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<https://dx.doi.org/10.1016/j.appet.2015.12.017>

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**Parental feeding behaviour and motivations regarding pre-school age children:  
a thematic synthesis of qualitative studies**

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## **ABSTRACT**

Poor childhood diet is a major risk factor for disease and obesity, and parents of pre-school children are in a powerful position to influence diet for life. The technique of thematic synthesis (Thomas & Harden, 2008) was used to synthesise recent qualitative research on parental feeding of pre-school age children (18 months – 6 years). The aim was to inform development of nutrition advice by gaining a comprehensive picture of parental feeding behaviours and motivations. Six key parental feeding behaviours were identified: modelling, rewards, pressure and encouragement, repeated exposure, creativity, and limiting intake. Four overarching themes regarding motivations were identified: promoting good health (balance and variety, and weight control); building positive relationships (child involvement, and parental engagement and responsiveness); practicalities and constraints (time, cost, and lack of culinary skill, and pressure and flexibility); and emotional motivations (problem avoidance, and emotional investment). Practicalities and constraints, and emotional motivations impacted more significantly on low income parents. In order to be effective, nutrition advice ought to tap into parents' strong desire to build positive relationships and promote good health while remaining sensitive to the significant constraints and practicalities faced.

## **KEYWORDS**

Parental feeding, pre-school children, diet, nutrition advice, low income families, thematic synthesis

## **INTRODUCTION**

Good nutrition in early childhood is crucial and the pre-school years are particularly significant in terms of healthy eating practices. Dietary habits are often lifelong and are formed in early childhood (Tucker, Irwin, Sangster Bouck, He, & Pollett, 2006). Once established, unhealthy dietary habits are, like other existing habitualised behaviours, difficult to change (Edmunds, Waters, & Elliott, 2001). Food preference and fruit and vegetable exposure at 2 and 4 years old can predict food preference at 8 years old (Skinner, Carruth, Bounds, Ziegler, & Reidy, 2002) and fruit and vegetables are protective against disease, especially in childhood (Department of Health, 2000). Early childhood therefore represents a unique opportunity to set children on a path of healthy eating for life. This is highly desirable given the well-established link between diet and health (Kerr, 1999; Pierce, Crowell, & Ferris, 2004) with poor diet being a major risk factor for cancer, cardiovascular disease and diabetes (Eyre et al., 2004). Poor diet also places a financial burden on society. In 2006-7 the cost to the British healthcare system of treating illnesses related to inadequate and poor nutrition was £5.8 billion (Scarborough et al., 2011).

Early childhood is also a significant time in terms of obesity prevention. The prevalence of obesity among pre-school age children in the UK is increasing, with over 22% of reception age children and 33% of year 6 children being overweight or obese in 2010-11 (Hayter et al., 2013). Childhood obesity is associated with depression, hypertension, type 2 diabetes, high blood cholesterol levels and low self-esteem (Tucker et al., 2006). Recently it was predicted that if current trends continue, up to 48% of men and 43% of women in the UK could be obese by 2030 (Wang, McPherson, Marsh, Gortmaker, & Brown, 2011). A longitudinal study by Gardner et al., 2009, found that the greatest weight gain before puberty happens before the age of five and a child's weight at 5 years predicts weight at 9 years. Additionally, adult obesity is strongly predicted by childhood obesity (Moore, Tapper, & Murphy, 2010) which, particularly in the toddler years, increases the likelihood of adult obesity (Singh, Mulder, Twisk, Van Mechelen, & Chinapaw, 2008). Gardner et al., 2009 concluded that 'the die seems to be largely cast by 5 years of age' (p. 67). Accordingly understanding practices and motivations in parental feeding of pre-school age children is imperative so that dietary improvements can be as effective as possible.

Parents have a unique capacity to foster or hinder the development of healthy eating patterns in pre-school children (Scaglioni, Salvioni, & Galimberti, 2008). Mothers are a logical target for effective nutrition advice because approximately 70% of the energy intake of pre-schoolers occurs in the home where mothers have primary responsibility for feeding (Herman, Malhotra, Wright, Fisher, & Whitaker, 2012). Parental feeding practices are related to children's weight (Moens & Braet, 2007; Webber, Cooke, Hill, & Wardle, 2010) and feeding practices are a risk factor for some children who become obese (Faith & Kerns, 2005). Parents' frequently incorrect perceptions of pre-schoolers' body weights may influence feeding practices (Garrett-Wright, 2011). Parental feeding has also been shown to be related to the development of children's food preferences (Birch & Fisher, 1998) which in turn influence dietary habits. Parental motivations and behaviour help to set the context of feeding. Parental feeding styles also influence context and interventions which target parenting style may improve childhood eating habits and help reduce childhood obesity (Xu, Wen, Rissel, Flood, & Baur, 2013). Feeding styles arise from two dimensions of parenting - responsiveness and demandingness (Herman et al., 2012). Demandingness refers to the number of demands a parent puts upon a child to get the child to eat (Hughes, Power, Fisher, Mueller, & Nicklas, 2005). Responsiveness refers to whether demands are made in a parent-centred or child-centred manner (Hughes et al., 2005). Based on these two dimensions, authoritative (high demandingness, high responsiveness), authoritarian (high demandingness, low responsiveness), permissive (low demandingness, high responsiveness), and uninvolved (low demandingness, low responsiveness) feeding styles have been identified. Feeding styles may be indicated by an examination of parental feeding behaviour and

motivations. Authoritarian styles, with an emphasis on rigidity and restriction, create a negative emotional context for eating which can be counter-productive to healthy self-regulation (Fisher & Birch, 2002; Thompson, 2010). Authoritative styles marked by high sensitivity, responsiveness and expectations of self-control have been linked with a lower risk of obesity and flexible, but healthy, autonomous eating (Carnell, Cooke, Cheng, Robbins, & Wardle, 2011; Rhee, Lumeng, Appugliese, Kaciroti, & Bradley, 2006).

Behaviour includes both goal directed strategies and non-goal directed general practices (Carnell, Cooke, Cheng, Robbins, & Wardle, 2011) while motivations include reasons and processes that guide behaviour. This review sets out to synthesise research on parental feeding behaviour and motivations given that they are influential in setting the context of feeding, and context is central to effective nutrition education.

A review of qualitative research is particularly important in forming a comprehensive picture of parental feeding behaviour and motivations of pre-schoolers. Previous systematic reviews have focused on primary school age children and have considered quantitative studies, often randomised controlled trials of obesity interventions in early childhood (Hardeman, Griffin, Johnston, Kinmonth, & Wareham, 2000; Stice, Shaw, & Marti, 2006; Waters et al., 2011). These have shown limited success (Campbell & Hesketh, 2007). Arguably, quantitative studies neglect the context and reasons for parents' motivations and do not capture subtle distinctions between feeding strategies and goals (Carnell et al., 2011). Qualitative research can assist by illuminating the context within which proposed nutrition and health interventions will occur. Additionally, it is apparent that mothers often misunderstand questions on feeding questionnaires and therefore qualitative research, particularly interviews, are useful in ensuring questions are correctly interpreted (Jain, Sherman, Chamberlin, & Whitaker, 2004). There have been calls for exploration of parental feeding practices and beliefs to be addressed as a high research priority given the current tendency to obesity (Brewis & Gerten, 2006) and previous reviews of qualitative research regarding parenting practices regarding food have not considered research beyond 2009 (Peters, Parletta, Campbell & Lynch, 2013).

The aim of this review is to develop a more nuanced and comprehensive understanding of parental feeding behaviour and motivations regarding pre-school age children by synthesising recent qualitative research. This understanding is crucial to developing parent-friendly and effective interventions and nutrition education which will improve child health. The research questions to be addressed by the review are therefore: what feeding behaviours do parents of pre-school children engage in; and what are the motivations for those behaviours?

## **METHOD**

### **Selection criteria**

This review included recent qualitative studies, published between 2007 -2014 in peer-reviewed journals that explored parental feeding practices, behaviours and motivations regarding pre-school children aged between 18 months and 6 years old. This age range was selected in order to capture as many papers as possible dealing with pre-school children. Although in the United Kingdom children start school at age 4, in other countries (such as Australia and the USA) children often start school at age 5 and children up until age 6 are regularly included in studies of pre-school age children.

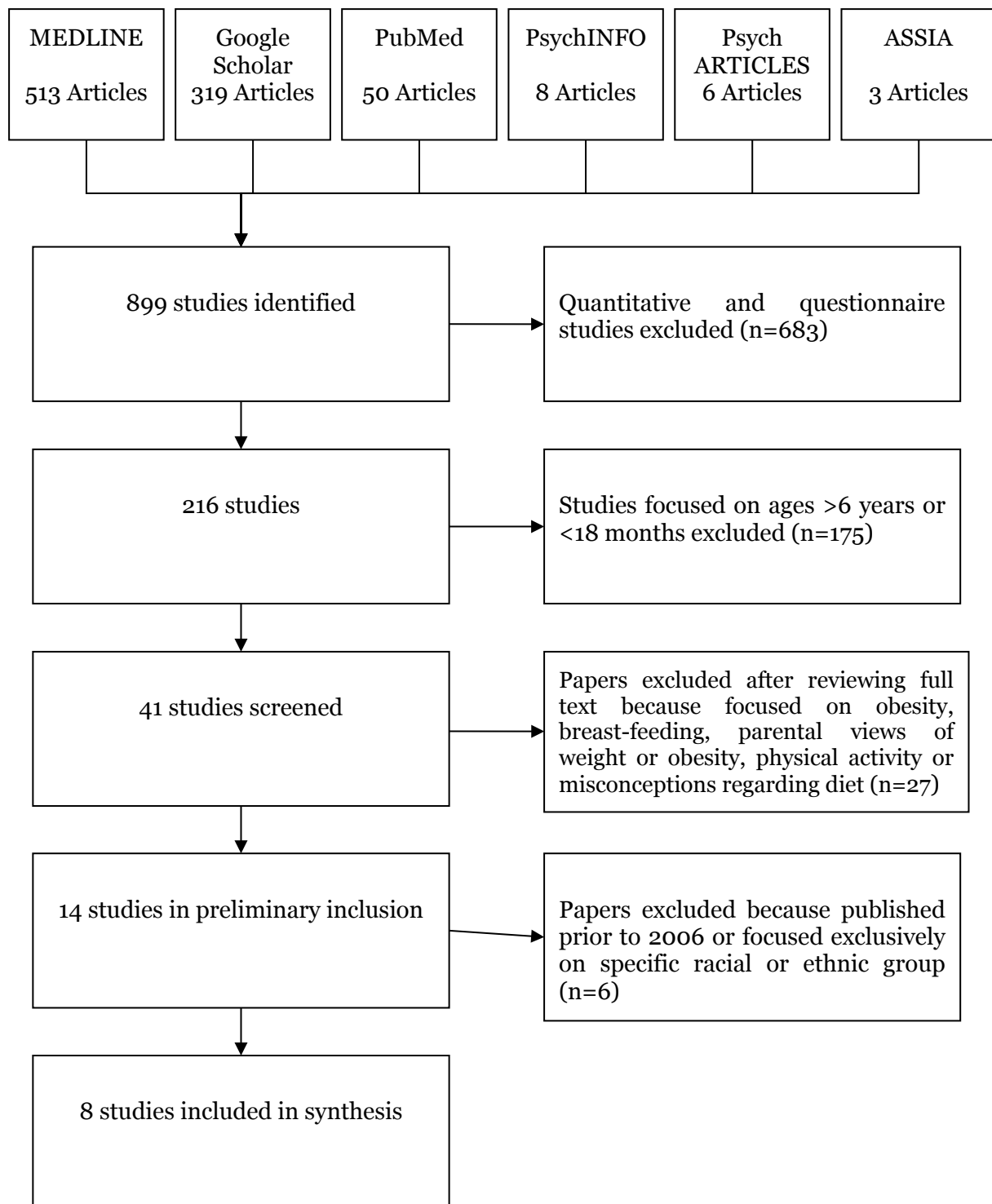
The selection criteria were applied to the results of the literature search as set out in Figure 1. Initial selection was undertaken by the first author and discussed with the second author when it was unclear whether the study met the inclusion criteria.

Non-English articles were excluded due to lack of translation resources. Articles were excluded if they used structured questionnaires or surveys, or reported only quantitative data. Observational studies and editorials were also excluded. Articles which focussed primarily on breastfeeding, parental views of obesity and weight, physical activity, or misconceptions regarding diet or nutrition were excluded. The review sought to obtain a broad picture of parental feeding behaviours and motivations. It has been noted that parental feeding practices do differ across racial and ethnic groups (Cardel, Willig, Dulin-Keita, Casazza, Beasley, & Fernández, 2012) and generalisation is difficult where studies are conducted in specific ethnic groups (Zuercher, Wagstaff, & Kranz, 2011). Articles focussing only on a particular racial or cultural group were therefore excluded. Studies dealing with low income populations generally were included in the review, due to significant recent concerns about greater health risks and obesity in this group, particularly in the UK where children's diets are said to be "known to be poor" particularly among socially disadvantaged groups (Hayter et al., 2013).

### **Literature search strategy**

A comprehensive literature search of six online databases was undertaken utilising keywords and subject headings which were modified to suit each database (see Table 1).

These searches yielded 899 articles. After applying the selection criteria, eight qualitative studies remained which dealt with parental feeding practices, behaviours and motivations regarding pre-school children aged between 18 months and 6 years old (see Figure 1).



**Figure 1.** Flowchart outlining literature search results and selection process for parental feeding papers included in thematic synthesis

### Quality appraisal

Studies were appraised using the Critical Appraisal Skills Programme (CASP) tool for qualitative research, in addition to the 32-item Consolidated Criteria for Reporting Qualitative Research (COREQ) developed by Tong, Sainsbury, & Craig in 2007.

**Table 1**

Search terms used in literature search of parental feeding papers

	AND	AND	AND
	OR	OR	OR
Parent*	Perception*	Feeding	Child*
Carer*	Opinion*	Food*	Pre-school*
Maternal	View*	Diet*	Toddler*
Paternal	Belief*	Nutrition*	Infant*
Mother*	Feeling*	Eating	0-2 year*
Father*	Attitude*	Consum*	0-5 year*
Caregiver*	Understanding	Meal*	3-5 year*
Household*	Perspective*		Early years
	Strategies		
	Practices		
	Behaviour*		
	Motivation*		
	Choice*		
	Style*		
	Approach*		

\* Truncation symbols were modified as appropriate for each database to search for variants of word endings

The measures employed by these tools overlap and broadly concern rigor, ethical issues, credibility and relevance of qualitative research. These two tools were combined to produce a table (available as supplementary material) which sets out the results of the quality appraisal process focussing on ten questions regarding research design, recruitment strategy, data collection, researcher/participant relationship, ethical issues, data analysis, clarity of findings, and value of the research.

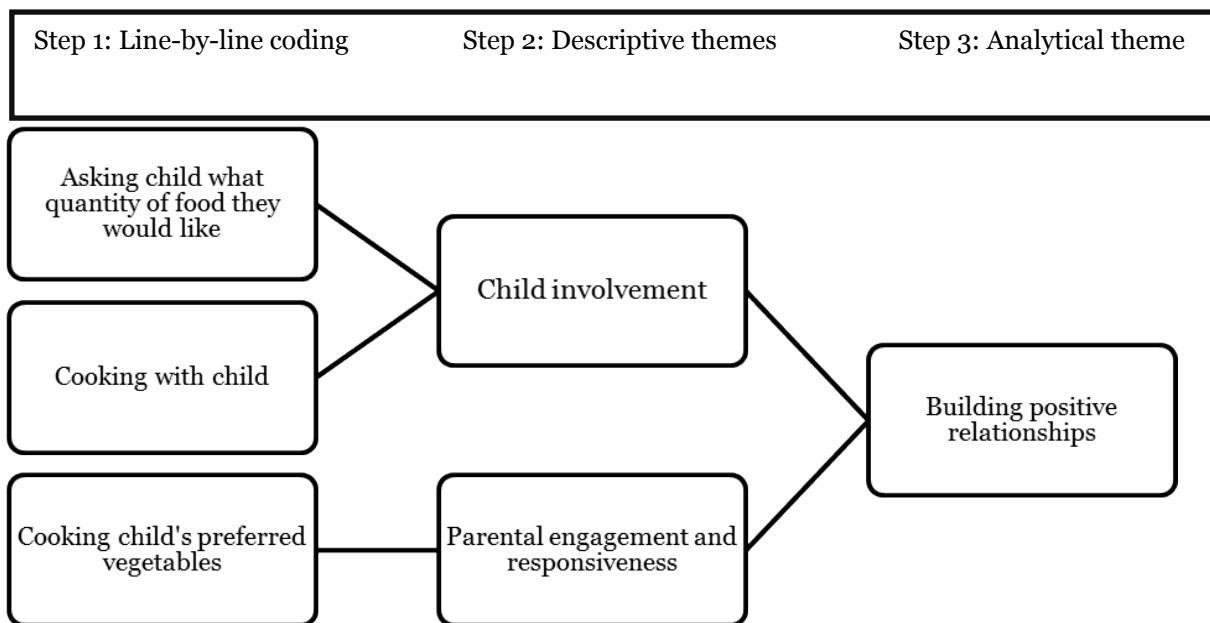


## **Data extraction**

Identifying data for a qualitative synthesis can be difficult as styles of reporting can vary and data from primary studies (such as quotations) can sometimes be misrepresented as findings (Thomas & Harden, 2008). This difficulty was resolved in accordance with Thomas and Harden's approach by taking the results and findings sections of the primary studies to be data in the synthesis. Key concepts from the primary studies were also extracted by the authors and entered into a table.

## **Synthesis of findings**

The technique of thematic synthesis, broadly as described by Thomas & Harden (2008), was used to synthesise findings. It has been referred to as a tried and tested method that preserves an explicit and transparent link between the conclusions and the text of the primary studies (Thomas & Harden, 2008). Three key steps were undertaken in the synthesis: First, inductive line by line coding of the findings of the primary studies; secondly, organisation of these codes into related areas to create descriptive themes; and thirdly, the development of analytical themes. In the first and second steps, as each study was reviewed and coded, a set of initial themes was created. Line by line inductive coding by hand allowed the translation of concepts from one study to another. A corresponding bank of quotations from each study was also created with codes being added as necessary from each new study coded. A total of 79 codes capturing parents' feeding behaviours and motivations emerged during the first step. The set of initial codes were then rearranged, with related codes being clustered together and some very similar codes being merged. At the end of this process the codes were reorganised into those concerning practical behaviours and strategies, and those concerning motivations and goals. The second step involved searching for similarities and differences among codes and resulted in the generation of descriptive themes by the first author. At this stage, the second author reviewed the content and organisation of themes and discussion resulted in a set of 25 descriptive themes. In the third step, the descriptive themes were applied to the review question which resulted in further merging and alteration and a final set of ten overarching themes. Similarities and differences across the initial themes were considered and sub-themes were created which focussed on specific yet inter-related aspects of a wider theme. Figure 2 shows how the theme of building positive relationships had sub-themes of child involvement, and parental engagement and responsiveness. Both subthemes involved building emotional intimacy and shared experiences and knowledge in the context of parental feeding.



**Figure 2.** Example of data coding and analysis process undertaken in thematic synthesis

Six themes regarding feeding behaviours emerged during the synthesis, focussing on how feeding took place and the strategies parents employed. Four analytic themes regarding motivations arose by going beyond the contents of the original studies and asking what broader goals and motivations were at play (such as the emotional desire to avoid problems, or to build a positive relationship) when parents spoke about what and why they fed their children. Thematic synthesis was chosen as a way of staying ‘close’ to the results of the primary studies, synthesising them in a transparent way, and facilitating the explicit production of new concepts and hypotheses (Thomas & Harden, 2008).

## RESULTS

### Literature search

Eight studies were included in this review. A summary of study characteristics is provided in Table 2. The studies were conducted in the UK and the United States. Across all studies interviews (telephone and face to face), diaries, questionnaires and focus groups were used to collect data.

### Quality appraisal

Quality and comprehensiveness of reporting was variable and the findings are summarised in the supplementary material. Applying CASP and COREQ, all eight of the studies were

found to have a clear statement of aims and were of good quality considering the research design and the appropriateness of using a qualitative methodology. Five studies (1, 2, 3, 4, 5) showed evidence of a rigorous data analysis process, while the remaining three studies (6, 7, 8) provided less detail of analysis, possibly due to space constraints. There was some variation in quality regarding the appropriateness of recruitment procedures and the sufficiency of descriptions of the data collection process, with two articles (6, 8) containing either fairly limited or no primary data to substantiate the authors' conclusions. Reflection on the role of the researcher and the relationship with the participants was also either fairly limited (1, 3, 5, 6) or largely absent (2, 4, 7, 8). All studies had received ethical approval but varied in the detail provided to permit an assessment of ethical standards. Ultimately, no studies were excluded on grounds of serious flaws in quality. Using CASP and COREQ, papers by Carnell et al., (2011), Hayter et al., (2013) and Herman et al., (2012) were appraised as high quality and given greater weight in the thematic synthesis.

### **Synthesis of findings**

Analysis of the samples used in the studies suggests a trend towards inclusion of low income or socio-economic status (SES) participants (in five of the eight articles synthesised). Five samples (1, 2, 5, 6, 7) concerned UK populations and three (3, 4, 8) concerned US populations. It has recently been suggested that children's diets are poor in the UK, particularly among socially disadvantaged groups and these children tend to have lower intakes of fruit and vegetables and higher intakes of non-milk sugars (Hayter et al., 2013). It has also been suggested in the UK that "how parents feed their children has been under-represented in obesity policy" (Clark, Goyder, Bissell, Blank, & Peters, 2007) and this may account for the concentration of studies regarding parental feeding in the UK over the last 5 years.

Six key parental feeding behaviours were identified: modelling; rewards; pressure and encouragement; repeated exposure; creativity; and limiting intake. The following four analytic themes (sub themes contained in parentheses) arose regarding motivations for parental feeding: 1) promoting good health (balance and variety, and weight control); 2) building positive relationships (child involvement, and parental engagement and responsiveness); 3) practicalities and constraints (time, cost, lack of culinary skills, and pressure and flexibility); and 4) emotional motivations (problem avoidance, and emotional investment). To illustrate each theme, selected participant quotations are included. Those studies which contained good detail of participant quotes (such as Carnell et al., 2011; Hayter et al., 2013; and Herman et al., 2012) are more heavily represented

**Table 2: Summary – characteristics and quality of papers included in thematic synthesis**

Study	Country	Data collection method & participant number	Child age range	Sample selection & socioeconomic (SE) factors	Theoretical approach	Analysis	Principal focus of study	Summary of quality and value of research <sup>1</sup>
Carnell et al., 2011 (1)	UK	Telephone interviews n = 14; diaries n=22	3-5 years	Parents of mostly healthy weight children in UK	None	Thematic analysis	Feeding behaviours and underlying motivations	High. Comprehensive reporting of analytic processes, themes and use of quotes. Data collected in 2002 when child obesity levels were high, but arguably there were lower levels of media focus and attention on the issue.
Hayter et al., 2013 (2)	UK	Focus groups n=33 in 4 groups; semi-structured interviews n=6 in 4 interviews	18 months – 5 years	Low income parents in UK (Islington and Cornwall)	None	Framework analysis – deductive and inductive, main focus to keep integrity of the accounts	Low income parents' perceptions of feeding their children and the factors felt to influence feeding practices	High. Good detail of analytic processes and themes. Valuable insights into factors influencing parental feeding practices
Herman et al., 2012 (3)	USA	Focus groups n=32 in 7 groups	3 – 5 ½ years	Low income mothers in USA	Grounded theory	Grounded theory analysis (constant comparative method)	Low income mothers' aspirations in feeding their children. Identifying common themes about social, emotional, cultural and economic context of feeding	High. Query use of only focus groups, although design was justified. Reflection on whether full disclosure occurred and unavailable mothers during work day times may have led to missing themes regarding time pressures.
Kalinowski et al., 2012 (4)	USA	Semi-structured interviews n=91	3-5 years	Low SES Midwestern USA mothers (49% mothers and 21% children obese)	Grounded theory	Grounded theory analysis (constant comparative method)	Understanding how mothers of lower SES perceive their role in childhood obesity in order to create more effective interventions tailored to these beliefs	Reasonable. Thorough analysis and reporting of themes but heavy focus on obesity and parenting style
Lovelace & Rabiee-Khan, 2013 (5)	UK	Semi-structured interviews n=11	10 months – 3 years	Low income parents in UK	Modified grounded theory (Silverman, 2005)	Grounded theory analysis (constant comparative method)	Influences on the diets of young children in low income families in the West Midlands, UK	Reasonable. Clear findings in relation to low income families and recommendations
Moore et al., 2007 (6)	UK	Semi-structured interviews n=12	3-5 years	White British mothers	None	Coding & interpretation at a manifest and latent level (Coffey & Atkinson, 1996)	Strategies used to encourage eating familiar/ novel foods and discourage eating undesirable foods	Limited. Short communication regarding an exploratory study. Limited detail of methods or analysis (no quotes)
Moore et al., 2010 (7)	UK	Semi-structured interviews n=12	3-5 years	White British mothers	None	Coding & interpretation at a manifest and latent level (Coffey & Atkinson, 1996)	To explore the feeding goals sought by parents of pre-school children	Reasonable. Useful data on goals. Discussion of findings in relation to existing knowledge
Ventura et al., 2010 (8)	USA	Semi-structured interviews n=32	2-6 years	Ethnically diverse low income parents in USA (Philadelphia)	None	Thematic analysis and analysis of quantitative data	To describe the feeding practices and styles used by a diverse sample of low income parents of pre-school age children	Limited. Minimal detail of analysis and illustrative quotes. An exploratory pilot study providing insights for similar, larger studies of low-income parents

<sup>1</sup> See supplementary material for a comprehensive table of quality appraisal of included studies

## ***BEHAVIOURS***

Across studies, parents described extensive feeding repertoires with a range of behaviours, generally directed at encouraging consumption of a healthy and varied diet. They relied on their experience and intuition when feeding their children. One low income study by Ventura et al., (2010) found racial and ethnic differences in feeding patterns with a greater proportion of East Asian parents having an indulgent feeding style while black parents were found to use more controlling practices compared to Hispanic and non-Hispanic white parents.

### ***1. Modelling***

Parents across the vast majority of studies acted as role models for their children by eating the same, healthy food, or commenting positively on its taste. They sought to structure mealtimes and to ensure the family ate together when possible.

“I eat what he eats now . . . we all eat the same which is excellent.” (5, p. 8)

### ***2. Rewards***

The use of rewards to encourage or discourage food consumption was widespread. Using food as a reward for good behaviour, or as a negotiating tactic or bargain, was also fairly common and often involved sweet food being given as a reward for eating perceived healthy foods (such as vegetables or a main dinner course).

“R. loves junk food and candy, but I save that just for a reward. Sweets are usually a reward for good behaviour or for finishing her dinner.” (8, p. 245)

### ***3. Pressure and encouragement***

The use of pressure and encouragement was widespread and tactics ranged across a spectrum from gentle reminders based on the nutritional value of food, such as, “J said ‘I don’t like cheese’ but I told him it was good for him. So he carried on eating it.” (1, p. 669) to more insistent verbal prodding and spoon feeding, “I pester and coerce M. to open her mouth and at least taste more of the food. I do not give up until she does.” (8, p. 243). A minority of parents used threats and imposition of punishment (such as the withdrawal of privileges) if food was not eaten while many rejected the use of intense and protracted pressure.

### ***4. Repeated exposure***

Parents were prepared to keep offering new foods over a period of time and on a number of occasions, in order to increase its acceptability.

“If I ever found that she wouldn’t eat something, first of all, I would never give up on that, I would try again a few days later.” (1, p. 669)

Some of the low income parents revealed a reluctance to do this, based on concerns about food waste and cost, while others acknowledged the importance of offering foods repeatedly, despite cost concerns.

## **5. Creativity**

Parents described a range of creative approaches to getting their children to eat, including mashing up food; adding sauces, butter and seasoning; ‘hiding’ vegetables in sauces or other, preferred food; playing games; distraction, and substituting healthy food for unhealthy choices.

“You have to pretend that the animals are coming to eat the food and sometimes he can eat a bit more that way. . .with A. you have to pretend you’re not looking and someone’s come and eaten her food for her.” (1, p. 669)

## **6. Limiting intake**

Parents were adept at finding ways to limit their children’s intake, both covertly (by not buying certain foods or visiting fast food restaurants), and overtly (by limiting or refusing certain requests for sweet or unhealthy food, or pure juice).

“She can be very greedy with sweets and chocolate and crisps. She can have one a day – like yesterday morning she said ‘can I have a packet of crisps, it’s 11 o’clock in the morning’. So I said, if you have one, you’re not having another packet so she knows – ONE.” (7, p. 190-191)

Attempting to restrict intake was often difficult and met with resistance but on the whole parents acknowledged the necessity of limits and were prepared to persist. They considered limit setting a part of teaching valuable life lessons to children about moderation.

“Sometimes it hurts you as a parent more than the child when you say no. I don’t know why though. I don’t like my son looking all upset or crying, but I also explain to him and say no sometimes because if you don’t have it and the child expects it, if everything is always yes, then it’s going to be a problem when you don’t have it.” (3, p. 5)

## **MOTIVATIONS**

### ***1. Promoting good health***

Across a range of situations and contexts, parents were often strongly motivated by a desire to ensure and promote good health in their children through a balanced, varied and healthy diet. They focussed on short term outcomes, such as minimising hyperactive behaviour, and sought to avoid obvious negative consequences such as tooth decay due to poor diet. Some were motivated to avoid dieting as well as weight gain in their children (1). Promoting good health was equally a motivation for low income parents as for those from varied SES backgrounds, although at times practicalities and constraints impacted more heavily on the low income populations (2, 3, 4, 5, 8).

#### *Balance and variety*

A varied and well-balanced diet was seen as important by the majority of parents who cited the importance of moderation and trying a variety of different foods.

“To be sure that they are eating a variety of food and not to stay always with the same things....For their health but I’m very intuitive in this. I like colourful food so they have that. I look at the variety, the colours...” (7, p. 189)

At times parents took a longer term view of balance, considering a child’s intake across the entire day when deciding whether to grant requests. Balance and variety were seen as particularly significant in one study where parents spontaneously categorised their children as ‘good’ eaters (7). It was also a major feature in the low income samples who often felt their own parents had been lacking in knowledge about healthy food and had not fed them in a positive manner.

#### *Weight control*

Motivations for feeding less regularly related to reasons of weight control or obesity, compared with balance and variety. Nevertheless, some parents still did express a desire to control weight and prevent obesity, especially where they perceived their child to be larger than average (1):

“I’ve always been strict with my older daughter... because she was always bigger... I don’t want her to be a fat child.” (1, p. 670).

The children in the synthesised studies were generally normal weight and it is expected that weight control would be a more significant motivation for parents of overweight or obese children.

## ***2. Building positive relationships***

Many parents were heavily motivated by the desire to bond and build a positive relationship with their children when feeding them. This was a two way process involving both parental engagement and responsiveness, and child involvement.

“Dinner, what it is with me and [my child] is nothing like it was with my family. When I was a kid we didn’t have dinners like that. ‘Here’s a hot dog. Here’s a sandwich. Eat it.’ You know? It’s kinda like that. Not with me and my daughter. I make dinner. I don’t throw a hot dog at her and say, ‘Here you go. Eat that. You’re good.’ No. I don’t do that.” (4, p. 433)

Across all studies parents focussed on giving their children pleasing and palatable food as a way of fostering the relationship and in some low income populations this was a priority even where it conflicted with parental rules and boundaries (4).

### *Child involvement*

Parents’ decisions about what and when to feed their children were driven by children’s preferences and parents also often responded to requests regarding portion size and content.

“I call them in the kitchen, and I ask them, ‘Do you think this is enough or is this too much?’ They may say yes or no, however. Then I give them their plate and they set it down.” (3, p. 6-7)

Parents involved their children in food related decisions and in cooking, hoping to positively engage them in the food preparation and consumption process.

### *Parental engagement and responsiveness*

Parents were often motivated to provide food as a response to their children’s temperament and eating behaviours, including the quantities previously consumed, requests and preferences, expressions of fullness and hunger, and weight. They observed and copied the food provided elsewhere, such as at nurseries (2). They saw this engagement as a positive process even where limit setting was involved, although some of the low income samples in particular, struggled to set limits about when, what and how much food could be consumed (3, 4). On the whole, the varied SES groups viewed the process as a part of teaching their children valuable life lessons and encouraging socialisation.



### ***3. Practicalities and constraints***

Another significant theme concerned the practical realities and constraints of fast-paced, modern family life, and the resultant need for compromise. Parents often felt a conflict between their desires and what they were practically able to achieve. At times they needed to settle for something less than their ideal when feeding their children. A lack of time, money and culinary skills all motivated parents and impacted on their decisions regarding what and when to feed. These themes were particularly significant in the low income populations. Parents also often expressed a need to be flexible and responsive to circumstances. Their own personal and cultural beliefs had an impact, as did pressure from children, advertising and significant others (such as family members).

#### *Time, cost and lack of culinary skills*

Parents performed many roles in addition to parenting and feeding was just one activity to be squeezed into a busy day. In between work and housework, there was often a reported lack of time and energy for cooking and food preparation.

“I work three 12 hour shifts a week and by the time you get in . . . I’d love to have things all prepared but I’m working, I’m so tired . . .” (2, p. 6)

Shortcuts such as cooking in bulk, using ready meals (which may not always be a healthy option) and using frozen vegetables were popular.

References to cost were rare among the varied SES samples, but frequent and weighty in the low income studies where participants were mindful of the need to manage on a limited budget and, at times, sacrifice food for other household essentials (such as bills or nappies).

“If I’ve got to spend £20 on nappies, the food has to suffer that week.” (2, p. 5)

Low income populations often revealed a belief that ‘healthy food’ such as fruit and vegetables were expensive (2) and there was some lack of understanding about what qualified as healthy food with parents indicating, for example, on the one hand their children ate healthy, low fat food, but then describing meals of sausage rolls and crisps, suggesting a lack of awareness of these foods’ high fat content (5). The UK low income samples reported that provision of government funded Healthy Start vouchers had increased their family’s intake of fruit and vegetables (2).

Confidence and ability to cook were another factor for some low income parents in deciding what food to provide and some used ready-made, convenience meals as a result.

“The confidence I think could be [a barrier to providing healthy food], yeah, thinking, oh my goodness I’m going to mess that meal up, I’m going to go for the easy option.” (2, p. 7)

Others felt their own childhood had assisted them in developing culinary skills.

#### *Pressure and flexibility*

Parents across all studies suffered from persistent demands from children, although more colourful descriptions were provided by the low income groups. They generally resisted this ‘pester power’ (2) which advertising was felt to exacerbate, but occasionally gave in. Parents often reported feeling frustrated with themselves when they did relent (2, 3). Some parents described being undermined by other adults (relatives, ex and current partners were frequently cited) who would provide unhealthy ‘junk’ food, thereby increasing demands for such food in the future and making it difficult for parents to encourage a healthy diet.

“When my kids are either at my mom’s or my sister’s, which is like, I guess, a grandparent syndrome, they get whatever they want and my in-laws, the same thing, we went down there, she gave him cake and ice cream for breakfast.” (3, p. 7)

They also found they needed to be flexible and to adapt to circumstances. They were influenced by what they viewed as special occasions (such as having guests, on weekends, and at Christmas) when they would relax their usual feeding behaviours.

“Obviously when there’s guests here and there’s other kids eating [chocolate bars] I don’t say to her ‘Oh no you can’t have nothing because you’ve had your quota for the day’. She will be allowed to eat a bit more. . . but it’s only for one day.” (1, p. 670)

#### **4. Emotional motivations**

Feeding was often an emotionally laden subject for parents, particularly mothers, who wished to engage positively with their children. Many parents were motivated to avoid problems through feeding. There was a strong theme of wanting to please children particularly among low income populations who felt their own childhood had been difficult (3, 4). This aspect did not feature in the mixed SES groups, perhaps because they were more likely to have had a comfortable upbringing themselves. Many mothers found feeding emotionally satisfying and reported that feeding children in a positive way allowed them to feel good about themselves too. Irrespective of SES, parents who perceived their children as problem eaters generally found feeding to be stressful and difficult.

### *Problem avoidance*

Problems which parents were motivated to avoid by feeding ranged from annoying behaviour and boredom, to tantrums and upset. Food was viewed as a quick and easy way of gaining peace and calm or cheering up, often at a time when parents needed to focus on other tasks such as cooking or shopping.

“But eating for the sake of eating I tend to allow, as probably lots of mothers do, for an easier life.” (1, p. 670)

Parents would also compromise on what and when they fed their children due to a wish to avoid hunger at key times (such as at school or bedtime).

“[I feed him breakfast] because otherwise he won’t eat anything at that time in the morning and it does worry me if he went to school without eating anything.” (1, p. 669)

Many parents reported issues with problem or fussy eaters which caused stress and frustration around parental feeding and mealtimes. These issues sometimes resulted in the use of creative techniques, or giving in to demands for the sake of peace.

“I don’t know (long, silent pause). You just don’t know, you just try anything. You try and get anything down their throat ... I’d say he’s made me ill. What shall I do this time, shall I try, just try different things with him?... I used to see the television and maybe get ideas from there...” (6, p. 189)

### *Emotional investment*

Parents were often motivated to serve food that was pleasing and appetising to their children. Particularly in the low income groups, parents described feeling gratified by watching their children eat happily and well (2, 3, 4) and wished to make their children happy through food. These groups were strongly emotionally invested in their children’s meal time enjoyment, often wishing to promote good health and positive feelings around eating in their children as a response to the overly strict, authoritarian feeding style their own parents displayed (3, 4). Structured and sociable mealtimes were valued by these parents.

“I just want my children to have the things that I didn’t have. I didn’t have the choice to ask or, you know, I mean I can’t speak for everyone in this room but my childhood wasn’t very good growing up. So I just try to give them the highlights and things that I didn’t have.” (3, p. 7)

## DISCUSSION

This thematic synthesis aimed to develop a more nuanced and comprehensive understanding of parental feeding behaviour and motivations regarding pre-school age children, through the synthesis of recent qualitative research published between 2007 and 2014. By reviewing eight studies, the in-depth views of 241 parents were able to be accessed and considered, thereby allowing construction of a broader picture of behaviour and motivations than that available within each individual study. An understanding of both feeding motivations and behaviour is vital to developing nutrition advice perceived by parents as relevant, supportive and helpful. This review highlighted the widespread use of rewards and pressure and revealed authoritarian feeding practices as a legitimate area of focus for effective nutrition education. In addition, this synthesis fills a significant gap left by previous quantitative reviews which neglected the context and reasons for parental feeding behaviour. The emphasis on low SES groups provides momentum and direction for future research while the focus on very recent work adds to significance and relevance.

In addition to highlighting restrictive and pressuring parental feeding behaviours which may be of concern, the results of this synthesis raise questions about the context that certain child feeding behaviours may create. A consideration of context ties in with the developing notion that parental feeding must be considered in conjunction with other aspects of parenting (Vollmer & Mobley, 2013). Context is informed by parental feeding behaviours and styles. Rigid, restrictive, authoritarian styles create a negative emotional context for eating and require the child to respond to the parent, ignoring their own internal cues of hunger or fullness (Fisher & Birch, 2002). Many parents may not be aware that this type of approach can be counter-productive to a child developing healthy, self-regulating eating habits (Thompson 2010). Conversely, authoritative styles characterised by sensitivity, high responsiveness and expectations for self-control have been linked with a lower risk of childhood obesity, in comparison with authoritarian, permissive and uninvolved styles (Rhee, Lumeng, Appugliese, Kaciroti, & Bradley, 2006). Effective nutrition advice should include information about the benefits of an authoritative style and could highlight the potential counter-productive effects of an authoritarian approach.

Ten master themes were developed, six concerning behaviours and four concerning motivations. Not all of these themes were explicit in the primary studies. Given that behaviours are guided and influenced by motivations (Carnell et al., 2011), considering both aspects together provides a more comprehensive understanding of parental feeding. This review revealed a clear link between parental behaviours and motivations in the context of child feeding. In particular, feeding behaviours such as modelling, pressure and encouragement, and limiting intake, reflected key motivations such as promoting good health.

Feeding behaviour involving the use of rewards and creative approaches assisted parents who were motivated and influenced by practicalities and constraints. Collectively, the themes revealed a complex picture of competing parental motivations. In feeding their children, parents carried out a difficult balancing act. They were primarily motivated to aim for optimum health and a balanced diet, and to control weight. At the same time, practicalities such as a lack of time, money and culinary skills, all of which were more keenly felt among the low income samples, sabotaged positive intentions to promote good health and build positive relationships with children. Parents wanted to engage and involve their children in feeding and to respond to their needs in a positive way, but advertising aimed at children, pressure from children themselves and the over-indulgence of other adults frequently derailed this process. Feeding was often a topic laden with emotion. Parents invested emotionally in feeding and looked to please their children, avoid conflict or compensate for their own negative childhood memories. Problem eaters caused particular stress and strain at mealtimes.

Parents across the studies employed a range of feeding behaviours, some of which have been positively evaluated in the literature, such as modelling, encouragement, repeated exposure and reasonable limit setting (Jansen & Tenney, 2001; Mitchell, Farrow, Haycraft & Meyer, 2013; Wardle, Carnell, & Cooke, 2005; Peters, Parletta, Lynch & Campbell, 2014) and some of which have not, such as the use of pressure and rewards (Batsell, Brown, Ansfield, & Paschall, 2002; Birch & Fisher, 1998; Kalinowski et al., 2012; Scaglioni et al., 2008; Tucker et al., 2006; Thompson, 2010). The balancing act carried out by parents involved a practical struggle to reconcile two disparate concepts. On the one hand, parents wished to please, remain responsive to, and build positive relationships with their children. On the other hand, they understood the necessity of limiting intake of unhealthy foods and beverages in order to promote good health. Being overly concerned with either aspect (pleasing and responsiveness, or restricting and limiting intake) can be detrimental to a child's good health and nutrition. The idea of reasonable limit setting within an authoritative, child responsive feeding style (such as allowing a choice between healthy foods) may offer a balanced and suitable resolution of this conflict. Such an approach may produce a flexible but healthy eating attitude while encouraging autonomy (Carnell et al., 2011). Across all studies there was generally a keen interest shown by parents in their pre-schoolers' eating habits and this suggests many parents are openly receptive to learning about facilitating healthy choices in behaviourally appropriate ways. Given that particularly in younger children, parental knowledge of nutrition and health has been positively associated with child diet (Blaylock, Variyam, & Lin, 1999), concerted nutrition education about the benefits and detriments of various parental feeding strategies in pre-school children appears warranted.

## **Recommendations**

Parental nutrition education programmes are a recognised method of improving pre-school children's home diets (Ho et al., 2012; Williams et al., 2014; Peters, Parletta, Lynch, & Campbell, 2014). However, for nutrition advice to be effective it must take account of parents' key motivations in feeding their children. The themes that emerged through this synthesis suggest that advice should tap into parents' desire to promote good health and bond with their children, while taking account of practical constraints (such as time, cost and the need to juggle multiple roles).

Unsurprisingly, previous research has found that mothers are most likely to be motivated by goals and values that they find significant (Alwin, 2001). Several of the healthy feeding practices present across many of the synthesised studies - setting limits, providing structure and being responsive to children's preferences, were motivated by a desire to create positive emotions. Nutrition education which reinforces these motivations and the associated positive emotions is more likely to be effective. At the same time, advice must be sympathetic to the very real difficulties that parents of problem eaters face. It should consider ways to allow parents to feel responsive and engaged with their children, while encouraging healthy eating.

Many of these recommendations apply to all SES groups. The findings concerning the impact on low income groups of a lack of food knowledge and lower confidence in the ability to cook, suggest that these groups would particularly benefit from the provision of inexpensive and quick, but nutritious recipes. Clear advice on reading food labels and on what constitutes healthy eating would also be beneficial. It has been suggested that nutritional messages which emphasise the role of the mother as a teacher and which encourage support of children's self-esteem, development and independence, will appeal to low income mothers (White et al., 2011). Preference has been shown for messages about role modelling, cooking and eating together, patience with the introduction of new food items and allowing children to serve themselves (White et al., 2011). Focus on building practical skills (e.g. cooking), social networking, progressive rewards, links to community resources and the use of behaviour change strategies (including self-monitoring and goal setting) has been endorsed in the context of obesity prevention among low SES families (Laws et al., 2014) and these techniques also hold considerable promise in the area of general nutrition education. New technologies such as apps which can be loaded onto mobile devices (e.g. smartphones) are increasingly being used to address health related behaviours and while concerns exist about their unregulated content (Abroms, Padmanabhan, Thaweethai, & Phillips, 2011), apps hold significant potential as a tool for delivery of health-related interventions (Mitchell et al., 2013). This is particularly the case among low income groups who may not seek professional medical advice, but are more likely to look online for help with feeding difficulties (Brodie, Flournoy, Altman, Blendon,

Benson, & Rosenbaum, 2000). An app explaining food labels and which levels of fat, sugar and salt are desirable in children's meals could provide useful information in a form appealing to low income groups.

Addressing a lack of awareness about healthy eating generally is important as inadequate parental nutrition knowledge contributes markedly to the increased accessibility of unhealthy food at home and is also associated with poor diet (Peters, Sinn, & Campbell, 2012). It has been suggested that in the UK, parents may perceive there to be a lack of educational resources available to assist with feeding difficulties (Mitchell, Farrow, & Haycraft, 2012, cited in Mitchell et al., 2013). Practical advice on how to cook speedy, cost effective and healthy meals, as well as suggestions on where to purchase inexpensive fruit and vegetables would assist with these issues. Information comparing the relative costs of healthy and unhealthy meals and snacks could also help rebut the belief that healthy food is the more expensive option and demonstrate that healthy eating on a budget is possible. Many parents are unaware of the need to repeatedly offer an initially rejected food and this could also usefully be emphasised. Recent research considering the merits of effective nutrition advice has suggested that effective interventions seeking to improve child feeding and eating behaviours should be (1) group based; (2) consisting of parents from similar backgrounds; (3) tailored to be inclusive; and (4) free from overt commercial references, as this may undermine trust (Mitchell et al., 2013).

In the UK, Healthy Start government funded vouchers can be used to purchase milk, fruit and vegetables by low income families and in 2010 the uptake of vouchers was estimated at 78.9%, and at 1.6% for healthy start free vitamins (Lovelace et al., 2013). These could be more widely promoted to low income groups by health visitors and other professionals.

Nutrition and dietary advice generally invokes the emotionally sensitive subjects of parenting and the parent-child relationship, and appeals to positive emotion may be needed to change practices (Herman et al., 2012; Peters et al., 2013). Advice will be unlikely to succeed unless it fosters positive feelings in parents about their relationships with their children. Advice about non-food related ways of deflecting conflict, comforting, and distracting children should therefore be framed in a sensitive and encouraging way. Such advice may already form part of many positive parenting programs and the benefits from a nutritional perspective could be highlighted. Additionally, advice may be perceived as insensitive and received negatively if it fails to take account of the practical constraints (particularly time and cost) and competing demands on parents' time (Herman et al., 2012). Given the strong theme of building positive relationships and parental engagement and responsiveness to individual child temperament, advice could be more effective if it underlines the desirability of responding sensitively to individual child features and characteristics.

Some low income parent groups were motivated to make their children happy, even where this conflicted with rules and limits that parents aspired to (Kalinowski et al., 2012). This behaviour can be associated with permissive parenting which is often driven by parents' desire to be liked by their children and has been associated with indulgent feeding practices (Peters et al., 2012). Parents' own difficult or overly strict childhoods may explain their reluctance to set limits. This suggests a need for advice which bolsters parents' ability and confidence in setting reasonable limits. The advice could be linked with parents' desire to promote good health and feel positive about encouraging long term health in their children. The results of this synthesis also suggest nutrition advice could usefully target certain behaviours. The use of rewards and pressure are an obvious area to focus on as these coercive practices can be unhelpful feeding strategies in the long term and earlier reviews have also found these practices to be widespread (Peters et al., 2013). Despite parents' best intentions, the use of food as a reward to influence or bring about a particular outcome (such as eating other 'healthy' food, like vegetables) is more akin to a bribe than a reward. The literature suggests this reduces liking for the 'healthy' food in the long term and increases preference for the restricted 'reward' food - often sweets, or unhealthy snacks (Birch & Fisher, 1998; Tucker et al., 2006). Using food as a reward for good and bad behaviour may also interfere with a child's self-regulation of food intake which can increase the risk of obesity (Thompson, 2010). At present, guidelines in the UK do not offer practical tips on how to deal with food refusal nor explain the detrimental effects of coercive practices (Mitchell et al., 2013). Sensitively framed nutrition advice should emphasise these issues and highlight other methods of encouraging eating (such as explanation-driven direction and repeated exposure) rather than pressure, restriction and reward. Advice could also help parents to understand and believe their children when they say they are full and could explain how this encourages positive self-regulation of portion size and intake.

## **Reflexivity**

The authors of this synthesis were both parents of young children and accordingly had their own parental feeding experiences, strategies and perceptions. While striving to remain objective, the authors may have been inclined to empathise with the descriptions of the practicalities and constraints faced by parents when feeding their young children and to identify with the expressions of desire to promote good health and positive relationships through parental feeding.

## **Limitations and implications for future research**

A number of potential limitations may have affected the validity of this review. Despite comprehensive efforts to identify all relevant studies, it is possible some may have been missed. Notwithstanding the use of measures such as CASP and COREQ, quality appraisal



retains a degree of subjectivity, and it is possible that other researchers may have appraised the quality of the studies in a different way. The synthesised studies were qualitative in nature and conducted in the UK and the United States among a diversity of cultures and socio-economic statuses and the degree of generalisability is uncertain. Each of the synthesised studies utilised volunteer participants and this may have attracted better educated parents with an interest in good nutrition, rather than a representative sample. In addition, the quality of the synthesised studies was variable, and although no studies were excluded on quality grounds, some contained little information about the theoretical framework, primary material or data analysis process. Nevertheless, this review provides an overview of parental feeding motivations and behaviour which adds to the evidence base and is useful in developing parent-friendly and effective interventions and nutrition education.

Until fairly recently, studies focussed largely on Caucasian middle class families. Since recent research has shown greater prevalence of obesity in children from minority groups (Thompson 2010), future research could usefully explore and assess the effectiveness of nutrition advice and interventions targeted at ethnically diverse families and could seek an understanding of the perspectives of different ethnic and cultural sub-populations which are at high risk of obesity and poor nutrition. Research on a larger scale could test the scope for the generalisation of the current findings and also assess the effectiveness of interventions and advice targeted at low SES groups and ethnic minorities. Future research might also look at frequency of use of certain parental feeding behaviours using quantitative research.

## **Conclusion**

The results of this thematic synthesis suggest key areas of focus for nutrition education should be methods of rewarding children without using food, and the regulation of diet without resorting to authoritarian or restrictive feeding practices. Advice should aim to help parents use control in a balanced and healthy manner that allows pre-school children to become independent eaters, capable of controlling their own diet in a way that is conducive to good health and weight. A clear message from this review is that many parents want to feel positive about feeding their children and about the good health that they hope will follow. Effective nutrition advice should tap into this desire for positivity, emphasising the benefits to children and their parents, while acknowledging the practical realities of child feeding.

## **ACKNOWLEDGEMENTS**

The authors wish to acknowledge Sarah Field, psychology librarian at the University of Westminster who supported development of the literature search.

### **CONFLICTS OF INTEREST**

The authors declare no conflicts of interest.

### **SOURCE OF FUNDING**

None.

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