06)	.58 (2.41)	Not normal
MPS CM	.01	-.29 (-.60)	.40 (1.63)	Not normal
MPS PS	.11	-.07 (-.15)	.20 (.81)	Normal
MPS DA	.00	-.91 (1.85)	.23 (.93)	Not normal
MPS EC	.02	-.47 (-.95)	.33 (1.34)	Not normal
HADS-A	.00	.52 (1.08)	.73 (3.01)	Not normal
HADS -D	.00	-.39 (-.81)	.51 (2.13)	Not normal
CFQ Restriction	.14	-.08 (-.18)	-.42 (-1.75)	Normal
CFQ Pressure	.01	-.57 (-1.20)	.23 (.98)	Not normal
CFQ Monitoring	.00	.69 (1.45)	-1.10 (4.60)	Not normal
Child age	.01	-.14 (.28)	.58 (2.36)	Not normal
Mother age	.62	.28 (.59)	.01 (.04)	Normal

Tables showing results of normality testing for between groups analysis (CFQ data for boys and girls)

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
CFQ Restriction Boys	.58	-.76 (1.15)	.04 (.11)	N/A	Normal
CFQ Restriction Girls	.17	.01 (.01)	-.59 (1.67)	N/A	Normal
CFQ Pressure Boys	.04	-1.12 (1.70)	-.09 (.26)	No	Not normal
CFQ Pressure Girls	.03	.15 (.22)	.66 (1.85)	Square Root	Normal
CFQ Monitoring Boys	.00	-.95 (1.43)	-.56 (-1.67)	No	Not normal
CFQ Monitoring Girls	.00	1.19 (1.71)	-1.34 (3.78)	No	Not normal

Tables showing results of normality testing for between groups analysis (CFQ data for only child/ sibling)

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
CFQ Restriction Only child	.53	.52 (.65)	.43 (1.04)	N/A	Normal
CFQ Restriction Sibling	.01	.38 (.66)	-.79 (2.70)	No	Not normal
CFQ Pressure Only Child	.18	-.36 (.45)	.59 (1.44)	N/A	Normal
CFQ Pressure Sibling	.04	-.67 (1.15)	.05 (.16)	No	Not normal

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
CFQ Monitoring Only Child	.00	-.37 (.50)	-.80 (1.96)	No	Not normal
CFQ Pressure Sibling	.00	1.61 (2.78)	-1.27 (-4.32)	No	Not normal

Part 2: Normality table for FMCS data

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
Length of mealtime	.78	.33 (.35)	.48 (.97)	N/A	Normal
Mother present	.56	.34 (.36)	.48 (.97)	N/A	Normal
Verbal Pressure	.01	.75 (.78)	1.19 (2.42)	Square Root	Normal
Physical Pressure	.00	4.48 (4.70)	2.08 (4.23)	No	Not normal
Incentives	.00	.19 (.20)	.99 (2.02)	No	Not normal
Verbal Restriction	.00	3.50 (3.68)	1.99 (4.06)	No	Not normal
Physical Restriction	.00	8.43 (8.85)	2.91 (5.93)	No	Not normal
Total Positive	.00	5.15 (5.40)	2.02 (4.44)	Square Root	Normal
Total positive food	.02	1.94 (2.03)	1.36 (2.76)	Square Root	Normal
Total negative	.00	13.89 (14.57)	3.41 (6.94)	No	Not normal
Total rules	.00	2.43 (2.55)	1.54 (3.13)	Square Root	Normal

Tables showing results of normality testing for between groups analysis (CFQ data)

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
CFQ Restriction Upper Quartile	.36	-1.17 (.79)	-.51 (.67)	N/A	Normal
CFQ Restriction Lower Quartile	.83	-.06 (.11)	-.06 (.11)	N/A	Normal
CFQ Pressure Upper Quartile	.27	-1.22 (.82)	-.34 (-.46)	N/A	Normal
CFQ Pressure Lower Quartile	.18	.03 (.03)	.71 (1.20)	N/A	Normal
CFQ Monitoring Upper Quartile	.09	-.19 (.13)	.19 (.17)	N/A	Normal
CFQ Pressure Lower Quartile	.17	-.98 (1.30)	-.81 (1.37)	N/A	Normal
CPQ Upper Quartile	.02	2.25 (1.52)	1.58 (2.10)	No	Not normal
CPQ Lower Quartile	.00	1.78 (1.54)	-1.50 (2.52)	No	Not normal
Child Age Upper Quartile	.50	-.47 (.31)	.21 (.28)	N/A	Normal
Child Age Lower Quartile	.69	-.31 (-.27)	.55 (.92)	N/A	Normal

Normality data for between groups analysis (FMCS data)

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
Verbal pressure Upper Quartile	.24	.80 (.59)	1.19 (1.58)	N/A	Normal
Verbal pressure Lower Quartile	.03	.81 (.71)	1.24 (2.08)	Square Root	Normal
Physical Pressure Upper Quartile	.01	.24 (.16)	1.26 (1.67)	No	Not normal
Physical Pressure Upper Quartile	.00	1.94 (1.68)	1.52 (2.55)	No	Not normal
Incentives Upper Quartile	.31	.49 (.33)	1.06 (1.41)	N/A	Normal
Incentives Lower Quartile	.01	.17 (.15)	1.03 (1.72)	No	Not normal
Verbal Restriction Upper Quartile	.00	-2.24 (1.51)	.64 (.86)	No	Not normal
Verbal Restriction Lower Quartile	.00	7.68 (6.65)	2.80 (4.70)	No	Not normal
Physical Restriction Upper Quartile	.00	8.00 (5.40)	2.83 (3.76)	No	Not normal
Physical Restriction Lower Quartile	.00	7.68 (6.65)	2.80 (4.70)	No	Not normal
Total negative Upper Quartile	.01	-2.18 (-1.47)	-.54 (.71)	No	Not normal
Total negative Lower Quartile	.00	10.75 (9.31)	3.15 (5.27)	Square root	Normal
Total positive Upper Quartile	.51	-1.08 (.73)	.29 (.39)	N/A	Normal
Total positive Lower Quartile	.02	2.45 (2.12)	1.55 (2.60)	Square Root	Normal

Questionnaire/ Subscale	Shapiro-Wilks (p-value)	Kurtosis (z score)	Skewness (z score)	Successful transformation?	Outcome
Total rules Upper Quartile	.15	2.99 (2.02)	1.56 (2.08)	Square Root	Normal
Total rules Lower Quartile	.03	1.74 (1.51)	1.39 (2.33)	Square Root	Normal
Positive food Upper Quartile	.97	-.42 (.28)	.42 (.56)	Square Root	Normal
Positive food Lower Quartile	.00	6.90 (5.98)	2.35 (3.94)	Square Root	Normal

Appendix Q

Spearman's correlations for significant results

Hypothesis 1: There was a significant positive relationship between clinical perfectionism as measured by the CPQ and pressure to eat
 $R_s = .32, p < .01$

There was a significant positive relationship between doubts about actions as measured by the FMPS and pressure to eat
 $R_s = .22, p = .02$

There was a significant positive relationship between evaluative concerns as measured by the FMPS and pressure to eat
 $R_s = .20, p = .03$

Hypothesis 2: A positive relationship was found between the HADS-D and use of pressure to eat
 $R_s = .22, p = .01$

3.3.5.2 Exploratory analysis

Length of mealtime was positively correlated with the total number of negative comments made towards the child ($R_s = .70, p < .01$)

Length of mealtime was positively correlated with the total number of rules ($R_s = .60, p < .01$)

The total time that mother was present at the table was positively correlated with the total amount of verbal pressure used ($R_s = .42, p = .06$)

The total time that mother was present at the table was positively correlated the total number of negative comments made to the child ($R_s = .55, p = .01$)

Use of verbal pressure was associated with total amount of praise ($R_s = .49, p = .02$)

Use of verbal pressure was associated with positive comments about food ($R_s = .33, p = .14$)

The total amount of physical pressure was positively correlated with total amount of praise $R_s = .57, p = .01$

Finally, total negative comments to child was associated with total rules $R_s = .66, p < .01$

3.2.6 Additional analyses

Spearman's Correlation Co-efficients for Individual Subscales of the CFQ.

	Restriction	Pressure	Monitoring
Restriction	—		
Pressure	.28**	—	
Monitoring	.31**	.08	—

*p<.05, **p<.01, ***p<.001 (2-tailed)

3.2.6.1 Relationships between predictor variable

Spearman's Correlation *Coefficients Showing the Relationship Between Independent Variables*

	CPQ	CM	PS	D	EC	HADS-A	HADS-D
CPQ	—						
CM	.278**	—					
PS	.390**	.420**	—				
D	.392**	.613**	.207*	—			
EC	.341**	.950**	.351**	.835**	—		
HADS-A	.421**	.421**	.243**	.397**	.437**	—	
HADS-D	.221*	.339**	.130	.325**	.364**	.450**	—
HADS-	.377**	.440**	.227**	.406**	.460**	.902**	.773**
Total							

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

Appendix R

Bootstrapped confidence intervals for correlations between independent variables

	CPQ	CM	PS	D	EC	HADS-A	HADS-D
CPQ	—						
CM	[.15, .55]	—					
PS	[.26, .62]	[.29, .66]	—				
D	[.24, .58]	[.49, .73]	[.05, .38]	—			
EC	[.22, .58]	[.94, .98]	[.21, .60]	[.77, .88]	—		
HADS-A	[.27, .60]	[.25, .65]	[.09, .52]	[.22, .57]	[.31, .66]	—	
HADS-D	[.03, .40]	[.12, .50]	[-.03, .32]	[.12, .50]	[.29, .66]	[.28, .62]	—

Appendix S

Examples of mealtimes rules

- no throwing
- no throwing food on the floor
- eat nicely
- use your knife and fork
- don't play with your food
- say "thank you mummy"
- ask nicely
- say please
- chew it properly
- feet off the table
- say "pardon me"
- keep your food on your plate
- stop shouting
- don't use your fingers
- close your mouth while you're eating
- no banging cutlery
- use your manners
- no making noises
- bums on seats