



Should we consider grandparents as important stakeholders in the promotion of healthy eating for preschool aged children?

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Abstract

The early years are an important time in the development of eating habits and preferences, yet many children this age are failing to meet dietary recommendations. Grandparents are the main providers of informal care in the UK and consequently they can be important stakeholders in children's eating. Nevertheless, very few studies have focused on grandparents feeding behaviours. Of those that have, data is often qualitative and based on interviews with parents. Using both quantitative and qualitative methods this thesis explores the dietary provision, feeding practices and feeding styles of grandparents and considers whether grandparents should be targeted to improve the diets of preschool aged children.

The findings indicate that strategies to promote healthy eating in young children should be expanded to include grandparents and that doing so could lead to positive changes in grandparents' diets. Grandparents are providing meals high in saturated fat, added sugars and sodium and providing less than the recommended amount of fruit and vegetables. Nevertheless, engaging grandparents with nutritional support may be a challenge as they perceive little need for support. The findings also support an alternate rhetoric to that of the "indulgent grandparent" as grandparents who provide regular care to their grandchildren may differentiate between their role as a childcare provider and that of a grandparent. For instance, many similarities were found between parent and grandparent feeding behaviours. Like parents, grandparents demonstrated feeding practices that help to provide structure to, and promote autonomy in, children's eating. By considering both the positive and negative ways in which grandparents shape children's eating, the barriers and facilitators to engaging grandparents and the

important outcomes for interventions aimed at grandparents, this research provides a framework upon which future interventions can be developed and evaluated.

Dedication

This thesis is dedicated to my mum who, unfortunately, did not see the completion of this PhD but who supported me unconditionally in all of my endeavours.

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List of Acronyms

ANOVA – Analysis of Variance

BMI – Body mass index

CFSQ – Caregiver feeding style Questionnaire

CPFQ – Caregiver feeding practices questionnaire

FFQ – Food Frequency Questionnaire

FPSQ - Feeding Practices and Structure Questionnaire

GDPR - General Data Protection Regulation

HrQOL – Health related quality of life

NHS – National Health Service

NDNS – National Diet and Nutrition Survey

NICE – National Institute for Clinical Excellence

OHID – Office for Health Improvement & Disparities

SchARR – School of Health and Related Research

SD – Standard deviation

SSB – Sugar sweetened beverages

UK – United Kingdom

USA – United States of America

WHO – World Health Organisation

Thesis Structure

This thesis uses a publication format which presents a coherent body of work that comprises of both traditional thesis chapters (e.g. introduction, methodology and discussion) and studies that have either been published or are written for publication. Commentaries are used to outline the coherence and significance of the works and link the thesis together.

Chapters 3, 4 and 5 feature manuscripts that have been published. The references for these papers are detailed below within the dissemination section. Chapter 6 is written for publication but has not yet been submitted for publication. Chapter 7 is comprised of multiple sections; a small-scale exploratory study which uses the style of a manuscript for consistency with the rest of the thesis, a rapid review which is written for publication but has not yet been submitted and a discussion which considers the significance of the findings. The specific contributions of authors and details of copyright are provided in the introduction to each relevant chapter.

Dissemination

Publications

Chapter 3

Marr, C., Reale, S., Breeze, P. and Caton, S. J. (2020). Grandparental dietary provision, feeding practices and feeding styles when caring for preschool-aged grandchildren: A systematic mixed methods review. *Obesity Reviews*, p.obr.13157.

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Poster Presentations

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Marr, C., Caton, S. J. and Breeze, P. Spillover effects from early childhood dietary obesity prevention strategies. A Rapid Review. *School of Health and Related Research (SchARR) PGR conference*, Sheffield, UK, June 2022

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1 Chapter 1 – Introduction

1.1 Childhood Obesity

Childhood obesity is a major public health problem. In 2016 the World Health Organisation (WHO) estimated that 41 million children under the age of five, and 340 million children aged between 5 and 19 years old had overweight or obesity globally. Worldwide, the prevalence of obesity has tripled since 1975 ⁽¹⁾.

In England, nearly a fifth of five year olds and over a third of eleven year olds had overweight or obesity in 2021/22⁽²⁾. Although prevalence rates of obesity in reception aged children have fallen slightly since 2006/7, rates have risen for children in year six ⁽³⁾. Stark differences can also be seen in deprivation level and ethnicity. Children living in the most deprived areas are more than twice as likely to have obesity than children living in the least deprived areas and children from white families are less likely to have overweight or obesity than children from global majority families ⁽⁴⁾. The UK now has one of the worst childhood obesity rates in Western Europe ⁽⁵⁾ and in 2018 the UK government set an ambitious plan to halve the amount of childhood obesity by 2030 ⁽⁶⁾.

1.2 Consequences of Childhood Obesity

Childhood obesity has implications across all aspects of life including health, psychosocial and financial domains. With respect to health, the adverse implications are widely documented. In the short term, children with obesity are more likely to suffer

with sleep apnea ⁽⁷⁾, asthma ⁽⁸⁾, develop cardiovascular problems, insulin resistance ⁽⁹⁾ and have an increased risk of fractures ⁽¹⁰⁾. In the long term, children with obesity are five-times more likely than their peers with a healthy weight to have obesity in adulthood ⁽¹¹⁾. This increases their risk of developing non-communicable diseases such as diabetes, cardiovascular disease and certain cancers ⁽¹²⁾. Consequently, childhood obesity is associated with increased mortality and morbidity in adulthood ⁽¹³⁾.

Childhood obesity also has significant psychosocial consequences. Many children with overweight or obesity experience stigma and discrimination ⁽¹⁴⁾. Children as young as six associate obesity with negative characteristics such as laziness ⁽¹⁵⁾ and subsequently, children with overweight and obesity are more likely to be victims of bullying than peers with a healthy weight ⁽¹⁶⁾. In turn, these negative social interactions can lead to low-self-esteem, body-dissatisfaction and depression ⁽¹⁷⁾ and have an adverse effect on school attendance ⁽¹⁸⁾ and potentially, academic attainment ⁽¹⁹⁾. The psychosocial consequences of obesity are also evident in adults; women with obesity have an increased risk of body image dissatisfaction and consequently, low self-esteem ⁽²⁰⁾ and depressive symptoms ⁽²¹⁾. The pervasive stigma and discrimination experienced by adults with obesity also negatively impacts upon relationships and work opportunities, affecting women disproportionately more than men ⁽²²⁾.

Obesity also has a significant cost implication. In 2014/15, £6.1 billion of the UK National Health Service (NHS) budget was spent on overweight and obesity-related ill-health and this is projected to increase to £9.7 billion per year by 2050 ⁽²³⁾. This relates to health care costs alone, however overweight and obesity also leads to

substantial productivity losses due to the influence weight has on absenteeism and presenteeism in the workforce ⁽²⁴⁾. Consequently, the annual cost of overweight and obesity in the UK rises dramatically to the annual sum of £27 billion if the wider economic implications of obesity are taken into consideration ⁽²³⁾.

1.3 Causes of Childhood Obesity

It is widely acknowledged that, in the most simplistic form, obesity is the result of an imbalance between energy intake and energy expenditure. However, the causes of childhood obesity are multifarious and are embedded within a complex system where individual, family, community, societal and environmental factors interact. According to the ecological systems theory of childhood obesity (figure 1) ⁽²⁵⁾, three main factors place a child at risk of weight gain; dietary intake, sedentary behaviour and physical activity. These risk factors are moderated by child characteristics such as gender and age and are shaped by and influence parenting styles and family characteristics in a bi-directional manner. The outer circle represents the social, demographic and community level factors that influence parenting practices and children's risk factors. This model demonstrates the importance of considering the wider context in which child risk factors occur and emphasises the need to target the family system rather than just individual behaviours. The model illustrates the important role of parents however it neglects to consider the influence of non-parental caregivers such as grandparents or childcare providers, demonstrating a need to consider how these non-parental roles can also influence child weight status.

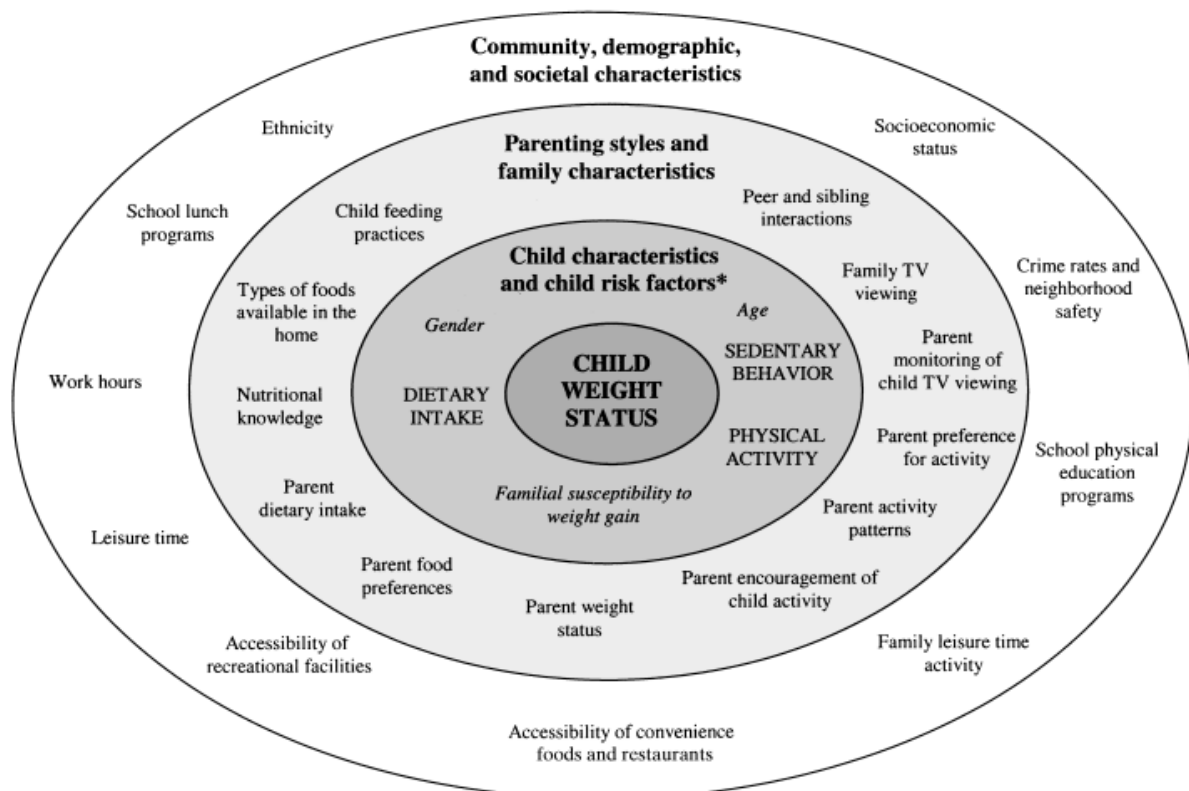


Fig 1. Ecological Systems Theory of Childhood Obesity. ⁽²⁵⁾

1.4 Children's Dietary Intake

Dietary intake is one of the key risk factors proposed by the Ecological Systems Model of childhood obesity and unhealthy dietary habits of children in the UK are partly responsible for the rise in childhood obesity. The National Diet and Nutrition Survey is a cross-sectional survey assessing the diet and nutrient intake of the UK population ⁽²⁶⁾. Results from 2016-2019⁽²⁷⁾ found that only 15% of children aged 1-5-3 years old met the recommendation of no more than 5% total daily energy intake from free sugars⁽²⁸⁾. Similarly mean saturated fatty acid intake exceeded government recommendations, with saturated fatty acids contributing to 13.1% of total energy

intake for children aged 4-10 years old. Children are also not consuming enough fruit and vegetables with only 12% of children aged 11 to 18 years old consuming five portions of fruit or vegetables per day.

1.5 The Early Years

Children's experiences with food in the first few years of life are pivotal in laying the foundation for lifelong healthy eating habits. This is due to the fact that food preferences and dietary behaviours are formed during this period that influence food choice throughout childhood and into adulthood^(29,30). For example, a longitudinal study of American girls found that the likes and dislikes of snack food items tracked between the ages of five and eleven years ⁽³¹⁾. Other studies have demonstrated tracking over an even longer time period whereby food choices ⁽³²⁾ and food variety ⁽³³⁾ at age 2-3 years old were strongly associated with food preference and variety of foods consumed at the age of 22. These tracking studies suggest that interventions targeting dietary intake in the early years not only have the capability of reducing childhood obesity rates but may also impact upon longer term obesity outcomes through the sustained effect on dietary habits. Consequently interventions aimed at children in the early years not only hold the potential to influence adult-onset diseases but also to mitigate health disparities experienced throughout the lifetime^(34,35).

1.6 The Home Environment

The home environment is considered crucial in children's health and development as children of all ages spend a significant amount of time in the home. In 2021, Kininmonth et al. developed a conceptual framework outlining the obesogenic home

environment⁽³⁶⁾. This included the food environment, as well as physical activity, and media environments. These three domains collectively shape a child's dietary intake and activity levels,^(37,38). These domains were further broken down into social and physical elements. For instance, concerning physical activity, the social domain encompasses caregiver modelling and support of physical activity, along with caregiver physical activity policies. Whilst the physical activity domain included the availability and accessibility of physical activity equipment. Within the home food environment, the social elements encompass caregiver feeding practices and policies, alongside caregiver modelling and support for food intake. The physical aspect of the food environment includes the availability and accessibility of food and drinks. In a systematic review of 62 studies examining different aspects of the home environment in relation to child adiposity it was consistently found that the physical domain of the home media environment was an important predictor of child weight. Particularly, availability of electronic devices was associated with higher child adiposity. Findings were less consistent for the associations between the physical and social aspects of food and activity environments and child adiposity⁽³⁶⁾ however a further study assessing the overall home environment and child bmi found that the home environment was a significant predictor of child bmi.

1.7 Role of the caregiver in the home food environment

It is estimated that around 70% of a child's food is consumed in the home⁽³⁹⁾ and particularly for young children caregivers play a vital role in molding both the physical and social aspects of a child's home food environment. By shaping children's early experiences with food, caregivers can be seen as the agents through which children develop food preferences and eating habits ⁽⁴⁰⁾. They become the nutritional gatekeepers for young children, impacting upon children's dietary preferences and intake via dietary provision, the practices they adopt and the overall approach they take to feeding ^(41,42). For instance, they decide what food to provide, controlling energy balance and amounts of macro and micro nutrients that children are served. A recent survey of 1000 UK caregivers found that children in the early years are often served portion sizes that exceed recommendations for meals, drinks and snack food items ⁽⁴³⁾. This is problematic because the greater the portions they are provided, the more they tend to consume⁽⁴⁴⁾, without any compensatory behaviours ⁽⁴⁵⁾. Nevertheless, children are the ultimate decision-makers in terms of what, when, and how much they consume. Children's dietary consumption is influenced by their temperament ⁽⁴⁶⁾ as well as their appetitive traits, such as food responsiveness, satiety responsiveness, and food enjoyment ⁽⁴⁷⁾. The early years also pose a unique challenge for caregivers as it is a time when children are developing autonomy and have a strong desire to self-feed and express control over their food choices⁽⁴⁸⁾. This period also coincides with the peak of food neophobia ⁽⁴⁹⁾, defined as the avoidance and rejection of unfamiliar or novel foods ⁽⁵⁰⁾), adding a further challenge for caregivers of young children. Positive caregiver-child interactions can therefore play a crucial role in helping children to overcome their reluctance to try new foods. Caregivers, through their feeding practices, exemplify culturally relevant eating

patterns and behaviors (63). They serve as role models from whom children can learn, but at times, they may employ practices that are counterproductive. For instance, certain practices, like encouraging a child to finish everything on their plate, may have originated during periods of food scarcity, and have been passed down through generations, but may not be suitable in the present obesogenic environment (63). The following section will delve into the potential positive and negative effects that caregiver feeding practices can exert on children's eating in greater detail and also consider how children's eating behaviour can also shape caregivers feeding practices.

1.8 Caregiver Feeding Practices

There has been a considerable amount of research into caregiver feeding practices, defined as *"the specific goal directed behaviours used by caregivers to directly influence their children's behaviour"* ⁽⁵¹⁾. Although research exploring feeding practices has focused mostly on parents, these practices are also relevant for non-parental caregivers such as grandparents. Feeding practices are important because they can have a positive or negative impact on children's eating behaviours and their overall relationship with food and therefore can impact upon weight. Feeding practices may be adopted to either promote or dissuade intake of specific food items, but they often result in behaviours counterproductive to caregiver aims. Caregiver feeding practices vary according to socioeconomic factors such as education and income, personal factors such as age and culture, personality factors and psychological health ⁽⁵²⁾. Caregivers may also adapt their practices based on child characteristics such as child weight or perceptions of child weight. More recently there is evidence to suggest that the relationship between caregiver feeding practices and children's eating behaviour

may be bidirectional. Not only do caregiver feeding practices influence children's eating behaviours but also children's eating behaviours may influence caregiver practices, particularly caregivers use of coercive practices. A large number of feeding practices have been described in the literature but Vaughn and colleagues mapped feeding practices onto three overarching higher-order food parenting constructs: (see figure 2) autonomy support, structure and coercive control⁽⁵³⁾. These will now be discussed in turn.

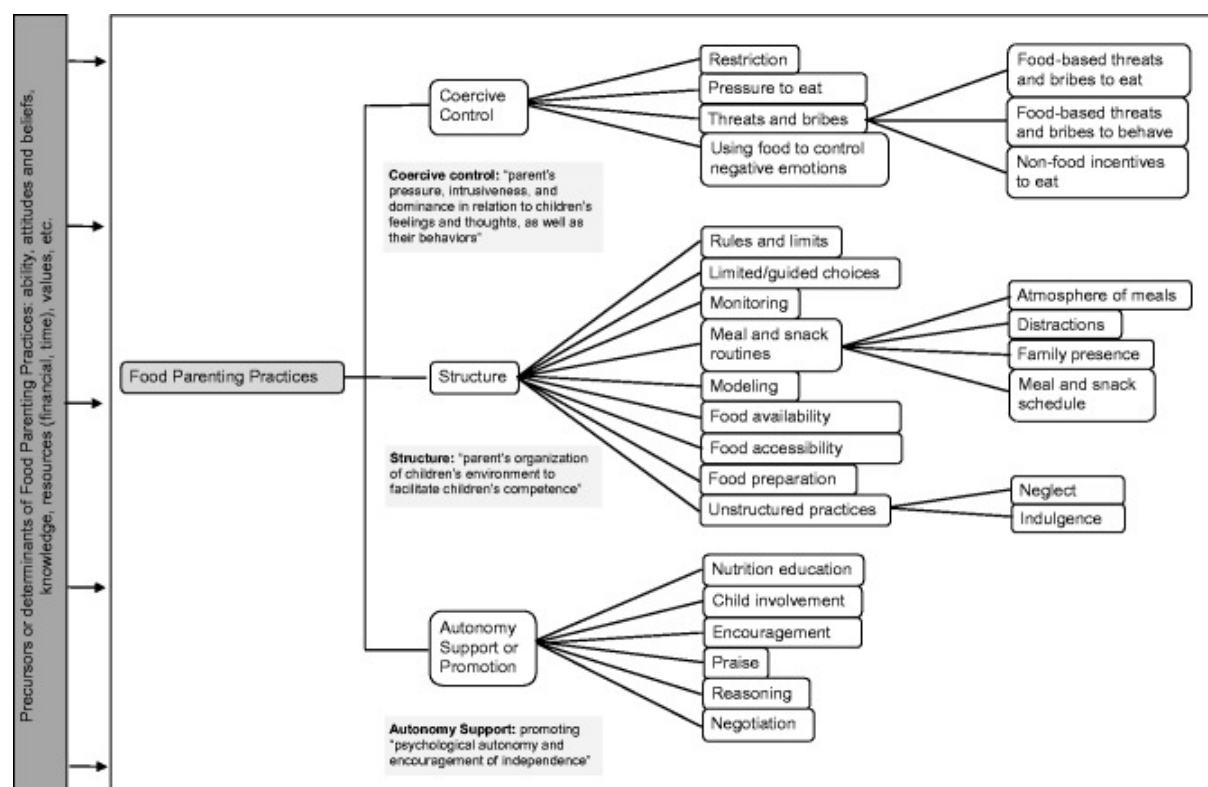


Figure 2. Content map of food parenting practices⁽⁵³⁾

1.8.1 Autonomy Support

Autonomy support refers to caregiver behaviours that support independence in children's eating, that teach them to self-regulate and to develop a sense of personal

ownership over their diet. This is done by providing structure, discussing with children the reasons for food rules and boundaries and creating an emotional climate where children feel loved and supported by caregivers. The parenting practices that do this include;

1. Nutrition education

When caregivers share age-appropriate nutritional information and skills it allows children to make informed dietary choices and helps to develop children's autonomy around eating.

2. Child involvement

When caregivers involve children in food shopping, meal planning and meal preparation it allows children to become more familiar with foods and facilitates the sharing of family norms and traditions. For instance children's willingness to try vegetables is increased when they are involved in the growing, choosing and preparation of them⁽⁵⁴⁾.

3. Encouragement

When caregivers gently encourage their children to consume healthy foods (rather than unhealthy ones) using supportive prompts and reminders and without pressure this can facilitate children's intake of both fruit and vegetables^(55,56).

4. Praise

When caregivers use positive verbal feedback for a child's behaviour such as trying a new food, eating fruit or vegetables or eating a desired quantity of food this can have a positive impact on children's eating. Studies have found that praise is associated with a child's acceptance of new food, vegetable consumption and overall healthier eating patterns⁽⁵⁷⁻⁶⁰⁾.

5. Reasoning

When caregivers use logic to persuade children to eat something or not this can impact upon eating behaviour. Caregivers may encourage children to eat something by convincing the child that the food is tasty or healthy or they may discourage a child from eating something by convincing the child that it is unhealthy or emphasising a food's negative qualities. There is some evidence to suggest that the former impacts positively upon eating behaviour ⁽⁶¹⁾.

1.8.2 Structure

Structure refers to how caregivers organise the children's eating environment. Although it is a type of caregiver control it involves the use of noncoercive practices which consider a child's perspective and support child autonomy. These include;

1. Rules and limits

When caregivers provide consistent rules and limits on what, when, where and how much children can eat it can lead to increased fruit and vegetable intake⁽⁶²⁾, healthier diets⁽⁶³⁾ and lower intake of sugar sweetened beverages^(64–66) and snack foods⁽⁶⁷⁾. This includes boundaries on what food is appropriate for meals and snacks, what foods should be eaten or limited and the context of food, for instance special occasions and what can be consumed for them.

2. Limited or guided choices

When caregivers provide a limited choice to children based on what they deem to be acceptable it provides the child with an opportunity to have control and independence over their eating. This is in contrast to providing a child with total

control over what they eat or no control whatsoever, both of which can have a negative impact on children's diets^(68,69).

3. Meal and snack routines

When caregivers create structure and routines around food this can have a positive or negative impact on children's eating. This includes structure and routines on where children eat, when snacks and meals are consumed, whether other family members are present, whether there are distractions whilst eating, and rules and manners during eating. For instance having meals as a family can positively impact on children's fruit and vegetable intake and overall diet quality^(70,71), whilst watching TV during mealtimes can have a negative impact^(72,73).

4. Monitoring

When caregivers keep track of their children's consumption it can lead to positive dietary outcomes including increased fruit and vegetable consumption and decreased intake of discretionary food items and sugar sweetened beverages^(55,74,75). However this may only be up to a certain point, with too much monitoring having a potential detrimental effect on children's diets⁽⁷⁶⁾. Monitoring can lead to food refusal and eating large quantities of food however increased monitoring may also occur as a response to these negative eating behaviours (114).

5. Modelling

When caregivers deliberately choose to consume healthy foods during meals shared with children this can have a positive impact on children's diets. This is because children learn via observational learning and will adopt the behaviours they observe from an influential role model. Caregiver modelling of healthy

eating is positively associated with children's consumption of fruit and vegetables ⁽⁵⁶⁾ and inversely associated with children's intake of foods high in fat⁽⁷⁷⁾. Additionally modelling of healthy eating may be predictive of lower food fussiness⁽⁷⁸⁾. Conversely, unhealthy caregiver food modelling is associated with children's consumption of unhealthy food⁽⁷⁹⁾.

6. Food availability

When caregivers control the availability of healthy and unhealthy foods for children they are shaping the home food environment. Children's preferences are developed through repeated exposure⁽⁸⁰⁾ and consequently the availability of food items greatly impact upon the foods children will accept⁽⁷⁹⁾. There is consistent evidence that the availability of fruit and vegetables is positively associated with children's fruit and vegetable consumption^(56,81). On the other hand, the availability of unhealthy food is significantly and positively related to children's consumption of unhealthy food⁽⁷⁹⁾.

7. Food preparation

When caregivers dedicate time to meal preparation this can greatly increase the healthiness of the meal provided and therefore consumed by children. Food preparation also includes strategies that caregivers use during food preparation such as avoiding unhealthy seasonings, using healthier version of products, offering healthy alternatives to unhealthy food (such as fruit for dessert), cooking from scratch rather than using ready-made products and choosing healthier cooking methods⁽⁵³⁾. These healthier food preparation methods can lead to lower intakes of fat in children⁽⁸²⁾ and lower BMI⁽⁸³⁾.

8. Unstructured practices (neglect and indulgence)

When caregivers are neglectful or overly indulgent they are asserting minimal control on their children's eating. Caregivers may be overly accommodating, distracted and cater to children's demands. Unstructured practices have been poorly defined and operationalised in the literature⁽⁵³⁾ however they closely resemble an indulgent feeding style which can lead to both unhealthy dietary intake and higher weight in children^(84,85).

1.8.3 Coercive control

Coercive control refers to strategies that serve parents food goals and desires and may fail to consider the child's needs⁽⁵³⁾. In doing so they can reduce a child's responsiveness to internal signals of hunger and satiety and consequently their ability to self-regulate food intake⁽⁵²⁾. Coercive practices can lead to negative effects on children's preferences and eating behaviours.

1. Restriction

When caregivers limit their child's intake of food (typically high fat and high sugar foods) they often do so to promote health or control weight, however these attempts can be counterproductive. For instance caregiver restriction, can lead to an increased desire for the restricted foods^(86–88) as well as an increased consumption of those foods ^(86,87,89). There is also some evidence to suggest that restriction is positively associated with child weight status ^(90–92) however caregivers who perceive their child to be underweight are also less likely to restrict foods ⁽⁹³⁾. Additionally, when mothers were concerned about their child weight they were more likely to restrict food items and exhibit covert control⁽⁹³⁾.

In the literature, inconsistencies have been identified regarding the associations between child weight and restriction^(88,94–96). This variability may stem from a lack of precise definition for the concept of restriction. Studies now make a distinction between overt and covert restriction^(97,98); overt restriction refers to a caregiver controlling what, when, where and how much a child eats whereas covert restriction involves the limiting of opportunities for consumption. Caregivers may covertly restrict by not purchasing unhealthy food items and not having them available in the home. The key distinction between overt and covert restriction is therefore the awareness of the child. When studies have distinguished between these two types of restriction different patterns of eating behaviours have been documented with covert restriction having a positive impact on children's diets and overt restriction impacting negatively⁽⁹⁹⁾. Vaughn and colleagues have developed the definition of restriction further. They describe coercive restriction as involving "little or no reasoning, negotiation or opportunity for children to make choices"⁽⁵³⁾. They differentiate this from non-coercive restriction practices such as controlling the availability of food, providing limited choices and monitoring intake which would provide structure to, and support autonomy in children's eating.

2. Pressure to eat

When caregivers insist that children eat more food using verbal prompts or physical actions although they are doing so to increase food consumption it can have the opposite effect and lead to food refusal and picky eating ⁽¹⁰⁰⁾. Considering that caregivers often pressure children based on the concerns that their child isn't eating enough or is underweight this practice is

counterproductive⁽¹⁰¹⁾. For instance data from the Generation XXI birth cohort suggests that mothers are more likely to pressure their children eat when they perceive their child as underweight⁽⁹³⁾. In a study of 1920 mothers, mothers were also more likely to pressure children who had a lower birth weight⁽¹⁰²⁾.

A bidirectional relationship between pressure to eat and children's eating behaviours has also been documented. Recent studies have found that child food fussiness⁽¹⁰⁰⁾, food refusal⁽¹⁰³⁾ and eating small amounts of food⁽¹⁰³⁾ can lead to increased caregiver pressure. Pressuring children may involve demanding that children finish the food on their plates or physically forcing a child to eat. Vaughn and colleagues also describe how central to their definition of pressuring to eat, as a coercive practice, is the caregivers failure to acknowledge the child's feelings and needs whilst doing so⁽⁵³⁾.

3. Threats and bribes

When caregivers use incentives or disincentives to shape a child's behaviour they can do so in a multitude of ways. For instance they can use food as a bribe or as a threat to eat (e.g. telling a child they can have pudding if they eat all of their dinner or threatening to withhold pudding unless they eat their dinner), they can use food as a bribe or threat to behave (e.g. telling a child if they are good in the supermarket they can have some chocolate or telling them they will not get an ice cream if they don't behave) or they can use non-food based incentives to encourage eating (e.g. giving the child a sticker for trying a new food). Using extrinsic motivators such as food based threats and bribes may lead to children ignoring their internal motivations to consume healthy food, especially once rewards and threats are removed^(104,105). It can also lead to

increased desire for the food used as a bribe^(106,107) and decreased liking of the target food^(59,106,108). Research exploring the use of non-food based rewards have found that rewards such as stickers can increase both the liking and intake of a disliked food and can therefore be an effective strategy to increase vegetable consumption^(109–111). Using threats and bribes to shape eating behaviour is also known as instrumental feeding.

4. Using food to control negative emotions

When caregivers use food to manage children's emotions (e.g. hurt, angry, boredom, upset etc.) it can lead to children eating in the absence of hunger⁽¹¹²⁾ and can encourage emotional eating in children^(113,114).

1.9 Caregiver Feeding Styles

Caregiver feeding styles also influence children's dietary intake and weight status. Caregiver feeding styles are the emotional climate in which feeding interactions take place⁽¹¹⁵⁾. Unlike caregiver feeding practices, feeding styles are believed to be stable over time and across different situations. Feeding styles are characterised by two main dimensions; responsiveness and demandingness. The concepts of demandingness and responsiveness came from the work of Baumrind in the 1980's who used these terms to describe general parenting styles, not specifically associated with feeding⁽¹¹⁶⁾. Demandingness refers to the level of control and supervision caregivers exhibit as well as the expectations caregivers hold, whereas responsiveness refers to the level of caregiver involvement, warmth and acceptance. In 2005 Hughes and colleagues developed a typology of parental styles for feeding based on these two dimensions⁽⁸⁵⁾. They described four types of feeding style (figure 3).

1. Indulgent styles are characterised by high responsiveness and low demandingness. Indulgent caregivers place few demands on a child's eating but are highly responsive to a child's needs and wants.
2. Uninvolved styles are characterised by low demandingness and responsiveness. Uninvolved caregivers place few demands on a child's eating and have low responsiveness to a child's wants and needs
3. Authoritarian styles are characterised by low responsiveness and high demandingness, Authoritarian caregivers place high demands on a child's eating with a low responsiveness to a child's wants and needs
4. Authoritative styles are characterised by high responsiveness and demandingness. Authoritative caregivers place high demands on a child's eating and are highly responsive to a child's wants and needs

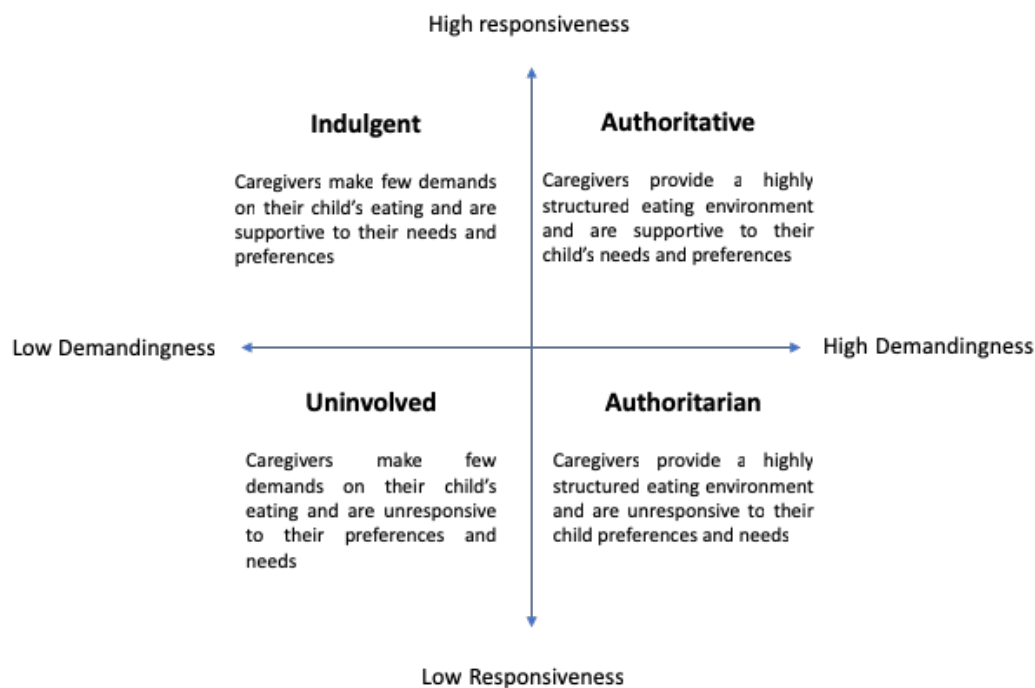


Figure 3. Caregiver feeding styles (adapted from Hughes et al 2005 ⁽⁸⁵⁾)

In a study involving 750 children aged 3-5-years-old, it was found that indulgent or uninvolved parenting styles were notably linked to higher consumption of energy-dense foods and lower consumption of fruit and vegetables when compared to authoritarian feeding styles⁽¹¹⁷⁾. Over time, feeding styles can therefore have an impact on child weight and a recent review of feeding styles and children's weight status ⁽⁵¹⁾ found that children whose parents adopted an authoritative feeding style were more likely to have a healthy BMI. In contrast, parental indulgent feeding style was consistently linked with childhood obesity. Although these feeding styles are also applicable to other caregivers, like with feeding practices, the research is predominantly parent-focused. Despite the common rhetoric that grandparents are indulgent with their grandchildren, the feeding styles of grandparents have been mostly overlooked in the literature.

1.10 Grandparents

Grandparents can play an important part in a young child's life. In its most simplistic form a grandparent is the parent of one's parent, however the role of a grandparent is defined via social norms and expectations, culture and the behaviours and characteristics of the grandparent themselves. Due to an increase in life span, men and women may spend over half their life as grandparents⁽¹¹⁸⁾ and Neugarten and Weinstein proposed five different styles of grandparenting⁽¹¹⁹⁾:

- 1) The formal grandparent who maintains an interest in their grandchildren and may provide treats and indulge them but maintains clear boundaries between the parent and grandparent role, choosing not to provide parenting advice or childrearing services.
- 2) The fun seeker who creates an informal and playful relationship with their grandchildren based on mutual satisfaction and with few authority lines.
- 3) The surrogate parent who takes on caretaking responsibility for the child when the parent works
- 4) The reservoir of family wisdom grandparent who has a very distinct line of authority with their grandchildren as elders who pass on knowledge, skills and resources and their grandchildren remain in a subordinate position
- 5) The distant figure grandparent who infrequently sees their grandchildren, often only on special occasions and is distant and remote from the grandchildren's lives.

There are many factors that might influence the grandparent-grandchild relationship. For instance, geographical proximity acts as a key determinant, whereby grandparents living closer to their grandchildren have a greater opportunity to spend time with their

grandchildren and be involved in their lives. Nevertheless, even with proximity the parent generation can influence the grandparent grandchild relationship by acting as a gatekeeper and facilitating or hindering the level of involvement⁽¹²⁰⁾. The marital status of the parents is also an influencing factor with maternal grandmother involvement and grandparent financial support increased with parental divorce⁽¹²¹⁾. There are also differences in gender whereby relationships through the maternal line are stronger⁽¹²²⁾ and grandmothers often have a closer relationship to their grandchildren than grandfathers⁽¹²³⁾. The age of both the grandparent and the grandchild also have an impact with younger grandparents often having greater contact with, and engaging in more recreational activities with their grandchildren. In contrast older grandparents may be more likely to provide financial assistance and have a stronger sense of identity as a grandparent⁽¹¹⁸⁾. Grandparents often interact more with younger grandchildren and are more likely to provide baby-sitting or childcare to younger grandchildren⁽¹¹⁸⁾. However, the number of grandchildren a grandparent has as well as the employment status of the grandparent can also determine a grandparent's capacity for involvement.

Over the last few decades, societal changes have led to a growth in maternal employment⁽¹²⁴⁾ and at the same time formal childcare options have become less affordable for many⁽¹²⁵⁾. Consequently, grandparents have become an important source of childcare worldwide including in Australia⁽¹²⁶⁾, the USA⁽¹²⁷⁾ and across Europe⁽¹²⁸⁾. In England, a fifth of children are cared for by informal childcare providers, with grandparents being the most common provider of informal care⁽¹²⁹⁾. The average cost of full time nursery for two year olds is £229.33 per week and only 45% of councils have enough childcare places for parents to access the free 30 hours they are entitled

to ⁽¹³⁰⁾. It is therefore unsurprising that children in the early years are even more likely to be cared for by grandparents than older children, with 24% of preschool children receiving childcare from their grandparents⁽¹²⁹⁾.

This means that many grandparents are becoming what Neugarten and Weinstein described as surrogate parents, those who provide regular childcare to their grandchildren. This is distinct from custodial grandparents who act as the primary caregiver and raise their grandchildren by acting as parents themselves⁽¹³¹⁾. Nevertheless, by adopting the role of childcare provider these grandparents become responsible for their grandchildren's diet, physical activity and sleep; all of which can influence energy balance.

The grandparent acting as an informal caregiver presents a distinctive challenge when considering their role in the home food environment. Grandparents may care for their grandchildren either in their own home, where they wield significant influence over the physical features of the home food environment, or in the grandchild's home, where their impact on the physical food domain may be more limited. However, the social aspects of the home food environment may be viewed as more adaptable in this scenario, relevant regardless of where the grandparent cares for the grandchild.. There is a distinct lack of evidence regarding grandparents feeding behaviours, highlighting the need to consider the feeding practices and feeding styles that grandparents use when caring for their preschool aged grandchildren. This is especially true for those grandparents that provide regular care to their grandchildren as their feeding behaviours may be particularly influential in shaping children's eating.

1.11 Grandparent involvement and child weight

With an increase in childhood obesity, researchers have therefore begun to explore the relationship between childhood obesity and grandparental involvement. There is some evidence to suggest that grandparental child-care is associated with childhood overweight and obesity. A systematic review and meta-analysis pooled together evidence from 23 studies and found a 30% increased risk of childhood overweight and obesity when grandparents were involved in childcare⁽¹³²⁾. However grandparental involvement was not associated with children's BMI z-scores after adjusting for publication bias. Furthermore, due to study heterogeneity the results could not be separated for children in the early years and the degree of grandparent involvement was poorly defined and varied considerably across studies. The authors concluded that further work is needed to explore the behavioural pathways connecting grandparent involvement to child weight outcomes. Consequently the focus of this thesis will be on the role that grandparents play in shaping children's early dietary experiences by exploring their feeding behaviours and their role in shaping the home food environment rather than their influence on child weight and obesity.

1.12 Benefits of caregiving for grandparents

Research has indicated that engaging in grandparental care can lead to better mental and physical wellbeing for the grandparents providing care to their grandchildren. For instance, studies have demonstrated enhanced happiness⁽¹³³⁾, cognitive function^(134,135), mental health^(136–138), physical health^(137,139,140) and life span⁽¹⁴¹⁾ in those grandparents that provide childcare. Interestingly, the potential impact that

caregiving could have on grandparents dietary health has been largely overlooked. This is surprising, considering that the social and physical aspects of the home food environment, including the availability and accessibility of healthy foods and modelling healthy food intake, inherently have the potential to influence grandparents' own home food environment. Thus, providing care to grandchildren, particularly those in the early years, could potentially contribute to improved dietary health and weight outcomes for grandparents. Consequently, interventions aimed at aiding grandparents in managing feeding behaviours may inadvertently yield positive effects on their overall health. This aspect becomes particularly crucial when developing and evaluating early years nutritional interventions focused on grandparents. Therefore, further research is essential to comprehensively understand the significance of grandparent outcomes in this context.

1.13 Conclusion

Childhood obesity is a significant public health challenge influencing physical and psychological health both in the short term and across the lifespan, with considerable financial cost. The causes of childhood obesity are complex, however dietary intake is a key risk factor associated with weight gain in children. Food preferences and dietary patterns are established during the preschool years, and can persist into adolescence and adulthood. It is therefore important that healthy eating behaviours are developed early in life. In the UK, children are falling short of dietary recommendations for fruit and vegetables and are exceeding their recommended amounts of saturated fat, added sugar and salt. A large amount of food is consumed in the home and therefore the home food environment is considered particularly important in child health. During

the early years children's nutritional intake and eating behaviours are developed through observing the eating behaviours of others and through their direct experiences with food ⁽¹⁴²⁾. Caregivers act as gatekeepers for young children's nutrition, making food purchasing decisions and deciding what food is available for, and provided to, children. Caregivers also use feeding practices that can shape children's eating and adopt feeding styles which create an eating environment that can positively or negatively impact upon children's eating and weight. A substantial amount of research has explored the dietary provision, feeding practices and feeding styles of parents and how they influence young children's diets ^(115,142,143). In contrast, very little research has explored these feeding constructs in grandparents. Grandparents are frequently relied upon to provide informal care to children in the early years and therefore grandparents may play an integral role in shaping the diets and eating behaviours of children this age. Considering grandparental involvement in early years child care, and the potential associations found between grandparent involvement and child weight, there is a clear need to research the feeding behaviours of grandparents. Additionally, it is essential to take into account the potential reciprocal impact of caregiving on the dietary health of grandparents and the implications this may pose for evaluating interventions designed to support grandparents in their feeding roles.

1.14 Aims and Objectives

This thesis will therefore explore a relatively understudied area. The principal aim of this thesis is to explore whether grandparents should be targeted to improve the diets of preschool aged children.

To achieve this aim the following research objectives formulated

1. Review the evidence assessing grandparental feeding behaviours with their preschool aged grandchildren
2. Explore how the National Diet and Nutrition Survey could be used to assess grandparental influence on preschoolers' dietary intake
3. Compare and contrast parent and grandparent feeding behaviours with their preschool aged children/grandchildren
4. Determine the barriers and facilitators to engaging grandparents to promote healthy eating in their preschool aged grandchildren
5. Determine grandparents' preferences towards feeding support for their preschool aged grandchildren
6. Establish if there are any further important factors (other than child weight/dietary outcomes) to consider when evaluating an early year's nutrition intervention aimed at grandparents.

1.15 Outline of thesis

Chapter 2 presents the methodology used within the thesis. It begins by describing the philosophical underpinnings of the research before explaining and justifying the design of the research and the materials and measures used. Chapter 3 provides an

overview of the literature regarding the influence of grandparents on the diets of their preschool aged grandchildren. Using a systematic mixed methods review the qualitative and quantitative data is synthesised. The results are presented and discussed within a framework of dietary provision, feeding practices and feeding styles. Chapter 4 presents an exploratory study assessing the relationship between dietary intake of preschool children in the UK and accompanying adult/s using data from the National Diet and Nutrition Survey. Chapter 5 presents a cross-sectional quantitative study using online methods. It explores the similarities and differences between parent and grandparent dietary provision, feeding practices and feeding styles to preschool-aged children. It also evaluates whether grandparental dietary provision, feeding practices and feeding styles vary depending upon the amount of time they spend caring for their grandchildren. Chapter 6 presents a qualitative study exploring the barriers and facilitators to engaging grandparents with interventions to prevent childhood obesity. It will describe the perceptions of UK grandparents towards guidance on feeding their 2-4-year-old grandchildren, examine the factors that might influence their engagement with such guidance and identify what preferences they might have for the content and format of guidance for feeding their 2-4-year-old grandchildren. It also presents some additional data from the study which explores whether grandparents perceive that caring for their grandchildren has influenced their own diets and if they believe that an intervention supporting them with their feeding would also benefit themselves. Chapter 7 then examines whether outcomes for grandparents should be considered when evaluating interventions targeting grandparents. A rapid review of studies that have captured spillover effects from early childhood dietary based obesity prevention strategies for parents is presented. By first considering what spillover outcomes have been captured previously, who have they

been captured for and what the effect size is this chapter then presents a discussion of the policy implications of spillover effects and an exploration of how these findings for parents might translate to grandparents . Finally, chapter 8 provides a summary of the main findings of the thesis. It considers how these findings relate to and expand upon the current literature and the strengths and limitations of the research.

Introduction to chapter 2

In the next chapter a comprehensive overview of the methodology used in this thesis is provided. Beginning with an outline of the philosophical approach underpinning the research decisions, this chapter then describes the methodological procedures, recruitment and analysis methods and provides justifications for these methodological decisions. Although separate method sections are provided within each chapter that follows, this chapter aims to supplement this with a more in-depth description and rationale.

2 Chapter 2 - Methodology

2.1 Research paradigm

A research paradigm is a philosophical framework and belief system that underpins our understanding of the reality of the world and how we study it. Research paradigms reflect two key elements; ontology which considers the nature of reality, particularly whether there is a single or multiple reality, and epistemology which considers the theory of knowledge, how we learn about reality and whether meaning exists within the subject or within the object. Research paradigms therefore guide the development of research questions and influence methodological decisions.

Traditionally, there are two main research paradigms; Positivism and Interpretivism. Positivism emerged during the enlightenment as a challenge to theological truth. The early proponents of positivism include the philosophers David Hume, John Stuart Mill, August Comte and Émile Durkheim. It is based on the idea that there is a single objective truth regardless of the researchers perspective or belief ⁽¹⁴⁴⁾. Reality is therefore both observable and measurable, and statistical and mathematical methodologies play a pivotal role in positivist research. Positivists use quantitative methodologies of experimental and quasi-experimental design to collect numerical data to explore hypotheses and stated theories. In contrast, interpretivism emerged in the late 19th early 20th century as a way to understand the human experience. It can be traced back to the work of the German sociologist Mark Weber and the German philosopher Wilhelm Dilthey. Central to this philosophy is the idea that reality is multiple, human behaviour is subjective and is affected by the environment, situation

and an individual's experience. Consequently people experience the same "objective reality" in different ways and reality can only be understood through social constructs such as shared meaning, language and consciousness ⁽¹⁴⁵⁾. Interpretivists therefore primarily use qualitative methodology such as interviews, ethnography and observations to immerse themselves in the culture they wish to explore in an effort to experience, interpret and understand what they are studying.

Both positivism and interpretivism have their limitations. For instance, the methods used in the former are not always transferable to the social world. For example, positivism aims to reduce complexity through simplification and control however it is very difficult to control for all variables when studying human behaviour ⁽¹⁴⁶⁾. In contrast, interpretivism is critiqued for its subjectivity, the resulting researcher bias and reduced reliability as well as an inability to validate results ⁽¹⁴⁷⁾. Nevertheless, it can be argued that the shortfalls in one paradigm are complimented by the strengths of the other ⁽¹⁴⁸⁾ and a researcher should not have to choose between qualitative or quantitative methods⁽¹⁴⁹⁾. The pragmatist paradigm offers a research philosophy which overcomes this. Pragmatists do not believe in a single system of reality, instead they believe that whilst there is a reality outside of the human form, there are also multiple explanations of reality rather than one single truth⁽¹⁴⁹⁾. Pragmatists focus on the practical understanding of issues rather than the metaphysical debate of the nature of truth and reality⁽¹⁵⁰⁾. In doing so a pragmatist can assess the suitability of the methodology to the research question and choose between quantitative or qualitative methods or a combination of both. The methodological decisions in this thesis are based on my pragmatic standpoint. The strengths and limitations of each methodology were considered for each research question individually, resulting in a body of work

which combines both qualitative and quantitative research. A summary of methods used in the thesis can be seen in table 1 and are further described in the next section.

Table 1. Summary of methods used in the thesis			
Chapter	Methodology	Method	Questionnaires Included
Chapter 3	Quantitative and Qualitative	Systematic Mixed Methods Review	
Chapter 4	Quantitative	Secondary Data Analysis	NDNS Dataset
Chapter 5	Quantitative	Online Survey Dietary Assessment	Comprehensive feeding practices questionnaire (CFPQ) Caregiver Feeding Style Questionnaire (CFSQ) MyFood24 24hr recall
Chapter 6	Qualitative	Semi-structured interviews	
Chapter 7	Quantitative	Rapid Review	

2.2 Methodological Procedures

2.2.1 Mixed Methods

2.2.1.1 Systematic mixed methods review

Traditionally, systematic reviews seek to identify, evaluate and summarize all relevant quantitative data on a particular topic ⁽¹⁵¹⁾. However, within the domain of social and behavioural science non-quantitative approaches are often necessary to capture the complexity of the problem. In recent years, mixed-methods research has emerged as a distinctive methodology⁽¹⁴⁸⁾ and is viewed as the third research paradigm alongside quantitative and qualitative methodologies ⁽¹⁵²⁾. Mixed method researchers believe that both qualitative and quantitative methodologies are useful to address research questions⁽¹⁵²⁾. By integrating both quantitative and qualitative techniques mixed methods research can explore real-life contextual understanding whilst also assessing

the magnitude and frequency of constructs⁽¹⁵¹⁾, resulting in a detailed understanding of a topic. Based on the same principles, mixed-methods systematic reviews incorporate evidence that uses both methodologies. A review of mixed methods systematic reviews identified two main typologies of synthesis design for mixed methods reviews; convergent and sequential synthesis design⁽¹⁵³⁾. Sequential synthesis design refers to when the data collection and analysis of one type of research informs the collection and analysis of the other, resulting in a two-stage approach. In convergent design both types of data are collected and analysed at the same time but the integration of the two types of data can occur at different points. For instance, in data-based convergent design data is integrated at the analysis stage so data must be transformed to either qualitative or quantitative form and the results are presented together. Whereas in results-based convergent design, qualitative and quantitative data are analysed separately and then integrated together within the results. This design has also been described by Sandelowski *et al.* as the segregated approach⁽¹⁵⁴⁾. Finally, in parallel results convergent design qualitative and quantitative data is analysed and presented separately and the integration occurs within the discussion.

A results based convergent design approach was adopted in the literature review presented in this thesis. I chose this approach based on the belief that qualitative and quantitative data are distinct from each other and therefore ought to be treated and analysed separately. Additionally, with few studies published within this field, I assumed that the data may be complementary whereby although the data may relate to each other, the two approaches (qualitative and quantitative) may not address exactly the same aspects within that domain⁽¹⁵⁴⁾. When this is the case a segregated

approach is recommended⁽¹⁵⁴⁾. Finally, the decision to synthesise the evidence within the results section enabled me to provide a greater analytical depth and breadth of the literature and explore how one type of data supports the other⁽¹⁵³⁾.

2.2.2 Quantitative

2.2.2.1 *Secondary data analysis*

Secondary data analysis is the process of analysing data collected by another researcher or research team. Advances in technology have led to the collection and storage of large amounts of data which are easily accessible to researchers. These large datasets are often collected via surveys or as part of routine administration. Access to these data sets can provide researchers with the opportunity to answer research questions that they might not have been able to otherwise. The use of secondary data analysis has three main advantages for the researcher⁽¹⁵⁵⁾. First, one of the major advantages is the scale of the data available. For instance, data can be collected nationally, over time, on a large scale and using a representative sample. Second, secondary data analysis is often advantageous over primary data collection for reasons of economy; using data previously collected for another purpose enables the researcher to primarily focus on analysis and will save the researcher both time and money. Third, the data collection process in these large-scale studies often benefit from expertise and professionalism unavailable to smaller research projects. For instance, they often have complex sample designs and use methods of weighting to increase sample representativeness.

Within food and nutrition research, weighed food diaries are considered the gold standard method to capture dietary data in young children ⁽¹⁵⁶⁾ but they require a heavy burden on participants as they require participants to weigh every item of food and drink before and after consumption. It is therefore often challenging to recruit participants to complete these dietary assessments, particularly in small research projects with limited funding. The National Diet and Nutrition Survey (NDNS) is a cross-sectional survey assessing the food consumption, nutrient intakes and nutritional status of the UK general population. As this is a rolling programme there is now data from over ten years and within each year, participants completed multiple weighed food diaries. This has resulted in a large amount of high-quality dietary data from a representative UK sample. The NDNS is therefore a hugely invaluable resource for food and nutrition researchers, which can be used to answer many different research questions. In chapter 4 I conducted a secondary data analysis to explore how the NDNS might be used to explore the relationship between the dietary intake of preschool children in the UK and accompanying caregiver.

2.2.2.2 Child BMI

The most widely used metric for assessing adiposity is the Body Mass Index (BMI), derived by calculating weight in kilograms (kg) divided by the square of height in meters (m²) using the formula:

$$\text{BMI} = \frac{\text{weight kg}}{\text{height (m}^2\text{)}}$$

BMI serves as a tool to classify individuals into distinct weight categories. In adults underweight refers to a BMI of less than 18.5, normal weight refers to a BMI between 18.5 and 24.9, overweight refers to a BMI of above 25 but below 30, and a BMI of 30 and above would be categorised as obese. For adults, BMI does not take into consideration age, sex, ethnicity or muscle mass which is problematic as these factors influence the relationship between BMI and body fat. For instance women and older adults tend to have more body fat than men and younger adults respectively⁽¹⁵⁷⁾. Furthermore athletes often have a higher BMI because they have increased muscle mass⁽¹⁵⁸⁾.

Although BMI is calculated the same way for children and adults, unlike adult BMI, the assessment of child BMI takes into account the child's age and sex. This is because child BMI fluctuates with age and sex making it impractical to apply a uniform BMI threshold for the classification of all children. Around the age of five the adiposity rebound occurs where an increase in BMI occurs after an initial drop in BMI during early childhood⁽¹⁵⁹⁾. Therefore age and sex specific references are used to define childhood overweight and obesity. These are informed by measures of height and weight taken from a specific population at given time points, creating growth reference curves with sex and age specific percentiles. In the UK, the predominant growth reference chart is the UK1990⁽¹⁶⁰⁾, covering the developmental period from birth to age 23. In the United States, the equivalent is the Centers for Disease Control and Prevention (CDC) growth chart⁽¹⁶¹⁾, constructed from data collected from American children aged 0-20 between 1963 and 1994. The utilization of multiple reference charts for BMI classification introduces variability in the definition of obesity, as these charts are derived from different populations. For instance, the CDC growth charts tend to

identify fewer children as obese compared to the UK1990, reflecting historical differences in obesity levels between the US and the UK. Consequently, comparing studies that employ different growth reference data to determine obesity becomes challenging.

Using these charts, typically the 85th and 95th percentiles have been used to classify children as overweight or obese respectively. This presents a further challenge when trying to assess weight across the lifespan as it is difficult to align child percentiles with adult classifications of overweight and obesity (BMI above 25 and above 30). The WHO Growth charts 2007⁽¹⁶²⁾ attempted to address this problem by creating age and sex specific growth charts between the ages of 5-19 years old using percentiles that aligned with adult obesity thresholds at nineteen years old (overweight above 84.1 and obese above 97.7). They include measurements from children from six diverse countries and were based on children whose parents were non-smokers and breastfed for up to 12 months therefore depicting growth under optimal environmental conditions. Nevertheless the WHO 2007 charts omitted children aged 0-4 and in 2008 the WHO created a further growth reference chart for children aged 0-5⁽¹⁶³⁾ which could be used in combination with the 2007 ones.

The International Obesity Task Force Thresholds (IOTF) are another example of growth reference curves used in the literature⁽¹⁶⁴⁾. These benefit from being based on an international sample, combining data from six different countries, and therefore incorporate different ethnic groups. Furthermore the IOTF align with adult bmi thresholds at 18 years old.

In the analysis of the NDNS dataset in chapter seven child BMI was extracted directly from the NDNS dataset. The NDNS used the 2008 WHO child growth charts to calculate BMI for children aged 0-2 whereas for children aged 3 and above they calculated it using the UK1990 reference case. By using different reference cases the definitions of obesity differ between the two age groups. As child BMI was not a key outcome measure in this study it was deemed less important, however it does introduce a level of bias as child BMI was included in the models as a covariate. In chapter eight the WHO child growth standards were used to classify child weight status. This method was chosen due to its ability to describe optimal growth for healthy breastfed children furthermore this method was adopted as standard in England by the royal college of paediatrics and child health in 2009 for children under 4.

2.2.2.3 Dietary assessment

To assess diet and nutrition, dietary assessment tools are often used. Dietary assessment involves the gathering of data concerning food and beverage consumption within a defined timeframe. To determine the intake of energy, nutrients and other dietary components the data is encoded and analysed using food composition tables. There are a plethora of dietary assessment methods, each possessing their own unique set of advantages and limitations. In choosing a dietary assessment method for chapter 5, the best practice guidelines for dietary assessment⁽¹⁶⁵⁾ were followed. This is a four-stage process containing 43 guidelines. In the first stage I defined what was to be measured, considering three key elements, what, when and who is involved. In the second stage I explored the different types of dietary assessment and considered the strengths and weaknesses of those available (see

table 2). In stage three I evaluated the tools to select the most appropriate tool for the study, considering issues of validation (see table 2) and application to the chosen sample. Finally, in stage four I considered the issues that may arise during implementation and how these can be overcome with planning and procedures.

Although weighed food diaries are established as the gold standard in dietary assessment methods for young children's dietary intake ⁽¹⁵⁶⁾, they are labour intensive and require a high level of literacy and numeracy, which can lead to low response rates ⁽¹⁶⁶⁾. In chapter 5 the decision was taken to collect data via a survey as surveys are cheap, fast and easy to complete for participants and can lead to better response rates. However, weighed food diaries are impractical to complete as part of an online survey. Furthermore, it may be challenging for caregivers to complete weighed food diaries prospectively whilst caring for young children. In contrast, 24-hour recalls are easy to administer and impose less of a burden on participants time. Additionally, they have been used successfully to measure preschool children's dietary intake, using parent's as proxies, when compared against weighed food intake ⁽¹⁶⁷⁾. Although it is recommended to conduct repeated 24 hour recalls to provide a more accurate assessment of usual diet, ensuring participants complete multiple recalls online is a challenge ⁽¹⁶⁸⁾. Furthermore, assessing the food provision of grandparents is a unique problem as grandparents may only care for their grandchildren one day per week and may not provide all meals and snacks during that day. A recent study in Australia found that a single 24 hour recall can provide a good estimate of dietary intake in young children, when compared to a 2 day estimated food record, particularly if the recall is performed on the day of observation ⁽¹⁶⁹⁾. Therefore, for the purposes of this study, a

single 24-hour recall should provide enough detail to compare parental and grandparental food provision.

It is important to note that further criticisms of the 24-hour recall method have been reported including the reliance on memory and a low level of competency in portion size estimation across the general public. However, advances in technology can be used to overcome these difficulties. Technologically assisted dietary assessment methods can support portion size estimation by using food photographs with multiple portion sizes and assist with memory by providing prompts for potentially forgotten items ⁽¹⁷⁰⁾. MyFood24 ⁽¹⁷¹⁾ is a UK based online method which uses such methods and benefits from a large UK food composition table. Additionally, it has been successfully used to assess the diets of infants and adults ⁽¹⁷²⁾ and validated against multiple pass records in both adolescents ⁽¹⁷³⁾ and adults ⁽¹⁷⁴⁾. In chapter 5 a single 24-hour recall is used via the online platform MyFood24 to assess parental/grandparental food and drink provision to their preschool aged children/grandchildren. To minimise memory issues further, participants were asked to complete the recall on the day of observation.

Table 2. Dietary Assessment Methods				
Dietary Assessment Method	Method description	Strengths	Weaknesses	Valid for use with preschool children
Food Diary	This is a prospective method where all food and drinks are recorded by participants as they are consumed. Participants either estimate the amount eaten using household measures (estimated food diary) or weigh everything served and left over (weighed food diary). Multiple food diaries can be used to assess usual intake. Can be administered online	- Provides detailed dietary data of food and drink as well as portion sizes consumed - Doesn't rely on memory when completed prospectively - Weighed food diaries produce a good estimate of actual intakes - Contextual information can be collected e.g. where consumed, who with, when etc.	- Time consuming and high participant burden particularly with multiple days which can lead to low completion rate. Therefore, they require participant motivation to record items accurately and comprehensively - May lead to participants changing usual diet to ease completion - Participants may end up completing it as a recall - Requires good numeracy and literacy - Labour intensive for the researcher - Can be costly to process	4 day weighed food diary completed by caregiver validated against doubly labelled water technique in a cohort of 81 children aged 1.5 -4.5 years old ⁽¹⁷⁵⁾
24hr recall	This is a retrospective method where participants record all food and drinks consumed in the previous 24 hours. A 24-hour recall can be a single recall or conducted on multiple days. Can be administered online	- Provides a good estimate of short-term diet and nutrient intake - To assess usual intake a multiple recall can be used - Doesn't require strong literacy and numeracy levels if conducted by a trained interviewer - Lower participant burden than a food diary - High compliance - Retrospective nature minimises risk of participants changing diet to ease dietary assessment burden.	- Relies on a good memory - It is common for participants to forget items - Relies on participants ability to accurately describe portion sizes - A single recall may not account for day to day variation and foods consumed irregularly - Coding is required by the researcher and therefore researcher burden is an issue - Can be expensive if training is required and face to face interviews are conducted for a large number of participants.	A single 24 hour recall validated against a weighed food diary in a cohort of 30 children aged 2-4 years old⁽¹⁶⁷⁾ A 3 day multiple pass 24 hour recall significantly exceeded energy intake compared with doubly labelled water technique in a sample of 41 children aged 3-4⁽¹⁷⁶⁾ Four multiple pass 24 hour recalls validated against 4 day weighed food diary in 384 low income participants age 2-90⁽¹⁷⁷⁾
Food Frequency Questionnaire (FFQ)	FFQ's are a retrospective method which require participants to select the frequency with which food and drinks have been consumed over a specified time period. This can be	- A large number of foods can be included to capture a wide variety of intake and to minimise memory errors - Quick and easy to complete which leads to a high response rate	- Relies on memory, literacy and numeracy – leading to inaccuracies - It is challenging for children to report frequencies and portions - Limited to the items included on the FFQ	A 105 item FFQ was validated against 3 24hr dietary recalls and blood biomarkers in a sample of 169 children aged 4-5 ⁽¹⁷⁸⁾

	weeks, months or years. Some FFQ's only assess frequency whereas others also assess portion size. Different lengths of FFQ's have been used; some are brief whilst others contain over 100 items. Multiple methods of completion are available e.g. in paper, online, via interviews or self-administered.	• Captures habitual intake • Useful in large population studies • Cheap to administer • Can be used to estimate dietary and nutrient intake	• Mis-reporting is common • Requires complex algorithms and software to convert frequencies to nutrients	
Diet History	An interviewer combines multiple dietary assessment methods such as FFQ, food diary and 24 hour recall to get a detailed account of an individual's dietary behaviours over the short term and long term. Interviewer can also ask open ended-questions. Often used in a clinical setting e.g. by Dieticians.	• Can assess usual diet and nutrient intake • Gathers information on food preparation methods, meal patterns and foods eaten irregularly	• No standardised approach • High participant and researcher burden • Complex analysis • Expensive • Requires a trained interview	Diet histories compared with doubly labelled water techniques for energy intakes of 78 3-18-year olds. Diet histories over-estimated intake but were more representative of habitual intake than 7 day weighed food diaries⁽¹⁷⁹⁾

2.2.2.4 Feeding Practices & Feeding styles

Feeding practices and feeding styles have been typically measured using validated instruments administered via surveys. To establish the optimal tools to measure both feeding practices and feeding styles in chapter 5 a review of the most widely used tools was conducted. These are presented in table 3.

2.2.2.4.1 Feeding Practices

Although there are a number of tools that have been designed to assess the feeding practices of parents, two tools were identified as being tested the most rigorously for validity and reliability. These were the Comprehensive Feeding Practices Questionnaire (CFPQ) and the Feeding Practices and Structure Questionnaire (FPSQ). Of the two, the most wide-ranging questionnaire is the comprehensive feeding practices questionnaire ⁽¹⁸⁰⁾. Using 49 items, this measures twelve different feeding practices including 1) Child Control 2) Emotion Regulation 3) Encourage Balance and Variety 4) Environment 5) Food as Reward 6) Involvement 7) Modelling 8) Monitoring 9) Pressure 10) Restriction for Health 11) Restriction for Weight Control and 12) Teaching about Nutrition ⁽¹⁸¹⁾. In addition to its prior applications for evaluating the feeding practices of parents with children aged 2-4-years-old^(182,183), the CFPQ has also been used to appraise the feeding practices of grandparents in their interactions with their grandchildren^(184,185). For these reasons the CFPQ was chosen as the most appropriate tool to measure feeding practices in parents and grandparents in chapter 5 To ensure its appropriateness for grandparents the instructions were reworded slightly, asking them to focus on their feeding practices used with their grandchildren.

Table 3. Feeding Practices & Feeding Styles Questionnaires			
	Description	Age	Validation tests
Food parenting practices ⁽¹⁸⁶⁾	43 items to assess permissiveness, pressure, food as a reward, verbal praise, negotiation, encouraging fruit consumption, encouraging vegetable consumption, discouraging soft drinks, discouraging sweets, catering on demand, avoiding negative modelling	2.5-7 years	Construct validity (questionable-acceptable), internal reliability (good-excellent)
Feeding strategies questionnaire ⁽¹⁸⁷⁾	40 items to assess six factors (Mealtime structure, consistent mealtime schedule, child control of intake, parent control of intake, between meal grazing, encourages plate clearing).	2-6	Construct validity (questionable – good), internal reliability (acceptable – good) ⁽¹⁸⁷⁾
Comprehensive feeding practices questionnaire ⁽¹⁸¹⁾	49 items measuring measures 12 feeding practices including 1) Child Control 2) Emotion Regulation 3) Encourage Balance and Variety 4) Environment 5) Food as Reward 6) Involvement 7) Modelling 8) Monitoring 9) Pressure 10) Restriction for Health 11) Restriction for Weight Control and 12) Teaching about Nutrition	1.5-8 years	Construct validity (questionable-acceptable), structural validity (good), internal reliability (unacceptable – good), test-retest reliability (poor-excellent) ^(181,188)
Feeding Practices and Structure Questionnaire ⁽¹⁸⁹⁾	Focus on maternal responsiveness to hunger and satiety facilitated by routine and structure – as key components of authoritative feeding. 9 factors using 40 items (distrust in appetite, reward for behaviour, reward for eating, persuasive feeding, covert restriction, overt restriction, structured meal setting, structured meal timing, family meal setting). Shortened version - 28 items (removed two domains. family meal setting and distrust in appetite)	21 months – 5 years Validated in 462 Australian mothers and their children aged 21-27 months ⁽¹⁸⁹⁾ Validated in 388 mothers and their children aged 3.7 years ⁽¹⁹⁰⁾ . Shortened version validated for children up to 5 years old ⁽¹⁹¹⁾	Construct validity (acceptable), criterion validity (poor – acceptable), structural validity (acceptable), internal reliability (poor-good) ^(189–191)
Child feeding questionnaire ⁽¹⁹²⁾	31 item questionnaire measuring parental beliefs, attitudes and practices including perceived responsibility, parent perceived weight, perceived child weight, parents concerns about child's weight, monitoring, restriction and pressure to eat	2-11 years	Construct validity (poor-acceptable), Structural validity (poor-marginal), internal reliability (poor-excellent) ^(192,193)
Family food Behaviour Survey ⁽¹⁹⁴⁾	20 items characterising four domains (maternal control of child eating behaviour, maternal presence during eating, child choice and organization of eating environment.	2-11 years	Construct validity (acceptable), internal reliability (acceptable-good), test-retest reliability (good) ⁽¹⁹⁴⁾
Feeding Styles Questionnaires			
	Description	Age	Validation tests
Infant feeding style questionnaire ⁽¹⁹⁵⁾	63 items (+20 for children older than 6 months) to measure five domains;	3-24 months	Construct validity (questionable - acceptable), structural validity

	laissez-faire, pressuring, restrictive, responsive and indulgent.		(acceptable/good), internal reliability (acceptable to excellent) ^(195,196)
Caregiver feeding styles questionnaire ⁽¹⁹⁷⁾	38 items to assess how caregivers interact with children during feeding based on the dimensions of demandingness and responsiveness. Using median splits four feeding styles are measured authoritative (high responsiveness, high demandingness), authoritarian (low responsiveness, high demandingness); indulgent (high responsiveness, low demandingness), and uninvolved (low responsiveness, low demandingness)	3-5 years	Construct validity (coefficients not reported), structural validity (good), internal reliability (acceptable-good), test-retest reliability (good) ⁽¹⁹⁷⁾ .
Parental feeding style questionnaire ⁽¹⁹⁸⁾	27 items to assess emotional feeding, instrumental feeding, prompting and encouragement to eat, control over eating, food rewards, parental control of intake, emotional feeding	3-7 years	Construct validity (questionable), internal reliability (questionable-good), test-retest reliability (acceptable – good) ⁽¹⁹⁸⁾

2.2.2.4.2 Feeding Styles

Three feeding style questionnaires were identified for possible use in chapter 5 however only one was deemed appropriate for the study; the caregiver feeding styles questionnaire. The other two tools were unsuitable for the following reasons. First, the Parental Feeding Styles Questionnaire, although named so, assesses feeding practices rather than styles and second, the infant feeding style questionnaire was designed for mothers of children under the age of 2 and therefore was not deemed appropriate for chapter 5 where the focus was on children and grandchildren aged 2-4 years old. The tool chosen for chapter 5 was the Caregiver Feeding Styles Questionnaire (CFSQ)⁽¹⁹⁷⁾. This is the most commonly used instrument for evaluating caregiver feeding practices⁽⁵¹⁾ and has been extensively used in the assessment of caregiver feeding styles for children under the age of five^(199–201). The CFSQ is a 19 item self-administered tool which has test-retest reliability, internal consistency and convergent validity with other feeding construct tools⁽¹⁹⁷⁾. In chapter 5 parents and

grandparents were asked to complete this scale following the feeding practices questionnaire, with appropriate rewording for parents/grandparents.

2.2.2.5 Rapid review

One of the key barriers to evidence use in health policy and decision making is the lack of timely and relevant research outputs⁽²⁰²⁾. Although systematic reviews are deemed the gold standard in evidence synthesis they often require a large amount of resources and can take between half a year to two years to complete⁽²⁰³⁾. In contrast, rapid reviews are a form of knowledge synthesis which can be conducted in a timely manner by simplifying or omitting elements of the systematic review process⁽²⁰⁴⁾. Although reviewers choose which elements to limit, rapid reviews should still be rigorous and transparent in their methodology and maintain the core principle of the systematic review of avoiding bias in the inclusion, assessment and synthesis of studies⁽²⁰⁵⁾. In a recent typology of reviews, Grant & Booth described the rapid review through the lens of the Search, Appraisal, Synthesis and Analysis (SALSA) framework; the comprehensiveness of the search is determined by time constraints, the quality appraisal is time-limited, or may not be conducted at all, the synthesis typically takes the form of narrative or tabular and the analysis involves quantities of literature and the overall quality/direction of effect of the literature ⁽²⁰⁶⁾. In chapter 7 I wanted to adopt a rigorous approach to synthesising the evidence on the spillover effects from early childhood obesity prevention strategies but was limited by the timeline of the PhD. I therefore chose to conduct a rapid review of the literature following the principles outlined by Grant & Booth⁽²⁰⁶⁾.

2.2.3 Qualitative

Qualitative methods can be particularly useful when there is limited research on a topic and a deeper level of understanding is warranted^(207,208). The caregiving grandparent has a unique role, with feeding experiences and perspectives that will differ to that of parents and other caregivers⁽²⁰⁹⁾, yet it is a largely understudied area. Qualitative methods can therefore provide an in depth understanding of grandparent's experiences, attitudes and feeding behaviours. The few studies conducted in the area also suggest that grandparents may need feeding support for caring for their preschool aged grandchildren and qualitative methods are a useful tool that can be used to aid intervention design⁽²¹⁰⁾, ensuring that an intervention meets the specific needs of the caregiving grandparent⁽²⁰⁹⁾. Semi-structured interviews are a frequently used qualitative method which involves a conversation between the researcher and participant using an interview protocol as a guide but allowing for flexibility to question and probe points of interest. The interview guide helps to achieve the optimal use of the interview time by providing focus⁽²⁰⁸⁾ but the interviewer can explore an interviewees responses with further follow-up questions and probing. Compared to structured interviews, semi-structured interviews resemble a more naturally occurring conversation, which can facilitate a more detailed response from interviewees⁽²¹¹⁾. This method is therefore an appropriate method to gather insight into grandparents perspectives and explore participants thoughts and experiences in depth ⁽²¹²⁾. In contrast to focus groups, where interviewees can be intimidated by more dominant members of the group, interviewees can feel comfortable sharing their opinions⁽²¹³⁾.

In chapter 6 I conducted semi-structured interviews online. Although conducting interviews face to face is viewed as the gold-standard approach⁽²¹⁴⁾ during the COVID-

19 pandemic social distancing was introduced and it was important to protect both participant and researcher safety. Virtual research methods have the potential to be high quality, rigorous and ethical if they are conducted in a careful and thoughtful way with an understanding of the methodological and ethical challenges that virtual research can introduce⁽²¹⁴⁾. For example, ethically, virtual interviews introduce privacy concerns whereby an interviewer may be intruding into participants personal space, particularly if participants don't have headphones or use a virtual background⁽²¹⁵⁾. In chapter 6 I adhered to the ethical standards set by the ScHARR ethics board, which take into consideration the ethical challenges of online research. Participants were asked to switch off their video to ensure only their voice was recorded and to position themselves in a quiet room where they wouldn't be disturbed. The researcher's camera remained switched on for the duration of the interview to better reflect a face to face interview.

A key methodological challenge of virtual research is that the use of videoconferencing software can negatively affect rapport if there is poor connectivity⁽²¹⁶⁾, which can impact upon participant willingness to disclose information. I took a number of steps to establish rapport with the participants. Prior to the interview I personally communicated with the participants to organise a convenient time and date for the interviewee and ensure participants understood how the virtual interviews would be conducted and what software would be used. By liaising with participants across multiple instances I began to build an open communication channel based on trust with interviewees⁽²¹⁷⁾. When the interview commenced if there were any technical issues I worked together with the participant to resolve the issue, which actually helped to improve the interviewer-interviewee bond⁽²¹⁸⁾. I used a normal conversational tone

during the interviews and dressed in a professional yet not too formal manner to put the interviewee at ease. Prior to the start of the interview I chatted to the interviewee to establish commonalities ⁽²¹²⁾ and the interview began with easier questions to initiate conversation regarding grandparents experiences of feeding their grandchildren.

2.3 Data collection

2.3.1 Participants

Grandparents who provide informal care for their 2-4-year-old grandchildren were recruited to take part in chapters 5 and 6. Only grandparents who provided care to their grandchildren on an informal basis were included in this research. This is because grandparents who act as custodial grandparents may undergo a role transition and assume a very different role to informal caregiving grandparents. Custodial grandparents are required to take on the day-to-day obligations and responsibilities of looking after their grandchild and may no longer enact the normative grandparent role. This in turn may alter their food provision and impact upon their feeding behaviours. Inclusion and exclusion criteria were used to ensure caregivers were not full-time custodial grandparents. Additionally, only grandparents who acted as regular childcare providers were included in this research, rather than those that provided care infrequently. This decision was made as regular interaction would be likely to influence children's eating behaviours, whereas infrequent care may not. To ensure that there was some food interaction between the grandparent and grandchild only grandparents who cared for their grandchild a minimum of once per week and provided at least one meal to their grandchildren were eligible to participate.

2.3.2 Recruitment

Participants were recruited online via three different channels. 1) Study advertisements were placed on two online platforms; MumsNet and GransNet. 2) Social media was utilised whereby a search was conducted on Facebook for groups relevant to local caregivers with young children and a poster detailing the study was used for advertisement. The administrators of these groups were contacted first to seek approval for posting. 3) The University of Sheffield volunteers list were contacted with study details via email.

The method of sampling used was convenience sampling, this is a non-probability sampling method that uses participants from the target population who meet the inclusion criteria and self-select to participate. This results in a non-random sample which means the results may not be generalizable to the entire UK population. The first two methods of recruitment also led to a snowball effect whereby people who saw the advertisement recommended others to participate.

After participants responded to the study advertisements they were provided with information sheets related to the specific study. This contained details of the study purpose, procedures, possible disadvantages and benefits of participation, data confidentiality, data storage methods, ethical review and contact information. Participants were given time to consider the information sheet, to ask questions and to decide if they wanted to participate without any pressure. Those interested were sent a consent form to complete online before participation. Participants who completed the study were provided with a high street voucher to compensate them for their participation (£10 in chapter 5 and £20 in chapter 6).

Using only online methods of study advertising and recruitment may have resulted in sample bias particularly when considering the grandparent population. Although the number of adults who don't use the internet has declined in the past 15 years, in 2018 a tenth of the adult UK population were non-internet users and those over 65 are more likely to be non-digital users than younger adults⁽²¹⁹⁾. This may have excluded older grandparents who may not be as computer literate, have the same access to digital technologies or use the internet in the same way as younger generations. Nevertheless in chapter 5 the mean age of grandparents was 60 and the maximum age was 74 and in chapter 6 the mean age was 65 and the maximum age was 71 suggesting that older grandparents were still represented in the data. Older grandparents may also be less likely to look after their grandchildren in the early years due to the energy requirements of doing so.

2.4 Data analysis

This section provides a summary of analysis methods used. Full details of the analyses are provided for each individual study in the relevant chapters. Quantitative and qualitative data analysis were performed separately.

2.4.1 Quantitative analysis

Data were analysed using Stata (version 16.1) and SPSS (version 26). Initially descriptive statistics were produced followed by relevant inferential tests. Prior to conducting inferential testing, the assumptions required for each test were explored. In chapter 4 the assumptions for generalised linear models were met (linearity,

constant variance, normality and independence) and generalised linear regressions were used to compare the nutritional intake of children when accompanied by different family members. In chapter 5, the assumptions for parametric tests were violated and therefore non-parametric tests Mann-Whitney U Tests were conducted instead of T tests to compare parent and grandparent feeding behaviours. This has been detailed in the specific chapters.

2.4.2 Qualitative analysis

Qualitative data analysis methods vary in terms of their purpose and their ontological and epistemological underpinnings ⁽²²⁰⁾. As the field of qualitative research has grown, so too has the number of analytical methods⁽²²¹⁾. It can therefore be challenging to identify the most appropriate approach for the research aims, particularly as there is no one ideal method for a project⁽²²²⁾. Braun and Clarke suggest that there are two main types of qualitative analysis, there are those that are independent of theory or theoretically flexible such as qualitative content analysis and thematic analysis and those that are based on a specific theoretical position⁽²²³⁾. Of those methods tied to theory they can either be prescriptive in their nature, allowing little variation in how they are applied e.g. conversation analysis⁽²²⁴⁾ and interpretative phenomenological analysis⁽²²⁵⁾, or they can allow for more flexibility in their approach such as in grounded theory⁽²²⁶⁾ or discourse analysis⁽²²⁷⁾.

In chapter 6 I chose to use thematic analysis. Thematic analysis is a general term used to describe a family of methods. Although as a general approach it is theoretically flexible, the iterations within this approach have different values, constructs and analytical methods⁽²²²⁾ and therefore are based on specific epistemological and

ontological assumptions. Thematic analysis is based on the idea of codes and themes. A code represents a single idea and is the smallest unit of analysis, codes come together to form the building blocks of a theme which is a larger pattern of meaning with a shared core idea⁽²²⁸⁾

The three main types of thematic analysis are

1. Coding Reliability

Coding reliability approaches use a structured codebook and identify themes early on in the analysis process. Themes are something that reside in the data, independent of the role of the researcher during analysis. Multiple coders independently code the data and any researcher bias is reduced through measuring the level of agreement between coders and having discussions until consensus between the coders is reached. For this reason, it could be argued that coding reliability falls within a positivist approach, seeking an objective truth.

2. Reflexive

Reflexive thematic analysis involves extensive work by the researcher. Coding is a very active and reflexive process and themes are generated via the researcher's engagement with the data. A coding frame is not used, instead coding is an analytical output. Themes don't exist separately from the researcher and coding is a subjective process that incorporates the researchers values and experience. This approach doesn't advocate the use of multiple coders to compare inter-coder reliability as arguably there is no single way to code data. Nevertheless, multiple researchers can code the data and discuss

codes and themes to help the researcher engage deeper with the reflexive process.

3. Codebook

Codebook approaches can be seen as falling between coding reliability and reflexive approaches to thematic analysis. Although a structured codebook might be used, there is not a positivist concern for coding reliability. Rather the codebook may be used for pragmatic reason. Similar to coding reliability, themes exist within the data and can be identified early on in the analytical process.

Thematic analysis can therefore be approached either in an inductive or deductive way, where coding is data driven or theory driven, in a semantic or latent manner, where meanings are explicit or implicit and from a realist or constructionist way, where meaning exists independent of the researcher or subjectively through researcher observation ⁽²²²⁾. This allows for a great amount of flexibility in its application and is in line with my pragmatic standpoint of selecting a method which is most suitable to the research study⁽²²⁹⁾.

I considered other methods of qualitative analysis including qualitative content analysis (QCA) and grounded theory. Qualitative content analysis is very similar to thematic analysis so much so that the two are often confused⁽²³⁰⁾. Like thematic analysis QCA is very accessible to qualitative beginners⁽²³⁰⁾ and both involve a process of coding and theme development, which can be conducted explicitly or implicitly⁽²²²⁾. However, QCA positions itself as atheoretical and arguably qualitative data analysis always involves some theoretical assumptions⁽²³¹⁾. Thematic analysis, a

method which is theoretically flexible, is therefore a preferable method over one which is atheoretical⁽²³²⁾.

I also considered grounded theory. Grounded theory is based on positivist philosophy and takes an inductive approach to qualitative analysis. Unlike thematic analysis, data is coded line by line after which useful concepts (collection of codes similar in content) are identified before being organized into categories (similar to themes in thematic analysis). A central core category is developed which encompasses all other categories and provides a coherent theory to the data. Although grounded theory has been applied to a wide variety of research questions some argue that it is more apt for research aimed at investigating social processes or the elements that could potentially impact, underlie and mould a specific phenomenon⁽²³³⁾. Moreover thematic analysis may be preferable when a researcher is new to qualitative analysis, when the researcher is not intending to develop a theory from the dataset and when the research goal is to describe and interpret patterns in data⁽²³²⁾. This made thematic analysis the preferable method for chapter 6.

Within thematic analysis, reflexive thematic analysis is seen as a particularly useful approach for understanding people's perceptions and views. Reflexive thematic analysis was therefore deemed the most suitable approach for chapter 6 to explore grandparents' attitudes and preferences towards feeding support for their preschool-aged grandchildren. I closely followed the principles of reflexive thematic analysis, completing the six stages proposed by Braun and Clarke; Although these were followed sequentially, I moved back and forward between the phases as the analysis developed.

Phase 1. Familiarising yourself with the dataset

After transcripts had been produced by an independent transcriber I read and re-read the transcripts to develop a strong familiarity with the dataset, taking initial rough notes of anything that came to mind whilst I was reading. This familiarity was strengthened by the fact that I had developed the interview guide and carried out the interviews myself, meaning I was already immersed in the data before starting the analysis process.

Phase 2. Coding

I did the initial coding on paper transcripts, reading them line by line and searching for anything meaningful in the data. I added these codes in to NVivo whilst repeating the coding process for each transcript, to ensure I had paid close attention to the dataset and didn't miss anything. As I coded further transcripts I would revisit previously coded transcripts to reflect on how similarities and differences in codes were arising. I took an inductive approach to coding whereby the codes were driven by the data however I often used the language of previous research, where such language seemed a good fit, based on my experience as a researcher in the field. In these instances, I reflected on how my own experience may be influencing the analysis process and whether these previously defined terms were relevant. This was particularly true for the feeding practices that grandparents discussed using. Although my initial coding was often semantic, taking meaning from the explicit things that grandparents said, as I progressed with the analysis I coded more latent codes. I noticed how after discussions with the second researcher who independently coded 20% of the data I began to assign more latent codes across the whole dataset, having more confidence in my analytical decisions.

Phase 3. Generating Initial themes

To generate initial themes from the data I collated the codes from all of the transcripts and began to explore any commonalities and patterns across the dataset. I used mind-mapping techniques to aid with the process, drawing diagrams and connections between codes and theme ideas. This helped me to reduce the large amount of data to something more manageable.

Phase 4 and 5. Developing and reviewing themes and refining, defining and naming themes

Using my initial theme ideas, I created a spreadsheet of themes with all quotes from the dataset to support it. This allowed me to create a description of the theme and reflect on the theme 'fit' and appropriateness. As there was some heterogeneity in participants opinions I also added contrasting quotations in here so that themes were balanced and not biased to one perspective. This spreadsheet allowed me to further review and refine my themes and ensure my analysis was grounded in the data. At this point I also created another visual map to consider theme boundaries and titles and any overlap between themes. The development of themes reflected both what the participants had said, in a descriptive manner, and any underlying meaning. The latter was shaped by my own subjectivity and interpretation of the data.

Phase 6. Writing up

My data analysis did not stop at the point of writing, rather writing up was a key part of the analysis process, where I adjusted theme boundaries and noticed more latent patterns within the dataset. Writing up allowed me to explore where themes were

lacking in coherence and needed development. This meant revisiting prior stages and making revisions to ensure the ideas reflected both participants perspectives and the aims of the research. I also drew on existing literature during this phase which helped me to consider my interpretation of the data, further question my themes and establish commonalities with existing research. I shared a draft with the second coder after which we discussed my interpretation, allowing me to reflect further on theme names, boundaries and my understanding of the data.

2.5 Ethical considerations

Throughout my research I adhered to the University of Sheffield's ethics policy. The fundamental principle of this is that researchers have an obligation to respect participant's dignity, rights, safety and wellbeing. Prior to conducting any primary data collection, I sought and gained ethical approval for my research projects from the School of Health and Related Research Ethics Committee (reference numbers 026363 and 035038). Participants were provided with a comprehensive information sheet outlining the details of the study and were given time to decide whether they wished to participate. Participation was entirely voluntary and participants were informed that they had the right to withdraw from the study at any time. As well as written consent, prior to conducting the interviews I also gained verbal consent from each participant.

Anonymity and confidentiality are key ethical considerations. All participants were provided with a unique id to ensure their data was not identifiable. In chapter 6 any names or workplaces mentioned during the interview were removed during transcription and no participants were identifiable in any of the publications.

Permission was sought to use anonymised quotes in publications. Interviews were audio recorded and were conducted using Google Hangout Meets. An independent transcriber transcribed the data. The transcriber had completed information governance training and adhered to guidelines approved by the School of Health and Related Research (ScHARR) information Governance Committee. Participants were asked to switch off their video prior to the interview commencing, conforming to the ScHARR information governance policy. With regards to data confidentiality, the researcher developed a data management plan for each study and only used platforms that were General Data Protection Regulation (GDPR) compliant such as Qualtrics and MyFood24 to collect data. Data were stored electronically on an encrypted hard drive and were analysed on an encrypted computer. Where data needed to be shared with a second coder or supervisors, this was fully anonymised.

The potential for any harm for participants was also considered. This included any social harm such as stigma from answering questions regarding their or their grandchild's weight. Participants were informed that they didn't have to answer these questions and had the option to answer with "prefer not to say". Additionally, participants were fully informed about the purpose of the study to avoid any deception about the research aims and objectives. At the end of each study participants were signposted to resources for guidance on feeding their preschool aged children/grandchildren.

Introduction to chapter 3

As outlined in the introduction, grandparents are important providers of childcare to preschool aged children. Consequently, they may be significant stakeholders in young children's eating. Chapter three is designed to supplement the introduction by delivering an overview of the literature regarding grandparents influence on the diets of preschool aged children. It aimed to provide a comprehensive and systematic synthesis of the evidence surrounding grandparents dietary provision, feeding styles and feeding practices when caring for their preschool aged grandchildren. The findings from this mixed methods systematic review were used to inform the design of chapters 4 and 5.

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3 Chapter 3 - Grandparental dietary provision, feeding practices and feeding styles when caring for preschool aged grandchildren: a systematic mixed methods review

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3.1 Abstract

Grandparents are frequently relied upon to care for their preschool aged grandchildren. These early years are a crucial age in the development of dietary habits and preferences. This review aims to determine grandparental dietary provision,

feeding practices and feeding styles when caring for their preschool aged grandchildren.

Medline, PsycInfo & Web of Science were searched in January 2020. A systematic mixed methods approach was used to synthesise the qualitative (n=13) and quantitative (n=7) articles describing grandparents' feeding styles (n=9), feeding practices (n=14) and dietary provision (n=18). Grandparents are serving large portion sizes and encouraging their grandchildren to eat frequently. Results are mixed for the types of foods provided; grandparents provide discretionary foods high in sugar and fat, and some also choose more expensive core foods as treats (e.g. berries). Grandparents engage in feeding practices that promote healthy eating (e.g. creating a healthy feeding environment) and promote autonomy and independence (e.g. considering their grandchild's preferences). However, they also use some coercive feeding practices (e.g. using food as a reward) and may be using indulgent feeding styles, which can be conducive to obesogenic dietary intakes. Interventions targeting grandparents could be an effective way to improve dietary related health outcomes in young children.

3.2 Keywords

Grandparents; preschool children; feeding practices; feeding styles; dietary provision; systematic mixed methods review

3.3 Introduction

Caregivers are often described as the nutritional gatekeepers for children, acting as agents through which children develop eating habits and preferences. Previous research has explored how parental behaviours impact upon children's eating but grandparents, who are frequently called upon to provide childcare ^(234–236) may also play a pivotal feeding role. In comparison to the number of studies exploring the role of parents in children's diets ^(115,142,143), there is very limited research exploring grandparental feeding behaviours when caring for their young grandchildren.

The early years are seen as a critical time for establishing healthy eating practices. This is because the food preferences and dietary behaviours formed during these years can track into later childhood and beyond ^(29–33). In a longitudinal study of 342 children, food choice and food variety at age 2-3 years old was significantly associated with intake and variety at aged 22 ⁽³³⁾. The food environment during these formative years can therefore have a significant impact on childhood and adulthood obesity.

Studies with parents have demonstrated that there may be three key mechanisms by which grandparents might influence children's food preferences and dietary behaviour; their dietary provision, the feeding practices they use and their feeding style ^(41,42). Dietary provision, defined here as the types, quantity and frequency that food is provided by caregivers, can have a direct influence on children's dietary behaviours. Studies have shown that caregivers are frequently offering young children larger than recommended portion sizes for meals, drinks and snack food items ⁽⁴³⁾, which may be problematic because the more young children are offered, the more they will consume

(44,237). Nevertheless, very little is known about grandparents' dietary provision to their grandchildren.

Feeding practices, on the other hand, influence dietary behaviours in a more indirect manner and are defined as *“the specific goal directed behaviours used by caregivers to directly influence their children’s behaviour”*⁽⁵¹⁾. Although feeding practices are often used to influence children’s eating behaviour positively some practices have the opposite effect and lead to unintended negative outcomes. For example, caregiver restriction of food items, often used to limit high fat and high sugar foods, is associated with increased desire for, and consumption of, those restricted foods⁽⁸⁹⁾. Pressuring children to eat, most frequently used to increase consumption of low energy dense food items such as fruit and vegetables, is a predictor of food refusal and picky eating⁽²³⁸⁾ and using food for emotion regulation can lead to children eating in the absence of hunger⁽¹¹²⁾. Nevertheless some feeding practices such as ensuring that healthy foods are available in the home, modelling healthy food intake and encouraging balance and variety lead to positive dietary behaviours⁽²³⁹⁾. A recent study of 1076 Australian grandparents, found that grandparents of grandchildren aged 3-14 years old were more likely to use more “positive” feeding practices, with encouraging balance and variety the most frequently reported positive practice⁽²⁴⁰⁾. Whether this finding is true for grandparents of children younger than this and from other countries is something that requires further exploration.

Finally, caregivers' feeding style, defined as the emotional climate in which feeding interactions take place⁽¹¹⁵⁾, can influence young children’s eating behaviours. Four feeding styles (indulgent, authoritarian, authoritative, uninvolved), across two

dimensions (responsiveness and demandingness) have been identified previously in caregivers of young children ⁽¹¹⁵⁾. These impact upon the types of food children consume, for instance in a study of 750 3-5 year olds, indulgent or uninvolved parenting styles were significantly associated with consuming higher energy dense foods and lower intakes of fruits and vegetables compared with authoritarian feeding styles ⁽¹¹⁷⁾. From a sociological perspective, being indulgent is integral to the role of being a grandparent ⁽²⁴¹⁾, and it is unknown if this translates to their feeding style.

Three reviews have been published previously investigating the relationship between grandparental behaviours and the diets of their grandchildren ^(242–244). Two of the reviews concluded that grandparents were predominantly exhibiting negative feeding behaviours towards their grandchildren such as spoiling their grandchildren with food, providing energy dense, nutrient poor food and drinks, using food to reinforce behaviour and providing too much food ^(242,244). In contrast, one review found mixed evidence for grandparental influence on children's eating behaviours ⁽²⁴³⁾. For instance, whether grandparents had a positive or negative influence on mothers breastfeeding initiation and duration, varied across cultures ⁽²⁴³⁾. Nevertheless, several limitations of these reviews are of note. 1) The searches were conducted over two years ago and would benefit from being updated. 2) All of the reviews looked at a broad age range (0-18 ^(243,244) or 2-12 ⁽²⁴²⁾) therefore it is difficult to assess the impact of grandparents on the diets of children in the early years. Considering that grandparental feeding practices may differ depending on the grandchild's age ⁽²⁴⁰⁾ it is necessary to look at different age groups separately. 3) Two of the reviews focused on multiple lifestyle risk factors ^(243,244) and did not provide an in depth review of the relationship between grandparents' feeding behaviours and their grandchildren's

eating behaviours. 4) The third review, that did focus specifically on dietary influences, used a limited search strategy and may have missed key papers ⁽²⁴²⁾. Consequently, no review has provided a complete synthesis of evidence exploring grandparental feeding behaviours when caring for their preschool aged grandchildren. Additionally, no review has attempted to synthesise the evidence according to these three feeding constructs (dietary provision, feeding practices and feeding style) and doing so may highlight the specific areas of feeding that grandparents need support with.

3.4 Aim

The aim of this mixed methods review was to explore grandparental dietary provision, feeding practices and feedings styles when caring for their preschool aged grandchildren.

3.5 Methods

A systematic mixed method approach was used to synthesise articles of both qualitative and quantitative methodology. The advantage of this design is that it can incorporate a wider pool of research to develop a broader understanding of a topic ^(154,245–247). This design is also particularly useful when there are limited number of studies conducted in the field.

3.5.1 Search Strategy

A search strategy was developed by identifying synonyms related to the population (grandparents and grandchildren) and outcome (diet, food etc) of interest. Literature and previously conducted reviews ^(242–244) in the field were also scoped to identify key terms. Search terms within the population and within the outcome were combined using the Boolean term OR. Population and outcome terms were combined using the Boolean operator AND. See appendix 1 for full search terms.

Using the defined terms, Medline, PsycInfo and Web of Science were searched in January 2020, and no limit on publication date was applied. Databases were searched via title, abstract and keywords. The reference lists of included papers were hand searched for additional relevant titles. A Google Scholar search was conducted using modified search terms; the first 25 results pages were searched for further studies; after which it was deemed that no articles were relevant for inclusion.

3.5.2 Selection of studies

The first author (CM) screened titles, abstracts and full texts against the inclusion and exclusion criteria. Papers were included if they met all of the inclusion criteria and none of the exclusion criteria. A second independent reviewer (SR) screened 10% of the initial search results via title and abstract, and 10% of the full texts to ensure no relevant papers were excluded. The review was registered with Prospero, registration number: CRD42019121418.

3.5.3 Inclusion and exclusion criteria

The review included papers that reported on grandparental feeding behaviours towards their grandchildren aged two to four years old. A full list of inclusion and exclusion criteria can be seen in table 4.

Table 4. Inclusion and Exclusion criteria

	Inclusion	Exclusion
Population	Children aged 2-4 years old. Studies with an age range including children below aged 2 were included if they met the following criteria 1) A mean or median age range within 2-4 years old Studies with an age range going beyond the age of 4 were included if they met both of the following criteria 1) The maximum age was not beyond age 6 2) The mean or median age was within 2 to 4 years, 11 months	Child age not reported Studies only focusing on children aged 0-2 Studies only including children aged 5 and above
Intervention/Exposure	Grandparents care for their grandchildren as informal carers Studies were not limited to those with only grandparents as study participants, but also those whereby parents expressed opinions on grandparental influence.	Grandparents as sole carers
Outcome	Grandchildren's diet Grandparents food provision Grandparental feeding style Grandparental feeding practices Studies with grandchildren's diet/grandparental feeding behaviour outcomes and child weight outcomes	Child weight the only study outcome Focus on infant feeding, breastfeeding or weaning
Study Design	All observational and experimental design Published in a peer reviewed journal Studies from middle and high income countries (using classifications from the World Bank ⁽²⁴⁸⁾)	Studies from low income countries (using classifications from the World Bank ⁽²⁴⁸⁾) Non-English language publications Abstracts Reviews (systematic or commentaries)

3.5.4 Quality Appraisal

Study quality was assessed using methodologically appropriate tools. Qualitative, case-control and cohort studies were assessed using relevant critical appraisal skills programme checklists ^(249–251) and cross-sectional studies were assessed using the AXIS tool ⁽²⁵²⁾. These tools assess key aspects of the design including aims, methodology and results to allow appraisal of study internal and external validity. Two reviewers (CM and SR) critically appraised all included papers. The heterogeneity across appraisal tools made it difficult to compare quality and consequently the reviewers assigned a scoring system to categorize the papers as low (meeting below 50% of appraisal tool criteria) moderate (50-75%) or high quality (>75%) to allow for comparison ⁽²⁴²⁾. Disagreements regarding study quality were resolved by consensus.

3.5.5 Data Extraction

The first reviewer (CM) extracted data related to the study design and outcome measures. A data extraction table was developed by the first reviewer (CM) and piloted. Data was extracted into a table under the following headings: study identifier, year, country, design, sample characteristics, child characteristics, grandparent care measurement, dietary measurement methods, relevant outcomes and for quantitative data, key results relating to dietary provision, feeding style and feeding practices (see supplement 2). For qualitative data, participant quotations and author discussions related to dietary provision, feeding style and feeding practices from the results section of the paper were extracted into NVivo for analysis. The data extraction process was verified in two ways; a second reviewer (SR) completed the data extraction for 10% of

the papers and no disagreements were noted. A third reviewer (SC) cross-checked all data extraction entries by the first reviewer (CM) for accuracy and completeness.

3.5.6 Data Synthesis

Data from both quantitative and qualitative studies were synthesised under the three feeding constructs of dietary provision, feeding style and feeding practices using a results based convergent synthesis design. This allows the qualitative and quantitative data to be analysed separately but integrated in the results section to address the three feeding constructs ⁽¹⁵³⁾. The qualitative data were analysed using thematic analysis of participant's quotes and relevant text from the results section of the papers⁽²⁵³⁾. A framework method of thematic analysis was adopted using a deductive approach ⁽²⁵⁴⁾ to identify codes and themes within the three identified feeding constructs (dietary provision, feeding style and feeding practices). The six phases of thematic analysis described by Braun and Clarke were followed closely for this synthesis ⁽²⁵⁵⁾ which allowed the reviewer to identify, analyse and report patterns within the data. All text was coded in NVivo and themes were identified. The second reviewer (SR) cross-checked ten percent of the results and consensus was achieved on very minor coding disagreements through discussion.

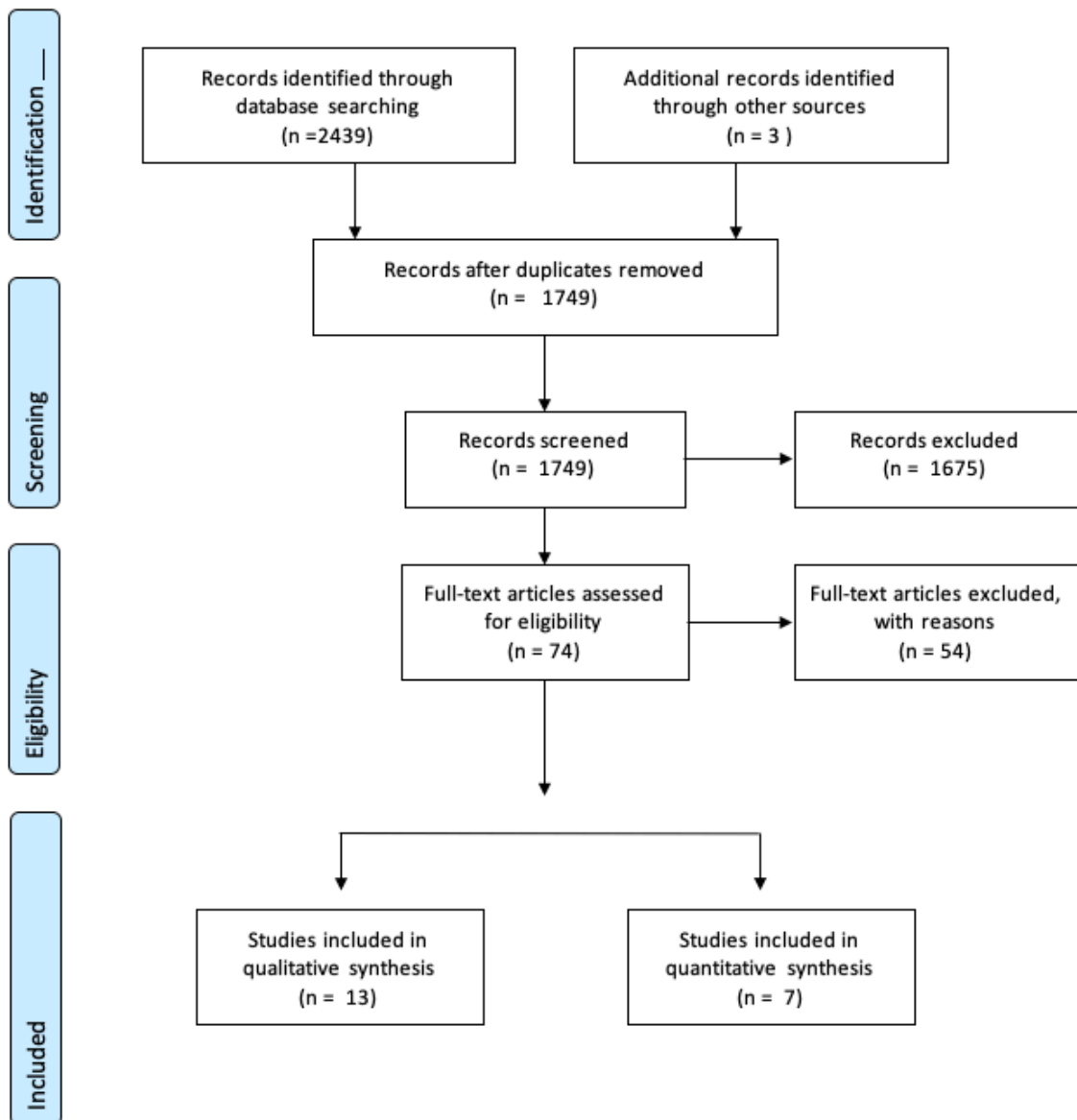
3.6 Results

The search yielded 1749 studies after duplicates (n = 693) were removed, 74 full text papers were screened of which 17 studies met all of the inclusion criteria and none of the exclusion criteria for the review (Figure 4). Hand searches of the full text reference

lists and the google scholar search, identified a further 3 studies for inclusion. A total of 20 studies were included in the review (qualitative n=13, quantitative n=7). Of the included 20 articles, three stemmed from a single study ^(256–258). Although these three articles used the same participants and methods, the study aims and outcomes were different and therefore are treated as separate studies. Reasons for exclusion at the full text screening stage include: article is a review (n=6), no access to full text or English version (n=4), the age range of the children (not specified, too young or too old) (n=22), inability to differentiate between carers influence (n=5), no measure/discussion of grandparent direct influence on child diet (n=15) and grandparents were primary caregivers not informal caregivers (n=1), and weight as an outcome (n=1)

Figure 4: Flow diagram of search results

Figure 1. Flow diagram of search results



3.6.1 Study Characteristics

The characteristics of the included qualitative studies are presented in table 5 and those of the quantitative studies in table 6.

Location: Eight of the studies were conducted in North America; in the USA ^(256–262) and Canada ⁽²⁶³⁾. Six of the studies were in Asia; in China ^(264,265), Japan ^(266–268) and the Asian part of Turkey ⁽¹⁸⁵⁾, three were conducted in Europe; in the UK ^(184,269) and Norway ⁽²⁷⁰⁾ and three studies were conducted in Australia ^(271–273).

Study Design: Thirteen of the studies used a qualitative study design ^(256–260,262–264,269–273), eight of which used structured or semi-structured interviews ^(256–258,262,264,270–272) and two used a combination of focus groups and interview techniques ^(260,273). The remaining three qualitative studies used focus group design ^(259,263,269). Of the quantitative studies (n=7), four studies used cross-sectional design ^(184,261,265,266), one was a case-control study ⁽¹⁸⁵⁾ and two used data from a cohort study ^(267,268).

Participants: This review includes data from 16,321 subjects reported across 20 studies. Of these, 16,064 were classified as parents with 11 studies reporting whether these were mothers (n=1242) or fathers (n=21) ^(256–260,262–264,269,270). Mean ages of parents were reported in seven studies and ranged from 30 to 35 ^(184,256–258,260,262,263).

Across fourteen studies 1097 grandparents participated ^(184,185,256–259,261,264,265,267,269,271–273) and thirteen of these studies specified whether they were

grandmothers (n=592) or grandfathers (n=47) ^(184, 185, 256–259, 261, 264, 265, 267, 269, 271, 272). Only six studies reported mean ages of grandparents and this ranged from 53 to 67 years old ^(184, 256–258, 261, 273). In two studies, although grandparents were not recruited specifically as participants, data was collected on 6459 three-generational households to assess the influence of grandparents co-residence ^(266, 268).

Many of the studies (n=11) did not report ethnicity but five of these eleven studies were interested in Chinese ^(264, 265) or Japanese ^(266–268) participants. Nine studies did report ethnicity; in seven of these over 90% of the sample were Caucasian ^(184, 256–258, 262, 263, 269), in one study 60% were African American ⁽²⁶¹⁾ and one study focused only on Latina mothers ⁽²⁶⁰⁾.

Twelve studies reported educational level of parents or grandparents. Overall grandparents tended to have less years in education than parents whereby between 17% and 100% of parents were reported to have attended higher education ^(185, 256–264, 269, 270) whereas between 8% and 39% of grandparents had ^(185, 256–258, 261, 264).

Table 5. Table of study characteristics of the qualitative studies included in the review

Study Identifier	Country	Study Design	Study sample	Child age (years)	Grandparent Involvement	Feeding assessment	Dietary Provision Practices	Paper reported on Feeding Style	Feeding	Quality Appraisal Score
Eli 2016 (256)	USA	Interviews	14 mothers, 8 fathers, 21 grandmothers, 6 grandfathers	3-5 (mean age =4.6)	Grandparents who spend time with the grandchild at least twice a month	Two questions on parental and grandparental (1) discussions and (2) agreement over child's diet	✓	✓	✓	High
Eli 2017 (257)	USA	Interviews	14 mothers, 8 fathers, 21 grandmothers, 6 grandfathers	3-5 (mean age =4.6)	Grandparents who spend time with their grandchild at least twice a month	Attitudes, knowledge, and practices regarding preschool aged children's beverage consumption	✓	✓	✓	High
Neuman 2019 (258)	USA	Interviews	14 mothers, 8 fathers, 21 grandmothers, 6 grandfathers	3-5 (mean age =4.6)	Grandparents who spend time with their grandchild at least twice a month	Exploring gender, generation and socioeconomic disadvantage in food provision	✓	✓	✓	High
Mena 2015 (259)	USA	Focus Groups	34 mothers and 2 grandmothers	2-5	Not reported	Influences on what and how they feed their child	✓		✓	High

Study Identifier	Country	Study Design	Study sample	Child age (years)	Grandparent Involvement	Feeding assessment	Paper reported on			Quality Appraisal Score
							Dietary Provision Practices	Feeding Style	Feeding	
Jiang 2007 ⁽²⁶⁴⁾	China	Interviews	9 mothers, 3 fathers, 7 grandmothers, 4 grandfathers	3-6 (mean age = 4.4)	Grandparents looked after child most of the time	Who is generally responsible for looking after the young child in your family? Who is responsible for family meals? What is your own view on how a small child should be fed?	✓	✓	✓	High
Rogers 2018 ⁽²⁷¹⁾	Australia	Interviews	9 Grandmothers	1-5	Grandparent cared for grandchild ≥7 h/wk	Views, perceptions and practices regarding dietary care, provision of treats, roles and responsibilities and challenges regarding feeding	✓	✓	✓	High
Toftemo 2013 ⁽²⁷⁰⁾	Norway	Semi structured Interviews	10 mothers, 1 father	2.5-5.5	Not reported	Perceptions of their child's weight and the family's relationship within their extended family and with kindergarten	✓	✓	✓	High
Dwyer 2008 ⁽²⁶³⁾	Canada	Focus groups	34 mothers, 5 fathers	2-5	Not reported	What experiences and challenges have you or other parents had in supporting healthy eating for pre-schoolers?	✓	✓		High
Lindsay 2009 ⁽²⁶⁰⁾	USA	Focus groups and interviews	51 Latino mothers	0-4	Not reported	Perceptions of child's weight status and definition of overweight, child feeding practices related to overweight, and the role of sociodemographic, sociocultural, and	✓			Moderate

Study Identifier	Country	Study Design	Study sample	Child age (years)	Grandparent Involvement	Feeding assessment	Paper reported on			Quality Appraisal Score
							Dietary Provision Practices	Feeding Style	Feeding	
						environmental influences on mothers' child feeding.				
Chung 2019 ⁽²⁷³⁾	Australia	Interviews	22 parents, 3 grandparents	6 months – 5 years (mean 3.5)	Not reported	Perceptions of factors that influence child sweet drink consumption	✓	✓	✓	High
Srivastava 2019 ⁽²⁶²⁾	USA	Interviews	17 mothers/female guardians, 3 fathers	3-5 years	Not reported	Parental belief systems about pre-schoolers' healthy eating	✓			High
Lidgate 2018 ⁽²⁶⁹⁾	UK	Focus groups	7 mothers, 5 grandmothers	0-5	Not reported	Experiences in receiving or giving informal childcare, perceived explanations of the relationship between informal childcare and childhood obesity	✓		✓	High
Pankhurst 2019 ⁽²⁷²⁾	Australia	Interviews and focus groups	10 grandmothers, 2 grandfathers	1-5	10 hours per week or more	The meaning and role of food treats among grandparents	✓	✓	✓	High

Table 6. Table of study characteristics of the quantitative studies included in the review

Study Identifier	Country	Study Design	Study sample	Child age	Grandparent Involvement	Feeding assessment	Paper reported on			Quality Appraisal Score
							Dietary Provision	Feeding Style	Feeding Practices	
Farrow 2014 ⁽¹⁸⁴⁾	UK	Cross sectional survey	49 mothers, 1 father, 39 grandmothers, 11 grandfathers	2-8 (Mean age =4)	Grandparents reported caring for their grandchild on average for 14.24 h each week (SD = 8.65, range = 3–39)	Comprehensive Feeding Practices Questionnaire			✓	Moderate
Yue 2018 ⁽²⁶⁵⁾	China	Cross-sectional survey	460 grandmothers, 923 mothers	18-30 months (median age =24 months)	Family member most responsible for child care	Feeding Practices & 24 hour recall for specific foods (staple foods, vegetables, fruits, meats, and eggs in the previous day). Dietary diversity coded as having food from more than 4 groups	✓		✓	Moderate
Speirs 2009 ⁽²⁶¹⁾	USA	Cross-sectional survey	44 mothers, 18 grandmothers	2-6	Care for grandchild (including meal and snack times) at least once a week	26 food consumption behaviour questions, FFQ fruit and vegetable consumption. Are grandmothers involved in purchasing food for or feeding their preschool-aged grandchildren?	✓		✓	Low

Study Identifier	Country	Study Design	Study sample	Child age	Grandparent Involvement	Feeding assessment	Paper reported on			Quality Appraisal Score
							Dietary Provision	Feeding Style	Feeding Practices	
Watanabe 2011 ⁽²⁶⁶⁾	Japan	Cross-sectional survey	1765 parent-child dyads (1222 in three-generation household)	3-6 (Mean age = 4.2)	Two generation vs three generation household	Dietary habits questionnaire - skipping breakfast, having meals at regular times and eating snacks at fixed times.	✓			High
Metbulut 2018 ⁽¹⁸⁵⁾	Turkey	Cross-sectional survey (Case-control)	50 grandmothers, 150 mothers	2-5	Fed by their grandmother mean 4.72 days per week	Comprehensive Feeding Practices Questionnaire			✓	Moderate
Kagamimori 1999 ⁽²⁶⁸⁾	Japan	Cohort study	8835 parent-child dyads, 5237 three-generational	3	Living with grandmother/grandfather in three generational household	Regular/Irregular meal & snack intake	✓			Low
Sata 2015 ⁽²⁶⁷⁾	Japan	Cohort study	3240 parents, 450 grandparents,	3	Daytime care provider	Questionnaire: Between-meal eating Eating before bedtime	✓			High

3.6.2 Quality Appraisal

Based upon the results of the relevant quality appraisal tools, thirteen studies were rated as high quality ^(256–259,262–264,267,269–273), five as moderate quality ^(184,185,260,265,266) and two as low quality ^(261,268). The low quality ratings were mostly due to methodological weaknesses; not measuring outcomes using validated tools ⁽²⁶⁸⁾, failing to consider confounding variables ⁽²⁶⁸⁾, and methodological reporting; poor reporting of statistical methods ⁽²⁶¹⁾, neglecting to justify chosen methods ⁽²⁶¹⁾ and unclear ethical procedures ⁽²⁶¹⁾. As few studies have been published exploring grandparent's feeding behaviours when caring for their two to four-year-old grandchildren these studies were included in the review. Nevertheless, the results of those studies assessed as low quality ^(261,268) should be interpreted with caution.

3.6.3 Dietary Provision

The first feeding construct relates to dietary provision. Within this category three main sub-themes emerged: frequency of food provision, the types of food and drinks and the portion size of food and drinks provided.

3.6.3.1 *Frequency of food provision*

In total, nine studies (quantitative $n=3$, ^(266–268) qualitative $n=6$ ^(256,259,264,269,270,272)) referred to the frequency of which grandparents served meals or snacks to their grandchildren when in their care. Two studies in Japan reported that three-generational households (where grandparents live with their grandchildren) were associated with unfixed ⁽²⁶⁶⁾ or irregular snack intake in children ⁽²⁶⁸⁾ but also regular meal times ⁽²⁶⁶⁾. Similarly, in another Japanese study the odds of three-year-old boys and girls eating between meals three or more times per day was 2.9 and 2.5 times the odds when cared for by grandparents compared to when cared for by parents ⁽²⁶⁷⁾. Likewise two qualitative studies from the UK also suggested grandparents provide frequent snack foods ^(256,269) and are more likely to provide confectionary than parents, ⁽²⁵⁶⁾ even though grandparents may discourage snacking before meal times ⁽²⁶⁹⁾. In another study, in the USA, Latina mothers complained that their parents were frequently serving their children junk food before meals ⁽²⁵⁹⁾. However, Australian grandparents described how they ensured their grandchildren did not eat too close to a meal so as to not spoil their appetite, or if their grandchildren were really hungry they would only provide a healthy option like fruit ⁽²⁷²⁾.

Qualitative interviews with parents and grandparents also described how grandparents focus their attention on providing set meals ^(256,272) but often this was to their grandchild's detriment as they may encourage children to eat more frequently. For instance it was noted in two studies that grandparents often served an additional meal, even if their grandchild had eaten that meal previously, whilst in childcare e.g. lunch ^(264,270).

3.6.3.2 Types of food and drink served

The review identified fourteen studies (quantitative n=2 ^(261,265), qualitative n=12 ^(256–259,262–264,269–273)) that reported on the types of food that grandparents provide to their grandchildren. Two out of twelve studies focused specifically on fruit and vegetable consumption. For example, a U.S. observational study compared the food served to children by parents and grandparents ⁽²⁶¹⁾. The authors reported that more grandparents served fruit in an evening meal than parents (39% vs 25% respectively) and that a similar number of parents and grandparents served vegetables (75% vs 73% respectively). Although this suggests that grandparents may have a positive influence on their grandchildren's diets, the low quality of this paper means that these results should be interpreted with caution. Similarly, a study conducted in China reported contrasting results to this US study, finding that grandparents were significantly less likely to provide vegetables (-0.19, p<0.05) and fruit (-0.16, p<0.05) to their grandchild than the parents were ⁽²⁶⁵⁾.

Discrepancies were also evident across the qualitative studies that explored the types of food grandparents provide. Although a majority of the studies indicated that

grandparents typically provide unhealthy food such as those with high fat and/or high sugar content e.g. chocolates, sweets and other junk food items ^(256,259,262–264,269–271), some studies suggested that grandparents provide healthy food to their grandchildren ^(258,272). For instance grandparents in Australia described how they frequently used core foods as treats, such as cheese and fruit and buy novel or more expensive but healthy items that the parents found too costly ⁽²⁷²⁾. Nevertheless grandparents did provide discretionary items as treats occasionally, believing that exposing their grandchildren to some discretionary items would allow them to develop self-control and learn to moderate their own intake ⁽²⁷²⁾.

Evidence on grandparents drinks provision was also mixed, despite grandparents and parents agreeing on which beverages are healthy/unhealthy ⁽²⁵⁷⁾. Grandparents in one study had stricter rules than parents on sugary drinks provision. For example, not using beverages as treats and using low fat or low sugar substitutes for more unhealthy drinks ⁽²⁵⁷⁾. This finding is in contrast to what was reported in four other studies, which described grandparents as providing frequent sugary drinks to their grandchildren ^(256,259,270,273).

3.6.3.3 *Portion Size of food served*

Three qualitative studies ^(260,263,264) reported on the portion size of food that grandparents provided to their grandchildren; no quantitative evidence was found. When parents in the USA were interviewed they described grandparents serving “*huge quantities of chips and candy*” to their grandchildren ⁽²⁶³⁾. Another study interviewing Latina mothers described grandparents who feed their grandchildren as if they were

“stuffing a bag” ⁽²⁶⁰⁾. Chinese grandparents were also accused of overfeeding their grandchildren, providing large portion sizes and encouraging their grandchildren to eat more even if the grandchild is full ⁽²⁶⁴⁾. In Latina and Chinese grandparents this feeding behaviour stemmed from grandparents preference for overweight in children ^(260,264) and some Chinese grandparents held the belief that overweight children will be thin when they grow up, or that eating more will help their grandchildren to grow taller ⁽²⁶⁴⁾.

3.6.4 Feeding Practices

Fourteen studies reported on grandparental feeding practices (quantitative n=3 ^(184,185,265), qualitative n=11 ^(256–259,261,264,269–273)). Feeding practices have been synthesised using the framework of three higher-order food parenting constructs proposed by Vaughn and colleagues; structure, autonomy and coercive control ⁽²⁷⁴⁾.

3.6.4.1 Structure

Grandparents may engage in some feeding practices that provide structure to children’s eating environment and promote healthy eating behaviours in children. For instance in a UK study comparing parent and grandparent feeding practices, grandparents were more likely than parents to create a healthy feeding environment ⁽¹⁸⁴⁾. Similarly, when grandparents from the USA were interviewed, grandparents discussed how they ensured that their grandchildren had access to healthy choices in their home, with specific reference to the choice of beverages ⁽²⁵⁷⁾. Grandparents may also model appropriate food and drink consumption, for instance when Australian grandparents were interviewed about their treat provision it was evident that grandparents were mindful of what they were consuming in the presence of their

grandchildren and understood the importance of modelling healthy behaviours ⁽²⁷²⁾. Similarly grandparents from the USA described how they modelled healthy beverage consumption after observing the mother's modelling techniques regarding sugary drinks ⁽²⁵⁷⁾. However, two studies comparing the feeding practices of parents and grandparents suggest that grandparents may be less likely than parents to engage in some feeding practices that promote healthy eating behaviours. In these studies grandparents were less likely to model healthy eating behaviours ^(184,185), promote variety and a well-balanced food intake ^(184,185) and less likely to monitor intake ⁽¹⁸⁵⁾ than parents.

3.6.4.2 Autonomy

Grandparents may also engage in feeding practices that help to promote autonomy and independence in children. For instance, in two studies grandparents described how they spend time to teach their grandchildren about nutrition and communicate about healthy eating to allow their grandchildren to make healthy choices themselves ^(257,271), although not all grandparents saw this as their role or responsibility ⁽²⁷¹⁾. Moreover, five qualitative studies demonstrated how grandparents consider their grandchildren's food and drink preferences ^(259,264,269–271), for meal choice, ⁽²⁶⁴⁾ drinks and snacks ^(259,270,271). Nevertheless this was often done in a permissive manner ^(259,269–271) and in one study was framed as grandparents being unable to say no to their grandchildren's requests ⁽²⁶⁹⁾. Similarly, although grandparents from the USA described how they wanted to create a balanced eating environment and prevent their grandchildren from becoming fixated on unhealthy foods they framed this as a justification for their excessive provision of treat foods and snacks ⁽²⁵⁶⁾.

3.6.4.3 Coercive Control

Grandparents were also described as using coercive feeding practices. Coercive practices are often used to impose the caregiver's own desires and influence a child's socialisation around food. They include pressure, restriction and using food to control behaviour or emotions and they can have a negative impact on eating behaviours and preferences ⁽⁵³⁾. Restriction was the most commonly reported of these feeding practices, whereby five qualitative studies ^(257,259,264,271,272) and two quantitative studies ^(184,185) highlighted that grandparents use restriction practices. Grandparents in one study restricted carbonated sugar-sweetened beverages (SSB's) for health reasons ⁽²⁵⁷⁾, whereas in another study, grandparent's restriction of food items was more likely to be for weight concerns ⁽¹⁸⁴⁾ than parents. Australian grandparents, in another study, chose to restrict items based on sugar and food-additive content rather than restricting items based upon salt and fat content ⁽²⁷¹⁾. Their grandchild's behaviour was also a motivating factor for restriction, rather than nutritional concerns ⁽²⁷¹⁾. Grandparents may also choose to restrict food items when a main meal is imminent for fear of spoiling their grandchildren's appetites⁽²⁷¹⁾. Interestingly, although grandparents do use restriction practices some grandparents did acknowledge that prohibiting food and drink items entirely can have negative consequences ^(257,272).

Four studies reported grandparents using food or drinks as a reward for behaviour ^(257,264,271,272), whether this was withholding treat foods (e.g. fast food items) due to negative behaviours ⁽²⁶⁴⁾ or rewarding good behaviours with snack foods (e.g. ice cream; chips/ crisps) ^(264,271,272). Some grandparents only used food to reward their

grandchildren's behaviour to align with parental practices, particularly to reinforce toilet training ⁽²⁷²⁾. In the same study grandparents were also opposed to using food to regulate their grandchildren's emotions yet, in other studies, grandparents were more likely than parents to use food to regulate their grandchildren's emotions ^(184,185).

Pressuring grandchildren to eat was also a theme that emerged from one qualitative study in China ⁽²⁶⁴⁾. This included; encouraging grandchildren to eat in the absence of hunger, to finish food in the bowl and to have second servings of food. Grandparents reportedly used pressure to prevent food waste and encourage greater consumption. Other reasons for pressuring their grandchildren to eat include having painful memories of hunger themselves and not wanting their grandchildren to experience this. Also, some grandparents had inaccurate perceptions of both child weight status (strong not fat) and consequences of eating more (becoming tall) and therefore pressured their grandchildren to eat.

3.6.5 Feeding Style

Nine qualitative studies implicitly referred to grandparents feeding styles ^(256–258,263,264,270–273). Most made reference to grandparents 'indulging', 'spoiling', 'treating' or being 'permissive' ^(256,257,263,264,270–272), and this was often framed within being a grandparents role or privilege ^(256,257,270,271). These references emerged across cultures, including studies from the USA, Australia, Canada, Norway and China. Grandparents rationalised their indulgent feeding style as a way of counteracting parents strictness, introducing a sense of fun and creating a bond with the child ⁽²⁵⁶⁾ as well as a way to transmit love ⁽²⁶⁴⁾. Grandparents believed that being indulgent was

inconsequential due to the limited time they spent caring for their grandchild ^(257,271). Although grandparents in one study were often indulgent, providing their grandchildren with food items they requested, they didn't want to be manipulated by their grandchildren ⁽²⁷²⁾. To overcome this, grandparents had rules and boundaries, particularly regarding the number of treats their grandchildren could have in one go ⁽²⁷²⁾, suggesting a more authoritative feeding approach is adopted by some ⁽²⁷²⁾. Three other studies referred to grandparents having rules and being strict with food and drink provision ^(257,258,273). This could also reflect either an authoritative or an authoritarian feeding style but it was unclear, if these rules were accompanied by a responsiveness to their grandchild's preferences and needs or not, which would clarify this.

3.7 Discussion

This review identified 20 studies that reported grandparental feeding behaviours when caring for their two to four-year-old grandchildren. This included both qualitative and quantitative studies of mostly high and moderate quality from a wide range of countries. The findings are described using three concepts: dietary provision, feeding practices and feeding styles.

3.7.1 Dietary Provision

The evidence suggests that grandparents might be serving large portion sizes and encouraging their grandchildren to eat frequently, offering snacks and additional meals to their preschool aged grandchildren. However, the evidence is less clear regarding the types of food and drink provided. Although a majority of the studies indicated that

grandparents are typically providing unhealthy food and drink items high in fat and sugar, there was also evidence to suggest grandparents provide healthy options to their grandchildren, using core foods as treat items and providing fruit and vegetables with meals. Discrepancies may result from differences between parental and grandparental report; for instance, within a single study in Australia, grandparents described themselves as being strict with sugary drink consumption whereas parents of the same children described grandparents as regularly offering fruit juice and soft drinks ⁽²⁷³⁾. Another finding is that grandparents value their role as a provider of meals for preschool aged children. Sometimes this led to grandparents providing a meal that the child had already eaten elsewhere so, for example, the child would eat two evening meals. Even though none of the included studies assessed the content of meals provided by grandparents, consuming regular meals is associated with higher fibre intake, lower added sugar intake and better diet quality ⁽²⁷⁵⁾. Consequently, this behaviour may have a positive effect on the diets of preschool aged children.

3.7.2 Feeding Practices

The results for feeding practices were also mixed. Grandparents demonstrated some feeding practices that provide structure to a child's eating environment such as creating a healthy food environment, ensuring healthy food is accessible to their grandchildren and modelling healthy eating, which are all conducive to healthy food intake in children ^(276,277). This is particularly important because in a study of Australian grandparents, creating a healthy food environment and having healthy food available and accessible in the home was the strongest predictor of child diet quality compared with other feeding practices ⁽²⁴⁰⁾. Moreover, the results of this review suggest that

grandparents use some feeding practices which may help to support their grandchildren's autonomy and independence with food and drink, such as teaching their grandchildren about nutrition and considering their grandchildren's preferences and choices ⁽⁵³⁾. Nevertheless, it is difficult to distinguish between grandparents considering their grandchildren's preferences and being permissive. Evidence suggests that grandparents are also engaging in some feeding practices that are coercive in nature such as restriction, using food as a reward or for emotional comfort and pressuring grandchildren to eat, which correlate with children's unhealthy food consumption ^(276,277). Studies of parental feeding practices suggest that these coercive practices are also adopted by parents of children this age but may vary depending on child weight status, parental ethnicity and child sex ^(278–280). It may therefore be useful to explore the variation in the use of different feeding practices across distinctive characteristics of grandparents and grandchildren. It is also worth noting that there is not always a straight forward relationship between feeding practices and eating behaviour. For instance, the ways in which caregivers choose to restrict food and drink items may influence children's eating behaviour positively or negatively. Covert restriction, whereby children are unaware that caregivers are restricting food and drink items can promote the consumption of healthy foods in children, whereas overt restriction, whereby the child is aware of the food or drink being restricted can increase child consumption of these restricted items ^(98,281). None of the studies in this review explored these constructs explicitly and therefore it is unknown if grandparents use overt or covert methods when they restrict food and drink items. However, in a few studies, grandparents understood that forbidding food entirely, a key characteristic of overt restriction can have negative consequences ⁽⁹⁸⁾.

Another oversight of the literature reviewed here, is that none of the studies considered how the behaviour of the grandchild might shape the feeding behaviours of grandparents. Some child eating behaviours e.g. satiety responsiveness, slowness in eating are, at least in part, genetically driven ^(282,283) and evidence indicates that child eating behaviours can precede and drive caregiver feeding behaviours ^(284,285). For instance, fussy eating in young children is predictive of caregivers use of coercive feeding practices such as pressuring to eat, using food as a reward and overt restriction ^(285,286). No study in this review captured child eating behaviours and therefore we do not know if grandparents feeding practices are used in response to child eating behaviours or vice versa. Exploring the direction of the relationship between grandparents feeding practices and their grandchildren's eating behaviours may be a key future direction for research.

3.7.3 Feeding Style

Finally, this review found that grandparents predominantly use an indulgent feeding style with their preschool aged grandchildren, confirming that being indulgent is a common part of the grandparenting role ⁽²⁴¹⁾. Indulgent feeding styles are characterised by being responsive to children's needs and preferences but having few rules and demands on their grandchildren's needs. This is important because compared to the authoritarian feeding style, an indulgent feeding style is associated with increased intake of energy dense, nutrient poor foods ⁽⁶⁸⁾ and a decreased intake of fruit and vegetables ⁽¹¹⁷⁾. Consequently an indulgent feeding style is negatively associated with pre-schoolers' weight status ⁽²⁰⁰⁾

Other reviews have found that grandparents predominantly have a negative influence on the diets of children aged 0-18 years old ^(242,244), however this review suggests that the relationship between grandparental care and preschool aged children's eating is less clear. The age of the grandchild may explain these differences, whereby grandparents feeding mechanisms differ for preschool aged children compared to older children. This argument is supported by a recent study which found that grandparents of younger grandchildren were more likely to give praise to their grandchildren for healthy eating, set limits of unhealthy food consumption and use food as a reward than grandparents of older grandchildren ⁽²⁴⁰⁾. Whether child age influences grandparent's dietary provision and feeding style however is still unknown and requires further comparative studies.

A strength of this review is that it not only focuses on preschool aged children but also explores the mechanisms by which grandparents may be influencing their grandchildren's diets. The early years are an important time when dietary habits and preferences are formed and this review provides evidence that targeting grandparents may be beneficial in improving the diets of young children and, due to the sustained nature of eating habits in childhood, children's health in later life. This review also included participants from a wide range of countries, representing numerous ethnicities, although limited homogeneity across study outcomes prevented a detailed assessment of differences between them.

Several limitations are also of note. Firstly, there was great heterogeneity between the study methods and outcomes. For instance, this review included studies where parents were reporting on grandparental behaviours. As inconsistencies were found

within studies between parent and grandparent reports, this inclusion criteria may bias the results. The review also included studies of low quality, potentially weakening the validity of the results. However, due to the limited number of studies published in the area these inclusion criteria were deemed justifiable. Another limitation of the review was the inclusion of studies across different nationalities and cultures. Although similarities were seen across these, caution needs to be taken when applying the results to a specific population and further research is needed to explore the specific influence of culture on grandparental behaviours. Finally, feeding styles are a complex phenomenon, defined by multiple criteria and no study identified in the review used a validated tool to assess them. This means that grandparental feeding style can only be inferred from the data available and a validated tool would provide a more reliable and accurate depiction of the feedings styles grandparents are adopting.

This review has highlighted several gaps in the literature. No study has rigorously assessed the dietary provision of grandparents to preschool aged children using dietary assessment methods that capture more than just fruit and vegetable intake or snack intake. Likewise, evidence on the types of food that grandparents are providing often come from parental report. Considering that grandparents are often relied upon for childcare when parents are unable to provide it themselves, parental perspectives of what grandparents do in their absence may not be wholly accurate. Consequently, it is very difficult to establish the overall dietary quality that grandparents are providing to their grandchildren thus further quantitative studies are needed. Similarly, no study has assessed grandparental feeding styles using a validated feeding styles tool and, as discussed, this is needed to fully examine their feeding styles and how they might influence their grandchildren's dietary intake. Doing so may also help to establish

whether grandparent's indulgent feeding styles are analogous to parent's indulgent feeding styles.

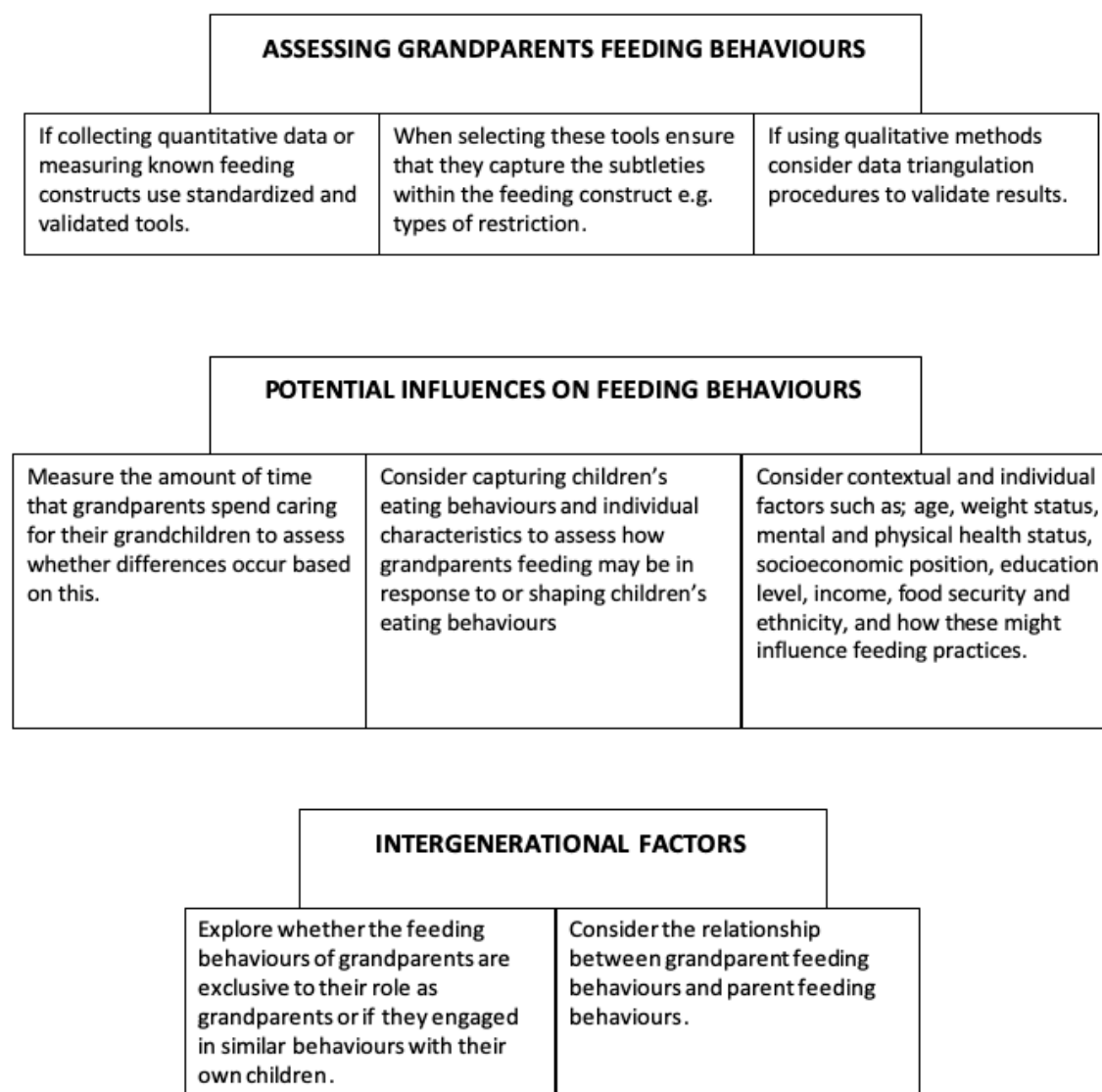
Few studies have explored the relationship between the amount of time that grandparents spend with their preschool aged grandchildren and their feeding behaviours. A recent study found that 3-14 year old grandchildren cared for regularly by their grandparents were more likely to consume both healthy (fruits and vegetables) and unhealthy (sugary and savoury snacks and sugary drinks) foods compared to those cared for by their grandparents less frequently ⁽²⁴⁰⁾. This suggests that increased time in grandparental care may have both a positive and negative effect on children's eating behaviours. Moreover, further research is needed to explore how the amount of time grandparents spend caring for their preschool aged grandchildren impacts upon their dietary provision, feeding styles and feeding practices.

Further exploration is also needed into the intergenerational nature of feeding behaviours. No study explored how feeding styles may be similar between related parents and grandparents, but there is some evidence to suggest this is the case for feeding practices. For instance, one study explored the correlation between related mother's and grandmother's feeding practices and found significant correlations between their use of pressure to eat, restriction and encouragement of energy balance ⁽¹⁸⁵⁾, suggesting that these behaviours may be passed down generationally from grandparent to parent. In another study, although similarities were found between parent and grandparent feeding practices, these parents and grandparents were independent and unrelated⁽¹⁸⁴⁾. Eli and colleagues found that grandparents residing in intergenerational households had similar feeding attitudes to parents but this may be

a consequence of residing in the same home ⁽²⁵⁶⁾. Similarly grandparents often described conforming to parental rules and practices ^(256,287). It is evident that further work is needed to characterise the intergenerational nature of feeding behaviours and explore whether they are learnt behaviours or if these similarities are a result of cooperation and agreement in approaches. Doing so would also help to establish whether grandparents used similar feeding practices or adopted an indulgent feeding style with their own children or if it is unique to the grandparenting role.

Considering the results of this review and the gaps within the literature the authors propose a set of recommendations (figure 5) for future research exploring the relationship between grandparents feeding behaviours and their preschool-aged grandchildren's eating behaviours.

Figure 5. Recommendations for future studies assessing the relationship between grandparent care and preschoolers diets



It is clear from this review that grandparents play an important role in caring for their grandchildren in the early years and they may need support to modify their feeding styles, practices and food provision. Being indulgent may be embroiled within what it means to be a grandparent and campaigns could encourage grandparents to be indulgent with their time, attention and activities rather than with food and drinks. Similarly, strategies could be developed to encourage grandparents to use non-food-based rewards and to refrain from using food as an emotional comfort. However, it is important to note that this review focuses specifically on feeding and does not account for the potentially positive and supportive role that grandparents play in their grandchildren's social and emotional wellbeing ^(236,288–290) and this should not be ignored. The results of this review do not suggest that grandparents care should be limited, rather that healthy eating initiatives targeting parents should be widened to ensure grandparents also receive support with their feeding.

In conclusion, grandparents use a range of feeding practices to influence their preschool aged grandchildren's eating and some of these, such as creating a healthy eating environment, may lead to healthful eating in young children but some of these, such as using food as a reward, may lead to negative eating outcomes. An indulgent feeding environment was also documented widely in grandparents caring for their preschool aged grandchildren as well as evidence that grandparents offer large and frequent snacks and meals. Grandparents are therefore an important group to target to improve dietary related health outcomes in young children. Nevertheless, there is still a need to use validated tools to assess grandparental feeding styles and to directly measure grandparent's overall dietary provision. Only then can interventions be

designed that are sensitive to both the positive and negative influences that grandparents have on the diets of their two to four-year-old grandchildren.

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3.9 Conflict of Interests Statement

The authors declare that there is no conflict of interest

3.10 Author Contributions

C.M., S.C., and P.B. contributed to the conception of this review; C.M. designed the study; C.M., SC and S.R. carried out study selection, data extraction, quality appraisal and data analysis; C.M drafted the paper; S.C., P.B. and S.R. critically revised the paper. All authors have read and approved the content of the review.

3.11 Further consideration of the findings

While conducting the search, three more journal articles were identified through manual searches of the reference lists of the included studies. In these supplementary studies, parents had discussed grandparents' feeding behaviours. These articles were not initially identified in the primary search since the feeding behaviours of grandparents were not the primary focus of those studies. Consequently, data related to grandparents' behaviours were not mentioned in the abstracts, titles, or keywords upon which the initial search was based. Importantly, similar instances may have been overlooked in the search due to this limitation. However, without employing data mining techniques, capturing all such instances would be challenging.

The home environment is seen as being particularly important in children's health^(36,291). The home food environment includes behavioural aspects like feeding practices and styles, as discussed here, and physical elements such as the availability and accessibility of food items⁽³⁶⁾. While the behavioural aspects can be linked to caregivers and applied across different locations, the physical elements are not as transferable. This distinction becomes significant when examining the influence of grandparents on the diets of young children. For instance, grandparents might care for their grandchildren in their grandchildren's homes, rather than their own, resulting in less control over the availability and accessibility of food. Similarly, other aspects of the home environment can influence children's eating habits, such as the availability and regulations regarding screen time. For example, consuming meals while watching TV has been linked to increased intake of unhealthy food^(292–294). Although grandparents may have control over screen time rules for their grandchild during their

care, they may lack control over the physical home media environment, including the availability and accessibility of television, when caring for their grandchild outside their own home. This study, although addressing certain facets of the home food environment, overlooks the broader home environment and fails to consider the impact of the home where grandparents provide care, which can have repercussions on children's eating habits.

Introduction to chapter 4

As evidenced in chapter 3, the influence of grandparents on young children's eating is a relatively understudied field. A large amount of evidence comes from interviews with parents. There is also a distinct lack of quantitative dietary data, measured using validated tools when children are in the care of their grandparents. Therefore chapter 4 aimed to address this gap by exploring how data from the National Diet and Nutrition Survey could be used to assess the diets of UK preschool children when in the care of their grandparents.

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The content of the chapter is the same as the published version. Two co-authors contributed to this manuscript; Penny Breeze and Samantha Caton. Colette Marr conceived the idea for the study, designed the study, conducted the data analysis and produced the original draft of the manuscript. Samantha Caton and Penny Breeze supervised and reviewed the work and critically revised the paper. The article was published open access under a CC BY 4.0 license following the requirement of the Wellcome Trust who financially supported this work. The conditions of open access publishing allow the author to copy and redistribute the material in any medium or

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4 Chapter 4: Examination of dietary intake of UK preschool children by varying carers: Evidence from the 2008-2016 UK National Diet and Nutrition Survey

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4.1 Abstract

Early years caregivers can play a key role in young children's eating and the prevention of childhood obesity. The UK National Diet and Nutrition Survey (NDNS) is a large representative survey collecting detailed food and nutrition consumption data. Using these data, the aim of this study was to investigate the relationship between dietary intake of preschool children in the UK aged 2 to 4 years and accompanying adult/s. Nutrition consumption data from 1,218 preschool children from the 2008-2016 NDNS were accessed. Dietary data was captured using three or four day estimated food diaries. Regression analyses revealed significant differences in consumption when children were not accompanied by their parents. Compared to when children were with parents, children consumed significantly more energy dense meals (0.32 kJ/g, 95% CI 0.1-0.6kJ/g), energy (62kJ/g, 95% CI 27-97kJ) sodium (19mg, 95% CI 6-

32mg) , added sugars (0.6g, 95% CI 0.1-1.1g), vegetables (3g, 95% CI 1-4g), total grams (12g, 95% CI 3-21g) and saturated fat (0.2g, 95% CI 0.1-0.4g) per eating occasion when accompanied by wider family. When children were accompanied by a formal childcare provider they consumed significantly lower energy dense meals (-0.9kJ/g, 95% CI -1.4 - -0.3kJ/g), less added sugars (-1.6g, 95% CI -2.4- -0.8g) and more fruit (12g, 95% CI 3-21g) per eating occasion than when they were with their parents. The results demonstrate that non-parental caregivers might be an important target to promote healthy eating in young children. Further research is needed to establish which caregivers would benefit most.

4.2 Introduction

Globally, in 2019, 38 million children under the age of five were overweight or obese ⁽²⁹⁵⁾ and poor dietary choices are partly responsible for this. Although the first few years of a child's life are documented as a critical period for the development of healthy eating habits, in the UK, preschool children are consuming over double the recommended amount of free sugars per day and exceeding their recommended intake of saturated fat ⁽²⁶⁾. Many children in England are also failing to meet the recommended daily intake of fruit and vegetables⁽²⁹⁶⁾. Caregivers (e.g. parents, family, childminders, nursery staff) of young children are nutritional gatekeepers, selecting the types and amount of food and drinks they receive ⁽⁴¹⁾. There are a wealth of publications exploring parental feeding ^(297–300) but few have investigated the influence of other caregivers, such as other family members, nursery staff and childminders, on young children's eating. This may be a key oversight in exploring the factors associated with early childhood obesity.

Over the last twenty years the employment rate of mothers has grown substantially and 73% of couple families have both parents in employment in the UK ⁽³⁰¹⁾. Consequently, parents rely on both formal and informal caregivers for childcare. Formal childcare is government regulated and can be provided free as part of the entitlement to early years provision or paid for directly by parents. Formal childcare includes nurseries and registered childminders. Informal childcare is the converse of formal childcare, often provided by family and friends. Children aged three to four years old in the UK are entitled to 30 hours of free childcare per week with a formal childcare provider, however, for children younger than this there is limited free provision and therefore informal childcare is often used. In a recent survey of English parents of children aged 0-14 years old, 62% had used formal childcare and 35% of families had used informal childcare provided by family and friends. More specifically, 40% of preschool children up to age two years, and 88% of children aged three to four years old had received formal childcare. The data are not so clear with regards to informal childcare since it is likely to be used outside of traditional working hours and school holidays ⁽²³⁴⁾. For children below school age this often involves a full day of childcare involving multiple meals and snacks and therefore the influence these caregivers are having on young children's diets requires more exploration.

Research into the provision of food and drink in formal childcare settings focuses mainly on nurseries. In the past, there is evidence to suggest that nurseries were failing to develop healthy eating habits in young children, providing meals deficient in energy, carbohydrate, iron and zinc and exceeding the recommended sodium guidelines ⁽³⁰²⁾. In another study, many nurseries were not providing a single portion of fruit or vegetables with the children's main meal ⁽³⁰³⁾. However, since the voluntary food and

drink guidelines for early years settings were released in 2012, nurseries started to serve food and beverages more consistent with the guidelines ⁽³⁰⁴⁾. Although these studies go some way in demonstrating the dietary quality in nursery settings there is still a lack of up to date data on food provision in UK nurseries. Research into the food provision in childminder settings is scarce, however a qualitative study of eight childminders found that although childminders were aware of key nutritional campaigns such as the 'five a day' there was an over reliance on the provision of fresh and dried fruit as snacks and no consistency in providing vegetables with meals ⁽³⁰⁵⁾. Most of the childminders were also unaware of the voluntary food and drink guidelines for early years settings ⁽³⁰⁵⁾.

There is also a distinct paucity of evidence examining food provision by informal childcare providers such as family members. Instead, research has focused on weight outcomes of children in formal versus informal childcare, with mixed findings. For instance in a UK wide cohort study of 12,354 three year olds children who were cared for in informal childcare settings were significantly more likely to be overweight than those cared for by their parents, whereas no significant relationship existed for those in formal childcare ⁽³⁰⁶⁾. Although there is little evidence for the association between childcare type and weight status persisting beyond the early years ^(307,308), it suggests that exploring the food provision by family members who are not parents may be important.

The National Diet and Nutrition Survey (NDNS) ⁽³⁰⁹⁾ is a representative survey collecting detailed food consumption and nutrient intake data of individuals aged one and a half years and over, from the UK. For children, parents are asked to complete

food diaries, regarded as the gold standard in dietary assessment methods ⁽¹⁵⁶⁾, for all food and drinks consumed over three days. Parents also document who the child is with when they consume these foods. Consequently, the NDNS may be an invaluable resource that can be utilised to explore the dietary provision of formal and informal caregivers.

A previous study has explored the relationship between children's fruit and vegetable intake and the eating context, including who the child was with, using data from the NDNS ⁽³¹⁰⁾. Children aged one and a half to three years old were more likely to consume vegetables when siblings were present, when they were with adult relatives and when with formal childcare providers, such as nursery/kindergarten staff and childminders, compared to when they were with their parents alone. Children were less likely to consume vegetables when alone and they were also more likely to consume fruit when they were with their formal childcare provider and when they were with friends. Although this study highlights the difference in fruit and vegetable intake when children are with different adult figures it doesn't provide insight into young children's overall diet provision when accompanied by different people. Doing so would provide a greater insight into ways to improve children's diets.

There is also a need to consider socioeconomic factors when exploring children's dietary intake when with different caregivers ⁽³¹¹⁾. Socioeconomic gradients in diets have been documented widely for both adults and children, with lower income groups consuming lower quality diets than higher income groups ^(312–315) and this is primarily due to reduced access and a higher cost of more healthful diets ⁽³¹³⁾. Less is known

about how the child's parental household income, a proxy measure of socioeconomic status, might influence young children's dietary intake within a caregiving environment.

The aim of this study is to investigate the relationship between dietary intake (energy (kJ), total added sugars (g), total sodium (mg), energy density (kJ/g), total saturated fat (g), total fruit (g), total vegetables (g) and total grams per eating occasion) of children aged two to four years old in the UK and accompanying adult/s using data from the national diet and nutrition survey. We will also explore the influence of the child's parental household income on children's dietary intake when they are accompanied by different people.

4.3 Method

4.3.1 Research Design

This study is a secondary data analysis of quantitative data from a UK National cross-sectional survey.

4.3.2 Data Source

The data were pooled data from the National Diet and Nutrition Survey (NDNS) years 1-8 ⁽³⁰⁹⁾. The NDNS is a nationally representative cross-sectional survey assessing the diet and health of households in Great Britain. Data was collected in three waves; wave one: 2008-2011, wave two: 2012-2014 and wave three: 2014-2016. Across the three waves 39,524 households were randomly selected to take part in the study. For each household either one adult (aged 19 years and over) and one child (aged one

and a half to 18 years) or one child only were randomly selected to take part. Participants for the present study were 1,218 children aged two to four years old and their caregivers who completed the dietary assessment for the children. The full survey design and sampling methods of the NDNS survey have been published previously⁽³⁰⁹⁾. Anonymised data were obtained from the UK Data Archives (NatCen, University of Essex, Colchester, Essex, UK). Ethical approval for the NDNS was obtained from Oxfordshire a Research Ethics Committee.

4.3.3 Dietary Data

Across the three waves, three or four-day estimated food diaries were used to assess dietary intake. Food diaries were completed by parents for children under the age of twelve and detailed instructions for caregivers were also provided for when children were not with their parents. To complete the food diaries, caregivers were asked to record all food and drink items consumed, both in and out of the home, the time they ate and who they were with. Parents and caregivers were requested to record only the food eaten, taking into consideration any leftovers and they were provided with picture examples and given detailed instructions on how to estimate portion sizes and were asked to record any weights from labels. Diary entries were coded by trained coders and editors in the NDNS team. For each food item consumed, macro and micronutrients were calculated in a modified version of the Diet in, Nutrients Out system; a dietary recording and analysis system. The food composition data was taken from the Department of Health's NDNS Nutrient databank.

4.3.4 Type of Caregiver

The NDNS coded 15 categories for who the child was with for each eating occasion and these were recoded into a new variable containing six categories for the current analysis. Three of these categories refer to types of caregivers; “parents”, “formal childcare providers”, and with “wider family”. The other three categories suggested no obvious caregiver (“no adult specified”, “with others”, and “not recorded”) but were retained in the analysis for validity. Any group that included parents was recoded as ‘with parents’ even if the category also referred to being with a carer e.g. ‘with parent/carers & siblings’ as there was no way to distinguish those within it. Exploratory analysis indicated that 94% of the eating occasions with parents/carers were in the home environment, strengthening the assumption that the carer referred to here is the parent figure. The category ‘with family (including relatives)’ was recoded as ‘with wider family’. One category referred to being with a carer without reference to parents (with carer and other children) and exploratory analysis indicated that 82% of these eating occasions accompanied by a carer were located at a nursery or kindergarten and 8% were located at a carer’s home indicating that these carers were nursery/kindergarten staff or childminders. Consequently, this category was assumed to be “formal childcare providers” and will be referred to this as such from this point onwards. When the NDNS categories included no obvious accompanying adult e.g. ‘with siblings’, ‘with friends’ these were recoded as ‘no adult specified’. Three NDNS categories, referring to with others, were collapsed into a single ‘others’ category. Finally, the NDNS category ‘not specified’ whereby participants did not enter into the diary who the child was with when consuming the food was coded as ‘not recorded’.

4.3.5 Other Variables

Alongside the food diaries, parents provided demographic information and trained field workers measured the children's body weight and height. BMI was calculated from height and weight and children were categorized as having a healthy weight, overweight or obesity using the WHO child growth standards ⁽³¹⁶⁾ for children aged two to three, and using the UK90 ⁽³¹⁷⁾ for children aged four and above. Parents also recorded their child's age in years, their gender, their ethnicity and the household income. For the present study we extracted the child's parental Equivalised Household Income to use as an indication of socioeconomic status ⁽³¹⁸⁾ since Indices of Deprivation scores were not available for all survey waves and nations. Equivalised Household Income is the total income of a household after tax and other deductions, divided by the number of household members weighted by age. This variable will be referred to as "household income" throughout.

4.3.6 Data Preparation & Outcomes

Food level dietary data, BMI, equivalised household income, ethnicity, gender and age data extracted from each wave and combined into one data set. Energy (kJ), added sugars (g), sodium (mg), saturated fat (g), fruit (g), vegetables (g) and grams from each food or drink item consumed were aggregated based upon serial id, exact meal time and the day of the week to create a total for each eating occasion. Energy density per eating occasion was calculated (total kilojoules/total grams).

4.3.7 Statistical Analysis

Means and standard deviations of energy (kJ), total added sugars (g), total sodium (mg), energy density (kJ per gram), total saturated fat (g), total fruit (g), total vegetables (g) and total grams (g) consumed per eating occasion when children were with the different accompanying adults were calculated to explore any initial associations between intake and accompanying adult. Regression analysis was then used to explore these associations further. Separate models were used to examine the main effect of each level of the “WhoWith” variable on each of the dietary outcomes (energy (kJ), total added sugars (g), total sodium (mg), energy density (kJ per gram), total saturated fat (g), total fruit (g), total vegetables (g) and total grams/eating occasion). Generalised linear models using clustered robust standard errors were used to control for multiple responses per participant. Sampling weights were applied in accordance with guidance from the NDNS. The models included gender, age, ethnicity (White, Mixed Ethnic group, Black or Black British, Asian or Asian British and any other group), equivalised household income (low $\leq$ £17,500, middle $>$ £17,500 $\leq$ £32,500 and high $>$ £32,500), and child BMI (normal, overweight and obese) to control for these factors which are known to influence dietary intake ^(312,314,315,319).

Over 10% of the sample (n= 291) had missing data for child BMI and/or household equivalised income data, which equated to 7769 missing eating occasions. Assuming this data was missing at random, multiple imputations (n=20) were performed for these two variables using the *mi impute* function in stata with *regress* for the continuous household equivalised income variable and *mlogit* for the categorical BMI variable. All variables used in the planned regression model were included in the imputation model to preserve the relationship between the variables of interest ⁽³²⁰⁾. The regression

analyses were conducted incorporating the average values from the 20 imputations for those with missing data in accordance with Rubin's rules ^(321,322).

4.3.8 Sub-group analysis

We examined the influence of household income on dietary intake ⁽³¹⁵⁾ and the differences in child intake when accompanied by different people. Although the indices of deprivation score (IMD) would have been the optimal measure of socioeconomic status, as it takes into consideration seven different facets of deprivation, IMD score was not available for all waves and all nations. Consequently household income was used as a proxy for socioeconomic status ⁽³¹⁸⁾. Household income was included in the model as a factor variable in addition to an interaction term between the accompanying person/people and household income categories. This was repeated for each nutritional element (energy (kJ), total added sugars (g), total sodium (mg), energy density (kJ per gram), total saturated fat (g), total fruit (g), total vegetables (g) and total grams (g)).

4.3.9 Sensitivity Analysis

As meal occasions (e.g. breakfast, lunch, evening meal, snack) vary in nutritional composition ⁽³²³⁾, ideally this should be controlled for in the regression analyses. However, the NDNS dataset does not provide an indication of whether the food eaten is part of breakfast, lunch, the evening meal or a snack, instead, participants record the time that the items were consumed. Although participants' self-identification of meal occasion is frequently used in the literature to define the meal occasion ^(324–326), where this data is lacking, time has been used as an approximation ⁽³²⁷⁾. Consequently, a sensitivity analysis was conducted making assumptions based on the

time items were consumed to control for meal type in the regression analyses. This assumed that any eating occasion consumed between 6am and 8.59am was breakfast, between 12 noon and 1.59pm was lunch, between 5pm and 7.59pm was the evening meal and items consumed at all other times were assumed to be snacks.

Data files and documentation for the survey were obtained from the UK Data Archive and analysed using Stata version 16.1.

4.4 Results

4.4.1 Child Characteristics

Data from 1,218 children were included in the analysis, table 7 presents the child characteristics. There were similar percentages of males and females in the sample and similar percentages of children aged two or three years old however there were slightly less four-year olds (29%). Although a similar number of children were from low- and high-income families (31% and 32% respectively) there were slightly more from middle income families (38%). A greater proportion of the sample were White British and of normal BMI but the distributions of ethnicity and BMI closely reflect national statistics.

Table 7. Child characteristics (n =1218)		
	n	%
Child Gender		
Male	634	52%
Female	584	48%
Child Age		
2	426	36%
3	431	35%
4	351	29%

Child Ethnicity		
White or White British	1049	86%
Mixed Ethnic Group	41	3%
Black or Black British	27	2%
Asian or Asian British	72	6%
Other	29	2%
Household EquivInc		
Lowest <£17,500	375	31%
Middle £17,500-£32,499	459	38%
High >£32,500	384	32%
Child BMI		
Normal	847	70%
Over-weight	195	16%
Obese	176	14%

4.4.2 Descriptive statistics of eating occasions

Across the 1,218 children, 30,652 eating occasions were included in the analysis (see table 8). The child had most of the eating occasions accompanied by parents (47%) followed by occasions when no adult was recorded as present (18%) and when accompanied by wider family members (17%). The fewest meal occasions were accompanied by a formal childcare provider (2%) or others (3%). In 13% of the eating occasions the accompanying person/people were not recorded.

Table 8. No. of eating occasions by accompanying adult

	No. of eating occasions	% of eating occasions
Accompanying person/people		
Parents	14540	47%
Wider family	5315	17%
Formal childcare providers	638	2%
No adult specified	5421	18%
Other	862	3%
Not recorded	3876	13%

Table 9 presents the mean dietary intake for each nutritional outcome categorised by who the child was with. Children aged two to four years old consumed the greatest

amount of energy (kJ), sodium (mg), total grams and vegetables (g) when accompanied by wider family members. The greatest amount of fruit was consumed when children were accompanied by parents. The most energy dense meals (kJ/g) were consumed when children were with others. The greatest amount of saturated fat and added sugars were also consumed when children were accompanied by others. The least amount of energy, saturated fat, sodium, vegetables and total grams were consumed when the accompanying people were not recorded by participants. The least amount of added sugars and the lowest energy density meals were consumed when children were accompanied by their formal childcare provider. The least amount of fruit was consumed when children were accompanied by wider family and when the accompanying people were not recorded.

Table 9. Mean child nutritional intake at an eating occasion when accompanied by different people

		Accompanying Person/People					
		(Number of eating occasions)					
		Parents (14,540)	Wider family (5,315)	Formal childcare provider (638)	No adult specified (5,421)	Other (862)	Not recorded (3,876)
Outcome Mean (Standard Deviation)	Energy (kJ)	784kJ (604)	861kJ (631)	763kJ (586)	747kJ (613)	876kJ (773)	584kJ (555)
	Saturated Fat (g)	2.9g (3.2)	3.2g (3.5)	2.8g (3.0)	2.9g (3.2)	3.5g (3.9)	2.3mg (2.9)
	Sodium (mg)	217mg (265)	248mg (283)	228mg (263)	195mg (250)	237mg (276)	141mg (216)
	Added Sugars (g)	6.2g (8.9)	7.0g (9.3)	4.7g (7.6)	6.0g (8.8)	7.5g (12.0)	5.3g (8.6)
	Total grams (g)	215g (179)	228g (154)	225g (139)	211g (139)	219g (155)	174g (133)
	Energy density (kJ/g)	5.0kJ/g (4.8)	5.3kJ/g (5.0)	4.1kJ/g (3.5)	4.9kJ/g (4.8)	5.4kJ/g (5.0)	5.2kJ/g (6.0)
	Fruit (g)	30g (0.5)	29g (0.7)	43g (2.5)	33g (0.8)	36g (2.9)	29g (0.9)
	Vegetables (g)	12g (0.3)	15g (0.4)	13g (1.1)	8g (0.3)	9g (1.4)	7g (0.4)

1 4.4.3 Regression results: nutritional intake when accompanied by different caregivers

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Table 10. Results of the regression analyses of child nutritional intake when accompanied by different caregivers

	Energy Density (kJ/g)		Energy (kJ)		Sodium (mg)		Added Sugars (g)		Total Grams (g)		Saturated Fat (g)		Fruit (g)		Vegetables (g)	
	Coef. (95%CI)	P Value	Coef. (95%CI)	P value	Coef. (95%CI)	P Value	Coef. (95%CI)	P Value	Coef. (95%CI)	P Value	Coef. (95%CI)	P Value	Coef. (95%CI)	P Value	Coef. (95%CI)	P Value
Parents	Reference															
Wider Family	0.3 (0.09 - 0.55)	0.007*	62 (27 - 97)	P<0.001	19 (6 - 32)	0.005*	0.6 (0.1 - 1.1)	0.024*	12 (3 - 21)	0.007*	0.2 (0.1 - 0.4)	0.006*	-1 (-3 - 3)	0.757	3 (1-4)	P<0.001
Formal childcare provider	-0.86 (-1.37 - -0.34)	0.001*	-1 (-98- 95)	0.982	26 (-25 - 78)	0.319	-1.6 (-2.4 - -0.8)	P<0.001	19 (-0.5 - 39)	0.056	-0.1 (-0.5 - 0.3)	0.593	12 (3 - 21)	0.01*	-1 (-5- 2)	0.374
No adults specified	-0.25 (-0.50 - -0.01)	0.043*	-51 (-85 - -17)	0.003*	-25 (-39 - -11)	P<0.001	-0.4 (-0.9 - 0.1)	0.104	-3 (-12 - 6)	0.498	-0.1 (-0.3 - 0.1)	0.169	4 (0 - 7)	0.042*	-4 (-6 - 03)	P<0.001
Other	0.50 (-0.03 - 1.01)	0.066	66 (0 - 133)	0.049*	13 (-11 - 36)	0.286	1.0 (0.1 - 2.0)	0.032*	0 (-15 - 16)	0.989	0.4 (0.1 - 0.7)	0.02*	7 (-1 - 14)	0.085	-3 (-7 - 1)	0.179
Not Recorded	-0.15 (-0.30 -0.27)	0.919	-227 (-261 - -193)	P<0.001	-82 (-94 - -70)	P<0.001	-1.0 (-1.5 - -0.6)	P<0.001	-41 (-48 - -33)	P<0.001	-0.7 (-1.0 - -0.6)	P<0.001	1 (-2 - 4)	0.639	-6 (-7 - -5)	P<0.001
Controlling for Child BMI, Child Age, Child Gender, Equivalised Household Income, Child Ethnicity																

*Significant at p<0.05

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The results from the regression analyses presented in table 10 (full regression results in appendix 13) indicate that, compared to when children were with parents, children consumed significantly more energy, sodium, added sugars, total grams, saturated fat and vegetables per eating occasion when accompanied by wider family. They also consumed higher energy dense meals. This equates to, on average, an additional 62 kJ, 19mg of sodium, 0.6g of added sugars, 0.2g of saturated fat and 3g of vegetables per eating occasion. Furthermore, children consumed an additional 12 grams of food and 0.3 kilojoules per gram for eating occasions accompanied by wider family members compared with parents. No significant differences were found between the amount of fruit consumed when children were with their parents versus when they were with wider family members.

When children were accompanied by a formal childcare provider, they consumed significantly less added sugars (-1.6g), significantly more fruit (12g) and significantly less energy dense foods (-0.86 kJ/g) per eating occasion than when they were with their parents. No significant differences were found between parents and formal childcare providers for the other dietary outcomes.

When no adults were specified, children ate significantly less energy (-51kJ), sodium (-25mg) and vegetables (-4g) and significantly more fruit (4g) per eating occasion than when there were with their parents. They also consumed significantly lower energy-dense eating occasions (-0.25 kJ/g).

When who the child was with was not recorded, children ate significantly less energy (-227kJ), sodium (-82mg), added sugars (-1.0g), saturated fat (-0.7g) and vegetables

(-6g) than when accompanied by parents. They also consumed significantly less weight in grams (-41g)-

When children were accompanied by others they ate significantly more energy (66kJ), added sugars (1.0g) and saturated fat (0.4g) per eating occasion compared to when they were accompanied by their parents. When no adult was specified, children ate significantly less energy (-51kJ) and sodium (-25mg) per eating occasions.

4.4.4 Influence of household income on child nutritional intake

Further analysis was conducted to explore the influence of household income on child intake. Children in families in the high-income category (>£32,500 equivalised household income) consumed significantly, less sodium (-32mg, $p=0.001$) and lower energy dense meals (-0.4 kJ/g, $p=0.014$) than children in the low-income category (£<17,500). Children in the middle-income category (£17,500-£32,500) consumed less sodium (-27mg, $p=0.006$) and lower energy dense meals (-0.4 kJ/g, $p=0.015$) compared with children in the low-income category (£<17,500). Very few significant interactions were found between income and accompanying people. Children from families in the high-income group (> £32,500) consumed significantly higher energy dense meals when accompanied by wider family members (0.7 kJ/g, $p=0.024$) or when no adult was specified (0.6 kJ/g, $p=0.039$) compared with children in the low-income group (< £17,500) when accompanied by parents. There were no other significant interactions between wider family members and income status for other nutritional elements.

Significant interactions were found between the household income status and when children were accompanied by formal childcare providers, when no adult was specified and when not recorded. When children from the high-income group were accompanied by formal childcare providers they consumed significantly more sodium (116mg, $p=0.033$) than children from families in the low-income group when accompanied by parents. Also, when children from the high-income group were with their formal childcare providers they consumed significantly more vegetables (7g, $p=0.017$) than children from families in the low-income group when accompanied by parents. When no adults were specified, children from families in the high-income group consumed significantly fewer total grams per eating occasion (-28, $p=0.014$) than children from families in the low-income group when accompanied by parents. When who the child was with was not recorded, children from families in the high-income group consumed significantly fewer total grams (-19g, $p=0.049$) than children from families in the low-income group when accompanied by parents. When who the child was with was not recorded, children from families in the middle-income group consumed significantly more vegetables (14g, $p<0.001$) than children from families in the low-income group when accompanied by parents. Full tables of results can be found in appendix 14.

4.4.5 Results of the Sensitivity Analysis

The sensitivity analysis used assumptions based on the time items were consumed to control for meal type (i.e. breakfast, lunch, evening meal or snack). Across the nutritional elements, whether the results were significant or not did not change for most of the categories of accompanying people. However, controlling for meal type led to some differences in the results of the regression analyses for dietary intake when

accompanied by formal childcare providers and when no adult was specified. There was no longer a significant increase in children's consumption of fruit when accompanied by formal childcare providers compared to parents and unlike in the base case analysis, children consumed significantly more total grams (33g) per eating occasion with formal childcare providers compared to with parents. There was no longer a significant reduction in energy (kJ) or increase in fruit (g) intake when no adults were specified. Additionally, the significant difference observed for sodium consumption or vegetable consumption when accompanied by wider family were no longer evident. Full tables of results can be found in appendix 15.

4.5 Discussion

This study explored the dietary intake of children aged two to four years old when accompanied by different adults, using data from the UK National Diet and Nutrition Survey. The results demonstrate that preschool children consume larger portion sizes of meals with a higher energy density, containing more vegetables, and higher in energy, salt, saturated fat and added sugar content when with wider family members compared to when with parents. However, parents and wider family members may provide similar amounts of fruit to preschool aged children as no differences in fruit intake was found when children were with parents versus wider family members. In contrast, preschoolers appear to be consuming more fruit when they are with their formal childcare providers, since fruit intake was higher when children were with their formal childcare providers compared to when they were with their parents. Formal childcare providers also appeared to be providing foods significantly lower in added sugars and energy density compared to parents.

While the differences in nutrient intakes are relatively small, this study focused on individual eating occasions and considering that children of this age are recommended to consume three meals and two snacks per day ⁽³²⁸⁾, these differences can add up. For instance, in the current study the difference of 62 kJ per eating occasion found between parents and wider family could equate to an additional 310 kJ per day or 2170 kJ per week. It was already known that children in the UK consume over double the recommended amount of added sugar per day ⁽²⁶⁾ but our study shows that this is even more likely when accompanied by wider family members versus by parents.

This study found that children were consuming significantly less energy and sodium when no adult was specified. This includes meal occasions accompanied by friends and siblings. Similarly, it is also worth noting the significantly lower intakes found for most dietary outcomes when who the child was with was not recorded. It is unknown why this may be and indeed the results may reflect actual intake but they may also reveal inaccuracies in the dietary assessment method. Underreporting is the most common misreporting error in dietary assessment ⁽³²⁹⁾ and may explain the significantly lower intakes recorded. As participants forgot to record the 'who with' response parents may have been distracted or busy when completing the diary, or it might indicate when they forgot to complete the diary prospectively and completed it at another time point. Likewise, when no adult was specified, children were accompanied by siblings or friends and may also have meant that respondents were less focused on completing the diary. Any of these factors could impact upon the accuracy of the food diary entries and consequently the validity of these results ⁽³³⁰⁾.

The results of this study suggest that children are consuming more fruit when with formal childcare providers compared to with parents. This finding reflects the existing literature exploring childminders' food provision to preschoolers, whereby in a UK study of eight childminders, childminders relied heavily on fruit as a snack food item ⁽³⁰⁵⁾. Children were also consuming significantly less added sugars and lower energy dense meals with formal childcare providers, which is in line with previous research demonstrating that childminders can successfully identify foods high in sugar and are confident in limiting unhealthy snacks and sugary drinks ⁽³³¹⁾. Due to the paucity of research carried out on food provision and eating behaviours in UK formal childcare settings, the current findings also conflict with a previous piece of research on food provision in formal childcare. Moore et al. reported that children were not frequently provided with fruit or vegetables with the main meal in formal childcare settings ⁽³⁰³⁾. One explanation for this discrepancy is that the previous study was conducted prior to the introduction of the Voluntary Food and Drink Guidelines for Early Years Settings in England ⁽³³²⁾ and that the current results reflect the changes made by nursery settings in light of this guidance.

Our findings on fruit and vegetable intake align with a previous study exploring fruit and vegetable consumption and the eating context using data from 2008-2010 of the NDNS ⁽³¹⁰⁾. For instance, similar to the significantly greater intake of vegetables when accompanied by wider family observed in our study, Mak et al. ⁽³¹⁰⁾ found that young children were more likely to consume vegetables when with adult relatives. Likewise Mak et al. found that young children were also more likely to consume fruit when they were with their formal childcare providers and when they were with friends ⁽³¹⁰⁾; reflecting the significantly greater intake of fruit that we found for children when with

formal childcare providers and when no adult was specified, a category which included being with friends. However some of our results differ from this study; Mak et al. ⁽³¹⁰⁾ found that young children were more likely to consume vegetables when with formal childcare providers compared to when they were with their parents alone but we found no such differences in vegetable consumption. This difference may arise from the size of the study, for instance our study combined data from three waves of the NDNS (2008-2011, 2012-2014 and 2014-2016) and used multiple imputation to account for missing data, resulting in over 30,000 eating occasions. In contrast Mak et al conducted a complete case analysis on data from only two years' of the NDNS dataset resulting in less than 5000 eating occasions for children aged 1.5 to 3 years old ⁽³¹⁰⁾.

It is unknown who the wider family members were in our study, however, a survey of childcare in England found that informal childcare of children in the early years is mostly provided by grandparents ⁽²³⁴⁾ and our results are consistent with the qualitative literature on grandparent's food provision to preschool aged children. For instance, parents frequently complain of grandparents providing their preschool aged grandchildren unhealthy options, high in fat and sugar ^(256,259,263,311). Yet previously no study actually measured children's nutritional intake when in the care of grandparents so it was unknown if these parental reports are accurate. Our findings seem to support this by demonstrating that preschool aged children consume greater amounts of saturated fat, sugar and salt and higher energy dense meals when accompanied by wider family members. Additionally parents often complain that grandparents provide large portions sizes to their preschool aged children ^(260,263,311,333). The provision of large portions prompts over consumption ⁽³³⁴⁾ and is a key driver of weight gain in young children ^(335,336). Children in this study consumed significantly more total grams

at a meal when with wider family members suggesting that the portion sizes provided by family members could also be larger than those provided by parents.

One explanation for the increase in child consumption when accompanied by wider family members compared to parents is the effect of social facilitation. This is where the more people there are in a group eating, the more each individual will consume⁽³³⁷⁾. The social facilitation effect on food consumption has been demonstrated widely in both adults and children and increases with the familiarity of the group^(338,339). When with wider family members, it is unknown how many people the children were accompanied by and therefore the increase in consumption, of both energy (kJ) and portion size (g), may not be a direct result of the food provision practices of family members but influenced by the social situation. The social facilitation effect might also explain why children consumed more fruit when with formal childcare providers as it's likely that children would have been accompanied by other children in the childcare setting. Similarly it could be an effect of peer-modelling, whereby fruit and vegetable consumption can be increased in children when they observe peers consuming such items⁽³⁴⁰⁾. However, contrary to these theories, no increase in consumption was found when no accompanying adult was specified, which included times when children were with friends and siblings. Highlighting the need for more detailed information on “who with” and “where” eating occasions occur.

An income gradient was seen in children's consumption whereby children of higher income families consumed less sodium, and lower energy dense meals than children of lower income families. This is in line with previous studies which have demonstrated how children from families of higher socioeconomic status consume more healthful

diets than children from families of lower socioeconomic status ^(314,315). However, when the interaction between the child's household income and who children were accompanied by was explored the results were mixed. In line with the social gradient, children of higher income families consumed significantly more vegetables when with their formal childcare providers compared to children of low-income families when accompanied by their parents. However, contrary to this gradient, we found that higher income was associated with the consumption of higher energy dense meals when with wider family members, and more sodium when with formal childcare providers compared to children of low-income families when accompanied by parents. Our measure of income was for the child's household, we did not have the income details of the people the children were accompanied by. Considering an intergenerational transmission of socioeconomic status has been consistently demonstrated⁽³⁴¹⁾, it could be assumed that the wider family members and parents would be of a similar status, but the same cannot be said for formal childcare providers such as childminders. Future research should capture socioeconomic indices of the accompanying caregivers rather than just those of the child and further consider how socioeconomic status influences the relationship between caregiver type and child intake.

To the authors knowledge this is the first study to explore the association between young children's nutritional intake and caregiver type in the UK, providing evidence that further research is required in this area to effectively design targeted childhood obesity interventions. The NDNS provides high quality data on food and nutrition consumption and benefits from a large and representative sample. Consequently, the

results provide a good indication of how children in the UK consume diets of a differing quality depending on who is looking after them. Nevertheless, several limitations are noteworthy. First, although the sample includes children from a range of deprivation levels and ethnicities, representative of the UK population ^(342,343), being UK specific, these findings may not generalize to outside of the UK. Nevertheless, similarities can be seen with studies in the USA where preschoolers' consume more fruit and vegetables in the childcare setting than at home ^(344,345).

Second, this study considers individual eating occasions, rather than investigating dietary intake over a whole day. In the past, studies have found that young children self-regulate their food consumption to keep their daily caloric intake constant ^(346,347), and therefore focusing on individual eating occasions may fail to account for any compensatory behaviour. However more recent evidence suggests there is large individual variability in self-regulation ⁽³⁴⁸⁾ and that by the time children reach the preschool years this ability has mostly diminished as eating becomes more influenced by external cues ^(40,349,350). Importantly, looking at individual eating occasions may be the most appropriate way to explore the influence of different caregivers on young children's diets as children of this age may be fed by multiple caregivers across a 24-hour period. Additionally, caregivers might influence children's consumption indirectly through the feeding practices or behaviours they use to guide children's eating behaviour, such as modelling healthy eating, restricting food and drink items or pressuring children to eat⁽⁵¹⁾. Although some feeding practices can lead to positive dietary outcomes others can have unintended and negative effects^(238,239,351). Our recent work suggests that there are no differences between parents and grandparents feeding practices when caring for preschool children⁽³⁵²⁾, however differences in

feeding practices between childcare staff and parents have been identified⁽³⁵³⁾. Future work should aim to further explore how feeding practices of friends, other family members and childminders might also differ to parents and potentially impact upon preschoolers' consumption.

Nutritional composition can also vary across meals and snacks ⁽³²⁴⁾ however, data on the specific meal being consumed by children or whether foods were consumed as a snack was not explicitly available within the NDNS dataset. Although this was attempted in the sensitivity analysis using crude assumptions based on the times eating occasions occurred. Controlling for meal type resulted in some differences in the regression analysis for dietary intake when children were accompanied by formal childcare providers, and when no adult was specified, compared to the base case analysis. There was no longer a significant increase in fruit intake for formal childcare providers versus parents. However, it is likely that the change in fruit intake when accompanied by formal childcare providers is due to formal childcare providers offering a higher proportion of lunches and snacks compared to parents (data not shown). The sensitivity analysis shows that lunches contain significantly more fruit and it is likely that the base case analysis is capturing this and assigning it to the formal caregivers category. The sensitivity analysis also demonstrates that children consumed approximately 33g more food overall per eating occasion with formal childcare providers compared to parents. However, rather than contradicting the findings of the base case analysis these findings confirm the overall trend. Furthermore, there was no longer a significant reduction in energy consumed or increase in fruit intake when no adults were specified. The changes to these findings are likely also to be driven by the types of foods in specific meals or snacks consumed

when no adults are present. Differences in sodium and vegetable intake when accompanied by wider family were no longer statistically significant in the sensitivity analysis. In both cases the magnitude of the coefficient has reduced, however, the direction did not change. It is worth noting that only a crude assumption of meal time was applied to the sensitivity analysis and therefore these results should be interpreted with some caution since “time of day” categories of eating occasions can eliminate foods consumed outside of traditional meal and snack patterns. Similarly, if a “participant identified” approach to categorising meal times had been adopted the data might be subject to bias from an individual’s interpretation of what constitutes a meal or snack⁽³⁵⁴⁾. This highlights the need for clearly defined, objective and accurate information on meal times to be specified within the NDNS data set. This would allow researchers to accurately define the food types that are consumed as part of specific meals and snacks.

A further limitation lies within the categories used to classify who the children were with when consuming food and drink items. Although the authors have tried to categorize the accompanying adults as best as possible, detailed information for the wider family category or the formal childcare category were not available. For instance, although there were separate categories for when children were with their parents it was not possible to distinguish between different family members within the wider family category or different childcare types within the formal childcare category. Consequently, the results cannot provide more detailed accounts of who the children were with when consuming foods for instance an auntie versus a grandparent. Additionally, it is unknown how many people the children were accompanied by when eating and the data set only contained information on who the children were with, not

who specifically provided food to the children. There could have been occasions when parents provided food for their child to take to formal childcare settings.

For a lack of more robust evidence, this study indicates significant differences in young children's dietary intake depending on which caregivers they are with. It demonstrates the need for a more focused exploration of the diets of young children when cared for by people other than parents. This includes different family members such as grandparents, aunts or uncles as well as care providers such as childminders and nurseries. Further research is needed to explore these differences in more detail and ensure that studies are designed to encompass more than just a single food group to understand the overall influence these caregivers are having on preschoolers' diets. Adopting a measure of diet quality would also improve future studies since these data would also allow for researchers to more easily identify those children at increased risk of not consuming optimal diets. These data are also useful for comparing dietary intake of specific groups, with different caregivers, to current dietary intake guidelines and recommendations, and for evaluating the effectiveness of interventions. This study also does not reveal anything about the frequency of food consumption when children are with different caregivers. Although caregivers are encouraged to provide some snacks to children of this age, the frequency in which young children consume snacks can have a significant effect on daily energy intake ⁽³⁵⁵⁾. Consequently, future work should also explore any differences in the frequency of food provision between different caregivers.

Several implications for policy and practice have been highlighted in this study. The results suggest that other caregivers may be an important target to promote healthy

eating in young children. To do so it will be necessary to understand what type of strategy is most appropriate for reaching and engaging these caregivers. Although UK public health strategies, such as front of pack labelling, exist to reduce young children's fat, sugar and salt intake, many young children are consuming diets low in fruit and vegetables, high in energy, sodium and sugar ⁽²⁶⁾, and large portion sizes of high energy-dense snack food items^(356,357) . Current methods may not be reaching these care providers or they might not realise they need support in their provision. Non-parental caregivers may assume different feeding roles to that of parents and an awareness of this is needed to design effective strategies.

In conclusion, this study takes a novel approach to explore the influence of different caregivers on young children's diets. Using a large representative UK sample, we have demonstrated that preschool children consume meals/snacks higher in energy, saturated fat, sugar and salt, but containing greater amounts of vegetables, with wider family members compared to when they are with their parents. Differences were also observed when preschool children were with formal childcare providers; more fruit and less added sugars were consumed by preschool children when with formal childcare providers compared to when they were with their parents. Even though parents may be the primary caregiver to young children, other caregivers can play a pivotal role in the dietary habits of young children. Nevertheless, further research should seek to explore these differences in more detail.

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4.7 Conflict of Interests Statement

None

4.8 Author Contributions

Conceptualization: C.M., P.B. and S.J.C; Methodology: C.M., P.B. and S.J.C; Formal Analysis: C.M.; Writing-Original Draft Preparation; C.M.; Writing-Review and Editing: C.M., P.B and S.J.C.

4.9 Further consideration of the findings

A significant portion of data was missing for some of the covariates included in the regression model. Consequently performing a complete case analysis could have substantially diminished the available data for analysis and biased the results. In response, the choice was made to employ multiple imputation, operating under the assumption that the missing data followed a random pattern. It is important to consider that the variables with missing data, specifically equivalised household income and BMI, might not align with the assumption of missing at random, as participants may have been less inclined to disclose this sensitive information. This means that multiple imputation may not have been a valid approach and a complete case analysis may have been more appropriate. However to explore this further, a sensitivity analysis was conducted to compare mean child intakes using the imputed dataset with the complete case analysis and, as can be seen in the table below very few differences were observed between the two. It is therefore unlikely that performing multiple imputation for the covariates impacted significantly upon the results.

Comparison between imputed and non-imputed data (complete case) for mean child nutritional intake at an eating occasion when accompanied by different people													
		Accompanying Person/People											
		(Number of eating occasions)											
		Parents (IMPUTED) (14,540)	Parents (Complete case) (11,073)	Wider family (IMPUTED) (5,315)	Wider family (Complete Case) (4063)	Formal childcare provider (IMPUTED) (638)	Formal childcare provider (Complete Case) (477)	No adult specified (IMPUTED) (5,421)	No adult specified (Complete case) (4303)	Other (IMPUTED) (862)	Other (Complete Case) (639)	Not recorded (IMPUTED) (3,876)	Not Recorded (Complete Case) (2920)
Outcome Mean	Energy (kJ)	784kJ	796 KJ	861kJ	871kj	763kj	768kj	747kJ	768kj	876kJ	887kj	584kJ	597kj
	Saturated Fat (g)	2.9g	3.0g	3.2g	3.3g	2.8g	2.7g	2.9g	2.9g	3.5g	3.6g	2.3g	2.3g
	Sodium (mg)	217mg	220mg	248mg	247mg	228mg	231mg	195mg	200mg	237mg	240mg	141mg	146mg
	Added Sugars (g)	6.2g	6.2g	7.0g	7.2g	4.7g	4.7g	6.0g	6.2g	7.5g	8.0g	5.3g	5.3g
	Total grams (g)	215g	217g	228g	229g	225g	223g	211g	214g	219g	220g	174g	176g
	Energy density (kJ/g)	5.0kJ/g	5.0kj/g	5.3kJ/g	5.3kj/g	4.1kJ/g	4.2kj/g	4.9kJ/g	4.8kj/g	5.4kJ/g	5.3kj/g	5.2kJ/g	5.1kj/g
	Fruit (g)	30g	29g	29g	29g	43g	43g	33g	33g	36g	36g	29g	29g
	Vegetables (g)	12g	12g	15g	15g	13g	13g	8g	8g	9g	9g	7g	7g

Another constraint lies in the methodology employed to define eating occasions, where the time of food consumption served as the defining criterion. For instance, if various food items were consumed at 12:15, they were grouped into a single eating occasion. However, any food consumed at 12:20 would be categorized as a distinct eating occasion. Consequently, this approach may not fully capture a child's complete meal, as there could be instances where respondents recorded the child's main course separately from the time they consumed dessert a few minutes later.

Furthermore, the sensitivity analysis utilized broad time categories to classify meals, designating 12:00 noon to 1:59 pm as lunch and 5:00 pm to 7:59 pm as the evening meal. While these time frames may align with lunch and dinner for adults, they may not accurately represent the eating patterns of young children who often have their lunch and evening meal at earlier times.

Another limitation is associated with using parents as the only reference group. When families consider childcare alternatives, they can opt for formal childcare services, like nurseries and childminders or informal childcare, such as relying on family members. In light of this decision-making processes, it would have been valuable to compare the eating occasions when children were accompanied by wider family with those accompanied by formal childcare providers. While descriptive data allows for some comparisons, a more in depth examination of their significance is warranted.

It is also important to note that a shift in the group mean does not imply reduced variation at an individual level. There could be noteworthy differences in the food intake of children within each caregiver type. For instance, the food provided by a

caregiver may be influenced by factors such as their age, gender and level of involvement with the child^(240,358). Variations may also arise among formal childcare providers, depending on factors like the setting type (e.g. childminder versus nursery) or whether the nursery is maintained, private, voluntary or independent.

In 2012, the voluntary food and drink guidelines for early years settings⁽³³²⁾ were introduced, providing guidance for nurseries and childminders on the provision of healthy food and drinks to children in their care. The data used in this analysis spans from 2008-2016 meaning that there could have been improvements after 2012 in children's diets when accompanied by formal childcare providers as they attempt to align their food provision with the guidance. There is very little data on food quality and quantity in childcare settings however in a recent study exploring the awareness and use of the guidelines in English nurseries although 82.6% of settings were aware of the guidance only 48.8% of them used them⁽³⁵⁹⁾. It's plausible that awareness and utilization were even lower in the early years of guideline introduction, emphasizing the need for further data analysis to compare pre- and post-guideline periods.

Since the release of this data, global and UK-wide challenges have also impacted families' ability to access and afford food. The onset of COVID-19 and the subsequent national lockdown resulted in shifts in employment, significantly heightening food insecurity⁽³⁶⁰⁾. The lockdown led to increased time for food preparation, but it also triggered elevated snacking among children, accompanied by a rise in the consumption of high-salt, high-fat, and high-sugar foods^(361,362). Children from economically disadvantaged backgrounds had fewer servings of fruits and vegetables.

With the closure of schools, caregivers faced the additional responsibility of providing extra meals, prompting families to either reduce meal sizes or skip meals altogether⁽³⁶³⁾. Moreover, the cost-of-living crisis has led to a significant surge in food prices, surpassing the growth in wages and benefits. This has had an adverse impact on the nutritional quality of diets, as households are now buying fewer fruits, vegetables, and oily fish⁽³⁶⁴⁾. The University of Cambridge's MRC Epidemiology Unit have been commissioned to deliver additional national diet and nutrition data covering the years 2016 to 2023. While data is currently accessible up to 2019 data from 2020 onwards is not yet available. When released a more up to date analysis of NDNS data is needed to explore how these challenges have impacted children's consumption when accompanied by different caregivers.

Introduction to chapter 5

Chapter 4 demonstrated that when preschool aged children in the UK are accompanied by their wider family they are consuming significantly more added sugars, salt, saturated fat and energy. Although this supports the qualitative evidence found in chapter 3, suggesting that these wider family members could be grandparents, the NDNS lacked the data to confirm this for certain. This was because data was coded using the broad category of “wider family” rather than individual family members such as grandparents. To overcome this, in this chapter, the dietary provision of grandparents is compared directly to parents using a validated dietary assessment tool. This will provide the first study to quantitatively assess grandparents dietary provision to their preschool aged grandchildren.

Moreover chapter 3 demonstrated that, although grandparents are frequently described as indulgent within the qualitative literature no validated tool had been used to assess grandparents feeding styles. Furthermore, many of the studies failed to consider the level of involvement of grandparents and how that might influence their feeding behaviours. In the next chapter, validated tools are used to assess grandparents feeding practices and feeding styles and to compare these with those of parents. By capturing evidence on the amount of time that grandparents spend caring for their grandchildren this chapter also explores whether grandparents feeding behaviours differ based on their level of involvement.

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5 Chapter 5: A comparison between parent and grandparent dietary provision, feeding styles and feeding practices when caring for preschool-aged children

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5.1 Keywords

Parents, Grandparents, Dietary Provision, Feeding Styles, Feeding Practices, Preschoolers

5.2 Abstract

Grandparents are frequently called upon to provide childcare to young children. Consequently, grandparents may influence the development of children's eating habits and preferences and may require support with their approach to feeding young children. However, research into grandparental feeding behaviours is scarce. Understanding how grandparental feeding behaviours compare to parental feeding behaviours will further help to establish whether grandparents require specific

interventions unique to the grandparental role or if current strategies that target parental feeding behaviour are also appropriate for grandparents. The aim of the present study was to explore the similarities and differences between parent and grandparent dietary provision, feeding practices and feeding styles to preschool-aged children. 72 parents and 44 unrelated grandparents of children aged 2-4 years old took part in an online study and completed an online 24-hour dietary recall using myfood24[®] to assess dietary provision. Parents and grandparents were providing meals high in saturated fat and sodium and providing below recommended amounts of fruit and vegetables. Overall, feeding practices were similar between parents and grandparents. Although, grandparents scored lower on using food as a reward ($p < 0.05$) and creating a healthy food environment ($p < 0.05$) compared to parents. Whereas, parents scored higher for promoting balance and variety ($p < 0.05$). A range of feeding styles were found within each caregiver type, with no significant associations found between caregiver type and feeding style ($p > 0.05$). Strategies to promote healthy eating in young children should be expanded to also target grandparents who act as informal caregivers to preschool-aged children. However, since very few differences in feeding behaviour were reported the content of such strategies may not need to be adapted specifically for grandparents.

5.3 Introduction

The most recent UK survey “Childcare and Early Years Survey of Parents”⁽³⁶⁵⁾ showed that 76 % of children aged 0-4 years old had received some form of childcare during their most recent school term-time week. 64% of children were in receipt of formal childcare (e.g., nursery, childminders) and 33% in receipt of informal childcare (e.g., family, friends). On average, children spent around 19 hours per week in formal

childcare, and 10 hours per week in informal childcare. Given that a large proportion of preschool children are receiving some type of childcare, this suggests that children consume a significant proportion of their daily food intake outside of the home environment.

Grandparents are relied upon the most as informal carers ^(234,236,365–368), particularly for preschool aged children⁽³⁶⁷⁾. For instance, in a survey of 50,000 European adults aged 50 or over, 38% of them provided grandparental care, with 28% providing this weekly or more frequently⁽³⁶⁹⁾. Like parents, grandparent's assume the role of gatekeeper for children's eating; shaping children's eating environment and making dietary decisions that influence children's consumption ^(142,311). Grandparents may be particularly influential during the preschool years as this is a time when children's eating preferences and habits are formed that can track into adulthood ^(29–32). It is therefore important that we understand the strategies that grandparents are using when feeding their grandchildren and the positive and negative influence they may have on preschoolers' dietary intake.

Research into caregiver feeding behaviour suggests that caregivers influence children's dietary behaviours in a complex manner. A caregiver's feeding style, defined as the emotional environment that caregivers create when a child is eating can have a positive or negative influence on children's eating behaviour ⁽¹⁹⁷⁾. Feeding styles reflect how caregivers encourage eating and by how much ⁽³⁷⁰⁾ and caregivers have been categorized as having one of four feeding styles; indulgent (placing low demands on a child's eating but being highly responsive to a child's wants and needs), uninvolved (placing low demands on a child's eating with low responsiveness to a

child's wants and needs), authoritarian (placing high demands on a child's eating with a low responsiveness to a child's wants and needs) and authoritative (placing high demands on a child's eating and being highly responsive to a child's wants and needs), with an authoritative feeding style considered optimum for promoting the best dietary quality and for fostering autonomy in preschoolers ^(371,372). The feeding practices caregivers use are also important and occur within the context of the feeding style ⁽³⁷³⁾. Feeding practices are the goal-oriented behaviours that caregivers use to directly influence a child's intake and include, for example, modelling healthy eating, putting pressure on a child to eat, restricting specific food or drink items or monitoring what and how much a child consumes. Some of these practices lead to the caregivers' desired behaviour, for instance, modelling fruit and vegetable consumption can facilitate child liking and consumption of fruit and vegetables ⁽²³⁹⁾ whereas others, such as pressuring a child to eat can lead to undesired behaviours like food refusal ⁽²³⁸⁾.

Strategies to improve young children's eating therefore often focus on caregivers feeding styles and feeding practices ^(374–376), however they also target caregiver's provision of food and drinks. Interventions have been designed to encourage caregiver's to change what they provide as snacks to preschool aged children ⁽¹⁸³⁾ and wider public health campaigns emphasise changes to dietary provision. For instance campaigns encourage caregivers to provide 5 portions of fruit and vegetables per day ⁽³⁷⁷⁾, to swap the high sugar items that they might usually provide for low sugar alternatives⁽³⁷⁸⁾, provide age appropriate portion sizes ⁽³⁷⁹⁾ and limit the number of packaged snacks they provide per day⁽³⁸⁰⁾. These strategies typically target and reach parents; whether these strategies are also relevant and appropriate for grandparents is unknown. Understanding grandparent's feeding behaviours, in the context of

parental feeding behaviours will help to establish whether current strategies that target parental feeding behaviour are also appropriate for grandparents. Conversely, if there are stark differences between parents and grandparents feeding behaviours with preschoolers, grandparents may require a more directed approach based on their unique feeding behaviours in the grandparental role.

In previous studies, parents have criticized grandparents for undermining their efforts to provide a healthy diet to their young children, complaining that grandparents are indulgent with their grandchildren, serve them high energy dense foods, in large quantities ^(256,259,260,263,270) and use food as a reward for behaviour ⁽³³³⁾. However, a review of grandparental feeding practices, dietary provision and feeding styles when caring for their preschool aged grandchildren highlighted several methodological shortcomings of the published literature ⁽³¹¹⁾. First of all, no study has captured all food that grandparents provide to their preschool aged grandchildren whilst in their care. Instead, studies have focused on particular food types such as measuring snack provision or fruit and vegetable provision in isolation. Grandparents who care for their preschool aged grandchildren seem to regard meal times as important and place an emphasis on their role in providing nutritious and homecooked meals to their grandchildren ^(256,272). This suggests that we also need to capture grandparents' dietary provision of meals as well as focusing on specific food types. Secondly, a substantial amount of evidence regarding grandparental feeding behaviours stems from parental reports⁽³¹¹⁾; considering that grandparents frequently provide care when parents are absent, it is necessary to capture grandparental feeding directly from grandparents. Finally, although there is a consensus across the literature that grandparents are indulgent with preschoolers, no study has used a validated tool to

measure grandparental feeding styles. Using a validated tool would give a more reliable indication of the feeding styles that grandparents are adopting with their preschool-aged grandchildren and explore how their feeding styles may compare with those of parents.

There is also evidence to suggest that the amount of time grandparents spend caring for their grandchildren may influence their feeding behaviours. For instance a UK study focusing on caregivers of children aged 2-8 years old found that grandparents' feeding practices aligned more closely with those of parent's the more time they spent caring for their grandchildren⁽¹⁸⁴⁾. Grandparents who cared for their grandchildren a greater amount were more likely to use practices that foster positive eating in children such as teaching about nutrition and modelling healthy food intake than those who spent less time with their grandchildren. This suggests that grandparent's may assume more of a parental role when providing frequent care to their grandchildren rather than adopting the stereotypical indulgent grandparent behaviours. However a study conducted in Australia found that the number of hours of care provided by grandparents to children aged 3-14 years old was positively associated with children's consumption of not only fruit and vegetables but also sweet foods, salty snacks and sugary drinks ⁽²⁴⁰⁾. Further research is needed to explore how grandparent's feeding practices, feeding styles and dietary provision may differ depending on the amount of time they spend caring for their grandchildren.

The aim of the present study is to explore the similarities and differences between parent and grandparent dietary provision, feeding practices and feeding styles to preschool-aged children. We also assess whether grandparental dietary provision,

feeding practices and feeding styles, vary depending upon the amount of time they spend caring for their grandchildren.

5.4 Methods

5.4.1 Participants

Parents and grandparents of children aged 2-4 years old were recruited online from across the United Kingdom. Participants in the two groups were distinct and unrelated. Grandparents were eligible to participate if they reported caring for their grandchild at least one day per week and providing at least one meal (not including snacks) to their grandchild on those days. Grandparents who were sole carers of their grandchildren were excluded from the study as primary caretaking grandparents may have a different feeding relationship with their grandchildren than grandparents who act as informal caregivers⁽¹⁸⁴⁾. If parents/grandparents cared for more than one child in the age range they were asked to complete the survey for just one child. Informed consent was obtained from all participants and the study was reviewed and approved by the School of Health and Related Research ethics committee at the University of Sheffield (application number: 026363).

5.4.2 Procedure

A cross-sectional observational study design was utilised using online methods. This allowed participants to complete the study in their own home, increasing ecological validity ⁽³⁸¹⁾. Participants were invited to take part in the study via advertisements posted on different online platforms including MumsNet (www.mumsnet.com), GransNet (www.gransnet.com), The University of Sheffield volunteers list and

Facebook between May 2019 and February 2020. Online methods of recruitment were considered the optimum approach for the study due to being logistically simpler, lower cost, and often achieving higher recruitment rates than offline methods ⁽³⁸²⁾. After consenting to participate, participants completed an online survey hosted by Qualtrics (Qualtrics, Provo, UT. Version 2019-2020). The survey included 49 items to assess caregiver feeding practices, 19 items to assess feeding styles and 13 demographic questions. Additionally, grandparents completed five questions to assess the amount of time they usually care for their grandchildren per week and their usual provision of meals and snacks per day. Upon completion of the survey, participants completed an online 24-hour food recall to record their food provision to their child/grandchild over a 24-hour period when they were in their care. Upon completion of the survey and food record, participants were provided with a £10 high street e-voucher for their time.

5.4.3 Materials and Measures

5.4.3.1 Demographics

Demographic data was collected for both the caregiver and child. This included caregiver gender, ethnicity, household income, self-reported weight and height in addition to child gender, caregiver-reported child weight, height and month and year of birth. Grandparents were asked additional questions on the number of days and hours they care for their 2-4-year-old grandchild per week and their typical provision of meals and snacks on those days.

5.4.3.2 Dietary Provision

A single online 24-hour recall was used to assess caregiver's food and drink provision to their 2-4-year-old child/grandchild. It did not assess children's dietary intake since the focus of this work is dietary provision. For grandparents, this included only the food grandparents provided within the 24-hour window and therefore did not always include all food and snacks provided to the child over the 24-hour period, including that provided by other caregivers. This method was chosen as 24-hour recalls are easy to administer, impose less burden on participants time than weighed food diaries and have been used successfully by caregivers of preschool-aged children⁽¹⁶⁷⁾. The recall was completed using myfood24[®] ⁽¹⁷¹⁾, a UK online dietary assessment tool which overcomes some of the traditional challenges of 24-hour recalls by assisting with both portion size estimation and memory ⁽¹⁷⁰⁾. The dietary analysis was completed within myfood24[®] using a large composition table of UK food and drinks. This data was extracted into SPSS for analyses.

5.4.3.3 Feeding Practices

Caregiver feeding practices were evaluated using the Comprehensive Feeding Practices Questionnaire (CFPQ) ⁽¹⁸¹⁾. This uses 49 items to measure twelve different feeding practices. As well as being previously used to assess the feeding practices of parents of children aged two to four ^(182,183) it has also been successfully used to assess the feeding practices of grandparents to their grandchildren ^(184,185). Despite the CFPQ being designed for parents, the wording was adapted for grandparents asking them to focus on their grandchild rather than child. Prior to conducting any analyses, the internal consistency of the scale was assessed for grandparents and parents using Cronbach's alpha. For grandparents all alphas were deemed good or acceptable for the sample (child control =0.55, emotion regulation = 0.73, balance and

variety = 0.67, food as a reward = 0.82, involvement = 0.65, modelling = 0.62, monitoring = 0.91, pressure = 0.74, restriction for health = 0.68, restriction for weight = 0.72, environment = 0.66, teaching about nutrition = 0.59). For parents, all alphas were deemed good or acceptable except for teaching about nutrition, therefore, results based on this subscale are treated with caution (child control = 0.73, emotion regulation = 0.85, balance and variety = 0.65, food as a reward = 0.83, involvement = 0.73, modelling = 0.72, monitoring = 0.93, pressure = 0.75, restriction for health = 0.76, restriction for weight = 0.81, environment = 0.67, teaching about nutrition = 0.09).

5.4.3.4 Feeding Styles

Caregiver feeding styles were measured using the Caregiver Feeding Styles Questionnaire (CFSQ) ⁽¹⁹⁷⁾. This is a 19-item validated tool and is the most frequently used tool to assess the feeding styles of caregivers ⁽⁵¹⁾. It has been widely used to assess caregiver feeding styles of children below the age of five ^(199–201). Scores on two dimensions of responsiveness and demandingness are calculated and a sample median split for each is used to categorise caregivers into one of four feeding styles; uninvolved (low demandingness, low responsiveness), authoritative (high demandingness, high responsiveness), authoritarian (high demandingness, low responsiveness) or indulgent (low demandingness, high responsiveness).

5.4.4 Data Analysis

A power calculation for this study was not carried out given the novelty of this exploratory study. No data were available to extract the relevant information to derive an exact sample size. Therefore, the sample size is modest, and the results should be interpreted with caution.

5.4.4.1 *Dietary Provision: Analysis of Meals*

5.4.4.1.1 Nutrient level

myfood24[®] calculates the amount of nutrients for each food and drink item recorded in the food diary. Data was separated by meal type (breakfast, lunch, evening meal, snacks and drinks) at the point of data entry. Therefore, to calculate the nutrient content of each meal, the nutrient quantities for each food item were aggregated using the sum function to create totals for each nutrition element including energy (kcal), total sugar (g), saturated fat (g) and sodium (mg) for breakfast, lunch and the evening meal. Mann-Whitney U tests were used to compare the nutritional content of each meal provided by parents versus grandparents. Each nutritional element (dependent variables) was analysed separately and caregiver type was input as the independent variable. Meal occasions were also analysed separately, rather than comparing total daily provision due to the variation in the number of meals a parent/grandparent provided to the child over the 24-hour period. Conducting the analysis separately for meal type also accounts for the variation in provision between meal type.

5.4.4.1.2 Food level

To assess the difference between parents' and grandparents' fruit and vegetable provision, the total grams of fruit and total grams of vegetables were calculated for each meal occasion. As myfood24[®] does not provide a breakdown of the grams of fruit and vegetables served when composite meals have been input into the software e.g. lasagne, this only included cases where fruit and vegetables were input separately for each meal or where a recipe was provided. Cases where a composite meal was input into the software were treated as missing values and excluded from this analysis.

Mann-Whitney U Tests were used to explore any differences between parents and grandparents' provision of fruit and vegetables at mealtimes, conducting separate analyses for each meal occasion.

5.4.4.2 Dietary Provision: Analysis of snacks

5.4.4.2.1 Nutrient Level

To explore the difference between the nutritional content of parent and grandparent snacks provided to 2-4-year olds the average content of energy (kcal), total sugar (g), saturated fat (g) and sodium (mg) of snacks were calculated for each individual participant. This was to account for the difference in the numbers of snacks provided by participants across the 24-hour period as some participants provided more snacks than others. Mann-Whitney U tests were used to compare the nutritional content of snacks provided by parents and grandparents.

5.4.4.2.2 Food Level

To explore differences in the content of snacks at the food level, two separate analyses were conducted. First, three new binary variables were created to indicate whether snacks included 1) fruit, 2) vegetables and 3) discretionary food items (biscuits, cakes, chocolate or savoury snacks). Chi-squared analyses were used to statistically compare any differences between parents and grandparents' provision of these three food types. Second, the average weight (in grams) of fruit, vegetables and discretionary food items in snacks were calculated per participant. Mann-Whitney U tests were used separately for each food item to compare the weight in grams of fruit, vegetables and discretionary food items provided by parents and grandparents.

5.4.4.3 Feeding Practices

Continuous scores were calculated for each of the 12 feeding practices. Mann-Whitney U tests were used to compare the feeding practices of parents with grandparents. Non-parametric tests were used to explore feeding practices as the data were predominantly non-normally distributed.

5.4.4.4 Feeding Style

Based on responses to the 19 items, scores on two dimensions of responsiveness and demandingness were calculated. A sample median split for each of these dimensions was used to categorise caregivers into one of four feeding styles; uninvolved (low demandingness, low responsiveness), authoritative (high demandingness, high responsiveness), authoritarian (high demandingness, low responsiveness) or indulgent (low demandingness, high responsiveness). To compare the feeding styles of parents and grandparents a Pearson's chi-squared test was conducted.

5.4.4.5 Associations with time spent caring for grandchildren

Analysis of variance (ANOVA) was used to explore any associations between grandparents feeding styles and the number of hours grandparents spent per week caring for their preschool aged grandchild. Spearman's Rho tests were used to explore correlations between grandparents' feeding practices and dietary provision in both meals and snacks (nutrient level and food level) with the number of hours grandparents spent per week caring for their preschool aged grandchild.

All analyses were performed in SPSS version 26. Significance was established at $p < 0.05$

5.5 Results

5.5.1 Demographic Characteristics

Table 11. Sample characteristics					
		Grandparents (n=44)		Parents (n=72)	
		Mean	SD	Mean	SD
		n			
Caregiver Age*		61	6	31	5
Caregiver BMI**		26.8	5.1	26.0	6.6
Hours per week Grandparents care for 2-4-year-old		15.7	8.7		
		N	%	N	%
Caregiver Gender	Male	6	14	0	0
	Female	38	86	72	100
Caregiver Household Income	£0-£10,000	5	11.4	3	4.2
	£10,000-£20,000	8	18.2	7	9.7
	£20,000-£30,000	6	13.6	19	26.4
	£30,000-£40,000	10	22.7	21	29.2
	£40,000+	12	27.3	20	26.4
	Missing	3	6.8	3	4.2
Caregiver Ethnicity	White	40	91	61	85
	Asian or Asian British	3	7	8	4
	Black or Black British	1	2	0	0
	Mixed Ethnic Group	0	0	3	11
Child Age	2	15	34.1	18	25.0
	3	16	36.4	35	48.6
	4	13	29.5	19	26.4
Child Gender	Male	18	40.9	31	43.1
	Female	26	59.1	41	56.9
Child BMI	Healthy weight	16	36.4	21	29.2
	Overweight	8	18.2	8	11.1

Obese	6	13.6	12	16.7
Underweight	0	0	7	8.3
Missing	14	31.8	25	34.7
* Missing data for 2 grandparents and 1 parent				
** Missing data for 7 grandparents and 10 parents				

222 parents and 86 grandparents (total 308) consented to participate in the study. 192 participants (62%) dropped out part way through completion; 53 (17%) participants did not complete the survey and 139 (45%) participants completed the survey but not the food record. This resulted in a final sample of 116 (38%) who completed both the online survey and food record in its entirety; 72 parents (32%) and 44 (51%) grandparents.

The mean age of grandparents was 61 ± 6 years and the mean age of parents was 31 ± 5 . 100% of parents and 86% of grandparents were female (Table 11). Both parents and grandparents were predominantly white British (85% and 91%) and had a mean BMI in the overweight category (26.0 ± 6.6 and 26.8 ± 5.1 respectively). 40.2% of grandparents and 40.3% of parents had a household income below £30,000. Most children were of a healthy weight (32%) (BMI z-scores were calculated using the WHO anthropometric calculator <http://www.who.int/childgrowth/software/en/>), female (58%) and aged 3 (44%). Grandparents cared for their 2-4-year-old grandchildren on average 15.7 ± 8.7 hours per week.

5.5.2 Dietary Provision: Meals

Table 12. The nutritional content of meals (breakfast, lunch and evening meal) provided to children by parents and grandparents									
	Breakfast			Lunch			Evening Meal		
	Parents (n=72) Mean (SD)	Grandparent s (n=37) Mean (SD)	Mann-Whitney U Test	Parents (n=71) Mean (SD)	Grandparent s (n=40) Mean (SD)	Mann-Whitney U Test	Parents (n=72) Mean (SD)	Grandparent s (n=34) Mean (SD)	Mann-Whitney U Test
Energy (kcal)	197 (113)	232 (99)	U=1633, p=0.054	393 (240)	351 (198)	U=1240, p=0.269	323 (201)	341 (149)	U=1136, p=0.551
Total Sugar (g)	17 (27)	15 (11)	U=1463, p=0.404	15 (11)	18 (20)	U=1450, p=0.854	12 (10)	14 (11)	U=1380, p=0.291
Sat Fat (g)	5 (22)	1 (4)	U=1195, p=0.192	10 (16)	12 (16)	U=1513, p=0.547	15 (28)	19 (27)	U=1380 p=0.248
Sodium (mg)	267 (322)	246 (231)	U=1358, p=0.870	621 (386)	545 (419)	U=1186, P=0.151	539 (383)	435 (320)	U=1026, p=0.179
SD = Standard deviation									

Mann-Whitney U tests revealed no significant differences between the nutritional content of breakfast, lunch or the evening meal served by parents compared to those served by grandparents (Table 12).

Table 13. The amount of fruit and vegetables served at mealtimes (breakfast, lunch and evening meal) to children by parents and grandparents			
	Breakfast	Lunch	Evening Meal

	Parent (n=72) Mean (SD)	Grandparent (n=37) Mean (SD)	Mann-Whitney U Test	Parent (n=71) Mean (SD)	Grandparent (n=40) Mean (SD)	Mann-Whitney U Test	Parent (n=72) Mean (SD)	Grandparent (n=34) Mean (SD)	Mann-Whitney U Test
Total Fruit (g)	23 (37)	20 (45)	U=1228, p=0.406	27 (47)	29 (52)	U=1468, p=0.930	20 (45)	19 (43)	U=1038, p=0.870
Total Veg (g)	0.3 (3)	0 (0)	U=1314, p=0.473	13 (38)	25 (35)	U=1868, p=0.002*	49 (68)	44 (56)	U=1046, p=0.945
SD = Standard deviation									

Descriptive statistics revealed that on average, parents served more fruit at breakfast and the evening meal than grandparents (breakfast; 23g vs 20g, evening meal; 20g vs. 19g) but less fruit than grandparents at lunch (27g vs, 29g). Grandparents served more vegetables at lunch time than parents (25g vs 13g) and less vegetables at breakfast (0g vs. 0.3g) and the evening meal (44g vs. 49g.) Mann Whitney U tests revealed that there was a significant difference in the amounts of vegetables served at lunch time between parents and grandparents (U=1858, p<0.05). Grandparents served significantly more grams of vegetables at lunch than parents (25g vs 13g). No other significant differences were found between the amounts of fruit and vegetables served at mealtimes by parents compared to that served by grandparents (Table 13).

5.5.3 Dietary Provision: Snacks

As some participants provided more snacks than others across the 24-hour period, the average content of kcal, total sugar, saturated fat and sodium of snacks was calculated for each individual participant based upon the number of snacks offered by the caregiver over the 24-hour period.

Table 14. The average nutritional content of snacks provided by parents and grandparents over the 24-hour period			
	Snacks		
	Parents Mean (SD)	Grandparents Mean (SD)	Two sample T test
Energy (Kcal)	110 (63)	120 (69)	U=1498, p=0.416
Total Sugar (g)	11 (8)	11 (7)	U=1391, p=0.888
Sat Fat (g)	2 (9)	3 (8)	U=1439, p=0.441
Sodium (mg)	93 (101)	106 (136)	U=1428, p=0.706
SD = Standard deviation			

The energy content of snacks provided by parents was 110kcal, slightly lower than that provided by grandparents (120kcal). Both parents and grandparents served snacks containing, on average, 11g of sugar and similar amounts of saturated fat (2g and 3g respectively). The sodium content of snacks provided by grandparents was slightly higher (106mg) than parents (93mg). When comparing parent and grandparent provision, no significant differences were found between the nutritional content of parents' and grandparents' snacks provided to 2-4-year olds (Table 14).

Table 15. Provision of fruit, vegetables and discretionary food provided by parents and grandparents as snacks			
	Parent (N=70)	Grandparent (N=38)	Chi Squared Test of Significance

	n (%)	n (%)	
Snacks included fruit			
Yes	46 (66%)	23 (61%)	$X^2 = (1, 108) = 0.287, p=0.592$
No	24 (34%)	15 (39%)	
Snacks included Vegetables			
Yes	3 (4%)	4 (11%)	$X^2 = (1, 108) = 1.582, p=0.208$
No	67 (96%)	34 (89%)	
Snacks included discretionary food items			
Yes	45 (64%)	23 (61%)	$X^2 = (1, 108) = 0.149, p=0.699$
No	25 (36%)	15 (39%)	

66% of parents and 61% of grandparents provided fruit as part of a snack. Only 4% of parents and 11% of grandparents provided vegetables as part of a snack. 64% of parents and 61% of grandparents provided discretionary food items as part of a snack. Chi-squared tests revealed no significant differences between the snack content provided by parents and grandparents ($p>0.05$). (Table 15)

Table 16. The amount of fruit, vegetables and discretionary food provided by parents and grandparents for snacks			
	Parents Mean (SD)	Grandparents Mean (SD)	Mann-Whitney U Test
Discretionary food items per snack occasion (grams)	14 (17)	14 (19)	U=1309, p=0.889
Fruit per snack occasion (grams)	38 (47)	33 (40)	U=1262, p=0.652
Vegetables per snack occasion (grams)	1.0 (5)	4.0 (13)	U=1383, p=0.477
SD = Standard deviation			

No significant differences were found between the amount of fruit, vegetables or high energy-dense foods served as a snack when comparing parents and grandparents (Table 16). When parents served fruit to their two to four-year-old children as part of a snack the average amount was 38g, for grandparents it was 33g. The amount of vegetables served was smaller for parents than grandparents, 1.0g and 4.0g

respectively. Parents and Grandparents both served an average of 14g of cakes, biscuits, chocolate and savoury snack items. Independent sample t tests found no significant differences between the amounts of fruit, vegetables and discretionary food items served by parents compared to grandparents.

5.5.4 Feeding Style

Table 17. Parent and grandparent feeding styles				
	Authoritative (%)	Authoritarian (%)	Indulgent (%)	Uninvolved (%)
Parent (n= 72)	10 (14%)	30 (42%)	20 (28%)	12 (16%)
Grandparent (n = 44)	10 (23%)	8 (18%)	18 (41%)	8 (18%)

The largest percentage of grandparents had an indulgent feeding style (41%) followed by authoritative (23%), uninvolved (18%) and authoritarian feeding style (18%). The largest percentage of parents had an authoritarian feeding style (42%) followed by indulgent (28%), uninvolved (16%) and authoritative (14%). The results from the chi-squared test showed there was no significant association between caregiver type and feeding style $X^2 (3, N=116) = 7.309, p = 0.063$. (Table 17)

5.5.5 Feeding Practices

Table 18. Parent and Grandparent feeding practices			
	Grandparents (n=44) Mean (SD)	Parents (n=72) Mean (SD)	Mann Whitney Test
Child Control	2.6 (0.7)	2.7 (0.8)	U=1466.5, p=0.502
Emotion Regulation	2.0 (0.6)	2.3 (0.9)	U = 1433, p=0.385
Food as Reward	2.2 (1.1)	2.8 (1.2)	U= 1155.5, p=<0.05*
Balance & Variety	4.5 (0.5)	4.7 (0.5)	U=1178.5, p=<0.05*
Involvement	3.6 (1.1)	3.7 (1.1)	U= 1490.5, p= 0.592
Modelling	4.3 (0.7)	4.4 (0.7)	U=1498.5, p=0.621
Monitoring	4.1 (1.0)	4.3 (0.8)	U = 1520, p=0.709

Pressure	2.9 (1.0)	3.2 (1.0)	U=1351, p=0.183
Restriction for Health	3.2 (1.0)	3.5 (1.0)	U=1283, p=0.086
Restriction for Weight	2.2 (0.7)	2.3 (0.8)	U=1633, p=0.780
Teaching about Nutrition	3.7 (0.9)	3.8 (0.8)	U=1522, p=0.722
Environment	4.1 (0.7)	3.6 (0.8)	U= 2176, p=<0.05*
SD = Standard deviation			

For both parents and grandparents, the most highly reported feeding practice was promoting balance and variety, and the least reported was using food to regulate emotions as well as restricting food for weight reasons in parents. When comparing parents and grandparents feeding practices, grandparents were significantly more likely to report creating a healthy eating environment (4.1 vs 3.6, $p<0.05$) than parents. Grandparents were significantly less likely to report using food as a reward (2.2 vs 2.8, $p<0.05$) and promoting balance and variety than parents (4.5 vs 4.7, $p<0.05$). There were no significant differences between grandparents and parents for the other feeding practices. (Table 18)

5.5.6 Associations between grandparental feeding behaviours with the amount of time Grandparent's spent caring for their grandchildren per week

5.5.6.1 Dietary Provision

Table 19. Spearman's rho correlations between grandparent's meal and snack provision and time spent caring for grandchild each week	
	No. of hours
Breakfast	
Kcal	-0.177
Total Sugar	-0.184
Saturated Fat	0.131
Sodium	-0.144
Grams of fruit	-0.109
Grams of veg	Not served by grandparents

Lunch	
Kcal	0.029
Total Sugar	-0.046
Saturated Fat	-0.143
Sodium	0.053
Grams of fruit	-0.122
Grams of veg	-0.172
Evening Meal	
Kcal	-0.255
Total Sugar	0.096
Saturated Fat	-0.275
Sodium	-0.282
Grams of fruit	0.179
Grams of veg	-0.111
Snacks	
Grams of cakes biscuits, chocolate and savoury items in snacks	-0.172
Grams of fruit in snacks	-0.005
Grams of vegetables in snacks	0.358*
Kcal in snacks	0.170
Sugar in snacks	0.043
Saturated fat in snacks	0.279
Salt in snacks	0.152

*Significant $p < 0.05$

Spearman's correlations indicated that there were no significant correlations between grandparent's provision of nutrients or fruit and vegetables at mealtimes and the amount of time grandparents spent caring for their grandchild each week. For snacks, there was a significant positive correlation ($p < 0.05$) between amount of vegetables grandparents served as part of a snack and the amount of time grandparents spent caring for their grandchild each week. No other significant correlations were found between grandparents' snack provision and time spent caring for their grandchild each week (Table 19).

5.5.6.2 Feeding Style

Table 20. Grandparents feeding style and the number of hours spent caring for their grandchild per week		
	Mean hours per week	Standard Deviation
Authoritative	18.7	4.3
Authoritarian	19.1	14.3
Indulgent	13.6	7.5
Uninvolved	12.0	7.1

Grandparents who used an authoritarian feeding style cared for their grandchildren the most hours per week (mean 19.1 hours) whereas grandparents who used an uninvolved feeding style and indulgent feeding style cared for their grandchildren the least number of hours per week (mean 12 and 13.6 respectively). ANOVA revealed there were no statistically significant differences in the mean number of hours grandparents spend caring for their grandchildren and the different feeding styles used by grandparents $F(3,40) = 1.466$, $p = 0.238$. (Table 20)

5.5.6.3 Feeding Practices

Table 21. Spearman's rho correlations between grandparent's feeding practices and time spent caring for grandchild each week	
CFPQ subscale	No. of hours
Child Control	0.253
Emotion Regulation	0.136
Food as a Reward	0.101
Balance and Variety	0.155
Involvement	0.172
Modelling	0.074
Monitoring	-0.096
Pressure	-0.177
Restriction for Health	0.208
Restriction for Weight	0.118
Teaching about Nutrition	-0.142
Environment	-0.113

*Significant $p < 0.05$

Spearman's correlations indicated that there were no significant correlations between grandparent's feeding practices and the amount of time grandparents spent caring for their grandchild each week (table 21).

5.6 Discussion

This study showed that the dietary provision, feeding styles and feeding practices of grandparents who act as informal caregivers to their preschool aged grandchildren were comparable to those of non-related parents of preschool children confirming that grandparents are also a key target for intervention aimed at improving the dietary intake of young children. Moreover, the overall similarity found between parent and grandparent feeding suggests that the content of strategies and public health messages that target the feeding behaviours of parents may also be appropriate for grandparents.

5.6.1 Dietary Provision

Dietary provision of parents and grandparents were similar for both meals and snacks. Nutrient provision at meal times suggest that over the course of a day it is likely that children would exceed their recommended daily intakes of saturated fat (less than 10% of total energy intake ⁽³⁸³⁾), and sodium (800mg for children aged 1-3 and 1200mg for children aged 4 to 6 ⁽³⁸⁴⁾) when cared for by either parents or grandparents. Additionally, for both caregiver types, only the evening meal contained a full recommended portion of vegetables for a preschool aged child (40g) and parents and grandparents often failed to provide a full portion of fruit (40g) with any meal ⁽³⁸⁵⁾. Considering that it is recommended that a third of each meal be made up of fruit and

vegetables⁽³⁸⁶⁾, both caregiver types are providing meals to preschoolers that fall short of these recommendations. Nevertheless, these results are important because they confirm that public health campaigns and interventions that encourage parents to limit the amount of salt and saturated fat and increase the amount of fruit and vegetables provided to preschoolers could be altered to also engage grandparents and other family members who act as informal childcare providers.

The overall similarity between parents' and grandparents' dietary provision conflicts with the accounts of grandparental dietary provision described by parents in the literature. For instance, parents complain that grandparents provide large portion sizes to their preschool aged grandchildren^(260,333) yet in the current study similar amounts of energy was provided in meals by grandparents and parents. Additionally, parents report that grandparents serve large amounts of high fat and high sugar foods to their preschool aged grandchildren⁽²⁶³⁾ yet, on average the amount of cakes, biscuits, chocolate and savoury snacks served by grandparents as part of a snack was similar to that served by parents.

Differences were seen between parents' and grandparents' provision of vegetables at the lunch time meal whereby, grandparents served significantly more vegetables than parents (25g versus 13g), albeit still less than the guideline portion size of 40g. Previously, studies have reported conflicting findings on whether parents and grandparents served fruit and vegetables at meal times^(261,265). Speirs et al. found that grandparents in the U.S were more likely to serve fruit in an evening meal than parents but identified no differences in whether they served vegetables⁽²⁶¹⁾. In contrast Yue et al. found that grandparents in China were less likely than parents to provide

fruit and vegetables ⁽²⁶⁵⁾. When fruit and vegetables were provided by both caregiver types as snacks, the amount was far below the guideline amounts for the age range ⁽³⁸⁵⁾. Moreover, public health campaigns in the UK ⁽³⁸⁷⁾ currently recommend limiting children's snacks to under 100 kcal per snack up to a maximum of two snacks per day; the snacks provided by both parents and grandparents exceeded this calorie recommendation. This is unsurprising since caregivers of preschool aged children often provide larger than recommended snack portion sizes of high energy dense foods ⁽³⁸⁸⁾.

5.6.2 Feeding Practices

Overall, feeding practices were similar between the unrelated parents and grandparents recruited for this study, except for creating a healthy food environment, using food as a reward, and promoting balance and variety. Grandparents were more likely to report creating a healthy feeding environment and less likely to report promoting balance and variety, and using food as a reward than parents. Despite the parents and grandparents recruited in the current study being unrelated, the differences that did emerge are consistent with previous work. For instance, in a UK study of 50 parents and 50 grandparents, grandparents were also more likely to report creating a healthy feeding environment and less likely to report promoting balance and variety than parents⁽¹⁸⁴⁾. Grandparents may be more able to create a healthy feeding environment than parents as they often have more time and money to do so and therefore can ensure healthy options are available ⁽²⁷²⁾.

Some discrepancies were found between the current study and that conducted by Farrow ⁽¹⁸⁴⁾. Farrow identified differences in parent and grandparent reports of

monitoring, child control, emotion regulation and restriction for weight⁽¹⁸⁴⁾. However, Farrow's study included caregivers of children aged 2-8 years old whereas our study just focused on caregivers of 2-4-year olds.

Regarding caregiver feeding practices, parents and grandparents scored highly (above 3.5/5) on feeding practices that provide structure to children's eating such as modelling healthy eating, monitoring children's intake and providing a healthy eating environment by making healthy foods available and limiting the amount of unhealthy food available. Additionally, both caregiver types scored highly on feeding practices that promote autonomy in children such as teaching them about nutrition and promoting balance and variety through encouraging preschoolers to try new and varied foods. This confirms what has been found in a study of Australian grandparents of 3-14-year-old grandchildren which reported grandparents using positive feeding practices, (which lead to favourable dietary behaviour) more frequently than negative, coercive ones ⁽²⁴⁰⁾. Other studies have found that grandparents do use coercive feeding practices with preschoolers such as using food to regulate emotions, pressuring children to eat and restricting foods for weight reasons ⁽³¹¹⁾. Feeding practices of grandparents may vary based on socioeconomic status and education level ⁽²⁴⁰⁾ and further work is needed to confirm whether demographic differences occur within a UK sample of grandparents.

5.6.3 Feeding Style

No significant associations were found between feeding styles and caregiver type. A range of feeding styles were demonstrated across both parents and grandparents. An authoritative approach, characterised by having high demands on children's eating but

being responsive to their preferences and needs, is associated with adequate dietary quality in preschool children ⁽³⁷²⁾ and is therefore considered the optimal approach. However less than a quarter of parents and grandparents in our study adopted this approach, suggesting a need to encourage both caregiver types to adopt this style. A previous review of grandparental feeding styles found that an indulgent feeding style was common in grandparents who care for their preschool aged grandchildren ⁽³¹¹⁾, however no study in this review used a validated tool to measure feeding styles. In contrast, using a validated tool to measure feeding styles, we found that over half of the grandparents in the current study did not adopt an indulgent feeding style. This highlights the importance of using tools that have been tested for their validity, reliability and sensitivity.

5.6.4 Associations with time grandparents spend caring for preschool aged grandchildren

Contrary to previous findings ^(184,240), we found few associations between the amount of time grandparents cared for their preschool aged grandchildren per week and dietary provision, feeding styles or practices. Only for vegetable provision in snacks was there a positive association, whereby grandparents who cared for their grandchildren for more hours provided greater quantities of vegetables as a snack to their preschool aged grandchildren. All grandparents in the current study were regular care providers to their grandchildren, providing a minimum of one day per week of care. Grandparents who routinely care for their grandchildren have reported feeling more responsible for their grandchildren compared with if they only saw their grandchildren occasionally ⁽²⁷²⁾. Further work is needed to explore the difference

between feeding behaviours of those grandparents who routinely provide care compared with those that do so on a more casual basis.

Overall, the results of this study highlight the need to ensure that strategies to promote healthy eating in young children also target and reach grandparents who regularly provide childcare to their preschool aged grandchildren. Strategies are needed to encourage grandparents to reduce the amount of sodium and saturated fat in their meals whilst increasing the amounts of fruit and vegetables served at both mealtimes and as part of a snack. Grandparents should be supported to continue using those feeding practices that promote healthy eating in young children whilst being encouraged to use a more authoritative feeding style. Nevertheless, the similarities between the current, unrelated parent and grandparent feeding behaviours suggest that the content of interventions and policies designed with parents as the main audience, may not need to be adapted specifically for grandparents. Instead, there is a need to consider how strategies and public health messages can be altered to engage grandparents and explore what format of intervention grandparents would be most receptive to.

This study has several strengths. This is the first study to use a dietary assessment tool to assess UK grandparents food provision when caring for their preschool-aged grandchildren and is the first to use a validated tool to capture UK grandparental feeding styles. The results therefore provide an insight into the ways in which grandparents may influence young children's eating behaviour. This study also benefits from looking at independent and unrelated parents and grandparents. Previously, correlations have been found between related mothers and grandmothers

feeding practices ⁽¹⁸⁵⁾ suggesting an intergenerational nature of feeding behaviours. By focusing on unrelated caregivers this potential confounding effect has been removed, strengthening the validity of the findings that grandparents who regularly act as caregivers to their preschool aged grandchildren use similar approaches to parents. Several limitations are also of note. As mentioned in the data analysis section, a power calculation was not carried out for this exploratory study. Due to the modest sample size the current results should be interpreted as exploratory and with caution. We adopted an appropriate, more conservative approach with the analysis that does not require certain assumptions to be met. Given the lack of previous studies in this area of research, the current study provides important details for future investigations, including sample size calculations. Moreover, the subscale “teaching about nutrition” (CFPQ) demonstrated poor internal consistency for parents and so these data should be interpreted with caution. Recruitment, particularly of grandparents was challenging, and the recruitment rates, in general, re-iterate the difficulty of recruiting participants to complete food records. Although a number of different methodological decisions were made to promote recruitment and completion of the food record e.g. using retrospective vs prospective methods, using an estimated vs weighed approach and using an intuitive online tool, further strategies to reach and engage grandparents and to increase participant compliance with food records are warranted. The recruitment strategy did result in a wide demographic participant pool with caregivers of different household incomes, weight status, and age but the sample was predominantly White British meaning that results are not generalisable to other ethnicities or outside of the UK. The use of food records also has its limitations. First, they rely on participant’s being able to accurately recall the food and drinks they provided and second, they could be subject to demand characteristics, whereby participants either selectively

recall items or provide different food and drink items on diary days to appear healthier. myfood24[®] has been specifically designed to promote accurate recall and, the dietary provision results of both caregivers might suggest that participants were minimally affected by demand characteristics.

5.7 Conclusions

Overall, very few differences were found between parents' and grandparents' dietary provision, feeding practices and feeding styles when caring for preschool-aged children. The results of this study have two key implications; first strategies to promote healthy eating in young children should be expanded to also target grandparents who act as informal caregivers to preschool-aged children. Second, those strategies that have been designed or reach mostly parents do not need to be adapted in content for grandparents. Instead, it is necessary to explore how receptive grandparents would be to receiving support and how best to promote their engagement.

5.8 Acknowledgements

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5.9 Author contributions

Conceptualization: C.M., P.B. and S.C; Methodology: C.M., P.B. and S.C; Formal Analysis: C.M.; Writing-Original Draft Preparation; C.M.; Writing-Review and Editing: C.M., P.B and S.C. All authors have approved the final article.

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5.11 Declarations of Interest

None

5.12 Further consideration of the findings

An additional limitation stems from using income as a sole measure of socio-economic status, which may not be suitable for the grandparent population. Given that many grandparents may be retired or own their homes outright, relying solely on income might not offer a comprehensive indicator. The use of a composite measure of socio-economic status, incorporating multiple factors, could have provided a more thorough and representative assessment.

Introduction to chapter 6

The findings from chapter 3 to 5 demonstrate that grandparents should be considered important stakeholders in the diets of preschool aged children and may benefit from feeding support. In the mixed methods review (chapter 3) I found that grandparents were providing large portion sizes, frequent snacks and foods high in fat and sugar and may use some coercive feeding practices and act indulgently when feeding their grandchildren. These findings were confirmed in chapter 4 which found that when preschool aged children were accompanied by their wider family members they consumed significantly more energy dense meals, energy (kj), sodium, added sugars, total grams and saturated fat per eating occasion compared to when they were accompanied by parents. In chapter 5 I focused specifically on grandparents who provided regular care to their grandchildren and the results differed slightly to that found in the mixed methods review and chapter 4. Unlike in chapter 5 I found no difference between parents and grandparents' dietary provision and few differences between their feeding practices and feeding styles. However similar to chapter 3 and chapter 4 grandparents were providing food high in saturated fat and sodium and not providing the recommended amounts of fruit and vegetables. Taken together these findings suggest grandparents should be targeted to help improve young children's nutrition and, those that provide regular childcare to their grandchildren, may require similar types of feeding support to parents. However, these studies fail to consider the personal preferences of grandparents themselves and prior to engaging grandparents in feeding support, it is important to understand the potential facilitators and barriers that might influence their engagement with an intervention, as well as their preferences for such an intervention. Doing so will ensure that any type of support provided meets

the specific preferences and needs of grandparents, helping to facilitate successful engagement.

This chapter therefore uses qualitative methods to gain the unique perspective of grandparents themselves by exploring the barriers and facilitators that might influence their engagement with, and content of, an early childhood obesity prevention intervention. The study also seeks to identify what preferences grandparents might have for the content and format of such interventions.

This chapter is presented in the format of a published paper in preparation to submission for a scientific journal. Three co-authors contributed to this work; Sundus Mahdi, Penny Breeze and Samantha Caton. Colette Marr conceived the idea for the study, designed the study, conducted the data analysis and produced the original draft of the manuscript. Sundus Mahdi additionally coded 20% of the transcripts. Samantha Caton and Penny Breeze supervised and reviewed the work and all authors critically revised the paper.

6 Chapter 6: A qualitative insight into engaging grandparents to promote healthy eating in young children

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6.1 Abstract

Grandparents are an important provider of childcare to young children and may be a key target for improving the diets of children in the early years. However further work is needed to look at the factors that might influence grandparents' willingness to engage with support as well as the preferences they might have for such support. To gain insight into this, semi-structured interviews were conducted with 13 UK grandparents who cared for their 2-4-year-old grandchildren on a regular basis. Data were analysed using reflexive thematic analysis. The analysis revealed that grandparents' may be a challenging group to engage as they perceive little need for nutritional support and may hold feeding expectations of their role as both a grandparent and as a part-time secondary care provider. Nevertheless, grandparents

voiced a willingness to learn new information and an eagerness to provide a healthy diet to their grandchildren. Grandparents spoke positively and frequently of learning from their grandchildren's parents, suggesting the potential for using an indirect approach to relay best practice recommendations to them. Potential resources for grandparents include portion size guidance, snack suggestions, strategies and games to introduce new foods and recipes to promote a varied diet. Future work should explore the feasibility and acceptability of using parents as a conduit for early years feeding guidance for grandparents.

6.2 Introduction

Childhood obesity is a global public health concern. It is widely acknowledged that overweight and obesity not only impacts upon the physical and psychological health of children during the childhood years but also, children with obesity are more likely to have obesity as an adult and are more likely to develop non-communicable diseases^(11,12). Poor diet is one of the key risk factors associated with the development and maintenance of childhood overweight and obesity and very few children are meeting public health recommendations for dietary intake. For instance, children are exceeding their recommended intake of saturated fats and free sugars and failing to meet the recommended daily portions of fruit and vegetables ⁽³⁰⁹⁾. Dietary intake is particularly important during the early years. This is because these first few years of life have been demonstrated to be a critical period, when dietary habits and preferences are established that are sustained into later life^(29,389). Consequently, it's essential that initiatives are developed that help to improve the diets of preschool aged children.

Although parents are often seen as nutritional gatekeepers who shape the eating environment for young children, in many countries' grandparents are also important providers of childcare. For instance, in a survey of parents (n=5693) in England, 43% of families with preschool aged children had grandparents acting as informal carers ⁽²³⁴⁾. A high level of grandparental involvement in childcare has also been documented internationally including in Australia, China, USA and parts of Europe ⁽³⁹⁰⁾. Consequently, grandparents can play a significant role in young children's dietary intake and eating behaviours ^(243,390,391).

Previous research has revealed that grandparents engage in both healthy and unhealthy feeding behaviours when caring for their preschool aged grandchildren. For instance, studies have demonstrated grandparents creating a healthy feeding environment for their grandchildren ⁽¹⁸⁴⁾, considering their grandchild's needs and preferences in food choice ^(264,269,271,392) and modelling healthy consumption ^(257,272). On the other hand, grandparents engage in some unhealthy feeding behaviours with their young grandchildren and may benefit from some support in their feeding. These unhealthy behaviours include providing their grandchildren with large portion sizes ^(260,263,333), frequently offering energy dense foods ^(269,393), using food as a reward for behaviour ^(257,271,272,333) and generally creating an indulgent feeding environment ^(263,264,271,272,392,393). Grandparents are therefore an important target for early childhood nutrition interventions ^(235,271,390,391,394).

Although grandparents have indicated that they would like information and support to help them generally in their role as caregiving grandparents ⁽²⁰⁹⁾ they may view feeding support less favourably. In a sample of 12 Australian caregiving grandparents,

grandparents had no desire for receiving guidance on feeding, due to their perceived high level of nutritional knowledge⁽²⁷¹⁾. Other studies have demonstrated that grandparents may hold the belief that what they feed their grandchildren is inconsequential to their grandchildren's health ^(257,271). Although grandparents may be a key target for improving the health of children in the early years further work is needed to look at the factors that might influence grandparents' willingness to engage with support in more detail.

For a behavioural intervention to be successful it needs to be tailored to the target population. Gaining grandparents' perspective on how an intervention would be delivered, who it should be delivered by and what should be included is essential in ensuring an intervention would meet the specific needs of caregiving grandparents⁽²⁰⁹⁾. Furthermore, exploration of the barriers and facilitators to engaging grandparents can inform the content of an intervention to maximise behaviour change⁽³⁹⁵⁾ . A previous UK study assessed potential intervention strategies for informal carers in the UK and demonstrated that advice for carers should not come from parents but rather utilise existing primary care platforms such as GP's health visitors and community midwives⁽³⁹⁶⁾. Indeed parents have described their relationship with caregiving grandparents as a delicate relationship that they have to navigate, relying on the support and care from grandparents whilst also trying to persuade grandparents to adhere to the parental feeding rules ^(271,392,393). Nevertheless, by including nannies and childminders in this previously conducted UK study it is difficult to disentangle the preferences of grandparents alone and considering the unique role of a caregiving grandparent, more tailored strategies might be needed.

The objectives of this study are twofold:

1. To understand the factors that might influence grandparents' engagement with guidance for feeding their preschool aged grandchildren
2. To explore grandparents' preferences towards guidance for feeding their preschool-aged grandchildren

6.3 Methods

6.3.1 Participants & Recruitment

Grandparents who provided informal care to their 2-4-year-old grandchildren were recruited in October-November 2020. Due to the coronavirus pandemic all recruitment and interviews were conducted online as face-to-face contact was discouraged. Study advertisements were published on local parenting Facebook groups in the South Yorkshire and Derbyshire regions of the UK. This method of recruitment was chosen to reach a diverse sample of participants. The advertisement stated that the study was exploring grandparents' role in feeding preschool children. Grandparents were eligible to participate if they looked after their 2-4-year-old grandchild at least one day per week and provided a minimum of one meal on those days or if they did so prior to the pandemic. Grandparents who act as sole carers for their grandchildren were excluded from the study as they adopt different feeding strategies to those acting as informal carers ⁽¹⁸⁴⁾. A comparative method of data saturation was used whereby the themes arising from each new interview were compared to those that had already been identified until no new themes arose, this resulted in a final sample size of 12 ⁽³⁹⁷⁾.

6.3.2 Procedure

Interested participants were invited to click on a link or scan a QR code which navigated them to the participant information sheet, consent form, eligibility questionnaire and demographic questionnaire. The researcher contacted interested participants to arrange an interview date and time, convenient to the participants. Interviews were conducted by the first author (C.M) using Google hangouts in line with the ethics policy of the School of Health and Related Research, University of Sheffield. All interviews were audio recorded. Semi-structured interviews were used to facilitate flexibility during the interview and to allow the interviewer to follow-up on individuals experiences. This helps to produce a rich and detailed account from participants, whilst remaining relevant to the study objectives. The interview guide was developed based upon study objectives and previous research in the field. The interview guide was piloted and refined, during which a few questions were edited for clarity. The full interview guide, consisting of 29 questions, can be found in appendix 27. Furthermore, an example of interview questions can be seen in table 22. The interview consisted of 29 questions. Each interview lasted between 30 minutes and 1 hour. Participants were compensated with a £20 high street voucher which could be spent online or in person. This study was approved by the School of Health and Related Research Ethics Committee, University of Sheffield [Ethic application number: 035038].

Table 22. Example questions from the interview guide

How do you decide what to provide your grandchild?
What do you think a healthy diet looks like for children aged 2-4 years old?
What do you find easy with regards to feeding your grandchild?
What do you find difficult?
Are there any foods you struggle to feed your grandchild?
Grandparents are often described as spoiling their grandchildren, what are your thoughts on this?
How do you think your grandchild's diet compares to what you fed your child or what you ate as a child?

Have you been given any advice before on feeding your grandchild, if so from who, what did you think of that advice? Is there any advice or support that you would find beneficial with regards to your grandchild's eating? If you were to be provided with support/advice how would you like to receive it? What barriers do you think would prevent you from engaging with any support?

6.3.3 Data Analysis

Recordings were transcribed verbatim and anonymised by an independent transcriber. The data were analysed using reflexive thematic analysis. Thematic analysis is a foundational method of analysing qualitative data with clear guidance on its application. Of the different approaches to thematic analysis, reflexive thematic analysis is particularly useful for understanding people's perceptions and views⁽³⁹⁸⁾, making it the most suitable method for aims of this research. The six stages of Braun and Clarke's guide to reflexive thematic analysis were followed closely using an inductive approach. The first author (C.M) familiarised themselves with the data by reading and rereading the transcripts thoroughly. Preliminary thoughts were noted and initial codes were generated across the entire dataset. The assumption behind reflexive thematic analysis is that coding is a subjective process whereby themes are developed through a researchers engagement with the data⁽²²²⁾. Throughout the coding process the researcher reflected on how their opinions and experiences may impact on and shape the analysis. Initial codes were organized into themes using mind-mapping techniques and were reviewed and refined in a recursive way. A second researcher (S.M.) independently coded 20% of the data and codes and themes were discussed and compared. Inter-rater reliability is not deemed appropriate in reflexive thematic analysis because there are no "accurate" ways to code ⁽²²²⁾.. Nevertheless, having a second researcher to discuss themes and codes with assisted the lead author

(C.M) in their introspection. In these discussions the first author considered how they had coded the data, any assumptions made and any potential oversights before final themes were named and defined. NVivo⁽³⁹⁹⁾ was used to aid the analysis process.

6.4 Results

6.4.1 Participant demographics

12 grandparents were interviewed for the study, including 11 grandmothers and 1 grandfather. Their age ranged from 50 to 71 years with a mean age of 65 years. All participants were white British/Irish and 83% had attended higher education. 33% had an annual household income below £20,000 whilst 25% received £40,000 or more per annum. Grandparents cared for their grandchildren a mean of 9 hours per week (range 6-27 hours).

6.4.2 Qualitative Results

6.4.2.1 *Factors that might influence UK grandparent's engagement with guidance for feeding their preschool aged grandchildren*

There were eight themes that emerged as potential factors that could influence grandparents' engagement with guidance in feeding their preschool aged grandchildren. This included 1) their confidence 2) their child centered feeding approach 3) the ease of feeding their grandchild 4) encouraging positive relationships with food 5) the part time-nature of the role 6) their perceived role as grandparents and 7) their perceived need for support and family influences. Example quotes supporting the themes are provided in table 23.

6.4.2.1.1 Confidence

Grandparents expressed a confidence both in feeding their grandchildren and in their nutritional knowledge which may act as a barrier to engaging with nutritional support. For instance, one grandparent mentioned how they would be surprised if recommendations contradicted what they were feeding their grandchild. Another rejected the idea of receiving nutritional support as they were confident in what they fed their grandchild. A couple of grandparents spoke about having greater nutritional knowledge in the present time than when they were parents. This increase in knowledge was described as coming from life experience, experience of being parents and work experience. Grandparents spoke about the importance of providing a healthy diet and emphasized their home cooking as central to this. They enjoyed being able to afford and provide their grandchildren with healthy food items such as fruit, vegetables and organic produce. Although grandparents considered their grandchildren's teeth when making feeding decisions and understood the importance of limiting the amount of sugar their grandchildren consumed they also made decisions based on their grandchild's weight and activity level. Additionally, grandparents' nutritional confidence was not often supported by awareness of feeding guides for preschool aged children. For instance, some grandparents were unaware of public health campaigns or guidance to promote healthy eating in young children and didn't seek out such information. A few were aware of resources such as the Change4Life campaign, the Eatwell guide or the Voluntary food and drink guide for early years settings but hadn't used them in relation to feeding their grandchildren or couldn't recall the specific details of what was recommended. Similarly, although grandparents spoke about serving smaller portions to their grandchildren, they were unaware of specific

guidance and sometimes held inaccurate beliefs about how much to provide. One grandparent implied that it was the parents who needed to access nutritional resources rather than grandparents.

6.4.2.1.2 Child Centered Feeding Approach

Grandparents often adopted a child-centered approach to feeding, responding to their grandchildren's requests and allowing their grandchildren to be involved in the feeding decisions. Grandparents would purchase food specifically for their grandchildren and cater to their grandchildren's preferences, providing food based upon what their grandchildren liked to eat and avoiding food they disliked. They would do this even if sometimes catering to their grandchild's likes and dislikes competed with their own ideas of what they should provide. They discussed how catering to their grandchildren's likes and dislikes made feeding their grandchildren an easy task, even if this involved making separate meals for their pre-school aged grandchildren.

6.4.2.1.3 Ease of feeding grandchild

Grandparents didn't discuss many problems with feeding their grandchildren. For instance, generally grandparents found feeding their grandchildren an easy task with many commenting on how unfussy their grandchildren were. Those that did have fussy grandchildren weren't particularly concerned and they accepted that food fussiness was common in young children. When grandparents did describe difficulties, these were few and with no similarity across grandparents. For instance, one found it difficult feeding their grandchild vegetables, another struggled with getting their grandchild to drink water and another expressed mild frustration at trying to encourage their grandchildren to stay at the dinner table until they had finished their meal. One

grandparent spoke of their difficulty finding the balance between being a grandparent who provides treats and being a regular childcare provider. Nevertheless, grandparents didn't express a need for help or support with these difficulties, instead they discussed and resolved them with their grandchildren's parents or implied that they were not issues that necessarily needed resolving.

6.4.2.1.4 Encouraging positive relationships with food

Grandparents demonstrated an understanding of positive feeding practices when feeding their grandchildren and sought to encourage their grandchildren to eat healthily and have a positive relationship with food. For instance, they discussed modelling healthy eating and avoiding eating discretionary food items in front of their grandchildren. Many spoke about having lots of fresh fruit and vegetables available for, and accessible to, their grandchildren. They set boundaries and limited provision of some food items, although often they didn't restrict sweet food items completely as they didn't want their grandchildren to develop an unhealthy relationship with these foods. Consequently, grandparents often had energy dense nutrient poor foods available in the house with some mentioning a treat tin or cupboard which the grandchildren knew about.

Grandparents emphasized the importance of creating a relaxed eating environment for their grandchildren so that their grandchildren enjoyed the eating experience. They didn't place any pressure on their grandchildren to eat and they spoke of encouraging good eating routines such as eating as a family and sitting at the dinner table. They discussed the importance of providing a balanced diet and providing variety, getting

their grandchild involved in food preparation, teaching them about nutrition and providing their grandchild with autonomy and independence with food choice.

6.4.2.1.5 Part time nature of role

Some grandparents implied that the part time nature of their role meant that they didn't need to worry about what they provided to their grandchildren. The part-time role was sometimes used as a justification for not providing an "optimum" diet and this attitude may also impact upon grandparents' willingness to engage with feeding support. For instance, a few grandparents felt that they didn't need to provide variety. One grandparent didn't think feeding support was relevant to grandparents as they only care for their grandchildren on a part time basis. Grandparents also held the belief that the part time role allowed them to be more lenient, particularly with high fat, salt or sugar items. However, not all grandparents held this attitude and a few grandparents spoke of aligning their behaviours with parental feeding. They felt that even though they cared for their grandchildren on a part time basis, they were regular providers of childcare. This implied an understanding of the impact they may have on their grandchildren's diets, even if they only care for them once a week

6.4.2.1.6 Perceived role as grandparents

Many discussed their role as a grandparent and how this role permits more indulgent feeding. For instance, grandparents spoke of being "allowed to be weaker" with the provision of treats, that providing treats is "part of being a grandma" or a "grandma's prerogative". Parents may also reinforce these role perceptions for instance, grandparents often spoke about parents making allowances for their indulgent feeding. Nevertheless, one grandparent spoke of having a mental separation between

their role as a regular care provider and that of a grandparent, describing how it is important to separate the two roles in feeding, yet they also spoke of the difficulties they encountered navigating these two identities. A few grandparents also seemed to separate being indulgent from the act of spoiling with food. For instance, the same grandparents who had supported the idea that grandparents were allowed to be more permissive with food, had strong objections towards spoiling their grandchildren with food.

6.4.2.1.7 Perceived need for support

Grandparents didn't feel that they needed support with anything relating to their grandchildren's feeding, they were happy and confident in what they provided to their grandchildren. Others didn't think they needed any guidance as their grandchildren were easy to feed and they hadn't encountered any specific feeding problems with them. They would only seek out guidance if they did encounter difficulties. Despite the above, many grandparents were open to learning new information and changing the way they feed their grandchildren. However, for some it would require admitting that what they were doing could be improved upon first.

6.4.2.1.8 Family influences

Family influences were also an important factor in grandparental feeding and these may act as a barrier to grandparents' engagement with feeding support. This includes parental involvement in feeding decisions as well as family feeding norms. For instance, grandparents spoke of having parental approval for the ways in which they fed their grandchildren, particularly for the provision of treat food items, even if the provision of treats went against what parents did at home. Others described how

parents gave grandparents complete authority over feeding which may incorrectly give grandparents the impression they do not need to seek any additional support. Nevertheless, many grandparents sought parental approval on their feeding with some mentioning how they would only change what they fed their grandchild if the parents were happy with the suggestions first. This demonstrates that parental approval may be necessary before some grandparents would engage with feeding support.

The maintenance of feeding norms was also a key factor in grandparents feeding decisions, this included the norms within their own household as well as those in their grandchildren's household. For instance, some grandparents fed their grandchildren based on what they ate themselves. One grandparent described their family as "a pudding family", meaning that they always provided something sweet to their grandchild after their main meal. Grandparents also considered what their grandchildren usually did at home in terms of the strategy's parents used and the food they provided.

The grandfather was also seen as an influencing factor with a few grandmothers describing grandfathers as more likely to indulge their grandchildren with food. Feeding support will therefore need to engage both grandparents. However, doing so may provide additional challenges as one grandmother described how the grandfather would not be receptive to such advice.

Table 23. Quotes supporting the themes demonstrating factors that might influence UK grandparent's engagement with guidance for feeding their preschool aged grandchildren

Feeding Confidence

p_5 "I believe that what I'm doing is right and it's right for him and he's getting a balanced diet whilst he's with us (yeah), why do I need to go or to have a one to one with somebody to say 'try this'. He's a well-balanced, healthy little boy so, I think what we're doing must be right."

p_8 " "I think as I say I know what I'm giving em is relatively healthy"

p_9 "We're quite aware, as a household, I'd say we're quite aware of erm food and what we consider good food, and we read quite a bit about food, so we might read newspaper articles and fat or sugar or whatever erm probably generally try to keep fairly well informed about things, but no not specifically feeding children...I think I feel that we've perhaps, we were aware of food issues and the importance of good food erm from the point that we became parents ourselves maybe before that, so this isn't just something that come upon us as we've become grandparents. We've always felt that food was important and healthy food was important."

p_12 " I feel confident that you know that we've got sort of a good pattern with him, we had a good pattern with him. Perhaps it's an arrogance but I've thought a lot about food over the years, partly because of my own experience, you know of, and my family experience, "

p_12 "I suppose it's there (guidance on feeding preschool children) but I you know, I feel as though I know what I want to do, I feel as though I know enough about it to not need particularly any advice...I think I'm quite arrogant around food really, because I've done a lot of thinking about it. I mean not scientifically but in a practical down to earth way I think I, it matters a lot to me and I think it's very important and you know as I've said, so I've tried to do what I think is the right thing erm you know, in terms of their wellbeing and our wellbeing."

P_6 "when my children was that age, we're talking the early 90's, nutrition wasn't, you wasn't as aware of nutrition back then as what you are now. I still used to try and feed them healthy but some of the meals what I thought was healthy back then, isn't as healthy as what I thought"

p_11 "on the nutrition side, I think if they've had what's a balanced diet to me but tailored towards children's stomachs... Erm....if there was any different advice I'd be surprised if it changed that much. Maybe you could tell me that. I mean to me good healthy, a varied diet that's not full of sugar has got to be sensible so I would be surprised if there was advice that went against that."

P_3 "I know there are campaigns and in school erm you know, the eat well and the change for life campaigns and such but I think more parents need to take that on board. Sorry I'll be on my soap box now...Er yeah well there is the government guidance it was issued, two or three years ago, it's for childcare providers, childminders and such. And I can't remember the exact title of it, but it does give guidance for feeding, and there's loads of sample menus in the government guidance to help childcare providers at nursery, childminders, because I have used that guidance, or when I've been

Child-Centred
Feeding

delivering training and students have asked, you know, questions about oh I don't know what to provide I've signposted them to that guidance. So yes there is stuff around yeah

P_11 "Do you know it's never crossed my mind til you've mentioned it. No"

P_10 "Well there's gonna be some somewhere isn't there because you know there's gonna be books out and yeah, but I don't know"

P_2 "I don't look at any guidance so no, I'm probably not aware and I'm out of touch...but I am aware it's there if I need it but I don't look at it personally, do you know what I mean? Do you know like people might have looked at Change for Life when that was around at personal level or, I don't tend to do that.'

P_2 "Yeah, yeah, I am, I'm aware that they eat smaller portions basically and they're not adults (aha) you know and you wouldn't expect them to be so, you know if we -sighs- not exactly scientific about it but if we were having a meal (aha), my grandson would have a much smaller plate (yeah) for his meal you know...I've not read the guidance (yeah) so, and to some degree I'm probably -sighs- taking a bit of a lead from my grandson (aha). I don't think, I don't think he's a child that eats unless he's hungry (aha); he doesn't, he's like 'I've had enough, I've had enough"

P_5 "I do measure out, I did Slimming World you see so this is -laughs- the reason why I measure out and they say 75 grams of pasta (yeah) a portion and you just know it's quite a big handful and he will eat that

P_11 "Generally I was trained by my grandson to give what he liked to eat, I think that's the way I ended up looking at it. I had high ideas about what I should do as a responsible grandparent and eventually getting them to eat something seemed more important than utopian sort of diet, but they did eat, I like them to eat fruit and vegetables."

p_12 "So erm so but the tea time, when if the meal was here I would often do two separate meals because I would know they would love fish fingers and peas and I didn't want any arguments with the meals, I don't like that, you know it was just easier to give them a simple meal of fish fingers and peas, they knew that's what they were going to get and then they had their bit of chocolate afterwards and then that's their meal. Do you know what I mean? So it kind of, at the end of the day you just want it to go as smoothly and they've had some good food and that's all.

P_2 "I do what he tells me (laughs), that wasn't the answer [both laugh] right, ok, several ways really ; obviously I talk to my grandson's mum about what he likes, what he doesn't like...if I did beans on toast every time he came, that is easy because I know he likes it and it is easy (yeah). So I try not to do that all the time -laughs- he is only here one day a week so it's not a big deal and we do try and vary it...trying to think [pause] no just things I know he likes, "

P_8 "I know exactly what she likes, and she knows exactly what she likes so I don't just offer things that I know she's not going to eat"

P_7 "That she knows her own mind, she's very good at telling me what she does and doesn't want so it's quite simple you know, I will ask her, I'll give her a choice and she's quite clear on her choice"

Ease of feeding
grandchild

P_7 "Yes, yeah, I'm not, she's not, she's not a difficult child to feed. Some children are difficult aren't they so, mm"

P_12 "But er he's easy really, he's an easy child from that point of view because he does like the right sorts of things,

P_3 "she's been exposed to a wide range of foods, so she's never been fussy or anything that she really doesn't. You know, there's sometimes when she'll have, like all of us, a food that she loved, she's gone ooo I really fancy that, I know if I have the same foods over and over again suddenly I don't want it.. There's never been any big tantrums over food or any big dislikes."

p_9 "I think because three of the four of them are actually very easy to feed, so they'll eat pretty much anything and they won't make a fuss about it that's, that almost doesn't need any thought, you don't need to think have I got something in for lunch I know that we do, we've always got eggs, we've always got cheese, we've always got loads of fruit, we've always got fish fingers in the freezer. I don't have to kind of do a lot of worrying about what I'm going to feed them. Erm and with the fourth one, the fussy one, erm I don't particularly worry about that, to be honest, really because I just put in front of him what I'm going to put in front of him.

P_4 "I think it depends on the child because erm granddaughter is pretty good about eating lots of different things, she'll eat a variety of things, one of my other grandchildren, who's now 5 has a very limited diet because he's at the stage where he just erm... categorically says I do not like vegetables. So he won't eat any vegetables. He eats lots of fruit, but he won't eat vegetables."

Encouraging positive
relationships with
food

p_12 "I don't want there to be any pressure around eating you know what I mean. It's just a very natural thing and to be enjoyed and we sit together you know what I mean and so it's kind of keeping that atmosphere of this is an enjoyable time to be together and we're sharing food. You know and you know being thankful for it actually, you know those sorts of things."

P_3 "I think it's because we're a very, meal time, anything to do with food we're very very calm and if she's having an off day, just go okay, shall I take the plate away and she's goes yeah or no"

P_1 "we sit down and make that time together with him"

P_11 "In many ways, well always we've tried to eat with the children, with my grandson and his brother and I always ate with my daughters because I like the family, I think the family eating things valuable."

P_10 "Well I know, something else I was going to say though yeah, I don't, from like my experience of working with children anyway, I don't sort of believe that you should not give children any sort of ever you know, sweets or sweet things, that you should deny them completely you know once they're getting past three to four and because the odd the, you know the odd child that I have known like that, they tend to over' I always think they tend to over-react you know when they're older and then like really, because it's been something that's denied them, they sort of seem to like really crave them or, they just have a funny relationship with sweets and so I think there's a balance between letting them understand that sweet things are a treat; somehow you've got to work that out yeah"

P_3 "I try be a role model, because we've looking after her from being erm must be about a year old, yeah my daughter went back to work when she was a year old so erm very much that, and I don't do the sneaky bit because it's too much like hard work. And it's not a hardship to stick to what, you know, what she's having and she likes to share, so we all have bread sticks or fruit."

P_3 "so we always make sure there's a selection of foods in, there's always cucumber and the tomatoes, a selection of fruit, I mean at the moment there's blueberries and blackberries in the fridge, there's apples and oranges in the fruit bowl"

P_2 "I try and very much moderate that and it's a treat...he didn't proceed through all the gingerbread men which is what he was going to do- 'I'll have another one', 'No, no, no, we've had one today' so we do try and limit"

P_3 "my granddaughter does switch, she understands er there are rules, different rules apply in different households and as a child minder I realised that because parents go oh they don't eat that at home, they don't sit at the table, and I'd say well they do here."

P_12 "I would talk about things being you know healthy, and good for their bodies, you know and good, and you know you're keeping well and it's really important and so on. And your teeth."

P_2 "Now he's a little bit bigger , I try explaining to him, or whether it's to him or if he's doing role play with his soft toy 'that you have to have drinks every day or you get poorly'

Part time nature of the role

P_8 "I'm happy really now that she will eat, even if it's just ham and cheese, it dunt matter to me because I've only got her the one day and I'm happy with that."

P_2 "I'd have been more um, probably would start particularly now, be, start being more assertive about him having different foods, different fruit and vegetables really yeah... I'd want to encourage him to eat as wide a variety of things as possible I think, yeah, but I don't feel as if that's my, a priority for me because I'm just looking after him, every week"

P_2 'we're both at a sort of agreement that if he's with grandparents, things can be a teeny bit more treaty because that doesn't pass into the rest of his life; it's like just that day at my house "

P_4 "I mean things like, sweets for example, they have family rules about what they're are allowed and when which you know we tend to, tend to stick with, yep so yeah I think I probably do but I think I'm probably a bit more relaxed than her parents are but with their consent because they'll just say well you're her grandma not her parent, she's not with you everyday that's fine. Within reason do what you want to do."

P_9 "f we're having them for a erm...like the sleepover that my grandsons came to for example. That's a bit of treat, and that's different to me to regular childcare. If you're doing the regular childcare then I think it's important that you erm have some sort of healthy eating ideas about it and also that you try to stay in line with what the parents would be feeding them at home. And that from my point of view that I would try to keep any treats in check to some extent.

Perceived role as grandparents	P_5 "Because I have my grandson two days a week, from Tuesday morning to Wednesday evening, so I usually give him breakfast, lunch, tea and supper Tuesday; breakfast, lunch, sometimes tea on the Wednesday, it depends on what time he can go home. Not that he usually wants to go home but obviously he has to go home -laughs- It's basically I'm just like a, well I'm a surrogate mother for two days in that respect aren't I" P_11 "Generally, yes I might be a bit weaker than his mum but grandparents are allowed to be." P_2 'we're both at a sort of agreement that if he's with grandparents, things can be a teeny bit more treaty because that doesn't pass into the rest of his life; it's like just that day at my house " P_6 "sometimes I must admit I mean, sometimes she does have things that she shouldn't have erm, but that's what grandparents do, that's a treat." P_4 "P: Oh I think I'm sure I spoil her. I mean they were all in lockdown last week so we we took round chocolate, and pizza, and magazines. Erm...and I think that's erm....fortunately my daughter and I see eye to eye on it we think that's a grandparent's prerogative" P_9 "Well the snacks, think I've talked a lot about them, I do find them challenging at times. Erm...and I think your role as a grandparent is quite interesting there, because I think that the being an indulgent grandparent is what being a grandparent is about, but on the other hand when you're doing childcare for them I think that's something you've got to be mindful of. Erm that and there's tension there I think between being the indulgent grandparent and being the person actually contributing to the daily care of the children. So I think that can be a difficulty at times." P_6 "I spoil them in a completely different way; I'll go out and buy them something to wear well it's usually always something to wear to be honest and it's not very often toys" P_11 "But as far as buying sweets and chocolates for them they don't get that sort of spoiling from me, but I will take them on special trips or maybe buy them a toy"
Perceived need for support	p_9 "I mean I think the main barrier would be me thinking I don't really need any support with this erm...that sounds a bit churlish really but. I wouldn't want to join a group or, there would be no reason for me, I've got enough support with you know with people that I'm directly involved with if I want to talk about something or I've got a worry about something. So I don't feel like I actively need to seek any support." p_12 "I feel as though I know what I want to do, I feel as though I know enough about it to not need particularly any advice and I know how I brought my own children up and I like what they do as adults actually." P_12 "I don't know I can be quite entrenched about somethings so but very you know but not in other ways, so I like to think I would listen and take it on board if it were necessary you know. But I think I'm quite arrogant around food really, because I've done a lot of thinking about it...I mean would it be admitting that you're not getting it right, you know or that you needed help p_11 "anything I would change....no I don't think so. Erm...I don't think there is. He gets the best food I could find for him, I don't see how I could improve on that. No."

Family Influences

p_7 "I suppose if they had difficulties like constipation or you know they were getting eczema or if there were things I probably thought were related to the diet I'd probably be motivated to think about it and think oh maybe we should try this but you know I'm not so.

P_2 "Erm, yeah, I'm always willing to change because at the end of the day, it's his best interests which is obviously is all you want to do so, yeah, definitely"

P_6 " Oh no, I'm always open to suggestions, ideas (yeah) or whatever, but it's like I've said from the start, you know she's my daughter's daughter so anything that I would introduce or anything I would go through my daughter first and ask her permission."

P_4 "Only if my granddaughter's mum was happy with it erm...if she said actually that hasn't been validated yet can you wait until erm...you know, until we've got some information then I would. But if she came to me and said oh actually you know, a really silly example, if she said to me actually you know, you have to give two year olds tuna three times a week otherwise it will affect their brain development and I want you to do those then I would."

P_2 "I tend to give him something sweet after his lunch and I probably do that more than I know my grandson's mother would, she would limit it a bit more and we're both at a sort of agreement that if he's with grandparents, things can be a teeny bit more treaty because that doesn't pass into the rest of his life; it's like just that day at my house "

P_3 "my daughter said the occasional treat is fine because that's part of being a grandma, you're allowed to give her treats but I try to do treats as more of an activity rather than food. But we all have to have chocolate"

P_4 "her mum's very good in terms of saying, you know, as far as I'm concerned it's my house my rules, I can, you know, within reason do things how I want. But I think it's helpful for my granddaughter to have a broadly similar approach,"

P_8 "we're a pudding family we always have pudding... so, that is part of our family culture which I know isn't everybody's really is it but yeah."

P_12 "you know, I also always had to have a, in mind what happens at home, so how do they feed, what are they used to at home or at the child minder, you know there's a range of different approaches, so you're working with that too. Naturally, naturally. So it's a bit of a compromise sometimes but you know, yeah."

P_3 "yeah so erm the pattern we tend to follow is very similar to what she has at home erm with the odd grandparent treat, but generally it's sticking to the healthy eating plan that she has at home"

P_12 "my husband is much more liberal than I am but anyway, there we go. That's another compromise...And it's always tricky because I was always slightly more into that (limited sugar) than my husband was, he's much more indulgent you know.

P_6 "but my partner, my granddaughter calls him Grandad bic bic and he will sneak her biscuits, so from a very young age she's called him Grandad bic bic...Yeah when she wants a sweet treat she goes to her grandad."

P_1 "if his [grandfather] was left to his own devices, he would spoil him more with his cake and puddings and things....so his grandfather would be more inclined anyway to spoil him")

6.4.2.2 Grandparents' preferences for guidance for feeding their preschool aged grandchildren

Five themes regarding grandparents' preferences for guidance were identified. This includes; 1) potential topic areas, 2) a preference for written support, 3) a mixed attitude to face to face support, 4) attitudes towards professionals and 5) parents as information providers. Quotes exemplifying the themes are provided in table 24.

6.4.2.2.1 Potential topic areas

Grandparents expressed few ideas about what feeding support could be helpful, with most saying they didn't need any support. Some mentioned how this might be different if they faced any difficulties in feeding their grandchild. Nevertheless, when discussing the feeding challenges, they had encountered they spoke about the challenge of knowing when their grandchildren had eaten enough, difficulties getting their grandchildren to eat at the table and to try new foods and the challenge of providing snacks which contradict the "indulgent Grandparent" stereotype. Although grandparents spoke of not needing support with these challenges, portion size guidance, snack suggestions and strategies and games to introduce new foods may still be beneficial. Grandparents mentioned how their grandchildren could be fussy but they were not concerned with this and didn't discuss needing support with this. Some grandparents found providing variety a challenge or mentioned how it would be if they were providing more care to their grandchildren. As many grandparents emphasized their role as a provider of home cooked meals they may benefit from additional child-friendly recipes that would help to provide variety. Likewise, many of the grandparents spoke about baking with their grandchildren and healthy baking ideas may also be a useful resource for them.

6.4.2.2.2 Preference for written information

Overall, grandparents expressed a preference for written communication however, within this, grandparents had different ideas of what written format they'd prefer. A few mentioned how they read books belonging to their grandchild's parents and would be happy to learn through this medium. Some preferred information via webpages or would prefer to be sent information or articles via email. Even though a few grandparents mentioned a preference for paper leaflets/pamphlets, others spoke about how they wouldn't read them and they'd go straight in the recycling bin.

6.4.2.2.3 Mixed attitude to face to face support

Grandparents held contrasting views towards face to face support. Only a few mentioned how they would prefer to receive support face to face and social confidence may act as a barrier to grandparents joining a group. Others held more negative attitudes towards face to face support, not wanting to join a group or engage with face to face support at all. Sometimes this stemmed from the perception that they didn't require any help. One grandparent said they would need be told they were "*doing a bad job and could benefit from it*" before attending anything, whilst another thought face to face sessions were a waste of time.

6.4.2.2.4 Attitudes towards professionals

Grandparents held differing opinions on professionals providing support. Most grandparents spoke about preferring information to come from a professional source such as the government, the NHS or healthcare workers, and some mentioned that information should be evidence based. Others discussed how these formal sources

can be alienating and make you less likely to trust them or make you feel too pressured to say the right things. A couple of grandparents preferred less formal forms of support and would rather gain advice from someone who had children and had experienced these kinds of issues first hand, or from other grandparents. A preference was also given for those delivering the support to be known within the community.

6.4.2.2.5 Parents as information providers

Grandparents often spoke about receiving nutritional information from parents. Sometimes grandparents accessed parental resources and at other times parents provided information to grandparents directly. Occasionally grandparents would ask parents for advice. Grandparents spoke positively about these interactions with parents and mentioned how they have, and would, change their feeding based upon advice given from parents.

Table 24. Quotes supporting the themes demonstrating grandparents' preferences for guidance

Potential topic areas

None needed

P_2 "I don't think so because I don't think there's anything we're doing that particularly needs help with, no, no, not really."

P_7: "No, well i suppose that answer may be different if she was not thriving or difficult to feed or was only into you know, one food group or you know those variations of things children go in for, because she's not, she's no different to- my own children weren't like that and the other grandchildren haven't been either so I've not been faced with that difficulty (yep). I'd have to look it up or ask for help."

P_8 "Erm no not really, I think because she's got access to all foods in her diet, because her mum's not vegetarian and they have everything, they have a varied diet, I think she's got all options there...so no I think I'm quite happy with everything and finding out what I need to know about what she likes"

P_9 "Well the snacks, think I've talked a lot about them, I do find them challenging at times. Erm...and I think your role as a grandparent is quite interesting there, because I think that the being an indulgent grandparent is what being a grandparent is about, but on the other hand when you're doing childcare for them I think that's something you've got to be mindful of. Erm that and there's tension there I think between being the indulgent grandparent and being the person actually contributing to the daily care of the children. So I think that can be a difficulty at times."

Difficulties

P_4 "I think the most difficult thing, is she's very like her mum in that erm...she's, if she's hungry, she'll eat loads, but she loses interest quite quickly in what she's eating. Which I think is probably very healthy, so she'll eat enough to satisfy her hunger and then she just wants to get down from the table and get back and play. Erm....and that's okay if, if I think she's had enough to eat, but if she's had two mouthfuls and I know that, you know, actually there's not going to be more food on offer for another two and half, three hours, then that can be tricky."

P_3 "well not particularly apart from getting, sometimes, getting her to the table because she's engrossed, I'll give the 5 minute warning and she knows, go to the kitchen and help my husband get the lunch ready. But she's so into role play, all the babies have got to be fed and they've got to be settled, oh their crying and so rather than going come on it's time, it's time for lunch come on up to the table, we just sit down and say lunch is on the table and then she comes in her own time and it could be 5, 10 minutes after we've started".

P_1 "I think if we tried to introduce different things, he'd probably, er I think we'd have difficulty persuading him to eat them."

Variety

P_11 "I would find it harder to find variety that he, of things that I consider good for him that he would consider eating and that's the trouble with dominancy in general that 7 days a week you have to find 7 different meals and over a month not repeat days 1 to 7 every single day. So if I had to look after him 5 days a week I think that would be a challenge to find something I would think is good for him 5 days a week that he would like."

P_1 "I think my own children, I'd have been more um, probably would start particularly now, be, start being more assertive about him having different foods, different fruit and vegetables really (aha) yeah. He likes you know, he likes cheese, eggs, peanut butter, bread you know all the sort of quite

what you might call normal, ordinary things but yeah I'd want him to, I'd want to encourage him to eat as wide a variety of things as possible (aha) I think, yeah, but I don't feel as if that's my, a priority for me because I'm just looking after him, every week"

P_2 "P: I do what he tells me (laughs), that wasn't the answer [both laugh] right, ok, several ways really (aha); obviously I talk to my grandson's mum about what he likes, what he doesn't like...if I did beans on toast every time he came, that is easy because I know he likes it and it is easy (yeah). So I try not to do that all the time -laughs- he is only here one day a week so it's not a big deal

Recipes

P_2 "I mean we've always cooked a lot and you know we have lots of home cooked meals and things like that"

P_9 "I might think oh it would be lovely to make them lots of homemade delicious things, but I actually don't get too worked up about that now. I'd probably be more worked up about that as a parent when I was trying to feed the children"

P_12 "we always did some baking so he would make buns but erm...that's not so good in some senses but we enjoyed it...I mean he loves baking and licking the bowl out and stuff like that. He loves doing all of that."

P_7 "I mean we do baking so I suppose that has, is treaty but not giving all these sweetie things really."

Fussiness

P_1 "I think maybe all two year olds do (have fussy tendencies) so I'm not worried about that, yeah [both laugh] I think yeah that's what, that's what almost like being two, two is about you know, finding what you like and then using what you like to get what you want and you know experimenting with all those -laughs- kinds of things (yeah-laughs)"

P_2 "don't know but there is sometimes we'll do a meal, particularly if we do a main meal and we'll think he'll love this and he's not that interested in it or his tastes change over time

P_9 "Erm and with the fourth one, the fussy one, erm I don't particularly worry about that, to be honest, really because I just put in front of him what I'm going to put in front of him."

Preference for written information

P_2 "For myself, it would be probably a website and because at the end of the day... we're educated enough around these things to find information and access information. So it would be websites for me and it wouldn't particularly, I don't want any person to person support because I don't need it, it wouldn't be apps because I don't need another app sitting on my phone I'd rather just go on a website yeah."

P_7 "In a written form, I'd want them to send me the article or whatever it was, the guidance and I'd pick it up on the email, that's how I'd want to get it."

P_8 "Er Well if they were my children it's different to how I am as a grandparent, as a grandparent I would like it in paper form, because I like to sit down, read it, digest it. I will read it on internet but I do like things in paper form that I can refer back to so I would want a package, an advice pack from maybe erm Health service"

Mixed attitude to face

to face

P_5 "I think I, I am a person person, so I think it would be nice if there was a group set up"

P_9 "I wouldn't want to join a group or, there would be no reason for me, I've got enough support with you know with people that I'm directly involved with if I want to talk about something"

P_7 "Well definitely face to face sessions I think is a waste of people's time; I can look at, I can read"

P_11 "I wouldn't just join a group for the sake of it. Somebody would have to tell me I was doing a bad job and could benefit from it, rather than me just joining it for the sake of it."

Attitude towards
professionals

P_6 "Um, someone who's already got children I think yeah, because I think, I always remember when, completely non-food related but I always remember when my children were little and the Health Visitor coming round and 'you should do this' and 'you should do that' but she'd never had children of her own, she were going from a text book. I'd rather hear it from someone who's done it."

P_5 "Um, ordinary people, not specialists because you know specialists have these wonderful ideas and 'oh you should provide this, this, this and this' but in real life it isn't ... When I think you have a specialist organising it and being there, it's too formal, you feel that you can always say what you want because you want to make it sound as though what you're doing is what they're telling you to do."

P_1 "I suppose a, like a I don't know what the right title would be but like a dietary, you know I know there's nurses, doctors, specialists who deal in nutrition and diet you know dietary which you could access through your doctor's surgery, so I presume you know there's specialist ones that deal with children so, yeah, somebody like that."

P_2 "I would trust government/NHS for accurate information. I just don't think you need a plethora of information from everybody and everybody, I think sometimes government/NHS ought to be the key to be able to look at some information you know?"n,

P_11 "Evidenced based. Quite happily. I haven't got the monopoly on good feeding, but if somebody said this would work better, or a brochure or something from the health workers then I'd go for that straight away why wouldn't I"

Parents as information
sources

P_11 "And if the information came from there via the parents to me that would be good as well"

P_4 "But if she (the grandchild's mother) came to me and said oh actually you know, a really silly example, if she said to me actually you know, you have to give two year olds tuna three times a week otherwise it will affect their brain development and I want you to do those then I would"

P_8 "But it's mostly I think, what's influenced me mostly is my daughter-in-laws, saying what they eat, especially the one that started with the baby led weaning because none of the others in family had never done it it were like woah what you doing you don't give babies chunks. But they've come on leaps and bounds so they've really guided me on a different path. So that's the path I'm on now."

P_6 "so she's very aware of nutrition... if I've ever been stumped on anything I've just asked my daughter. I've never, I've never looked anything up on line in that regard because every child's different"

P_3 "Well there was informally things was er from my daughter, so we were following her lead and I think she's read every book under the sun about childcare, she's gone to all the parenting classes, all the healthy eating classes, anything and everything that Sure Start have put on and she's handed me leaflets and things, this is what we're doing."

6.5 Discussion

There were two aims to this study; the first was to explore the factors that might influence UK grandparents' engagement with nutritional support in feeding their preschool aged grandchildren and the second was to understand the preferences grandparents might have for such nutritional support. We found that grandparents may be a challenging group to engage as they may have a low level of interest and readiness in seeking guidance for feeding their preschool aged grandchildren. Nevertheless, grandparents voiced a willingness to learn new information and an eagerness to provide a healthy diet to their grandchildren. Whilst grandparents expressed a preference for written information they also frequently spoke of learning from their grandchildren's parents. This suggests the potential for using an indirect approach to relay best practice recommendations to them.

One of the key barriers to engaging grandparents in improving early childhood nutrition will be overcoming grandparent's perceptions that nutritional support is unnecessary for them. They expressed confidence that what they were providing was appropriate and nutritious, maintaining that they had strong nutritional knowledge, which was frequently used as a reason for not requiring any nutritional support. Similar findings have been documented in a sample of Australian grandparents who felt they didn't require support in feeding their 1-5 year old grandchildren because they perceived themselves as having high nutritional efficacy⁽⁴⁰⁰⁾. In our study, grandparents indicated that they'd gained this knowledge from parenting, work and experiences through life, often recalling how they knew more as grandparents than they did as parents. Eli *et al.* 2017 documented similar findings in grandparents in the USA ⁽²⁵⁷⁾. Regardless of this, many grandparents were unaware of specific feeding guidance for preschool

aged children or couldn't recall any details of guidance they were aware of and grandparents nutritional knowledge may still need updating⁽³⁹⁶⁾. Due to the qualitative methodology adopted for the present study, nutritional knowledge was not measured empirically and therefore it is unclear whether grandparents perceived nutritional knowledge corresponds to actual nutritional knowledge. Additionally, whether nutritional knowledge relates to healthful feeding in grandparents is unknown. In a study of 287 parents of preschool children, the nutritional knowledge of parents was not significantly associated with either preschool children's nutritional adequacy or their diet quality⁽⁴⁰¹⁾. Considering that UK grandparents are providing meals high in saturated fat and sodium and providing below recommended amounts of fruit and vegetables ⁽⁴⁰²⁾ it may be necessary to persuade grandparents that they would benefit from further nutritional support related specifically to feeding preschool aged children.

Encouragingly, the results demonstrate that grandparents were keen to help their grandchildren develop positive relationships with food and they used feeding practices that can positively impact upon children's eating. This indicates that grandparents have a desire to encourage healthy eating in their grandchildren and may respond positively to support that helps them do so. However, because grandparents are already using these positive practices, this may contribute to their perception that they do not require any further support. Nevertheless, grandparents expressed a willingness to learn new information and discussed how they would be willing to enact upon any guidance they might receive. Grandparents wanted to do what was best for their grandchildren suggesting that they could be an amenable group to engage.

Nevertheless, grandparents described using a child-centered approach to feeding whereby their grandchildren's likes and dislikes had a strong influence on the food they provided. This means that if guidance were to contradict their grandchildren's preferences and choices, grandparents may find it challenging to adhere to. Grandparents also encountered few problems in feeding their grandchildren and consequently may be less likely to seek out and engage with support or guidance.

Grandparents also held expectations of their role including how a grandparent should behave around food and their role as a secondary care provider, both of which may reduce the likelihood of them engaging with nutritional support. For instance, grandparents had an entrenched belief that being indulgent was "a grandma's prerogative". This deep-rooted idea may be a difficult attitude to change and may act as a barrier to encouraging positive changes in grandparents' food provision, particularly as parents may reinforce these role perceptions. Grandparents indulgent behavior has been well documented in the literature ⁽³¹¹⁾ and may be a tool to express love or create a special relationship with their grandchildren⁽²⁷²⁾. However, in our study there seemed to be a dissonance within grandparents' practices. Many who "indulged" their grandchildren with sweet food items also spoke strongly of not "spoiling with food". This suggests that grandparents may define spoiling differently to indulging. It may also suggest a cognitive dissonance whereby their beliefs contradict their behavior ⁽²⁷¹⁾. Nevertheless, it may be necessary to break down or divert these role 'ideologies'. Grandparents should be encouraged to indulge with non-food items and a social norms approach could be utilized to help modify the perceived norm that all grandparents are indulgent.

Grandparents also set themselves lower feeding expectations because of their role as a secondary carer who provide care only on a part time basis. This 'relaxed' feeding approach may hinder grandparents' engagement with and perceived need for feeding support. This division of responsibility has been documented previously ^(272,403) and may allow grandparents to reduce their levels of responsibility and authority for their grandchildren's nutritional wellbeing ⁽⁴⁰³⁾. It may be useful to educate grandparents on the importance of the early years in the formation of eating habits and preferences and emphasize the impact that even one day a week can have on young children's eating behaviors. Promisingly, not all grandparents held this attitude with many aligning their feeding behaviours with parental approaches, something which has been seen in other recent studies ^(272,402). In the present study a few grandparents spoke of separating the instances from when they were a childcare provider to when they were looking after their grandchildren as 'a grandparent' suggesting an acceptance of their responsibility for their grandchildren's nutritional wellbeing. Encouraging the distinction between the grandparental role and the role of childcare provider may be an important step in engaging grandparents with feeding support.

The findings also suggest that family influences could also limit grandparent's successful engagement with support. For instance, grandparents often spoke of having parental approval for their feeding behaviours. This was particularly salient for the provision of discretionary food items, whereby grandparents believed they had parental acceptance for their indulgent behaviour. In contrast, previously reported interviews with parents have often found parents disapproving of grandparents methods and provision of such items and documented it as one of the main sources

of disagreement ^(259,263,392,393). Although grandparents didn't mention this as a source of disagreement, if grandparents believe that they have parental approval for their feeding behaviours they may be less likely to perceive a need to change. It may be advantageous to encourage open dialogues and honesty across generations to help grandparents realise the potential changes they could make, particularly as grandparents are motivated to comply with parental feeding rules and practices^(271,393). Nevertheless, this would require a degree of sensitivity as parents rely on grandparents for childcare and wouldn't want to jeopardise this ⁽³⁹³⁾. Moreover, considering the complexity of the family food system and the influence of family beliefs and values it may be necessary to adopt a whole family approach that intervenes at different levels of the family system and incorporates both parents and grandparents. It will also be important to consider the home environment where grandparents are providing care. Grandparents may look after their grandchildren in their grandchildren's homes where they may have very little control over the availability and accessibility of food. Recognizing the significance of the home environment in shaping children's eating habits⁽⁴⁰⁴⁾ further emphasizes the necessity of adopting a holistic family approach.

This study also explored grandparents' preferences towards guidance for feeding their preschool aged grandchildren. Very few potential topic areas were suggested by grandparents and when asked to reflect on any feeding difficulties they encountered, only a few difficulties were mentioned with limited consistency across grandparents. Nevertheless, potential resources could include portion size guidance, snack suggestions and strategies and games to introduce new foods. Although food-

fussiness was mentioned frequently, grandparents didn't see this as problematic, often because they catered to their grandchildren's likes and dislikes and fed them similar meals each week. Not only is this in contrast to parents who find picky eating a source of frustration and stress ⁽⁴⁰⁵⁾ but this finding also conflicts with a study of Australian grandparents who discussed wanting tips and help to manage food fussiness with their grandchildren aged 3-12 years old⁽⁴⁰⁶⁾. Nevertheless, it may be helpful to encourage grandparents to provide variety and offer them recipes and serving suggestions that promote the consumption of a varied diet. Healthy baking recipes may also be beneficial as many grandparents spoke of baking frequently with their grandchildren. To inform the content of feeding guidance for grandparents further, studies evaluating grandparents feeding practices, styles and dietary provision ^(184,402) should be utilized.

Grandparents expressed a clear preference for written communication, with many conveying a strong disinclination for face to face sessions. Whether grandparents would prefer information in email form, on a website, in a leaflet or in a book was unclear and multiple methods of communication may be necessary to target a wider audience of care-providing grandparents. Although formal sources of information were often regarded the most trustworthy, parents were a principal source of nutritional knowledge. This is unsurprising considering that friends and family are an important source of health information⁽⁴⁰⁷⁾. Grandparents spoke favourably of receiving information from their grandchildren's parents, often providing examples of what they had previously learned this way. Positive interactions were also described with daughters-in-law, even though this can be a difficult relationship to manage ⁽⁴⁰⁸⁾. This suggests that nutritional support may be best conveyed to grandparents via parents. Previous research has described the difficulty parents experience in persuading

grandparents to replace discretionary food treats with fruit or activities ⁽³⁹²⁾ and the constant battle they have with grandparents over their food provision⁽²⁶³⁾. To be successful an intervention may therefore need to be developed by a recognized source such as nutritionists, health visitors or the Office for Health Improvement and Disparities (OHID) but delivered to grandparents via parents. As parents have previously expressed the opinion that information for informal carers is better provided from an outside source than from them ⁽³⁹⁶⁾ further research is warranted to explore how effective communicating guidance via parents might be and how it would impact upon the parent-grandparent relationship.

6.5.1 Strengths and Limitations

To the authors knowledge this is the first study to explore the factors that might influence UK caregiving grandparents' engagement with guidance for feeding their preschool aged grandchildren and the preferences they have for the content and structure of such guidance. The qualitative method has provided a rich account of these issues and allowed suggestions to be provided for the most effective way to reach grandparents as well as how potential issues might be overcome. Nevertheless, several limitations are of note. The use of qualitative methods introduces the potential for researcher bias in the analysis, selection and interpretation of the data. To overcome this a second researcher independently coded a random selection of transcripts and the two researchers discussed the themes before coming to an agreement on the final themes. Furthermore, where applicable, contradictory data has been presented in the results section to present differing opinions. Second, although this study sought to inform the content of nutrition strategies, grandparents made few suggestions for this. One explanation for this is that the grandparents described

themselves as having high nutritional knowledge and therefore didn't require any additional help, another is the expressed ease at which this sample of grandparents found feeding their grandchildren. Nevertheless, by highlighting the factors that might influence grandparent's engagement with support, several content ideas have been suggested but future work could seek to explore the opinions of grandparents who find feeding their grandchildren challenging. Another limitation is the use of a convenience sampling method. The participants that volunteered may have had a prior interest in nutrition and consequently a higher than average level of nutritional knowledge, which may account for the belief that nutritional support was unnecessary. Additionally, a few participants spoke of professional experience working with children and using nutritional guidance. However, when asked to recall specific guidance few could, suggesting that although they had experience of working with children, nutrition was not the main focus of their roles. Nevertheless, the sample is not representative of the general population as most had attended higher education, were white British/Irish and were predominantly female. Although the latter is unsurprising considering that grandmothers are more involved in relationships with their grandchildren than grandfathers⁽⁴⁰⁹⁾, the views of caregiving grandfathers and ethnic differences are not fully accounted for. Further work is needed to explore potential gender and cultural differences.

A further sampling issue lies with the use of online recruitment, which could have resulted in the recruitment of a younger sample of grandparents, as older generations are more likely to be non-digital users than younger adults⁽²¹⁹⁾. The age range of grandparents in the study spanned from 57 to 71 suggesting that older grandparents were not well represented in the sample. Providing care for grandchildren in the early

years requires a certain level of energy, and it's possible that older grandparents may be less inclined to care for grandchildren this age. However, alternative recruitment methods, such as reaching out through toddler groups and utilizing poster advertisements, may have contributed to a more varied sample of grandparents in terms of age. Furthermore, recruiting at toddler groups situated in areas of deprivation or with higher non-white populations could have led to a more diverse participant pool. Another limitation lies in the use of income as a measure of socio-economic status, as it may not be suitable for the grandparent population. Many grandparents may be retired or own their homes outright, making income alone an insufficient indicator. A composite measure of socio-economic status that considers multiple factors might have provided a more comprehensive and indicative representation.

6.5.2 Conclusion

This study has found that engaging grandparents who care for their preschool aged grandchildren with early years feeding support may be a challenge. Grandparents expressed little need for help in their feeding, describing the ease at which they found feeding their grandchildren and the confidence they held in their provision and nutritional knowledge. Moreover, grandparents held expectations of themselves as both a grandparent and a secondary (part-time) care provider that may reduce their willingness to engage with advice. Regardless of this, grandparents expressed a willingness and openness to learn new information and a desire to provide a healthy diet to their grandchildren. This study has provided suggestions for how grandparents could be reached as well as their preferences on support content and format which

can help to inform intervention design. Future work should explore the feasibility and acceptability of using parents as a conduit for early years feeding guidance for grandparents.

6.6 Further exploration of the qualitative data

6.6.1 Introduction

The impact of grandparental care is not limited to that of the grandchild but also caring for grandchildren can have a significant impact on grandparent's health and wellbeing. For grandparents who don't live with their grandchildren, but provide care to them, this is often positive. Studies have found that caring for grandchildren is associated with increased cognitive function^(134,135), subjective wellbeing⁽⁴¹⁰⁾, mental health^(136–138), life satisfaction^(411–413), physical health^(137,139,140), happiness⁽¹³³⁾, quality of life⁽⁴¹⁴⁾ and longevity⁽¹⁴¹⁾. A recent review exploring the impact of looking after grandchildren on grandparents health found that 69% of 74 studies showed a positive impact of grandparental care on grandparents health and wellbeing⁽⁴¹⁵⁾. Even in the studies that showed a negative result this was frequently accompanied by positive effects on different health and wellbeing outcomes, or the negative effects were only on a subgroup of grandparents. Interestingly, no study looked at grandparents' dietary behaviours as an outcome, even though preventative health behaviours, such as healthful eating, were part of the inclusion criteria of the review. This is important as dietary improvements in grandparents could positively influence their outcomes for non-communicable diseases related to aging such as cardiovascular disease, diabetes and cancer risk^(416,417). For instance, in the UK, the average age that people become grandparents is 63⁽⁴¹⁸⁾, whilst the average age for people in England referred

to the diabetes prevention programme is 62. This demonstrates a clear overlap between the population of grandparents and those developing non-communicable diseases.

This chapter, alongside chapters 3 and 5, has demonstrated that grandparents use feeding practices that can positively influence their grandchildren's eating. For instance, they model healthy food intake and ensure that healthy foods are available and accessible for their grandchildren. By their very nature, these feeding practices have the potential to also positively influence grandparents' diets. For instance, by modelling healthy eating grandparents may consume more healthy foods and less unhealthy foods than they would otherwise if they weren't looking after their grandchildren. Similarly, by having healthy foods available and accessible for their grandchildren, grandparents may be more likely to purchase these foods and consume these healthy foods themselves than if they weren't caring for their grandchildren. Moreover, interventions addressing these feeding behaviours may inadvertently result in positive effects on grandparents' own diets through these pathways.

To explore these ideas further, additional questions were included in the semi-structured interviews in the previous study;

1. Has looking after your grandchild influenced your own eating habits? If so how?
2. Does this have an impact on days when you are not looking after your grandchild, if so please explain?
3. Does this also have an effect on the diet of anyone else?

4. If you were to change what you fed your grandchild (based on receiving guidance) how do you think this might influence your own diet?
5. Would this also impact upon the diet of anyone else? If so who?

These questions were included in the interview guide to consider two notions. First, grandparents' perception of how caring for their grandchildren might have influenced their own diets. Second to explore whether grandparents perceive that participating in an intervention to support their feeding behaviours with their grandchildren could affect their own dietary habits. This additional qualitative data obtained in the previous study, is now presented.

6.6.1.1 Impact of caring for Grandchildren

Grandparents perceived that providing regular care to their grandchildren influenced their own dietary intake. Some grandparents perceived it to have a positive influence as they ate fewer discretionary food items on the days that they cared for their grandchildren. They was because they wanted to model healthy eating,

“Well certainly on the days that she’s with us, I definitely stick to what she’s having, I mean I might have the same snack as her, but I don’t have the chocolate bars hidden in the back of the cupboard. I try be a role model”

“Probably I think I'm a bit more careful about what I eat when she's around... because you don't want them sort of picking bad habits up do you”

or because they were too busy to snack.

“Yeah it does actually yeah, now I think about it yes because well we're too busy to, so yes I'm too busy to snack on biscuits that he can't have”

Whereas others perceived it to have a negative impact on their eating as they described eating more snacks and discretionary food items on the days that they cared for their grandchildren, which they wouldn't usually have done.

“Oh yes, yeah, if he's having a freddo, why can't I have something?...if he's having a treat and we make it so 'ooh come on, let's sit down and eat this treat' so we're sat together, so yes, we tend to have one.”

For one grandparent, having food items specifically in the house for their grandchild meant that they ate more healthily.

“I do think I eat more healthy because we've bought the food, so it's there, you don't think to buy, oh a cucumber it'll go off before we've eaten it because there's only two of us in the house...so yeah I think I'm eating better, than prior to having my granddaughter. Erm so I think role modelling works both ways sometimes”

A few spoke about how it influenced what they ate for meals because they ate the same as their grandchildren when caring for them. As meal choice was often dictated by what their grandchildren liked, sometimes this meant that grandparents were eating more processed foods.

“Well it has an influence on what I want to cook and what I want to eat and I still eat the same diet myself, but it erm I do modify what I buy so it’s in tune with my grandson’s desires”

“Erm...my husband eats more fish finger sandwiches now than he used to”

One grandparent described how they ate lunch when with their grandchild but wouldn’t usually.

“If I didn’t have her in my house at lunchtime I probably wouldn’t stop and have a lunch, I might have something on the go or not have something till 2 or 3 o’clock in afternoon”

Others only perceived very minor changes to their diets. For instance, they spoke of how they amended the level of spice added to a meal when caring for their grandchildren. Conversely, some grandparents perceived that the effects of caregiving on diets extended beyond themselves. They elaborated on how caring for their preschool aged grandchildren also influenced other household members including siblings and husbands/wives.

“so the impact is he (grandfather) eats healthier on my granddaughter days”

Certain grandparents held the perception that caring for their grandchildren had no impact on their diets. They expressed that they simply offered their grandchildren the same food available in their homes, without making any dietary alterations, as the provided meals were consistent with their own eating habits.

“No. I carry on exactly the same. The cereal I get is what I eat, so when she comes she has Shreddies that's what they have because I have it. So yeah, it's the same.”

“No not really because they, we'll still eat the sorts of things we normally eat erm they, erm, all of them would be offered normal family foods”

6.6.1.2 Impact of guidance

When questioned about the potential impact of altering their grandchildren's diet based on guidance, grandparents provided mixed responses regarding their anticipated impact on their own or others' diets. Some grandparents mentioned the possibility of adjusting their own diets after receiving nutritional advice for their preschool-aged grandchildren.

“Erm, if there was, yeah, it does make you think (aha) definitely, so, yeah. So for example, if there's advice, say if there was advice about sugar free fizzy drinks (aha) for my grandson, I would also and have done actually thought oh, perhaps they're not a great idea at all”

Grandparents described how these changes could result from changes in food purchasing and food availability in the house

“Erm....I suppose it might erm in that if I had bought something in especially, it would depend what it was, but if I'd bought something in especially for them I can imagine that we might then end up eating some of that”

“Well I suppose if I made an assured effort to be really healthy, then I'd have to get rid of all the things like the snacks that are in the snack box... So I probably would, if I got rid of all that it would change those things for me, it would make me eat more healthy”

Another spoke about how engaging with children's eating guidance in the past had improved their diets and increased their awareness of portion sizes.

“It made me a bit more aware I think. You get into a rut, the same old same old, whereas I do eat a lot more salad, well cucumber on the sandwiches and things so erm I think just little changes...I think it's kick started a little bit of erm yeah and I'm a bit more aware of portion control and stuff”

Whereas others believed that engaging with nutritional support wouldn't affect their diets. They asserted that they would continue to consume the foods of their choice when not caring for their grandchildren. Some believed that they already consumed a healthy diet, indicating no need to alter their eating habits based upon dietary advice for their preschool aged grandchildren.

“I don't think it would to be quite honest. I mean I know what I like, and I would, if information said I could do better I would end up eating what I want at a different time”

“I don't think so at all because we're, er...you know as far as I'm concerned it's just simple eating, we just eat simply and good things you know we just eat the

simple things that make you healthy and make you feel alive you know it's as simple as that really"

6.6.2 Discussion

Overall, the findings indicate that caring for preschool aged grandchildren could influence grandparents own diets, in both positive and negative ways. For instance, some grandparents spoke about making purposeful changes to their diets to promote healthful eating in their preschool aged grandchildren whereas others consumed more discretionary food items and processed foods as a consequence of providing part time care. These results are in line with what has been found previously, in that caring for grandchildren can impact upon grandparents health and wellbeing ^(133–141,410–414). Grandparents were less convinced that engaging with guidance would impact upon their own diets. Whilst some believed it would influence them, others were of the opinion that it wouldn't. Nevertheless, considering that some grandparents thought that changes could occur to their diets from engaging with guidance, the benefits of an early years dietary intervention may go beyond that of the pre-school children targeted and further research is needed to explore this.

Introduction to chapter 7

Across the first 6 chapters there has been an exploration of the influence that grandparents can have on grandchildren's diets. This has emphasised the potential benefits of an early year's nutrition intervention targeting grandparents on children's dietary outcomes (and potentially weight outcomes.) The previous chapter (chapter 6) then examined the barriers and facilitators to engaging grandparents with an early year's nutrition intervention. It provided the foundations for the design of a future intervention by considering the content that grandparents would find beneficial and the format that would be most preferable to them. These results could therefore facilitate more successful engagement of grandparents if such recommendations were followed in future intervention design. The previous chapter also suggested that an intervention supporting grandparents' feeding behaviours could have positive effects that extend to grandparents' own diets. However this is based only on qualitative evidence capturing grandparents perceived impact from a hypothetical intervention and more empirical evidence is needed to confirm this. In chapter 3 it was found that no early years feeding strategies targeting grandparents have been designed or evaluated, let alone one that captured grandparent outcomes. Whether interventions aimed at grandparents can impact upon grandparents' dietary health therefore remains unknown.

In this chapter I therefore draw on the extensive literature with parents to explore if there is evidence of spillover effects from dietary interventions targeting parents of preschool aged children. I present a rapid review of the literature which considers what

spillover outcomes have been captured from evaluations of family based early childhood obesity prevention strategies, who have they been captured for and the magnitude of the effect. In an additional section the detailed implications of these findings for policy and intervention design are discussed. This is followed by an exploration of the transferability of these results to interventions targeting grandparents.

This chapter is presented in a mix of traditional thesis and publication format. Section 1 introduces the chapter, section 2 is presented in publication format in preparation for submission to a scientific journal. Section 3 and 4 are presented in traditional thesis format. Two co-authors contributed to the work detailed in section 2; Penny Breeze and Samantha Caton. Colette Marr conceived the idea for the study, designed the search, carried out the study selection and data extraction and produced the original draft of the manuscript. Samantha Caton and Penny Breeze supervised and reviewed the work and all authors critically revised the paper.

7 Chapter 7: Grandparent health outcomes from an early years' nutrition intervention

7.1 Section 1. Introduction

Chapters 4 to 6 have demonstrated that grandparents may benefit from feeding support when caring for their preschool aged grandchildren. Specifically, the importance of feeding practices have been demonstrated and such behaviours (in parents) are often targeted within interventions designed to improve early years nutrition. Typically, within such interventions, caregivers are encouraged to increase the availability and accessibility of healthy food and to model healthy eating. These changes could therefore impact upon the home food environment for the caregiver themselves. It is therefore unsurprising that In the previous chapter, interviews with grandparents revealed their belief that engaging with nutritional guidance for their preschool-aged grandchildren could influence their own dietary habits. This could be even more likely. considering that grandparents didn't acknowledge any gaps in their nutritional understanding, suggesting that nutritional education could benefit both grandchildren and grandparents. If there are unintended improvements in grandparents' dietary outcomes from an intervention designed to improve the eating habits of preschool aged children this has important implications for both policy and the design and evaluation of future interventions. However, considering the speculative nature of the evidence presented in the previous chapter, there is a need to explore any possible unintentional outcomes more empirically.

The most optimal approach to do so would be to conduct a randomized controlled trial involving an early years feeding intervention for grandparents, capturing both grandparental and child outcomes. However, it is worth noting that trials are resource-intensive and time-consuming, and they exceed the scope of this research. While evidence may exist from prior intervention studies, the systematic mixed methods review presented in chapter 3 found no intervention studies specifically addressing grandparent's food provision to preschool aged children ⁽³¹¹⁾. Nevertheless, the wealth of literature focusing on interventions for parents could be used to demonstrate the potential impact that an early childhood feeding intervention for grandparents can have on care providing grandparents.

In the next section I present a rapid review of spillover effects from early childhood dietary obesity prevention strategies targeting parents in the hope that this can demonstrate how an early years dietary intervention for grandparents could impact upon grandparental dietary health. This will be used to establish if there are any further important factors (other than child weight/dietary outcomes) to consider when evaluating an early year's nutrition intervention aimed at grandparents.

Family based interventions also have the potential to influence other household members and grandparents may look after more than one than grandchild at a time. Consequently, the decision was taken to broaden the scope of the review and include parent and sibling outcomes so that wider potential family benefits could be investigated at the same time. Within the review, a brief overview of the policy implications of these spillover effects are presented however a more in-depth

discussion of this is provided afterwards in section 3 followed by a discussion of the transferability of the findings to grandparents in section 4.

7.2 Section 2. Spillover effects from early childhood dietary obesity prevention strategies: A rapid review

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7.2.1 Abstract

Interventions targeting early childhood obesity are often-family based, as such they have the potential to not only impact upon the target participants but also on other family members. Changes in outcomes for those not directly targeted in an intervention can be referred to as spillover effects. The aim of this rapid review was to explore the spillover effects from early childhood, dietary-based obesity prevention strategies. Medline, Web of Science and PsycInfo were searched in July 2020. 12 studies met the inclusion criteria and were included in the review. In most of the studies (n=11) the intervention targeted multiple health behaviours incorporating dietary components. Spillover effects were only captured for parents of children enrolled in an obesity prevention intervention. Dietary outcomes were the most frequently explored spillover effect, followed by weight-based outcomes. There were significant positive effects of early childhood obesity prevention strategies on parental fruit and vegetable intake. Results were mixed for spillover effects on parental sugar intake and dietary pattern scores. Of the five studies capturing parental weight outcomes only one study found significant positive changes in parental weight. Although spillover effects often accompanied significant changes to the weight or diet of the child targeted by the intervention, in three studies, spillover effects occurred irrespective of significant

positive changes in child outcomes. Obesity prevention strategies targeting children in the early years can also benefit other members of the family. Failure to capture spillover effects from early childhood obesity prevention strategies may underestimate intervention effectiveness and cost-effectiveness. Further work is needed to explore the spillover effects from early childhood obesity prevention strategies on other family members and caregivers, such as siblings and grandparents.

7.2.2 Introduction

Obesity prevention strategies have proven to be particularly effective at reducing obesity in young children aged 0-5 years old ⁽⁴¹⁹⁾. This is because these early years are a critical period in the development of dietary preferences and habits ^(29,420). Caregivers are the nutritional gatekeepers for children this age and, as such, it is the caregivers of young children who can implement changes ⁽⁴¹⁾. This means that interventions targeting early childhood obesity are often-family based. A family is an interconnected unit and a change in one element of the family can impact on another ⁽⁴²¹⁾, consequently child obesity prevention strategies have the potential to impact upon other family members and caregivers. This is particularly true for dietary interventions because dietary changes will likely involve changes to family food purchasing behaviours and food availability. Moreover, as caregiver modelling of healthy food and drink is often a key target behaviour in early childhood obesity prevention strategies ^(422,423), interventions targeting young children are even more likely to impact upon other family members. A positive impact on those not directly targeted in an intervention can be referred to as a spillover effect. Very few studies have explored the benefits of interventions targeting young children on other family members.

Evidence from childhood obesity *treatment* strategies suggests that positive effects of interventions can spillover to parents. For instance in a study of 1,125 children and adolescents enrolled in a childhood obesity treatment programme in Denmark, significant weight loss was observed in the children and adolescents as well as the parents of those participating ⁽⁴²⁴⁾. Likewise, in a community based participatory research study ⁽⁴²⁵⁾ seeking to prevent and reduce obesity in children aged 6-8 years through household, school and community environment changes, significant reductions were observed in parents BMI.

There are two main reasons why spillover effects are important. First, capturing the benefits of an intervention for only the target recipient ignores any positive impacts upon other recipients which can result in an underestimation of intervention effectiveness ⁽⁴²⁶⁾. And second, this can lead to an underestimation of the potential cost savings from an intervention and therefore can impact upon cost-effectiveness calculations, on which funding decisions are often made.

Nevertheless, spillover effects are not often captured within randomised controlled trials of early childhood obesity prevention strategies. Spillover effects are also rarely incorporated within economic evaluations even though it is recommended by bodies such as the National Institute for Health and Care Excellence (NICE) and the Second Panel on Cost-Effectiveness that these effects are included. A recent review found that within economic evaluations of childhood obesity prevention dietary interventions spillover effects were rarely included ⁽⁴²⁷⁾. Only one out of 26 studies identified in the review included spillover effects. In this study the productivity losses averted for parents whose children attended Shape Up Somerville; a community wide obesity

prevention initiative⁽⁴²⁸⁾ were included. No economic evaluation included the potential benefits of an intervention on caregiver's health outcomes. This is in part due to the distinct lack of these outcomes being collected in trial evaluations. Nevertheless, when conducting a model based economic evaluation of a trial, spillover effects can still be included if there is evidence of spillover effects from other studies. An understanding of the potential nature and magnitude of spillover effects for caregivers is therefore needed. This will help researchers to consider how spillover effects could be included in future cost-effectiveness evaluations ^(426,429) and provide evidence upon which future modelled spillover effects could be based.

The aim of the present study is to review the spillover effects from early childhood dietary obesity prevention strategies. The following questions will be addressed;

1. What spillover effect outcomes have been captured?
2. Who have they been captured for?
3. What is the effect size, if any?
4. Is there a link between child and spillover outcomes?

7.2.3 Method

A rapid review was conducted to explore the spillover effects of early childhood obesity prevention strategies with a dietary component. Like systematic reviews, rapid reviews use systematic and rigorous methods ⁽²⁰⁶⁾ but with minor modifications to allow the researcher to identify and review the literature on a specific topic within a limited timeframe ⁽⁴³⁰⁾. In this review these modifications included; limiting the scope of the review, using one reviewer for study selection and data extraction and not conducting a critical appraisal of the evidence ⁽⁴³⁰⁾. The scope of this review was limited in the

following ways 1) only focusing on obesity prevention strategies 2) only strategies targeting children aged 0-5 years old 3) only including family, home or community strategies with a dietary component.

The search was conducted in two stages. First, a preliminary search was conducted for texts containing the term spillover to explore how the construct had been previously represented in the literature. A systematic review was identified that conducted an analysis of the terms commonly used to describe spillover effects; identifying 15 key terms ⁽⁴³¹⁾. Using these terms as a basis, and incorporating any additional terms relevant to the field, a search strategy was developed in consultation with an information specialist at the University of Sheffield. The search strategy was piloted and refined and the final search strategy can be found in appendix 40. In July 2020 Medline, Web of Science and PsycInfo were searched with no limits applied to the publication year. The search strategy was based on three key concepts; the population, whereby terms were related to parent, caregiver, mother, family etc.; the intervention with terms relating to 1) the target e.g. child, preschool, infant, 2) the topic e.g. food, health etc., 3) the intervention itself e.g. strategy, program etc. and finally 4) the outcome with terms related to spillover effects e.g. parent outcome, secondary effect etc. A final search term was added to limit the results to studies related to obesity prevention to allow the review to be conducted in a rapid manner. After relevant studies were identified their reference lists were searched for any other potential articles. Where protocols were identified in the search that met the inclusion criteria, further searches were conducted to identify whether the full text had been published and these were included if they met the inclusion and exclusion criteria.

7.2.3.1 Study selection criteria

Title, abstract and full text screening was undertaken by the lead author (CM). Articles were included if they captured spill-over effects from an early childhood dietary obesity prevention strategy delivered to families in the home or community. Articles that met all of the inclusion criteria and none of the exclusion criteria (listed in table 25) were included in the review.

Table 25. Table of inclusion and exclusion criteria		
	Inclusion Criteria	Exclusion Criteria
Population	• Caregivers • Parents • Grandparents • Informal carers • Family members • Siblings	
Intervention	• Childhood obesity prevention strategies targeting 0-5-year old's with a dietary component • Family based interventions delivered in the community or home • Multi-component strategies e.g. including sedentary behavior and or physical activity were included as long as there was a dietary component	• Obesity treatment interventions • Interventions without a dietary component • Interventions targeting both the caregiver and the child • Interventions targeting child-care settings or schools
Comparator	• No criteria for comparator	• No criteria for comparator
Outcome	• Spillover outcomes from the intervention • Weight or dietary outcomes	

7.2.3.2 Data extraction

A data extraction tool was developed by the lead author (CM) containing elements specific to the research question. This included country, study aim, study design, participant characteristics (child and caregiver), intervention details, comparator, length of follow up, key child outcomes and spillover outcomes. The lead author (CM) completed data extraction for the review.

Results relevant to the dietary component of the intervention were synthesized in narrative form, addressing the aims of the review.

7.2.4 Results

7.2.4.1 Study Characteristics

736 studies were identified in the initial search, reducing to 495 studies after duplicates were removed. 29 studies were screened via full text and 12 studies met all of the inclusion criteria and none of the exclusion criteria and were included in the review. 7 of the studies were full randomized controlled trials ^(375,432–437), 3 were pilot randomized controlled trials ^(438–440) and one used an uncontrolled pre/post feasibility study design ⁽⁴⁴¹⁾. One of the studies was observational using pre and post data routinely collected from a program delivered in the community ⁽⁴²³⁾. The largest number of studies (n=5) were conducted in the USA ^(375,434,436,438,439), two studies were conducted in Canada ^(440,441), two in Australia ^(432,433) and one in the UK ⁽⁴²³⁾ and in Sweden ⁽⁴³⁷⁾. One study was conducted in a number of European countries including Belgium, Bulgaria, Germany, Greece, Poland and Spain ⁽⁴³⁵⁾. This review includes data from 9898 families with children aged 0-5 years old, although two studies also included children aged 6 ⁽⁴³⁴⁾ and aged 6 and 7 ⁽⁴⁴¹⁾. 11 studies reported collecting data from 4075 mothers ^(375,423,433,434,436–441) and six studies reported collecting data from 611 fathers ^(423,432,434,436,440,441).

In most of the studies (n=11) the intervention targeted multiple health behaviours incorporating dietary components alongside components to target other health behaviours such as physical activity and sedentary behaviour ^(375,423,432,433,435–441). In

one of the studies the intervention was solely dietary focused ⁽⁴³⁴⁾. Child outcomes included weight related outcomes (bmi z score, weight status, waist circumference, prevalence of overweight, fat mass) dietary outcomes (fruit and vegetable intake, sugar-sweetened beverage intake, unhealthy snack consumption, eating behaviours, fast-food intake, dietary intake, food habits and dietary patterns), physical activity levels, screen time and sleep. In the eight studies that captured child weight related outcomes ^(375,432,433,436–440) only one study found a significant effect of the intervention on child weight ⁽⁴⁴⁰⁾ although two studies reported a trend towards favourable weight outcomes ^(436,439). Of the 12 studies ^(375,423,432–441) that assessed children's dietary outcomes most of them found a significant effect of the intervention on dietary intake (n=7) ^(423,432–434,436,437,440). A table of study characteristics is provided in appendix 41 and full details of spillover outcomes can be found in table 26.

Table 26. Characteristics of spillover outcomes

Study Name	Date	Intervention	Spillover outcomes							
			Spillover collected for who	Spillover outcome	Dietary assessment method	Spillover dietary/weight outcomes	Positive Child Outcome Weight	Positive Spillover outcome weight	Positive Child outcome dietary	Positive Spillover outcome dietary
De La Haye	2019	65% of analytical sample received intervention. Home visiting programme for low income families with combined obesity prevention components (nutrition and lifestyle) - nutrition goals, eliminate SSB's, portion sizes, breastfeeding, healthy feeding practices, increase physical activity	Mothers	Mother bmi and weight status. Mothers consumption of fruit and veg and SSB's and juices. Mothers physical activity	Multi-pass dietary recalls	Compared to mothers in the control group, mothers in the intervention showed trends for greater weight loss (an average of 0.53 kg weight loss in the intervention vs. 0.0 kg in the control group) and declines in BMI; greater uptake of vegetable consumption (an avg increase of 0.5 daily servings vs. 0.1 daily servings in control); and less uptake of SSB (an average increase of 0.2 daily servings vs. increase of 0.9 daily servings in the control). There were negligible differences in mothers' fruit intake between study conditions, and the difference in daily steps could not be interpreted	No	Yes	Yes	Yes
Walsh	2014	Mothers took part in the Melbourne INFANT programme- 6 sessions delivered to first time	Fathers (mothers took part	Dietary intake (four dietary	FFQ	There were no sig differences between intervention fathers and	No	Not captured	Yes - some	No

		parents' groups. Intervention covered basic nutrition principles, parental modelling of eating, physical activity and sedentary behaviours, limiting sedentary behaviour and provision of opportunities for physical activity. Mothers were asked to share and discuss the provided resources to fathers and other carers of their child	in the intervention)	pattern scores; fruits; potatoes and veg; high-fat foods; high energy snacks and processed food), sedentary behaviour and physical activity		control for dietary pattern score, screen time or total physical activity			outcome s	
Lioret	2012	Mothers took part in the Melbourne INFANT programme- 6 sessions delivered to first time parents' groups. Intervention covered basic nutrition principles, parental modelling of eating, physical activity and sedentary behaviours, limiting sedentary behaviour and provision of opportunities for physical activity. Mothers were asked to share and discuss the provided resources to fathers and other carers of their child.	Mothers	Dietary intake (four dietary pattern scores; fruits; potatoes and veg; high-fat foods; high energy snacks and processed food), sedentary behaviour and physical activity	FFQ	Mothers in intervention had sig lower scores on high energy snack and processed foods (mean diffe -0.21 p=0.03) and high fat food scores (unadjusted mean diffe -0.25 p=0.004, adjusted p=0.005). No significant difference in fruit and vegetable pattern or cereals and sweet foods pattern.	No	Not captured	Yes - some outcome s	Yes - some outcome s
Doring	2016	Primrose - based on social cognitive theory and learning theory nurses used motivational interviewing and cognitive behavioural therapy to promote healthy food and physical activity habits in their children. Families took part in 9 sessions (1 group, 6 individual and 2 telephone sessions over 39 months). Parents formed goals	Mothers	Mothers bmi, food and physical activity habits, prevalence of overweight and waist circumference	FFQ validated using a food diary	Although no sig differences in mothers bmi, prevalence of overweight, waist circumference or physical activity there were sig differences in eating habits. Mothers in the intervention group consumed sig less French fries (mean diffe -0.33 times per week,	No	No	Yes	Yes - some outcome s

						p=0.01) and discretionary calories (mean dif -1.0, p=0.01). In right direction for other eating habits but not significant; frequency of fruit, vegetables, and fish, and a lower consumption frequency of sugared drinks.				
Haire-Joshu	2008	H5-KIDS- Parent educators deliver a standardized curriculum via at least five home visits, on-site group activities, newsletters and kid's resources e.g. storybooks. Provided annually to parents at the time of pregnancy until the youngest child in the home is 3 years of age (or 5 if underserved families). Based on social cognitive theory and an ecological framework. Targeting 1. intrapersonal environment of the parent (e.g., knowledge, FV servings), 2. interpersonal interactions between the parent and child (e.g., child-feeding practices, FV modelling) 3. the physical environment (e.g., FV availability in the home).	Mothers	fruit and veg intake	FFQ	Compared to control, mothers in the intervention group significantly improved intake of fruit (0.14 mean dif servings, p=0.04) and combined fruit and veg (0.20, p=0.05)	Not captured	Not captured	Yes - some outcomes	Yes

Ostbye	2012	KAN-DO intervention to promote healthy weight in preschool children. The intervention material was delivered via 8 monthly mailed packets followed by a 20-30-minute telephone conversation using motivational interviewing techniques. Kits included child activities and incentives. Topics included communication and stress management, parenting styles, routines, portion control, health food options, exercise guidelines and tips for behaviour change. Based on social cognitive theory it also emphasized parental role modelling.	Mothers	fruit and veg intake, ssb intake, sedentary time, weight, physical activity	Multiple pass 24-hour dietary recall	mothers in the intervention arm reduced sugary beverage intake sig more than mothers in the control arm (-5.78 oz vs. -2.24 oz; p=0.03), and the percentage eating 5 or more servings of fruits and vegetables a day increased (by 8.4% in intervention arm vs. 0.0% in the control arm; p=0.04). Change in other outcomes not sig. Exploratory analysis also conducted investigating effect of participation - Mothers who completed at least half of the possible 16 intervention contacts (completed coaching calls and returned postcards) showed a greater mean change in BMI than those who did not (-0.85 vs. -0.07; p=0.04).	No	Not in core analysis, but in exploratory by effect of participation	No	Yes

Willis	2016	HENRY - 8 weekly group sessions supporting parents with parenting skills, eating patterns, healthy eating physical activity and emotional wellbeing	Parents	food intake, physical activity	FFQ	The number of parents eating fruit and vegetables at least five times per day rose from 86 (14%) to 201 (33%) ($X^2(1) = 82.8, P < .001$). Frequency of consumption of fruit and vegetables increased ($M1=2.9, SD = 1.6; M2 = 3.7, SD = 1.5$); ($t(615) = 14.0, P < .001$). Parents reported consuming high fat and sugar foods sig less ($M1 = 2.7, SD = 1.6; M2 = 2.3, SD = 1.4$); ($t(606) = 5.4, P < .001$) Parents reported increased levels of physical activity ($Z = 6.2, P < .001$), with significantly more achieving the recommended level of >30 mins per day than at the start (401 (67.3%) vs 333 (55.6%); $X^2(1) = 24.1, P < .001$). Moreover, the number reporting >1 h per day was also significantly greater at the end of the programme (248 (41%) vs 198 (33%); $X^2(1) = 13.1, P < .001$).	Not captured	Not captured	Yes	Yes

Krystia	2019	Guelph Family Health Study Intervention - based on family systems theory and self-determination theory uses motivational interviewing and goal setting. Either 2 or 4 home visits by a health educator - about limiting SSB consumption, engaging in family physical activity, establishing sleep routines to increase child sleep duration, limiting the children's sedentary time, and having more family meals. Families also sent weekly emails tailored to behaviour change goal of the family and resources e.g. children's book.	Parents	Parental body composition - body mass, bmi, waist circumference, fat mass	N/A	For parents with a baseline bmi >25.0kg/m2 sig effect of 2health visit intervention on body mass at 6 months (-2.99, CI -5.85 to -0.14, p=0.04) and 18 months (-4.39, CI -7.57 to -1.21, p<0.01), bmi at 18 months (-1.44, CI -2.59 to -0.29, p = 0.01) and waist circumference at 6 months (-3.06, CI -5.82 to -0.30, p=0.03) and 18 months (-5.90, CI -9.30 to -2.50, p<0.01). For parents with a baseline bmi <25 kg/m2 sig effect of 2 health visit intervention on body mass (-1.49, CI -2.56 to -0.42, p<0.01) and bmi (-0.42, ci -0.77 to -0.08, p=0.02) at 6 months but no longer sig at 18 months. For the intervention arm involving 4 health visits only a significant effect on fat mass was seen at 6 months for healthy weight mothers (bmi<25) (-2.03, CI -3.94 to -0.12, p=0.04) but this was not significant at 18 months. There were also no sig effects for other outcomes. (Models adjusted for baseline age, sex, family household income and baseline body composition)	Yes	Yes-some outcomes	Yes - some outcomes	Not captured

Wilson	2016	PWT - parents working together. A workplace initiative combining parenting and weight related messaged - topics included child behaviour, knowing when children are full, sugar sweetened beverage intake, physical activity, screen time and sleep routines. Seven 30-minute sessions.	Parents	Sugar sweetened beverage intake, tv duration and sleep duration	FFQ	Slight decrease in sugar sweetened beverage consumption but not significant (change = -0.3 servings/day, p = 0.41). Sleep duration and tv duration remained similar.	Not captured	Not captured	No	No
Cloutier	2018	ECHO - early childhood obesity prevention program. Weekly 60-minute home visits for 2 months and biweekly NFN home visits (Nurturing families network). Intervention group received NFN + in addition to standard NFN they also received additional modules and support on breastfeeding, sugar sweetened beverages, introduction of solids and portion sizes, screen time, sleep, tummy time, soothing and improved maternal diet and physical activity. Used goal setting, self-monitoring, problem solving, tool kit e.g. sippy cup, play mat, coupons for fruits and vegetables, signposting to cooking classes, exercise classes and breastfeeding support resources.	mothers	fruit and vegetable intake	FFQ	No significant difference in mothers' fruit and vegetable intake between control and intervention at any follow up time point.	No	Not captured	No for dietary outcomes but yes for breastfeeding duration	No
Lambri nou	2018	Toy box intervention - targeting four behaviours drinking, snacking physical activity and sedentary behaviour. Covered four levels 1) availability of healthy snacks at kindergarten 2) children's daily consumption of healthy snacks 3) interactive classroom activities 4) two newsletters, two tip-cards and one poster for parents/caregivers with key messages on healthy	Parents	snack consumption	FFQ	No significant difference between parent's unhealthy snack consumption in intervention vs control (0.26 portions/day vs 0.25)	Not captured	Not captured	No	No

snacking. Level 1 and 2 were for a whole year, level 3 and 4 over six weeks.

Tomay ko	201 8	Healthy Child Strong Families 2 (HSCF2). Wellness Journey - 12 monthly mailed healthy lifestyle lessons, items and children's books addressing six areas. 1) fruit and vegetable, 2) sugar consumption 3) physical activity 4) screen time 5) sleep habits 6) adult stress. Supported by social media engagement - text messages and Facebook group. Printed educational lessons, supportive items e.g. recipes measuring cups, pedometers, games and a children's book.	Parents	BMI, diet pattern, fruit and vegetable intake, servings of sugar sweetened beverages. Readiness to change	FFQ	Parents in the intervention group had a significantly greater postintervention improvement in overall healthy diet pattern compared with the Safety Journey (+0.21 vs -0.005, $p=0.009$). Also, sig dif in mean change of fruit and vegetable consumption (+2.3 vs -1.9, $p=0.007$). No significant difference for sugar sweetened beverage consumption or BMI. Intervention parents had significant increase in readiness to change fruit and vegetable consumption compared with control (mean change 0.41 vs 0.16, $p=0.037$)	No	No	Yes - some outcomes	Yes - some outcomes

1. What spillover effects have been captured from early childhood dietary obesity prevention strategies?

When measuring spillover effects of early childhood obesity prevention strategies most of the studies captured the spillover effect on other's dietary intake. This included seven studies that captured fruit and vegetable intake ^(375,423,434,436–439), five that assessed sugar sweetened beverage intake ^(375,436,437,439,441), and three studies that assessed dietary patterns including an overall healthy dietary pattern ⁽⁴³⁶⁾ and patterns for fruits; potatoes and vegetables; high-fat foods and high energy snacks and processed foods ^(432,433). A few studies assessed intake of non-core food items, including snack consumption (n=1) ⁽⁴³⁵⁾, intake of high fat and high sugar foods (n=1) ⁽⁴²³⁾ and discretionary calorie intake (n=1) ⁽⁴³⁷⁾. Four studies also captured the spillover effects on non-target recipients' weight outcomes such as bmi, weight status, prevalence of overweight and waist circumference in addition to dietary intake ^(375,436,437,439). One study assessed the spillover effect on mothers weight outcomes alone exploring any changes in body mass, bmi, waist circumference and fat mass as a result of their child taking part in an obesity prevention strategy ⁽⁴⁴⁰⁾.

2. Who were spillover effects captured for

Spillover effects were predominantly captured for parents of the children enrolled in an obesity prevention intervention (n=12) ^(375,423,432–441). This included six studies that assessed spillover effects only in mothers ^(375,433,434,437–439) and one study that assessed spillover effects in fathers ⁽⁴³²⁾. In most of these studies either both parents (n=5) ^(423,435,436,440,441) or mothers (n=7) ^(375,432–434,437–439) participated in the intervention with their child. However the study assessing the spillover effects on fathers is particularly noteworthy as it was the mothers (and not the fathers) who engaged in the intervention

with their child ⁽⁴³²⁾. No studies captured spillover effects on siblings or other caregivers such as grandparents.

3. *What is the effect size of spillover outcomes?*

7.2.4.1.1 Weight Outcomes

Evidence for spillover effects on weight outcomes was limited and may only occur in subgroups of participants. Three of the studies collecting weight outcomes (n=5) found no significant changes in mother's BMI ^(375,433), prevalence of overweight or waist circumference of mothers ⁽⁴³³⁾ and bmi of parents ⁽⁴³⁶⁾ after participating in an obesity prevention intervention with their young child. In another study a trend towards greater weight loss was seen in mothers in the intervention group compared to the control group with an average of 0.53kg weight loss compared to 0.00kg respectively and declines in BMI score (mean change of -0.07 compared with -0.04) ⁽⁴³⁹⁾. However, this study was a feasibility study and the study was underpowered to detect significant changes, consequently all results are descriptive. In one study, even though no significant difference was found in maternal weight between intervention arms, exploratory analysis found significant differences based on intervention participation. Mothers who completed at least half of the intervention showed a greater mean change in BMI compared with those who did not (-0.85 vs. -0.07 respectively; p=0.04) ⁽³⁷⁵⁾. Interestingly, no significant differences were found in child weight outcomes in the exploratory analysis. Krystia and colleagues also conducted a sub group analysis, splitting the analysis by bmi to explore how the intervention may spillover to mothers differently depending upon their baseline weight status ⁽⁴⁴⁰⁾. At 18 months follow up, significant differences were found in body mass (mean difference -4.39, p<0.01), waist circumference (mean difference -5.90, p<0.01) and bmi (mean difference -1.44, p = 0.01) vs control for mothers with overweight or obesity (bmi >25). On the other hand,

for mothers of a healthy weight with a bmi below 25, even though significant differences were found at 6 months in body mass (-1.49, $p < 0.01$) and bmi (-0.42, $p = 0.02$), no significant differences remained at 18 months follow up ⁽⁴⁴⁰⁾.

7.2.4.1.2 Dietary Outcomes

Of the five studies that explored sugar sweetened beverage consumption as a spillover outcome, three studies found no significant change in mothers' ^(436,441) or parents' ⁽⁴³⁷⁾ sugar sweetened beverage consumption from participating in an early childhood obesity prevention program. In contrast, Ostbye and colleagues found that compared to the control group, mothers in the intervention group significantly reduced their daily sugar sweetened beverage intake (-5.78 oz vs -2.24 oz, $p = 0.03$) ⁽³⁷⁵⁾. Another study, albeit descriptive due to the small sample size, also found that mothers in the intervention group had a lower consumption of sugar sweetened beverages (0.2 daily servings) compared to those in the control group (0.9 daily servings) ⁽⁴³⁹⁾.

Significant fruit and vegetable spillover effects were more commonly seen, whereby of the seven papers that explored fruit and/or vegetable consumption, five found a positive spillover effect ^(375,423,434,436,439). For instance two papers looked at how an intervention could spill over onto the percentage of mothers ⁽³⁷⁵⁾, or parents ⁽⁴²³⁾ consuming the recommended 5 portions of fruit and vegetables per day. Ostbye and colleagues recorded an 8.4% increase in the percentage of mothers in the intervention group meeting the recommendations compared with a 0.0% increase in the control ($p = 0.04$) ⁽³⁷⁵⁾. Willis et al on the other hand found an increase from 14% to 33% meeting the recommendations in their pre/post-test feasibility design ⁽⁴²³⁾. Other studies found greater increases in mean daily intake of vegetables in mothers (mean difference 0.4) ⁽⁴³⁹⁾ and in fruit and vegetable intake in mothers (mean difference 0.14, $p = 0.05$) ⁽⁴³⁴⁾ and

parents (mean difference 0.4, $p=0.007$)⁽⁴³⁶⁾ assigned to the intervention group with their young child compared to those in the control. However, Doring and colleagues demonstrated no significant changes in mothers intake of fruit and vegetables from participating in an early childhood obesity prevention strategy⁽⁴³⁷⁾.

Three studies explored changes in dietary pattern scores from participating in an early childhood obesity prevention strategy^(432,433,436). In one study no changes were observed in fathers of children enrolled in an obesity prevention strategy for the following dietary patterns; fruits; potatoes and veg; high-fat foods; high energy snacks and processed food⁽⁴³²⁾. Lioret and colleagues found no significant difference in mother's scores on a fruit and vegetable dietary pattern or a cereals and sweet food pattern, but did find differences in mothers scores on a high energy snack and processed foods dietary pattern (mean difference -0.21 $p=0.03$) and a high fat food dietary pattern (unadjusted mean difference -0.25 $p=0.004$, adjusted $p=0.005$) when comparing changes between the intervention arm and control⁽⁴³³⁾. Similarly Tomayko et al found a significant difference in parental scores on an overall healthy diet pattern between the intervention and control group (+0.21 and -0.005 respectively, $p=0.009$)⁽⁴³⁶⁾.

Two studies looked at spillover effects on mothers'⁽⁴³⁷⁾ and parents'⁽⁴³⁵⁾ non-core food intake. For instance in one study, mothers in the intervention group (compared with control) consumed significantly less French fries (mean difference -0.33 times per week, $p=0.01$) and discretionary calories (mean dif -1.0, $p=0.01$) after participating in an early childhood obesity prevention strategy⁽⁴³⁷⁾. Another study looked at unhealthy snacking but found no significant spillover effect on parental unhealthy snack consumption⁽⁴³⁵⁾.

4. Is there a link between child and spillover outcomes?

In most of the studies there seemed to be some correlation between child outcomes and spillover outcomes. For instance in three studies, the early childhood obesity prevention intervention had no significant effect on child dietary outcomes and there were also no significant spillover dietary outcomes either ^(435,438,441). Similarly in six studies, where the intervention had a positive effect on child dietary outcomes there were also positive spillover dietary outcomes ^(423,433,434,436,437,439). The same was found for weight outcomes; whereby one study found a positive weight change in both the children taking part in the intervention and in their parents ⁽⁴⁴⁰⁾.

In some cases, spillover effects were observed in outcomes that saw no change in the children. For instance in one study, significant positive dietary outcomes were seen in parents for some dietary outcomes that were not found to change significantly in children ⁽⁴³⁶⁾. Ostbye et al found no significant dietary changes in children enrolled in the intervention but did observe significant positive changes in mother's diets and, in exploratory analysis, changes in some mother's weight outcomes ⁽³⁷⁵⁾. Likewise, another study found a positive weight change in mothers but an increase in weight for length z score for children enrolled in the obesity prevention intervention ⁽⁴³⁹⁾.

Only one study found significant changes in the children but no spillover effects and this was where the children exhibited positive dietary changes from taking part in an intervention but dietary changes were not demonstrated in fathers ⁽⁴³²⁾.

7.2.5 Discussion

The aim of this review was to explore the spillover effects from early childhood obesity prevention strategies. There are a few key notable findings. First, the effects of early childhood obesity prevention strategies can spillover to other family members and can impact upon both diet and weight. This means that intervention studies that fail to capture spillover effects may underestimate intervention effectiveness. Second, although spillover effects often accompany significant changes to the child's diet or weight whom the intervention is targeting, this is not always the case and spillover effects can happen irrespective of significant changes in child outcomes. Third, these changes have predominantly been observed in parents and consequently there is a paucity of data exploring spillover effects in other family members, such as siblings, grandparents, or other care providers.

Spillover effects may not happen for all individuals within a family equally. For instance, even though there is evidence for spillover effects occurring in mothers alone and for parents combined, only one study looked at fathers in isolation and found no evidence for spillover effects ⁽⁴³²⁾. Even though fathers spend more time with their children than ever before, mothers still take on the greatest share of childcare ⁽⁴⁴²⁾ and they play a key role in feeding the family, with greater responsibility for food purchasing and preparation ^(443–445). Interventions may therefore be more likely to influence mother's dietary intake or weight status than fathers. In the study assessing spillover effects in fathers, fathers did not engage in the intervention themselves, suggesting intervention engagement may also be necessary for spillover effects to occur. This is further supported by the findings of another study which conducted subgroup analysis by intervention participation and found that those mothers who engaged with the intervention to a greater extent experienced significantly more spillover effect than those who attended less than 50% ⁽³⁷⁵⁾. Nevertheless according to family systems theory,

families are not made up of independently functioning individuals, rather families are a system whereby a change in one element of a family e.g. child feeding, could benefit other family members ⁽⁴²¹⁾. Consequently, spillover effects could still occur in parents, regardless of whether they engaged with the intervention themselves but further research is needed to explore this.

Although few studies have been conducted previously in this field our results are in line with those that have. For instance, during a trial evaluation of a childhood obesity *prevention* strategy targeting children of an older age range (6-8 years old), and therefore outside of this reviews inclusion criteria, significant positive changes were seen in parental BMI ⁽⁴²⁵⁾. This review establishes that spillover effects can also occur from obesity prevention strategies targeting children in the early years. Nevertheless, this review revealed that most studies exploring spillover effects of early childhood obesity prevention strategies have captured dietary spillover outcomes rather than weight outcomes. This is not surprising considering that the follow-up period for intervention studies is often too short to capture significant changes in weight ⁽⁴⁴⁶⁾. However, there was some evidence that spillover effects on weight may be more likely to occur in parents with overweight or obesity. Changes to weight for parents with overweight and obesity at baseline have been documented previously in a childhood obesity treatment study ⁽⁴²⁴⁾ highlighting the necessity for sub group analysis by weight when exploring spillover effects in the future.

A key strength of this study is its novelty. To the authors knowledge, this is the first study to review the spillover effects of early childhood obesity prevention strategies. Although few studies have captured spillover effects within this domain, the results are important because they suggest that such spillover effects should be captured within intervention

study design. Nevertheless a few limitations are of note. This is a rapid review and although systematic methods were adopted during the searching, screening and data extraction processes, due to time and capacity constraints these processes were conducted by one researcher alone and therefore were not cross-checked for accuracy. Additionally, the studies included in the review have not been critically appraised and therefore validity or study bias has not been explored. Researchers may be more likely to report positive secondary outcomes when their primary outcomes were insignificant and therefore caution should be taken in interpreting these results. This review also only captures home and community based obesity prevention strategies, however other interventions such as those delivered in childcare or educational settings may also benefit the family, as information could still filter into the household ⁽⁴²⁹⁾. Although the focus of this review was on dietary based interventions, most of the interventions were multicomponent interventions also targeting physical activity and sedentary behaviours. Even though it is likely that spillover effects on caregivers' diets were due to the dietary components of the intervention the impact on weight cannot be solely attributed to this and further research should explore the mechanisms by which spillover effects occur. Doing so would gain a deeper understanding of what intervention elements have the biggest impact on caregivers. It is also worth noting that although the expertise of an information specialist was sought to design the most appropriate search there are some limitations of the search. Without using data-mining techniques the authors could not search the full text for relevant terms. As spillover effects were often captured secondary to the primary aims of the research there may have been instances when spillover effects were captured but were not detected. Nevertheless, without the availability of more advanced methods this review conducted a thorough search of the literature using a broad range of search terms to encapsulate as many studies as possible.

This review has highlighted several gaps in the literature. Most of the literature reviewed here captured spillover effects of early childhood obesity prevention strategies on parents. Parents are not the only care providers to young children. Other caregivers such as grandparents or childminders can be highly involved in the day to day care of children in the early years ⁽²³⁴⁾ and consequently are responsible for their feeding across the day. To this end, interventions targeting young children's dietary habits may also benefit other caregivers and this warrants further investigation. Moreover, no study in this review captured the spillover effects on other members of the household such as siblings or grandparents who live in the home. Considering changes can be seen in parental dietary intake it is highly likely that the dietary intake of other household members could be affected and should be explored in future research. Additionally, since there is limited evidence on the sustained nature of benefits from early childhood obesity prevention strategies ⁽⁴⁴⁷⁾ it will also be necessary to explore how long any spillover effects may also last. Finally, any future research exploring spillover effects on weight outcomes should consider sub group analysis by weight and by intervention engagement to ascertain how these factors may mediate spillover effects.

The results of this review have implications for policy; it highlights the need to capture the full benefits of early childhood obesity prevention strategies delivered in practice. The wider impact on parents should be considered when evaluating such services, and should be included in economic evaluations. An economic evaluation was only conducted for one of the interventions identified in this study and this was a within trial economic evaluation assessing the short-term cost-effectiveness of the intervention. Nevertheless, the benefits of the intervention on mothers eating habits were not included in the economic evaluation⁽⁴²⁶⁾. This is essential for ensuring funding decisions can be based on comprehensive evaluations that consider the full costs and benefits of

a strategy. Ignoring such benefits could lead to interventions being undervalued and therefore result in either disinvestment of services or decisions to not fund them in the first place.

7.2.6 Conclusion

Obesity prevention strategies targeting children in the early years can also benefit other members of the family. These benefits include significant changes in parent's diet as well as potential changes in their weight, regardless of any significant changes occurring in child outcomes. Capturing these wider benefits of early childhood obesity prevention strategies will ensure that interventions are not undervalued. Further work is needed to explore the spillover effects on other family members and caregivers such as siblings and grandparents and to investigate how spillover effects can be incorporated into an economic analyses of early childhood obesity prevention strategies and how doing so impacts upon funding decisions.

7.3 Section 3. Policy Implications

This review has provided evidence that the benefits of an early childhood obesity prevention strategy go beyond the target participants. This is an important finding to consider when designing an intervention to support grandparents feeding behaviours with their preschool aged grandchildren as benefits could also extend the grandparents themselves, which has implications for the consideration of whether commissioning such an intervention would be an effective use of resources. As discussed previously, the dietary intake of children in the UK falls short of recommendations and therefore interventions are needed to improve young children's dietary intake⁽²⁷⁾. However, the

same is also true for adults. In the UK, only 33% of adults under 65 and 40% of adults aged 65-74 years old are consuming the recommended 5 portions of fruit and vegetables per day⁽²⁷⁾ increasing their risk of heart disease, stroke and some cancers⁽⁴¹⁷⁾. Additionally UK adults are exceeding the recommended amount of free sugars⁽²⁷⁾, increasing their risk of tooth decay and excess energy intake⁽⁴¹⁷⁾, and failing to meet the recommended daily intake of fibre (30g) per day⁽²⁷⁾ putting them at greater risk of cardiovascular disease, bowel cancer and type 2 diabetes⁽⁴¹⁷⁾. Many UK adults are also exceeding the daily recommendations for saturated fatty acids⁽²⁷⁾. Evidently interventions to improve adult dietary intake are also needed and this review suggests that the diets of parents as well as children could be improved by early childhood obesity prevention dietary interventions. This is important as Public Health departments have a limited budget, with considerable competition for resources. Consequently, they are under increasing financial pressure to demonstrate that public resources are being spent in the most effective manner. If an intervention aimed at improving young children's diets also benefits their caregiver, these benefits need to be included in an evaluation of its costs and benefits to help commissioners decide if such an intervention would be an efficient use of resources.

Typically, economic evaluations are used as a framework for making a comparison between alternative methods of intervention and help guide decision makers in allocating resources. In the UK, within clinical health, economic evaluations are commonplace, however in comparison, there is very little economic evidence relating to public health interventions ⁽⁴⁴⁸⁾ and specifically childhood obesity interventions ⁽⁴⁴⁹⁾. Nevertheless, in recent years there has been a move towards economic evaluations for public health strategies, leading to a greater focus on what methods should be used for such analyses.

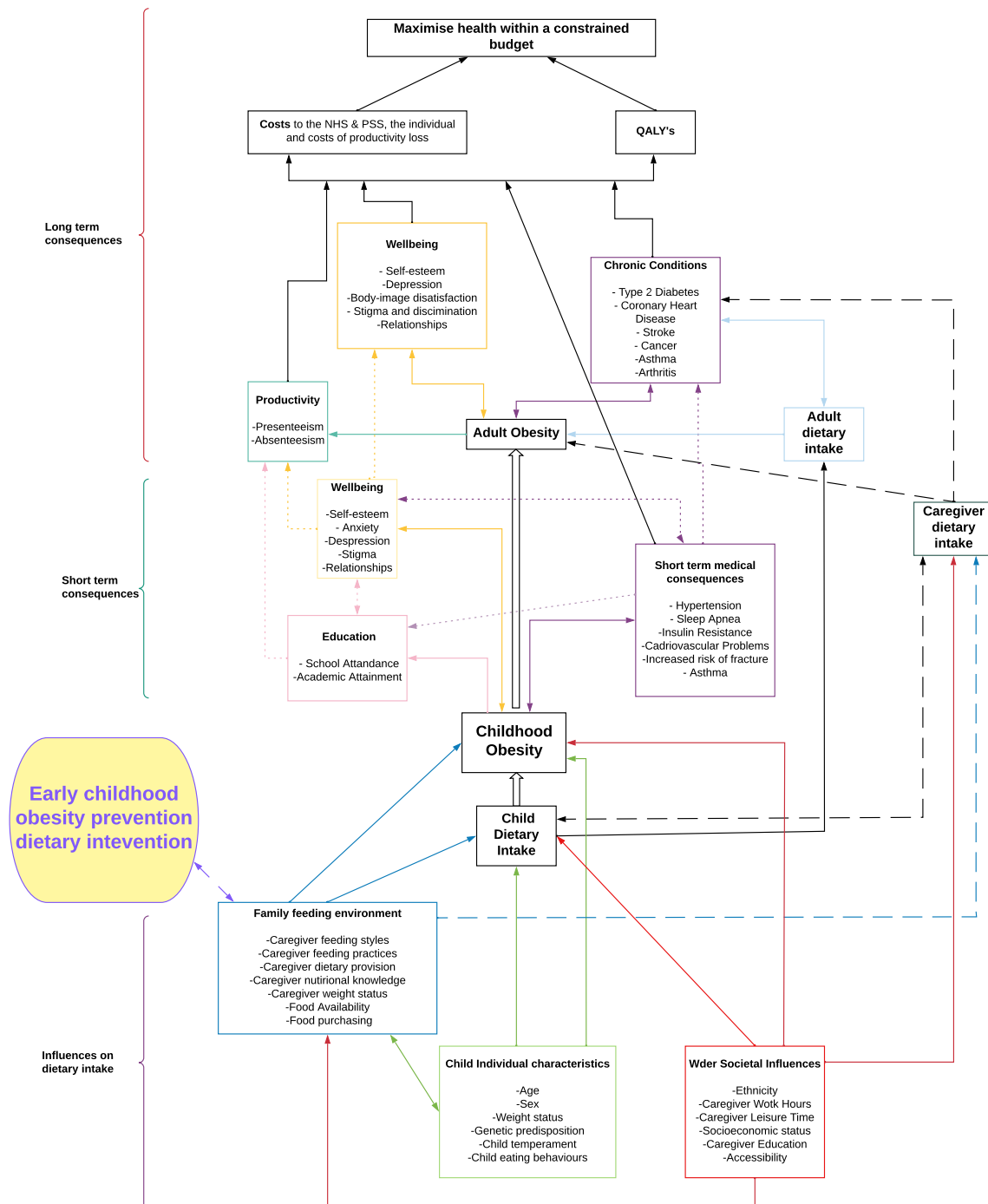
Traditionally, in health technology assessment, the focus of the evaluation is on the individual and the assumption is often made that patients exist independently and do not interact with others in the system. However, this framework ignores the complexity needed to assess public health interventions. The findings of this review demonstrate this further by suggesting that an individualised approach is not appropriate when assessing the cost-effectiveness of childhood obesity prevention strategies as the benefits go beyond the target participants. In interventions targeting early childhood obesity, the family-unit is integral and often involve changes to the home environment and feeding behaviours which, as demonstrated in the review, can benefit other members of the household.. Omitting this data from cost-effectiveness analyses may result in an underestimation of the cost-effectiveness of early childhood interventions⁽⁴²⁶⁾, leading to either disinvestment of an intervention or the decision to not fund it in the first place.

The results therefore highlight the need to carefully consider the boundaries of an economic evaluation, meaning what it does and doesn't include. This should be done based on a strong understanding of the problem and based on the researchers judgement of what is relevant and what can be excluded based on time and resource constraints⁽⁴⁵⁰⁾. This can be particularly challenging with complex public health problems such as childhood obesity. To demonstrate this further, and based on opportunistic discussions with key stakeholders¹ in the field I developed a conceptual model of an early childhood dietary obesity prevention intervention (see figure 6)

¹ Academics in the field of nutrition, psychology, public health and health economics and public health professionals

drawing on the knowledge gained from chapters one to six of this thesis as well as the rapid review presented in this chapter.

Figure 6. Conceptual Model of an Early Childhood Dietary Obesity Prevention Strategy



Although grandparents are the focus of this thesis the conceptual model is based on evidence of spillover effects on parents and the transferability to other caregivers such as grandparents can only be inferred. Nevertheless the term caregiver is used in the conceptual map to demonstrate this possibility. As demonstrated in chapter three and five the family environment is crucial in young children's eating. This doesn't just include dietary provision but also caregivers feeding practices and styles. Within the conceptual model, early childhood obesity prevention interventions target the family feeding environment and, as well as impacting upon children's outcomes, this review has demonstrated a potential positive influence on parents outcomes demonstrating a need to consider spillover effects in evaluations of early years interventions.

Although there is only limited evidence on the beneficial effects of an early childhood obesity prevention strategy on parent weight this may be due to the limited time frame for the evaluations. Consequently, the pathway between caregiver spillover effects and adult weight has still been included in the conceptual map. On the other hand, changes to parents' dietary intake were observed frequently, particularly changes to fruit and vegetable consumption. These changes to dietary intake, both for children and caregivers, can affect health outcomes either directly or indirectly via an obesity pathway. Differences in spillover effect outcomes based on parents' baseline weight status were also identified in the review and a bidirectional relationship between the intervention and the family feeding environment is presented.

The conceptual model demonstrates how both short- and long-term outcomes can occur from an early childhood obesity prevention strategy both within and outside of the healthcare sphere. Many benefits take time to materialise both for the child and the caregiver. This suggests that economic evaluations that consider only the short-term

outcomes from a trial, for both the child and caregiver, are not necessarily appropriate when evaluating childhood obesity prevention interventions. A recent economic evaluation of a childhood obesity prevention strategy for children aged 6-7 years old included the benefits on family members health related quality of life (hrqol) at 12 months post-intervention. In this study only a very small insignificant mean difference was found for family members hrqol after intervention ⁽⁴⁵¹⁾. Although this may reflect the futility of a health-related quality of life measure to pick up spillover effects from obesity prevention strategies for family members it also highlights the need to consider impacts on family members over the long term. Additionally, this demonstrates the need for researchers who are designing trials to consider whether data collection methods are going to help decision makers assess the value of the intervention. Although having data from long term trials would be optimal, conducting long term trials are both time consuming and expensive and statistical models can be used to explore the long-term costs and benefits of such an intervention. Nevertheless, when modelling long term costs and benefits an annual discount rate of 3.5% is typically applied to all costs and outcomes, as future costs and outcomes are valued less than present ones. For childhood interventions this can have a big impact on the value of future health gains ⁽⁴⁵²⁾ and can lead to them being disadvantaged in funding decisions. As the health gains of caregivers will occur more quickly, including outcomes for caregivers in a model may therefore be more persuasive to policy makers as return on investment occurs sooner.

To the authors knowledge no study has incorporated caregiver outcomes into a model evaluating the long-term costs and benefits of a children's obesity prevention strategy. Yet potential health benefits can occur from even small changes in diets. For instance, increasing fruit and vegetable consumption by one portion per day can reduce the risk of cardiovascular disease mortality by 4% and of cancer mortality by 3% ⁽⁴⁵³⁾.

Incorporating even small dietary changes for caregivers into economic evaluations of children's obesity prevention strategies could therefore have a big impact on healthcare costs over time. Nevertheless, doing so would require a consideration of the decay rate (whether these changes are maintained over time) for both child outcomes and spillover outcomes. Brown and colleagues demonstrated how the decay rate of child outcomes from obesity prevention strategies can have a substantial impact on cost-effectiveness results ^(454,455). How influential the decay rate of caregiver spillover effects would be is unknown. Previous work has demonstrated that economic evaluations of adult dietary interventions are highly sensitive to the decay rate used ⁽⁴⁵⁵⁾ suggesting that this may be true for caregiver spillover effects too. Either more long-term studies are needed to explore the decay rate of caregivers' outcomes or thorough sensitivity analyses is required to explore how this may influence cost-effectiveness.

The review demonstrated wide heterogeneity in outcomes collected for parents, including different weight-based outcomes and dietary outcomes. The type of outcomes collected for caregivers can pose a challenge when considering how to include these outcomes in cost-effectiveness analyses. Typically economic evaluations of childhood obesity prevention strategies use child weight to predict adult weight status and the associated health outcomes⁽⁴⁵⁶⁾. However, improvements in parent dietary intake were more likely than weight-based changes after participating in the interventions, particularly changes to fruit and vegetable intake. Changes in fruit and vegetable consumption can lead directly to changes in weight or, conversely, epidemiological modelling can be used to estimate potential health effects of dietary changes ⁽⁴⁵⁷⁾. Nevertheless, to use epidemiological modelling, caregiver outcomes need to be in a format which can be easily translated onto health outcomes. Outcomes such as grams of fruit and vegetables or portions of fruit and vegetables are therefore preferable to

dietary pattern scores. However, considering that changes were demonstrated across overall dietary patterns, only including fruit and vegetable intake in a model may fail to capture the full benefit of an intervention for caregivers. Furthermore, increasing fruit and vegetable intake may actually lead to an increase in calories and therefore weight gain if they were not eaten in substitution of less healthy options. It may be necessary to use food diaries in trials to capture differences in energy intake for caregivers to provide a summary outcome that could be easily translated into changes in caregiver weight. This would also overcome the methodological challenge of how to incorporate dietary outcomes for caregivers with weight outcomes for children. Furthermore, only considering one pathway such as that from weight status to health outcomes avoids any potential double counting of benefits that could occur if including both pathways between weight and health outcomes and diet and health outcomes.

The review also suggests that there may be individual differences in how parents respond to early childhood obesity prevention interventions. For example, in one study significant weight changes were found in parents with overweight and obesity but not for those with a healthy weight. In another, spillover effects were dependent on the level of parent engagement with the intervention. There are two implications for this. First it is important to consider individual differences in future trial evaluations, as not all caregivers will respond in the same way. Considering that a key aim of public health strategies is to reduce health inequalities, future work should also explore how spillover effects may differ for caregivers based on socioeconomic background. And second, as individual differences occur, individual based models may be required to simulate this heterogeneity when incorporating spillover effects into cost-effectiveness evaluations of interventions. Doing so will provide more of a realistic simulation of how an intervention can impact upon caregivers' long-term health outcomes and costs. Furthermore,

individual based models can be used to inform the impact of targeting an intervention to specific groups to see who will benefit from it the most.

The results of this rapid review also support the idea that a complex systems approach may be needed to evaluate early childhood obesity prevention strategies. In chapter 1 the ecological systems theory of childhood obesity is presented, describing the complex system in which childhood obesity occurs. It is unsurprising that interventions designed to prevent childhood obesity therefore also interact with the wider system in which it is delivered. This review has shown that changes for an individual within the family system can impact upon other agents in that system, demonstrating the need to move beyond evaluating just a single primary outcome. This is further highlighted in the conceptual model where a wide range of outcomes are presented for both the child and caregiver that don't all happen immediately. Within the complex systems approach the notion of "feedback" is described whereby a change reinforces or balances further change⁽⁴⁵⁸⁾. By changing the feeding environment for children, the diets of their family and caregivers can be impacted which can then lead to further changes to their health over the life course. Rather than considering a simple linear cause and effect model of an intervention a systems approach to obesity prevention strategies would consider these unintended and indirect effects ^(458,459).

7.4 Section 4. Conclusion

The principal aim of this chapter was to establish if there are any further important factors (other than child weight/dietary outcomes) to consider when evaluating an early year's nutrition intervention aimed at grandparents. The findings have demonstrated the importance of considering caregiver outcomes. In section 1 positive changes in parents' weight and diets were demonstrated to have occurred from participating in an early

childhood obesity prevention strategy. Considering that interventions designed for improving the feeding behaviours of grandparents may use similar approaches to ones designed for parents, the results indicate that spillover effects could potentially occur for grandparents from such an intervention. In section 3 the broader implications of this for policy were explored, demonstrating that changes to caregivers diets have the potential to lead to changes in weight, health outcomes, wellbeing and productivity, all of which can have significant cost saving implications.

Nevertheless, it is important to consider that the difference in roles between care-providing grandparents and parents could impact upon the significance of these findings. Grandparents only care for their grandchildren on a part time basis and spillovers for grandparents may depend on the amount of time that grandparents spend caring for their grandchild. Spillover effects may be greater for those grandparents that live in the same household as their grandchildren. For those that don't live in the same household, changes to behaviour may not be maintained on the days when they are not providing care to their grandchildren or when they stop caring for their grandchildren. This may result in very little impact on grandparents' health in the long term. Grandparents may also care for their grandchildren in their grandchild's home and therefore environmental changes to the availability and accessibility of healthy food will have less of an impact on grandparents dietary health. Chapter 6 demonstrated that grandparents also have different motivations to parents when feeding their grandchildren, for instance they may view their feeding as inconsequential or use food to create a bond with their grandchildren. This may limit their engagement with an early years nutrition intervention, which as identified in the review, could significantly alter the impact of an early years dietary intervention on grandparents. This demonstrates the need for further research to not only capture grandparental outcomes from an early

childhood obesity prevention strategy but also to explore any potential maintenance and decay of these outcomes and how different levels of grandparent involvement in childcare and level of engagement with support may influence the extent to which grandparents health can benefit. Furthermore it will be important to explore how any resulting changes to grandparents dietary health translates onto their long term health outcomes. Only then will we have a better understanding of the importance of considering outcomes for grandparents when evaluating early childhood obesity prevention strategies aimed at grandparents.

8 Chapter 8. General Discussion

8.1 Introduction

The early years have been established as a critical period in the development of eating habits and preferences. However preschool children in the UK are consuming insufficient amounts of fruit and vegetables and exceeding their recommended amounts of saturated fat, salt and added sugar. This is contributing to rising childhood obesity. Grandparents are often relied upon as regular childcare providers for children this age and in doing so, they become important providers of meals and snacks. Previous literature has demonstrated an association between grandparental care and overweight and obesity in young children but research into the feeding behaviours of grandparents is limited. The research described within this thesis seeks to expand on previous work by exploring the feeding behaviours of grandparents in detail, focusing on grandparents' dietary provision, feeding practices and styles when caring for their preschool aged grandchildren (aged 2-4 years). Through both quantitative and qualitative methods the research helps to determine whether grandparents are a key target in the prevention of early childhood obesity and considers grandparents unique preferences for intervention design. Furthermore, this research demonstrates the need to consider grandparent outcomes when evaluating an early year's obesity prevention strategy aimed at grandparents. The current chapter synthesises the research findings from chapter 3-7, discussing how the findings relate to the existing literature as well as the strengths and limitations of the research. This is followed by a discussion of the implications of this thesis for future research and practice.

8.2 Summary of Main Findings

The overarching aim of this thesis was to determine whether grandparents should be targeted to improve the diets of preschool aged children. In chapters 3-5 the feeding behaviours of grandparents were explored, beginning with a presentation of previously published research in the field, followed by an exploration of how NDNS data could be used to assess children's intake when under the care of grandparents. Following this, in chapter 5, a direct comparison was made between parent and grandparent feeding behaviours. The rest of the thesis was concerned with interventions for grandparents, exploring the potential barriers and facilitators to engaging grandparents, their preference towards feeding support and the potential impact an intervention could have on grandparent's own health outcomes. The key findings for each chapter will now be presented.

8.2.1 Chapter 3 Systematic Mixed Methods Review

The aim of the systematic mixed methods reviews presented in chapter 3 was to synthesise the evidence on grandparents' dietary provision, feeding practices and feeding styles when caring for their preschool aged grandchildren. The review demonstrated that research into grandparents' dietary provision is limited, often relying on qualitative evidence from parents. Of the data available, grandparents were described as providing large portion sizes, additional meals and promoting the consumption of foods high in salt, sugar and fat. Grandparents used feeding practices that were both positive and negative. For instance, they used coercive feeding practices that could negatively impact upon the diets of their grandchildren such as pressuring their grandchildren to eat or using food as a reward. However, they also used feeding

practices such as creating a healthy food environment, modelling healthy food intake and considering the preferences of their grandchildren, that promote healthy eating in children and foster autonomy and independence around food. Although none of the included studies used a validated tool to assess grandparents feeding styles the evidence suggested that grandparents were mostly indulgent with their preschool-aged grandchildren, catering to their needs and wants and placing few demands on their eating. Several gaps in the literature were demonstrated in the review including a need for quantitative data using validated tools to explore grandparents' dietary provision and feeding styles and a need to consider the amount of time that grandparents spend caring for their grandchildren in future analyses. Furthermore, a distinct lack of evidence on the feeding behaviours of UK grandparents was found.

8.2.2 Chapter 4 Analysis of the National Diet and Nutrition Survey

This study aimed to explore how the NDNS could be used to assess grandparental influence on the diets of preschool aged children by investigating the relationship between dietary intake of preschool children in the UK and accompanying adult/s. The results suggest that when preschool aged children are with wider family members they consume significantly poorer diets with larger and higher energy dense meals containing more energy, salt, added sugar, and saturated fat compared to when they are with their parents. However, when accompanied by wider family members children may also consume significantly more vegetables than when they are with their parents. Although the NDNS dataset did not contain specific details of who the wider family members were these results were consistent with the qualitative literature reviewed in chapter 3 suggesting that the wider family members could often have been grandparents. Nevertheless, the results indicated a need for further examination of grandparental dietary provision to their preschool aged grandchildren.

8.2.3 Chapter 5 A comparison between parent and grandparent feeding behaviours

This study aimed to explore the similarities and differences between parent and grandparent dietary provision, feeding practices and feeding styles to preschool-aged children. The secondary aim was to assess whether the feeding behaviours of grandparents differ according to the amount of time they spend caring for their grandchildren. The results suggest that the feeding behaviours of parents and grandparents who provide regular care to their grandchildren are similar. With both parents and grandparents' children were likely to exceed their recommended daily amounts of saturated fat and salt and fail to meet their recommended amounts of fruit and vegetables. However, both parents and grandparents used feeding practices that provide structure to children's eating and promote autonomy around food. In contrast both caregiver types scored lower on coercive feeding practices suggesting that parents and grandparents may be aware of the negative impact these practices can have on children's eating. No associations were found between caregiver type and feeding style and contrary to the results of the review over half of grandparents did not adopt an indulgent style of feeding. No associations were found between the amount of time grandparents spent caring for their grandchild and dietary provision, feeding practices or feeding styles.

8.2.4 Chapter 6 A qualitative insight into engaging grandparents to promote healthy eating in young children

Chapter 6 used qualitative methods to explore two aims. The first aim was to understand the factors that might influence grandparents' engagement with guidance for feeding their preschool aged grandchildren. The second was to explore grandparents' preferences towards such guidance. The interviews revealed that grandparents may be

a challenging group to engage. Although grandparents were eager to provide a healthy diet to their preschool aged grandchildren they perceived little need for feeding support. Their expectations of their role as a grandparent and as a secondary part-time care provider may also act as a barrier to engaging with support and providing an optimal diet. Nevertheless, grandparents discussed learning new information from their grandchild's parents and spoke about these interactions positively, highlighting a need to explore the feasibility and acceptability of relaying early years feeding guidance to grandparents via parents. The qualitative data also suggested that early years interventions targeting grandparents had the potential to benefit grandparents' own diets.

8.2.5 Chapter 7 Grandparent health outcomes from an early year's nutrition intervention

The aim of the last chapter was to establish if there are any further important factors (other than child weight/dietary outcomes) to consider when evaluating an early year's nutrition intervention aimed at grandparents. This was explored in a rapid review of spillover effects from early childhood obesity prevention strategies which demonstrated that family based nutrition interventions not only impact upon the target children but can also have a positive impact on caregivers outcomes. Significant positive effects on parents dietary intake were demonstrated, particularly their fruit and vegetable intake. Moreover, positive changes in parent outcomes happened irrespective of positive changes in child outcomes. While it can only be assumed that these findings can be applied to grandparents, it underscores the importance of taking into account the health outcomes of grandparents when assessing an early years nutrition intervention aimed at grandparents.

8.3 Integration of main findings

In this next section the main findings of the thesis are discussed and situated within the existing literature.

The main findings of this thesis are

1. Grandparents are important stakeholders in the promotion of healthy eating for young children and would benefit from education and support to improve the diets of preschool aged children in the UK
2. The feeding behaviours of grandparents who provide regular care to their grandchildren align with those of parents
3. Grandparents perceive little need for early years feeding support and will be a challenging group to engage
4. Early childhood obesity prevention strategies for grandparents could also benefit grandparent's health outcomes

8.3.1 Grandparents are important stakeholders in the promotion of healthy eating for young children and would benefit from education and support to improve the diets of preschool aged children in the UK

In support of previous research this thesis illustrates that grandparents are an important influence on the diets of preschool aged children. Although qualitative accounts from parents have documented the potential negative influence grandparents may have on children's eating ^(259,263,264,269–271,393), the systematic mixed methods review presented

in chapter 3 highlighted a distinct lack of empirical dietary data, particularly for the UK. The findings from this thesis therefore extend this knowledge base, providing quantitative evidence that the food and drinks served by grandparents to their preschool aged grandchildren may be contributing to the insufficient consumption of fruit and vegetables and the excessive intake of salt, added sugar and saturated fat of UK preschoolers. Not only does this demonstrate the need to include grandparents in policies and programs aimed at improving children's diets the findings also help to indicate what support grandparents might need.

Few studies ^(261,265) have considered how grandparents influence preschool aged children's fruit and vegetable consumption and of the studies that have been published none have been conducted in the UK. The findings from chapters 4 and 5 provide new evidence that grandparents are important stakeholders in UK preschool aged children's fruit and vegetable consumption. This suggests that grandparents would benefit from strategies to help increase preschool aged children's fruit and vegetable intake (chapters 4 and 5). Nevertheless, increasing young children's fruit and vegetable consumption can be challenging. During the preschool years, fussy eating and food neophobia are common traits that are known to effect children's fruit and vegetable intake and overall dietary variety ⁽⁴⁶⁰⁾. Previously, grandparents have described how their grandchildren's disliking for the taste of healthy snacks negatively impacted their offering of healthy snack items ⁽⁴⁶¹⁾. Children may need as many as 15 exposures to a new food to increase liking and consumption⁽⁴⁶²⁾. Considering that, in chapter 6 grandparents frequently provided only a limited range of foods to their grandchildren, based on their grandchild's likes and dislikes. Future interventions for grandparents may need to emphasise the importance of repeated exposure to increase child liking and intake.

Nevertheless, grandparents may already engage in some strategies that promote fruit and vegetable consumption and that should be further encouraged in future interventions. For instance, similar to what has been demonstrated previously ⁽⁴⁶³⁾, in chapter 6 grandparents described how much they valued their role as home-cooked meal providers. Not only can grandparent involvement with children's meals lead to children consuming a greater variety of foods ⁽⁴⁶⁴⁾ but home food preparation can provide a good opportunity to improve diet quality and increase fruit and vegetable intake ⁽⁴⁶⁵⁾. Grandparents provision of home-cooked meals may therefore partly explain why in chapter 4 children consumed significantly more vegetables when they were with wider family than when they were with their parents and why, in chapter 5, grandparents provided significantly more vegetables at the lunch time meal than parents. Together, these findings suggest that strategies that capitalise on grandparent's gratification from being the provider of home cooked food to encourage home meal preparation could be a successful way to improve children's diets and increase children's total fruit and vegetable consumption.

Chapters 4 and 5 indicated that grandparents may be contributing to young children's excess intake of salt, sugar and saturated fat. Although this is the first study to quantitatively assess this in the UK, these findings are similar to the previously published qualitative literature. For instance studies have demonstrated how grandparents often provide their grandchildren with unhealthy foods, particularly snack foods high in sugar, salt and fat ^(259,263,264,269–271,393). Grandparents provide treats as an expression of love and a way to strengthen their bond with their grandchildren ⁽³⁵⁸⁾ and future interventions may need to recommend other ways in which grandparents can do so. Furthermore chapter 6 highlighted how there is a pervasive attitude that indulgent

feeding is part of being a grandparent. This finding is in line with previous work (270,271,393,466) and confirms that future interventions should attempt to change these normative ideas and discourage spoiling with unhealthy food. Alternative ways to spoil their grandchildren, such as with their time or with activities should be suggested to grandparents.

It was also evident from both chapter 3 and 6 that grandparents see themselves as food educators with regards to treat foods, whereby they consider it important to expose their grandchildren to treat foods in moderation and not restrict these foods entirely to encourage children to learn self-control. Although the association between overt restriction of high fat, sugar and salt foods and increased child desire for these foods has been documented ⁽⁹⁹⁾ grandparents should be discouraged from providing high energy dense snack foods in their attempt to counter the effects of restriction. Instead grandparents should be encouraged to use covert restriction methods of not purchasing these foods or having them available for their grandchildren. Grandparents may benefit from information distinguishing between overt and covert restriction and explaining the divergent influence that these two types of restriction methods can have on children's eating. The findings from chapter 6 also indicated that in grandparent's child-centred approach, they cater to their grandchildren's likes and dislikes even if it contradicts their own ideas of what they should be feeding their grandchildren. Providing children with full dietary control can negatively impact upon children's diets ^(69,84) and therefore grandparents may benefit from advice and support around child-centred feeding and levels of child control and could be encouraged to offer only limited or guided choices.

Nevertheless, it is important that interventions for grandparents do not make grandparents feel targeted or criticised ⁽²⁶⁹⁾. To avoid this from happening future

interventions could also focus on the positive behaviours that grandparents are already engaging in when feeding their grandchildren. For instance, this thesis has demonstrated how grandparents are utilising positive feeding practices that, when used by parents, have been shown to lead to more healthy eating in children (as discussed in chapter 1). For instance, across chapters 3, 5 and 6 it was found that grandparents' model healthy food intake, try to have healthy food accessible and available, are keen to promote balance and variety, involve their grandchildren in feeding decisions, and have feeding rules and boundaries. To the authors knowledge, only one study has investigated the association between grandparents feeding practices and children's dietary behaviour⁽²⁴⁰⁾. They found that grandparents positive feeding practices were a stronger predictor of children's diet quality than their negative feeding practices, impacting upon children's fruit and vegetable, sugary drink and sweet and savoury snack food consumption. The most influential feeding practices were creating a healthy food environment and limit setting, both of which were demonstrated by grandparents throughout this thesis. Accordingly, to avoid grandparents feeling criticised, future interventions could emphasise these positive practices that grandparents are using, praising them for their efforts, describing the potential positive impacts they can have on children's eating and encouraging them to further utilise them.

8.3.2 The feeding behaviours of grandparents who provide regular care to their grandchildren align with those of parents

In chapter 5, parents and grandparents demonstrated similar feeding practices and feeding styles and provided food and drinks that were nutritionally comparable. Not only does this contrast with the findings in chapter 4, where children were consuming poorer quality diets when with their wider family members compared to with their parents, but also with the existing literature where grandparents are described,

particularly by parents, as providers of excessive amounts of discretionary food to their grandchildren and potential barriers to young children's healthy eating ^(257,263,467–470).

In chapter 6 the grandparents who cared for their grandchildren on a weekly basis discussed the importance of providing a healthy diet to their grandchildren and described how they felt accountable for doing so. They engaged in many feeding practices that encouraged positive and healthy eating behaviours in their grandchildren. Chambers and colleagues have defined two types of grandparent care practices ⁽⁴⁶³⁾. They described “responsible” grandparent practices where grandparents provide healthy meals to their grandchildren, adopt an authoritative approach and limit their consumption of less healthy foods and “fun” grandparent practices where grandparents embrace their role as a treat provider and create an environment where children enjoy their grandparents' homes by providing their grandchildren with opportunities to eat high sugar or fat snacks. These “fun” grandparent practices seem to align more with the existing literature and may explain why preschool aged children in the UK were consuming significantly poorer quality diets when accompanied by their wider family members in chapter 4. In Chamber's study, it was unclear whether grandparents demonstrated these two types of practices exclusively or if grandparents adopted different behaviours depending upon the situation. In chapter 6 a cognitive dissonance was described whereby grandparents discussed providing a healthy diet to their grandchildren and using feeding practices that encouraged the consumption of healthy food whilst also being permissive with treat foods, reasoning that this was an integral part of their role as grandparents. Grandparents may therefore engage in both practices, even if they are conflicting, and try to become both the “responsible” caregiver and the “fun” caregiver.

In contrast, the similarities between parent and grandparent feeding found in chapter 5 may suggest that grandparents engage in either “fun” or “responsible” practices, as grandparents provided discretionary food items no more frequently than parents. Furthermore, there was no association found between grandparents and indulgent feeding styles. A previous study demonstrated that grandparents who cared for their young grandchildren for ten hours per week often used core foods as treats rather than discretionary food items and that the transition from casual visits to informal caregiving led to an increased sense of responsibility for the health of their grandchildren ⁽³⁵⁸⁾. In chapter 3 it was demonstrated that previous studies often failed to consider the level of involvement of the grandparent and how this influenced grandparents feeding, and similarly this data was unavailable in chapter 4. The study that did consider this found that a greater level of grandparental involvement was associated with feeding behaviours more closely aligned with parents⁽⁴⁷¹⁾. Taken together this may indicate that, grandparents who are regular childcare providers to their grandchildren may be more likely to adopt “responsible” feeding practices than grandparents who take on less of a regular care role, by aligning their behaviours more closely with those of the parents. This is important because when grandparents health views and goals for their grandchildren align with those of the parents this can have a positive impact on children’s eating ⁽⁴⁷²⁾. Supporting grandparents to distinguish between their role as a grandparent and their role as a regular care provider could therefore be a useful way of improving children’s health outcomes.

However, with this in mind, it was surprising that, in chapter 5 no differences were found in grandparents feeding behaviours according to the amount of time they spent caring for their grandchildren. This may be explained by the sampling criteria of the study which focused on grandparents who cared for their grandchildren on a regular basis, thus

excluding more casual grandparent/grandchild relationships. This highlights the need for future research to explore the differences in feeding between those that provide childcare regularly and those that do so on an ad-hoc basis, as those that do it on an ad-hoc basis may be less likely to engage in “responsible” practices and more likely to indulge with food.

Even though similarities were demonstrated between parent and grandparent feeding in chapter 5 which were not demonstrated in chapter 4, the findings of chapter 5 supported those of chapter 4 by demonstrating that grandparents, like parents, may be a contributing factor in preschool aged children’s excessive consumption of saturated fat, salt and their insufficient consumption of fruit and vegetables. The findings of chapter 5 therefore build on the current knowledge base by demonstrating that interventions already designed for parents don’t need to be adapted in content for grandparents, because, based on their similar feeding behaviours, they may require very similar types of support. This suggests that grandparents could be incorporated into current parent-child interventions to form wider intergenerational interventions. This is further reiterated in chapter 6 which demonstrated the importance of involving the whole family in future interventions due to the potential influence of family beliefs and values on grandparent engagement. As shown in chapter 7 not only do family-based interventions lead to positive changes in children’s outcomes but they can also positively impact upon caregivers’ diets. Evidence from interventions that have incorporated custodial grandparents demonstrate that intergenerational interventions can lead to positive changes in children’s health behaviours, grandparents health and wellbeing^(473,474) and can positively impact upon the parent and grandparent relationship⁽⁴⁷⁵⁾. Future work should explore the impact of including grandparents in interventions on children’s short- and long-term dietary behaviours and weight

outcomes. Furthermore, it may be useful to assess how impactful such interventions can be depending upon the level of involvement of the grandparent. Nevertheless, as discussed in the next section, engaging informal care providing grandparents in interventions could be challenging.

8.3.3 Grandparents perceive little need for early years feeding support and will be a challenging group to engage

Previous studies have outlined a lack of research exploring both the barriers and enablers that might influence grandparents engagement with intervention programs and grandparents' overall willingness to change how they feed their grandchildren ^(394,476). The findings from this thesis extend our current understanding by highlighting some of these barriers and demonstrating that UK grandparents may be a challenging group to engage. For example, in chapter 6, although grandparents were motivated to provide a healthy diet to their preschool aged grandchildren they perceived little need for nutritional support. This belief was based on their confidence that what they fed their grandchildren was healthy as they perceived themselves to have good nutritional knowledge. Similar findings have been found in Australia where grandparents also perceived little need for support due to their nutritional knowledge ⁽⁴⁰⁰⁾. In the present work grandparents were unaware of specific guidance for feeding preschool aged children which supports the idea that UK grandparents nutritional knowledge may be out of date and need updating ⁽²⁶⁹⁾. Grandparents also found feeding their grandchildren easy, barely encountering difficulties and this was often because they adopted a child-centred approach that catered to their grandchildren's likes and dislikes. This coupled with the strong normative belief around how a grandparent should indulge their grandchildren may act as a barrier to engaging with nutritional advice. The pervasive belief that grandparents should indulge their grandchildren has been documented

widely across the literature ^(257,263,400,467) however the findings of chapters 5 and 6 develop this further by indicating that not all grandparents adopt indulgent feeding styles when providing regular childcare and that grandparents may attempt to balance the two roles of being an indulgent grandparent and being a care-provider. Taken together this suggests that these normative ideas could potentially be broken down by emphasising grandparent's responsibility as regular childcare providers. Nevertheless chapter 6 indicated that grandparents also hold the belief that what they feed their grandchildren is inconsequential because they only look after them on a part time basis. This has been demonstrated previously in both Australian and North American grandparents ^(257,400) but the present study suggests that this belief may be a barrier to successfully engaging UK grandparents.

Strategies are therefore needed to overcome some of these barriers. According to the transtheoretical model of behaviour change, changes to behaviour only happen when individuals are at the right stage of change ⁽⁴⁷⁷⁾. Within this theory there are five stages of change beginning at the precontemplation stage, moving to the contemplation stage, the preparation stage, the action stage and finally to the maintenance stage. The evidence from chapter 6 suggests that grandparents might be in the precontemplation stage, unaware that changes to their food and drink provision are needed and how changes could benefit the health of their grandchildren. Proshaska and colleagues identified processes of change that can support individuals through the stages ⁽⁴⁷⁸⁾. When individuals are in the precontemplation stage, the following processes can support people to move stages. 1) Consciousness raising which involves raising awareness of the need to change behaviours, 2) dramatic relief which involves raising individuals worry about the risks of the unhealthy behaviours 3) environmental re-evaluation where individuals assess how the behaviour may impact upon the physical

or social environment and 4) social liberation where individuals realise that the social norms are changing in ways that support the healthy behaviour change.

Grandparents may therefore benefit from strategies that build awareness of the need for improvements in their grandchildren's diets. This could include marketing campaigns that highlight that children are consuming too much saturated fat, salt and sugar and insufficient amounts of fruits and vegetables and that detail the health and social consequences of this. It will be important to emphasise the influence that grandparents can have on young children's diets and their development of food preferences and eating behaviours and demonstrate that even part time care can be influential. Furthermore as social norm campaigns can influence food choice ⁽⁴⁷⁹⁾ it may be a useful to use social norm campaigns to change the perceived norm that grandparents indulge their grandchildren with food.

The present work also sought to identify the preferences that grandparents have for feeding support, extending our understanding of the unique needs of grandparents, which, if utilised in future study design, could help to boost engagement. Grandparents expressed a preference for written communication over face-to-face sessions and preferably from professional sources such as the NHS or healthcare professionals. Similar preferences have been documented previously in parents⁽⁴⁸⁰⁾. The preferences of informal caregivers including grandparents, childminders and nannies, have been explored previously but no distinction was made between the preferences of each childcare type ⁽²⁶⁹⁾. This is important as tailoring interventions specifically to grandparents could lead to better engagement and outcomes⁽³⁹⁴⁾. In the present study grandparents discussed how the information they received from their grandchildren's parents influenced their feeding decisions, frequently citing parents as a key source of

nutritional information. Parents rely on grandparents for childcare and there is often a trade-off for parents between receiving childcare support and maintaining control of their children's diets. Parents often feel that they can't make suggestions to grandparents as they rely on them for childcare and don't want them to feel criticised ^(269,400). However, the findings from chapter 6 indicate that grandparents are responsive to parents' suggestions. Nevertheless grandparents may be more likely to listen to parental advice if parents are provided with formal resources from accredited sources to support their suggestions ⁽²⁶⁹⁾. There may also be cultural differences in acceptance of advice from parents as British grandparents are more likely to respect parents feeding decisions than grandparents from other cultures ⁽²⁶⁹⁾. Future studies should explore the acceptability and feasibility of providing grandparents with nutritional support via parents. A consideration of how this might influence the grandparent parent relationship is needed as well as an exploration of cultural differences that might occur in participant acceptability.

8.3.4 Early childhood obesity prevention strategies for grandparents could also benefit grandparent's health outcomes

This is the first study to consider how an early childhood obesity prevention strategy targeting the feeding behaviours of informal care providing grandparents could also benefit grandparents. Although the rapid review in chapter 7 identified no studies that captured grandparent's outcomes, by considering the outcomes of caregivers such as parents, this study demonstrated how benefits for caregivers such as grandparents are possible. Obesity prevention interventions for preschool aged children can lead to significant changes in parents' fruit and vegetable consumption as well as changes to dietary patterns, including reduced intake of high energy snacks and processed foods, which often contain large amounts of added sugars and saturated fats. The nutritional

profile for adults in the UK, is similar to that of preschool aged children, often characterised by excessive added sugars and saturated fat and too few portions of fruit and vegetables⁽⁴⁸¹⁾. Taken alongside the findings from chapter 5 which demonstrated that interventions for parents and grandparents could contain similar content, and chapter 6 which demonstrated the importance of considering the whole family, this provides compelling evidence that interventions incorporating the wider family system could be beneficial, not only in preventing childhood obesity but also for improving the diets and health outcomes of adults in the UK.

This is further demonstrated when considering the important concepts within Family Systems Theory. For instance, within family systems theory is the notion of causality. This is where a change in one family member can cause reactionary changes in another which can then enforce changes in the family member who initially changed ⁽⁴⁸²⁾. The findings from chapter 7 support this theory by demonstrating that changes to a child's diet (via the food provided by grandparents to their preschool aged grandchildren) can lead to changes in grandparents' diets (via changes to food purchasing, availability and modelling) which, as demonstrated in chapter 1 can then further inform changes to the child's eating. Another concept within family systems theory is that of equifinality. This is where a desired outcome can be achieved through a number of different means, even if this is not the most obvious pathway ⁽⁴⁸³⁾. Study chapter 7 also exemplifies this concept by demonstrating that improvements in adult nutrition can be achieved via interventions targeting children's nutrition. This emphasises the need to carefully consider all relevant outcomes, including those of caregivers, when evaluating an intervention aimed at improving the diets of preschool aged children.

In the past, family system interventions have often only considered an isolated relationship such as the parent and child or the couple and few have considered the extended family ⁽⁴⁷²⁾. When extended family have been considered this has included grandparents who act as custodial parents rather than those who provide informal but regular care ^(474,484) and are the focus of this thesis. The present work demonstrates that a family systems approach to childhood obesity prevention is needed which considers multiple outcomes across multiple generations rather than just single outcomes for individuals. Although doing so will also present a greater complexity in the assessment of the costs and benefits of such interventions it supports the current shift towards the evaluation of whole systems which capture complex interactions, instead of those focusing only on simple linear relationships ⁽⁴⁵⁸⁾. Importantly, to evaluate whole systems, first an understanding of the interactions within those systems is needed; as knowing more about the relationships within a system will allow us to make better public health decisions. The findings of this thesis therefore extend the current knowledge base by evidencing one such complex interaction within childhood obesity prevention, that between the child and the grandparent. Nevertheless, the findings demonstrate a need to develop and evaluate an early childhood obesity prevention strategy aimed at grandparents that considers grandparent outcomes alongside child outcomes and which considers the potential long term economic and health consequences.

8.4 Limitations of the research and directions for future study

The limitations of each study have been discussed in each of their relevant chapters however there are more broad limitations of the research that will be discussed within this section.

8.4.1 Dietary Assessment Methods

This research relies on dietary data collected by parents and grandparents who complete the food records as proxies for their preschool aged children. Very few studies have used dietary assessment methods with grandparents to assess children's diets. In contrast, the use of parents as proxies for children's dietary intake is frequently seen in the literature⁽⁴⁸⁵⁾. Research investigating the accuracy of using parents as proxies has shown mixed results, for instance some have found that parental reports on preschool children's food and drink are relatively accurate ⁽⁴⁸⁶⁾ whereas others have demonstrated that parents are likely to underreport children's food intake ⁽⁴⁸⁷⁾. It is unknown whether grandparents provide accurate assessments of preschool aged children's diet's when completing food records for their grandchildren and future studies are needed to review this. Completing food records online also requires both literacy and computer skills which could also influence the accuracy of the data. Both parents and grandparents participating in the present study were offered online support for completing the food records but few requested it. This suggests that online methods can be a suitable method for collecting children's dietary data from grandparents.

The use of self-report methods that can be completed in the home environment has its advantages. By enabling data collection to occur in the natural environment the demand characteristics and social desirability that can occur in laboratory-based research were minimised. Nevertheless, when completing dietary assessments at home, participants may still change their diets on assessment days and edit their responses to ease completion, or to appear healthier to the researchers. This could have influenced the validity of the dietary data.

Getting participants to complete dietary assessments can be challenging due to their relatively high burden on participant time. Moreover food records require motivation, honesty and, in the case of 24 hour recalls, memory of the participants ⁽⁴⁸⁸⁾. Using an interviewer to administer recalls ⁽⁴⁸⁶⁾, repeating the data collection on multiple days ⁽¹⁶⁸⁾ or having multiple methods of data assessment ⁽⁴⁸⁹⁾ could have increased the accuracy of the dietary data but doing so increases both the researcher and participant burden. This was the first time food records were collected from informal care providing grandparents and the decision was taken to reduce participant burden by using independent self-report methods and minimising the number of food records. Online methods were also used to increase the reliability of the data ⁽⁴⁸⁶⁾ and aid in recruitment. Regardless of this, recruitment of grandparents was still challenging and future work should explore whether this was due the data collection methods or due to other factors such as the recruitment strategy.

8.4.2 Representativeness of the sample

A strength of chapter 4 was that it analysed nationally representative data from the national diet and nutrition survey, however for the remaining studies participants were predominantly white British. Considering that there are marked ethnic differences in dietary intake and dietary habits^(490–492), as well as the use of feeding practices ⁽⁴⁹³⁾ the findings may not be generalizable to non-white British populations. The use of convenience sampling may further weaken generalizability as participants may have volunteered to participate based on a prior interest in nutrition, which may have influenced their feeding behaviours. These sampling issues could explain the difference in findings between chapters 4 and 5 however further work using a representative random sample is needed to confirm this. Grandparents feeding practices may also differ by their socioeconomic status, their age and their gender ⁽²³⁵⁾ however due to

difficulties with recruitment the sample size in chapter 5 was too small to explore these differences. Previous research has shown that building connections with local toddler groups can assist in the recruitment of parents from diverse socioeconomic backgrounds ⁽¹⁸³⁾. Although grandparents may be less likely than parents to take their grandchildren to toddler groups ⁽⁴⁹⁴⁾ future work could explore whether toddler groups can be utilised in the recruitment of grandparents for research. Finally, grandfathers were relatively underrepresented in the research. Although this is unsurprising considering the gender differences in grandparent involvement with their grandchildren ^(494–496) chapter 6 indicated that grandfathers may be a negative influence on children's eating and therefore the feeding behaviours of grandfathers warrants further investigation.

There may also be significant generational differences in grandparents feeding, whereby those born at different times and encountering different life experiences adopt different feeding approaches. For instance in China, grandparents who experienced the great famine often overfeed their grandchildren⁽⁴⁹⁷⁾. A generational effect may explain some of the differences in grandparents feeding documented both across the literature and in this thesis. However with the limited sample size, and higher proportion of grandparents under the age of 75 in this body of work, an in-depth exploration of this generational effect was not feasible. Nevertheless, it underscores the need for further investigation, particularly in the context of the United Kingdom.

8.4.3 Grandparents influence on physical activity/sedentary behaviour

The scope of this thesis may have been limited by only considering the influence of grandparents on young children's eating behaviours. Grandparent care may also impact

upon preschoolers levels of physical activity and sedentary behaviour, both of which are important contributors to childhood obesity. Compared with parents, grandparents are often older and have declining energy levels and may be limited by physical fitness or health problems ⁽⁴⁹⁸⁾. Some parents have described children as less physically active when cared for by their grandparents ⁽²⁶⁹⁾ however in other studies physical activity was a key part of grandparent care ⁽⁴⁹⁸⁾. Grandparents may be more likely to rely on screen time to keep their grandchildren engaged rather than taking them outside to play ^(269,498). Physical activity and sedentary behaviour impact upon children's energy requirements. Although the data has not been presented in chapter 6, during the interviews with grandparents, the amount of energy that grandparents perceived children to be expending also influenced grandparents feeding behaviours. Research is needed to explore this interaction further and to consider how incorporating physical activity elements into an intervention for grandparents could influence children's weight outcomes but also grandparents feeding behaviours. Moreover, based on the results of chapter 7 it will be interesting to consider how incorporating physical activity into an intervention for grandparents would influence their own physical activity levels.

8.4.4 Children's eating behaviour

The present work only considered the ways in which grandparents could influence children's eating via their dietary provision, feeding practices and feeding styles. Nevertheless, children's eating behaviours were not captured. This means that it is unknown how feeding practices and styles demonstrated by grandparents in this research influenced children's eating behaviours. Although the inclusion of an assessment of children's eating behaviour was considered in chapter 5 it was not included as relieving participant burden was deemed more important. The survey included 81 items in addition to the 24-hour recall, therefore to minimise participant

fatigue and ensure participant completion the decision was made to omit a children's eating behaviour questionnaire. Grandparents may have also found it difficult to complete an eating behaviour questionnaire for their grandchild as they were not their primary carer. Nevertheless research has shown that there is a bidirectional relationship between children's eating behaviour and parent feeding behaviours⁽⁵²⁾ and that parental feeding behaviours are influenced by a child's temperament and biological foundations. It is therefore highly likely that grandparents feeding behaviours are shaped by their preschool aged grandchildren's behaviours and disposition but this complexity was not considered in the present research. Future work should seek to explore whether this bidirectional relationship occurs in the grandparent-grandchild feeding relationship and how it compares to the parent-child interactions within the same family system. Furthermore, an exploration could be done of how the part-time nature of grandparental care impacts upon the extent to which grandparents influence children's eating behaviour and vice versa.

8.5 Summary

This thesis makes an original contribution to knowledge by demonstrating that grandparents in the UK who provide regular care to their grandchildren are important stakeholders in the promotion of healthy eating in preschool aged children and would benefit from support. The findings also support an alternative rhetoric to the "indulgent grandparent" by demonstrating that the feeding behaviours of grandparents who provide regular care to their grandchildren closely align with parents. These grandparents may differentiate between their role as a grandparent and their role as a care provider as they often use feeding practices that positively influence children's eating. Nevertheless, grandparents would benefit from interventions that encourage them to increase the amount of fruit and vegetables they provide to their grandchildren

and decrease the amount of added sugar, saturated fat and salt. Furthermore, this thesis has demonstrated that interventions for grandparents could also lead to positive changes in grandparents' diets, highlighting that grandparent outcomes should also be considered during intervention evaluation. Although this thesis has established a number of barriers that will need to be addressed to successfully engage grandparents, suggestions have been made on how to do so. Additionally, this research has considered the intervention preferences of grandparents, allowing future interventions to be tailored to their specific needs. Taken together, the results of thesis have provided the foundations upon which wider family interventions can be developed, that include grandparents as key stakeholders, and consider multiple outcomes within the family system.

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10 Appendices

10.1 Appendix 1 – PsychInfo Search Strategy

.TW search

1. Grandparent* or "grandparent*" or Grandmother* or "grand mother*" or Grandfather* or "grand father*" or Grandmaternal or Intergenerational

AND

2. Grandchild* or "grandchild*" or Granddaughter* or "grand daughter*" or Grandson* or "grand son*" or preschool* or toddler* or child*

AND

3. Diet* or Fruit* or Vegetable* or Sugar or Feed* or Dairy or Egg* or Meat or Cake* or Candy or Meal* or Snack* or Food or Dinner or Breakfast or Lunch or Fed or Eat* or Nutrition* or Portion* or Soda or Confectionery or Fibre

10.2 Appendix 2 – Qualitative Data Extraction Table

Study Identifier	Year	Title	Country	Design	Sample characteristics	Child characteristics	Grandparent care measurement	Relevant Outcome	Key results	Dietary provision/feeding practices/feeding style	Dietary Measurement method	
						no. looked after by grandparents	Total no. of children & any additional sample characteristics	Child age				
Eli	2016	A question of balance: Explaining differences between parental and grandparental perspectives on preschoolers' feeding and physical activity	USA	Qualitative-Interviews	22 parents (14 female, 21 Caucasian, 12 with overweight or obesity, mean age 32), 27 grandparents (21 female, 23 Caucasian, 18 overweight or obese, mean age 57) 11 had further education	not specified	16 (8 female, 9 overweight or obese))	3-5 years old mean age 4.6	Grandparents who spend time with the grandchild at least twice a month	the role of grandparents in the development of preschoolers' eating and physical activity practices	3 categories related to feeding 1) disagreements about feeding practices stem from parents' and grandparents' differing definitions of healthy feeding; (2) differences between parents' and grandparents' feeding practices reflect differences in perceived care-taking roles; (3) parents and grandparents negotiate differences in feeding practices through dynamics of grandparental compliance and parental compromise.	Feeding practices, feeding style and dietary provision
		Water, juice, or soda? Mothers and grandmothers			22 parents (14 female, 21 Caucasian, 12 with overweight or		16 (8 female, 9	3-5 years	Grandparents who spend time	mothers' and maternal grandmothers' attitudes,	The analysis identified three thematic categories: 1) mothers and grandmothers agree about the hierarchy of healthiness between and within beverages, though juice occupies an ambivalent position; 2) mothers and grandmothers cite role	Feeding practices,

Eli	2017	of preschoolers discuss the acceptability and accessibility of beverages	USA	Qualitative-Interviews	obesity, mean age 32), 27 grandparents (21 female, 23 Caucasian, 18 overweight or obese, mean age 57) 11 had further education	not specified	overweight or obese))	old mean age 4.6	with the grandchild at least twice a month	knowledge, and practices regarding preschool aged children's beverage consumption.	modeling and the home environment as important in regulating preschoolers' beverage intake; 3) mothers and grandmothers balance between restricting sugary beverages and using these beverages as treats. Difference in how mothers and grandmothers view the healthiness of juice	feeding style and dietary provision na
Jiang	2007	Influence of grandparents on eating behaviors of young children in Chinese three-generation families.	China	Qualitative-Interviews	12 parents (3 male, 9 female, 7 had higher education) 11 grandparents (4 male, 7 female, 3 had higher education)		23 (13 boys, 10 girls. 57% with obesity)	3-6 years old (mean 4.4)	The grandparents were the ones to look after the child in all of the interviewed families. The children spent much more time with their grandparents than with their parents, including the time after kindergarten.	What is your own view on how a small child should be fed?	The three domains identified through the seven themes included: (1) grandparents as primary caretakers of children in the three-generation family, (2) grandparents' attitudes to child nutrition and healthy eating habits, and (3) the role of food as an educational and emotional tool	Feeding practices, feeding style and dietary provision na
Mena	2015	Contextual and Cultural Influences on Parental Feeding Practices and Involvement in Child Care Centers among Hispanic Parents.	USA	Qualitative-Focus Groups	36 caregivers, 34 mothers and 2 grandmothers (31% Dominican, 55% had some college education)	2 not specified	not specified	2-5 years old	Not reported	Parents were asked about influences on what and how they feed their children	All of the mothers agreed that grandparent's indulgent behaviors were an issue for them as it contradicted their efforts to promote healthy eating habits for their children: Providing sweets and junk foods (Indulgent/permissive practices?)	Feeding practices, feeding style and dietary provision na

Rogers	2018	Exploring the Role of Grandparents in the Feeding of Grandchildren Aged 1-5 Years	Australia	Qualitative-Interviews	9 Grandmothers (88% over 60 years old, 11% 50-59 years old)	not specified	not specified	1-5 years old	At least 1 grandchild aged 1-5 years for whom they cared for ≥7 h/wk	Role of grandparents in the feeding of their 1-5 year old grandchildren	Although Grandparents recall a stricter and more structured approach to feeding they considered children's desires and food preferences and some grandparents even came across as permissive in their food provisioning practices: contextualized by the part-time and secondary care relationship they had with their grandchildren. it was common for grandparents to provide their grandchildren with treats that were primarily unhealthy foods. They justified giving treats on the basis of indulging children's desires and requests, rewarding good behaviour, and demonstrating love. Grandparents often referred to their high level of nutritional knowledge and confidence in feeding their grandchildren. Consequently, most grandparents did not express a need for more education about child nutrition. They focused on restricting sugar rather than fat and salt	Feeding practices, feeding style and dietary provision na

Study Identifier	Year	Title	Country	Design	Sample characteristics	Child characteristics Total no. of children & any additional sample characteristics	Grandparent care measurement	Relevant Outcome	Key results	Dietary provision/feeding practices/feeding style	Dietary Measurement method		
						no. looked after by grandparents							
Toftemo	2013	Parents' views and experiences when their preschool child is identified as overweight: a qualitative study in primary care.	Norway	Qualitative-Semi structured Interviews	11 parents (10 mothers, 1 father) 5 had higher education	not specified	10, 5 boys, 5 girls. 3 with obesity	2.5-5.5 years old	Not reported	Parents views and experiences when health professionals identify their preschool child as overweight	For most children in this study, grandparents had an influence on the quality and quantity of food served. Some grandparents did an excellent job, whereas others 'spoiled' the children by giving them unhealthy food, sweet beverages and perhaps an extra dinner. Some parents found it difficult to make grandparents, especially their in-laws, understand that the child would appreciate fruit and activities just as much	Feeding practices, feeding style and dietary provision	na
Dwyer	2008	Parents report intrapersonal, interpersonal, and environmental barriers to supporting healthy eating and physical activity among their preschoolers.	Canada	Qualitative - focus groups	39 parents (34 mothers, 5 fathers) (36 Caucasian, 29 further education)	not specified	not specified	2-5 years old	Not reported	Parents experiences and challenges in supporting healthy eating in preschool children	Parents said "the grandparents bring bags and bags of junk food into our house for our daughter" and "the grandparents want to spoil the grandchildren...every time we go to grandma's house, there are huge quantities of chips and candy". These different views were the source of some family conflict, as illustrated by the comment "my mother is in charge of shopping...she buys junk food, French fries, and frozen food. I try to get my child to lean toward the kind of nutrition that I prefer, but am constantly arguing with my mother who just doesn't get it and doesn't care."	Dietary provision, feeding style	na
Lindsay	2009	Influence of social context on eating, physical activity, and sedentary behaviors of Latina mothers and their preschool-age children	USA	Qualitative focus groups and interviews	51 Latino mothers (mean age, 32) 72% had high school diploma	not specified	not specified	0-4 years old	Not reported	Influence of social context on preschooler's eating	Using grandparents for care affects children's seating habits (Quote -My mother, she is taking care of her granddaughter and she wants to see her chubby . . . she feeds her like if she was stuffing a bag, it's a pity.) Mothers whose children attended day care centers appeared to be more aware of their children's diet and daily activities away from home than mothers whose children were cared for by friends or relatives.	Dietary provision	na
Lidgate	2018	A qualitative insight into informal childcare and childhood obesity in children aged 0–5 years in the UK	UK	Qualitative - focus groups	7 parents, 7 informal caregivers (5 grandparents) 13 females, 13 Caucasian 14 had higher education	not specified	not specified	0-5 years old	Not reported	The relationship between informal childcare and childhood obesity	4 key themes - cross-generation conflict preventing adoption of healthy practices; the trade-off for parents between receiving childcare and maintaining control; reduced energy capacity of carers; and increased snacking.	dietary provision and feeding practices	na
Srivastava	2019	Lifestyles survey - eating habits. No details further provided	USA	Qualitative-Interviews	17 mothers/female guardians (mean age 35), 3 fathers (mean age 33.3). 95% White, 5% black. 85% had higher education	not specified	not specified	3-5 years old	Not reported	Parental belief systems and practices about preschoolers' healthy eating	Food socialization influences. Participants mentioned that grandparents, siblings, and childcare centers influenced children's eating behaviors. Participants explained that grandparents had both positive and negative influences on children's healthy eating. While participants mentioned that they cannot control what their children eat when they are with grandparents, they believed in communicating and educating grandparents about healthy foods. For example, one participant explained, "I want them [grandparents] to be making sure he [child] gets at least a vegetable with every meal, and fruit for snacks." A few participants attributed food concerns to grand- parents' cultural background: "That would be my mother-in-law and father-in-law, and their cultural background is Mennonite, which is kind of a Germanic religious background, and it focuses heavily on baked foods, and lots of desserts, lots of strudels and kolaches... creamy sauces and gravies, things like that. And I know that when he [child] goes over there to spend an afternoon with Grandma, there will be cookies. There just will be cookies [laughs], so. It's an old-fashioned way of eating that they still follow now."	Dietary provision	na
Pankhurst	2019	Treats are a tool of the trade: an exploration of food treats among grandparents who provide informal childcare	Australia	Qualitative - focus groups and interviews	10 grandmothers, 2 grandfathers. Age 50-79.	not specified	not specified	1-5 years old	Grandparents who provided care for 10 or more hours per week to one or more grandchildren in this age range	The meaning and role of food treats	Three themes emerged: (i) the functional role of treats (e.g. to reward good behaviour); (ii) grandparent role, responsibility and identity (e.g. the belief that grand- parent and parent roles differ); and (iii) the rules regarding food treats (e.g. negotiating differences between own and parental rules).	Feeding practices, feeding style and dietary provision	na

Study Identifier	Year	Title	Country	Design	Sample characteristics	Child characteristics			Grandparent care measurement	Relevant Outcome	Key results	Dietary provision/feeding practices/feeding style	Dietary Measurement method
						no. looked after by grandparents	total no. of children & any additional sample characteristics	Child age					
Neuman	2019	Feeding the extended family: gender, generation, and socioeconomic disadvantage in food provision to children	USA	Qualitative-Interviews	22 parents (14 female, 21 Caucasian, 12 with overweight or obesity, mean age 32), 27 grandparents (21 female, 23 Caucasian, 18 with overweight or obesity, mean age 57) 11 had further education	not specified	16 (8 female, 9 overweight or obese))	3-5 years old mean age 4.6	Grandparents who spend time with the grandchild at least twice a month	How parents and grandparents describe their provision of food to preschool children	Notably, Sandra's mother's food provision activities extended beyond her role as mother; she also cooked for her grandson. Sandra and Edgar had lived with Sandra's mother, who cooked for them while they shared a household; however, she continued cooking for Edgar even after Sandra and Edgar had moved, and despite seeing them less regularly. As Sandra said, her mother was still "very on board about making sure that he gets a well-balanced [diet] and low on the sugar content." Furthermore, she was also said to be "really strict specialized, like, almost like vegan diet for health problems so, the food that she eats and what she has at her house when Edgar is there is like really restrictive." Thus, not only did Sandra's mother continue to play a role in Edgar's feeding, but Sandra also claimed her mother was more nutritionally strict in what she offered Edgar.	Feeding practices, feeding style and dietary provision	na
Chung	2019	Factors influencing sweet drink consumption among preschool-age children: a qualitative analysis	Australia	Qualitative-Interviews	22 parents (mean age 34.5), 3 grandparents (mean age 67). 60% had further education	not specified	not specified	6 months - 5 years old (mean 3.5)	Not reported	Context in which preschoolers consume sweet drinks consumption occurs and factors that influence sweet drink consumption	Health and nutrition knowledge played an important role in parents' and grandparents' intentions regarding drink choices. For example, some parents spoke of fruit juice and soft drink being regularly offered by grandparents. In some instances, this was seen as a treat, and therefore considered acceptable. However, some parents spoke of conflict where parents and grandparents held different views about suitable drink options. Of note, the grandparents who participated in this study reported being strict with their grandchildren in not allowing regular sweet drink consumption. I think of course the adults in the family have to set the example. You can't say, 'I can drink coke but you are not.' And they're thinking, 'Why? Why can you do it and I can't do it?'	Feeding practices, feeding style and dietary provision	na

10.3 Appendix 3 - Quantitative data extraction table

Study Identifier	Year	Title	Country	Design	Sample characteristics	Child characteristics			Grandparent care measurement	Relevant Outcome	Dietary Measurement method	Key results		Feeding style
						no. looked after by grandparents	No. of children & child characteristics	Child age				Dietary Provision	Feeding practices	
Farrow	2014	A comparison between the feeding practices of parents and grandparents.	UK	Quantitative - cross-sectional survey	50 parents -49 mothers, 1 father 21-47yrs old, avg age 33. 90% white British. Avg 3.3. yrs of education post 16yrs 50 grandparents -39 grandmothers, 11 grandfathers, 45- 65yrs old, avg age 55. Avg 1.9yrs education post 16yrs	not specified	not specified	2-8 years old (Mean =4)	Grandparents reported caring for their grandchild on average for 14.24 h each week (SD = 8.65, range = 3– 39)	Feeding practices of parents and grandparents	Comprehensive Feeding Practices Questionnaire		Grandparents reported allowing children significantly more control and input into mealtimes and food choice (parents 2.32, sd 0.54, grandparents 3.08, sd 0.87 p<0.01) and providing a significantly more positive and healthy food environment (parents 3.37, sd 0.69, grandparents 3.74, sd 0.71 p<0.01). However, grandparents used food to regulate emotions significantly more often (parents 1.76, sd 0.66, grandparents 2.51, sd 1.13, p<0.01), encouraged energy balance and variety with food less (parents 4.42, sd 0.46, grandparents 3.93, sd 0.68, p<0.001), modelled healthy eating less (parents 3.94, sd 0.81, grandparents 3.49, sd 0.81, p<0.01), and used	

restriction of food for weight concern significantly more than parents (parents 2.35, sd 0.64, grandparents 3.02, sd 0.86, $p<0.01$). No sig dif between parents and Grandparents for using food as a reward, involvement, monitoring, pressure, restriction for health, teaching about nutrition) Grandparents who spent more time caring for their grandchildren reported significantly more provision of a positive food and eating environment (Spearman's rho correlation .32 ($p<0.05$)) , more teaching grandchildren about nutrition (Spearman's rho correlation .35, $p<0.01$), more use of food as a reward (spearman's rho correlation .24, $p<0.05$), and more modelling of healthy food intake (Spearman's rho correlation .29, $p<0.05$). They also allows grandchildren sig less control into mealtime and food decisions (Spearman's rho correlation -0.29, $p<0.05$)

Kagamimori	1999	The relationship between lifestyle, social characteristics and obesity in 3-year-old Japanese children.	Japan	Quantitative - Cohort Study	8834 parent-child dyads	5237 three generations (474 households)	8834 with obesity)	3 years old	Living with grandmother/grandfather classified as belonging to an expanded family. Grandmother/grandfather responsible for care	Irregular snack intake (>3 times per day)	Lifestyles survey - eating habits. No details further provided	Irregular snack intake frequency significantly higher in children living with grandparents than those not (expanded frequency of irregular snack intake = 1771, non-expanded 813, $p < 0.01$. Odds ratios are expanded/nonexpanded; 1.44 95% CI = 1.3-1.5). If mother is main carer also significantly less likely to have irregular snack intake (mother/other; 0.63 CI=0.55-0.73). The greatest-attributable risk was observed for irregular snack intake for mother as main caregiver, that is a 36.5% reduction of irregular snack intake among 3-year-old children is attributable to being mainly cared for by the mother.
Metbulut	2018	A comparison between the feeding practices of parents and grandparents.	Turkey	Quantitative - cross sectional survey (Case control)	150 mothers (24% higher education) 50 grandmothers (8% higher education)	50	200, 103 male, 97 female (16 with obesity)	2-5 years old	Fed by their grandmother (Mean 4.72 days per week, median 5 days per week)	Feeding practices of parents and grandparents	Comprehensive Feeding Practices Questionnaire	The 'use of food for emotion regulation' was statistically significantly higher for grandmothers (7.3, sd 3.78) compared to mothers (5.48, sd 2.56) ($p = < 0.05$).

However
 'encouragem
 ent of energy
 balance and
 variety',
 'monitoring
 child food
 intake',
 'restriction of
 unhealthy
 food' and
 'teaching
 about
 nutrition'
 scores were
 higher for
 mothers
 (respectively
 17.78, sd
 2.68, 17.36,
 sd 3.19,
 15.76, sd
 3.09, 11.82,
 sd 2.46) than
 grandmother
 s
 (respectively
 16.48, sd
 2.92, 15.60,
 sd 4.61,
 14.28, sd
 3.48, 10.34,
 sd 3.28) , $p =$
 <0.05). No
 sig dif for
 child control,
 environment,
 food as
 reward,
 encouraging
 child
 involvement,
 modelling,
 pressure,

											restriction for health and weight) Correlations of feeding practices were found between mothers and grandmothers in the group 2 (where mothers and grandmothers fed the child)
Sata	Impact of Caregiver Type for 3-Year-Old Children on Subsequent Between-Meal Eating Habits and Being Overweight From Childhood to Adulthood: A 20-Year Follow-up of the Ibaraki Children's Cohort (IBACHIL) Study.	Japan	Quantitative - Cohort Study	4281 (3240 parents, 450 grandparents)	450	4281 (2239 boys)	3 years old		Between meal eating habits (3 or more times per day)	Questionnaire - The questionnaire asked about between-meal eating (three or more times a day, twice a day, once a day, or no snacking), between-meal eating before bedtime (everyday, three-five times a week, one-two times a week, two-to-three times a month, or once a month)	Those 3 year old's cared for by grandparents were sig more likely to eat between meals 3 or more times per day. (Boys who do so with mother carers mean 13.1%, vs with grandmothers 31.4%. Girls who do so with mother carers mean 13.3, with grandparents 28.7%). Sig at p<0.001 No sig dif between meal eating before bedtime ever day.
Watanabe	2011 Associations of maternal employment and three-	Japan	Quantitative - cross-sectional survey	1765 parents/caregivers	Not specified	1765 children (910 boys, 855 girls)	3-6 years old	Two generation vs three generation household	Dietary habits included skipping	Dietary habits included skipping breakfast,	Three-generation family was significantly associated with regular mealtimes and snacks

generation families with pre- school children's overweight and obesity in Japan

9% with (Mean overweight or obesity). 1222 aged 3-4

breakfast, having meals at regular times and eating snacks at fixed times.

having meals at regular times and eating snacks at fixed times. at unfixed times. Adjusted model OR for irregular meal times for three generational families compared to two generation 0.74 (0.59, 0.94). Unadjusted model OR for irregular snacking time pattern for three generational 1.41 (1.16- 1.70) Not sig for adjusted model. Children of three generation families more likely to be overweight or obese. No sig dif between three generational vs two generational households and skipping breakfast

Yue	2018	Do Infant Feeding Practices Differ Between Grandmothers and Mothers in Rural China? Evidence From Rural Shaanxi Province.	China	Quantitative - cross-sectional survey	1383 households. 460 grandmothers (97% less than 9yrs education) 923 mothers (87% less than 9 yrs education)	not specified	not specified	18-30 months (median age range =24 months, 721 males)	Whoever was most responsible for the infant's care (in China grandparents act as caregivers when mothers migrate to the city for work)	Provision of certain foods and dietary diversity. Sources of info	Feeding Practices & 24 hour recall for specific foods (staple foods, vegetables, fruits, meats, and eggs in the previous day). Dietary diversity coded as having food from more than 4 groups	Grandparents sig less likely than mothers to feed vegetables (60% vs 71%, p=0.000 CI - 0.16, 0.06), fruit (33% vs 39%, p=0.031, CI - 0.11, 0.005) or meat (40% vs 54%, p=0.000, CI - 0.19, 0.08) to child on the previous day or to have provided a diverse diet (24% v 33%, p=0.001, CI - 0.14, 0.03)	Grandparents sig less likely than parents to gained info about feeding practices from local doctor, bureaus, family planning or women's rep (10% vs 19%, p=0.000, -0.14-0.05) and sig less likely to get from books, tv or web (31% vs 52%, p=0.000, -0.26-0.15)
Speirs	2009	Grandmothers' involvement in preschool-aged children's	USA	Quantitative - cross-sectional survey	44 mothers, mean age 30, (68% African American, 23% White, 9%	not specified	not specified	2-6 years old	a grandchild with whom they spent time (including meal and snack times) at least once a week. Grandmothers were	Servings of fruit and vegetables	26 food consumption behavior questions including the frequency of fruit and	83% Grandparents reported making or buying some or all of the food eaten by their grandchildren, 51% always or most of the time paid for the food	Even though most of the grandparents in the sample didn't consume the recommended portions of fruit

consumption
of fruits
and
vegetables:
an
exploratory
study.

other. 16%
higher education
)
18
grandmothers,
mean age 53
(72% African
American, 28%
white 17% had
higher education)

excluded if they were
the grandchild's
primary caregiver.

vegetable
consumption.
Are
grandmothers
involved in
purchasing
food for or
feeding their
preschool-aged
grandchildren?

they fed their
grandchildren, and
72% reported some-
times serving their
grandchildren an
evening meal. Even
though most of the
grandparents in the
sample didn't consume
the recommended
portions of fruit and
vegetables per day
(modelling) 94.4% of
grandparents want their
grandchildren to
consume vegetables
every day (compared to
95.4% parents). 38.9%
of grandparents serve
fruit almost always or
always for the evening
meal (25% parents).
72.2% of grandparents
almost always
or always serve
vegetables for the
evening meal (75%
parents).

and vegetables per
day (modelling)
94.4% of
grandparents want
their grandchildren to
consume vegetables
every day (compared
to 95.4% parents)

10.4 Appendix 4 - Full qualitative data extraction for the three feeding constructs

		Dietary Provision
Eli	2016	"Both parents and grandparents consistently identified certain foods, beverages, and ingredients as potentially problematic or unhealthy, most frequently citing sugar, candy, soda, and fast food. In particular, although grandparents correctly identified certain foods, such as processed meat (specifically chicken nuggets and fast food hamburgers) and candy, as less nutritious or not nutritious at all, they also spoke of "indulging" their grandchildren with such foods. Indeed, most parents said they had to set "rules" to curb preschoolers' consumption of snack foods while spending time with their grandparents. Grandparents' excessive feeding of candy and sugary drinks to preschoolers was the most common parental complaint about grandparental feeding practices. For example, a participant who criticized her mother for giving the child "sugar and candy and junk" (Gp13P1F***), was criticized by her mother for not cooking, with the implication that she was endangering the child's health (Gp13G1F***). Likewise, a grandmother who said that her son - a single father who occasionally resided with her - was "liberal" with her grandchildren's snacking, said that she made sure to provide the children with set meals, occasionally asking her son not to provide snacks before mealtime (Gp16GP1F**). In another example, a grandmother (Gp02G1F*) who was criticized by her son (Gp02P1M*) for feeding the children candy and fast food, stated that, compared to her son, she was providing her grandchildren with a more balanced eating environment, and suggested that it was important for their emotional wellbeing. Nearly all participants - parents and grandparents - described grandparents as more likely than parents to provide preschoolers with candy, soda, and fast food on a regular basis; While many grandparents spoke of preparing nutritious meals for their grandchildren, they framed instances of indulging as introducing a sense of fun and creating a closer bond with the child. For example, the mother of a child with obesity explained that she knew the grandparents secretly provided the child with snacks, but that she trusted they intended "to do the best for [their grandchild]" "
Eli	2017	"Soda, on the other hand, was always described as unhealthy. It was rarely allowed, and then only as a 'treat' and in small amounts: I think if he had his choice, he would probably pick... the forbidden thing is soda, so every once in a while his grandparents will let him have soda, so that would probably be his ... I guess it would be his favorite. (Gp03P1) Mothers and grandmothers tended to agree on the kinds of beverages their child/grandchild preferred, most commonly soda, juice, water, and milk. While soda was mentioned as a favorite, the participants indicated that it was rarely allowed: He of course likes pop, but I don't give him pop. (Gp12P1) Juice was also among the children's preferred drinks, but most participants said they restricted juice consumption. Unlike soda, however, juice was allowed, usually in measured or diluted amounts, with concerns about sugar content moderated by the apparent 'healthiness' of 100% fruit juices. One grandmother described diluting juice with seltzer water [carbonated water] to make a healthier imitation 'soda'. A few participants cited only juice drinks that contained added HFCS as problematic, in contrast to 'natural' fruit juices and V8-fusion. One grandmother stated that her granddaughter could drink as much juice as she wanted as long as it did not contain HFCS: She likes orange juice, apple juice, any, I mean she loves juice. She drinks that a lot. I: And can she drink as much juice as she wants? G: Yes, because we make sure there's no high-fructose corn syrup in it. (Gp07G1) All mothers and most grandmothers used a combination of strategies to encourage or discourage the consumption of particular beverages, which included varying degrees of overt and covert practices. Many preferred taking actions that the child would not notice, such as diluting juice or using skim or low-fat milk. In some families, it was the grandmother who expressed stricter views about beverage provision, while the mother described providing sugary beverages as treats. For example, in one family, the maternal grandmother talked about providing her grandchild with low fat milk and did not mention using beverages as treats. In another family (Gp13), the grandmother said she provided the child with V8 juice for the vitamins, and used Ovaltine as a substitute for ordinary chocolate milk to decrease fat and sugar intake.

Jiang 2007	"Grandparents were responsible for shopping for food in most interviewed three-generation families. The reason given for this was that grandparents usually had time to do the shopping, whereas the parents were busy working. The parents only cooked on some weekends. My husband and I have retired. We buy food and cook every day. We like to do so because we have time and have nothing else to do. (No. 16, grandmother) In most interviewed families, the grandmothers cooked the family meal each day. They did so according to their own preferences and in line with what they believed was good and nutritious for the whole family. Grandparents originating from the Northern parts of China preferred food based on wheat, whereas those from the South preferred rice. Grandparents who liked salty food put more salt in the food and the same was true for sugar. The young children, in turn, tended to follow their grandparents' preferences since they were used to their cooking style: Wheat-based food is the main food type in my family. My mother likes food based on wheat, so she always cooks with flour in various ways, such as dumplings, noodles, steamed buns etc. My daughter has been with my mother since she was born, so she also likes wheat based food. (No. 14, father) Grandparents' personal preferences sometimes also helped them in choosing healthy meals for their families: I don't like oil soaked food. It's not healthy. I seldom cook this kind of food in my family. (No. 18, grandmother) It is interesting to note that grandfathers also had strong opinions about healthy child nutrition and influenced food choices. It doesn't matter if a young child is fat. He [the child] will be thin when he grows up. I want him to eat more and grow taller. (No. 19, grandfather) A young child must eat meat often. The child will be tall if he eats more meat. (No. 17, grandfather) All the grandparents questioned had experienced food shortage in their lives and seemed to have a profound recollection of hunger and poverty. With this experience, they did not want their grandchildren ever having to be hungry with now both food and money being available. They wanted to let the children experience a "happy life" by providing them with plenty of food. Happiness in life is to eat what you want, to eat the amount you want, and to eat whenever you want to. (No. 9, grandmother) Grandparents generally wanted the children to eat more meals and larger portions at served meals, whereas parents were of a different opinion. My mother-in-law would always put a lot of food in my child's bowl when we are eating dinner. Then she would push my son to eat more when he can't eat up everything. When I put less food into my child's bowl, she would ask my child again and again if the meal was enough. (No. 20, father) Almost all young children in interviewed families were encouraged by their grandparents to have supper after they had had supper at kindergarten. In addition, children were provided with ample snacks and sweets, despite the parents' disapproval: When I am not at home, my father-in-law always buys for my son what I don't want him to eat. (y) Once, I told my son not to eat candy. He said, 'Okay, I will have it when you leave'. I was surprised and asked him why he said that. My son said that he had learnt this from his grandmother. (No. 10, mother) Western fast foods were commonly used to influence young children's behaviours, because almost all the young children liked these. Threatening not to go to McDonald's was used as an example. Grandparents chose and bought food for their families according to the young children's preference. They always took the child's wishes into consideration when buying and preparing meals. My mother-in-law asks my child what she wants to eat every morning. She will then buy and cook for her the foods my daughter wants to have. (No. 21, mother) The choice of food for supper in my family is often decided by my child's preference. He likes shredded potatoes. So this dish is always a part of our supper. (No. 2, father) Grandparents were likely to purchase food items the child asked them to buy after having seen them in the supermarket. The young child's preference was considered important enough to be satisfied at all costs: My father-in-law is a thrifty man. But he always satisfies my child's wishes in food, even if it is expensive. (No. 6, mother)

		Dietary Provision
Mena	2015	"Parents stated that both husbands and grandparents often indulged their children with unhealthy foods and thought this interfered with their efforts to maintain a healthy home environment. "When my son goes to visit my parent's house, you've got the cookies, the juice, the cereals, the chocolate milk, the Oreos, whatever he wants, he gets. There's never a limit. So that's my struggle. "At los abuelos (grandparents)...it's horrible. I would have to tell them to stop giving him candy and junk food before meals...so basically we also have to be on top of other people letting them know, to avoid all that." According to a few mothers, not indulging their grandchildren was taken very seriously by the grandparents and was even called abusive because eating sweets should be part of being a child.
Rogers	2018	"Notwithstanding their memories of a more strict and structured approach to feeding, many grandparents were child-centered in their approach to feeding their grandchildren. They considered children's desires and food preferences and some grandparents even came across as permissive in their food provisioning practices: I mean, they do pretty well, eat what they want to here. There's no rules about what they can eat; as far as we're concerned, we've got carte blanche [complete freedom to act as one wishes] if you like. (Gp2) My house is open when they come; they don't have to ask, they go around to the fridge, straight into the pantry. (Gp1) In sharp contrast to complying with parental rules, which were invariably about providing healthy foods, it was common for grandparents to provide their grandchildren with treats that were primarily unhealthy foods.
Tottemo	2013	For most children in this study, grandparents had an influence on the quality and quantity of food served. Some grandparents did an excellent job, whereas others 'spoiled' the children by giving them unhealthy food, sweet beverages and perhaps an extra dinner. Some parents found it difficult to make grandparents, especially their in-laws, understand that the child would appreciate fruit and activities just as much. It's good to have grandparents close by, but my child knows that if she goes there, she'll have anything she asks for. I try, but it seems even harder to raise grandparents than children (laughs). But I think it's a well-known issue because grandparents somehow have a right to spoil them, especially with sweets. It's an everlasting job when we try to restrict this.
Dwyer	2008	Parents expressed concern about high-fat and high-sugar foods that grandparents made available. Parents said "The grandparents bring bags and bags of junk food into our house for our daughter" "The grandparents want to spoil the grandchildren... Every time we go to grandma's house, there are huge quantities of chips and candy." "My mother is in charge of shopping... She buys junk food, french fries, and frozen food."
Lindsay	2009	My mother, she is taking care of her granddaughter and she wants to see her chubby . . . she feeds her like if she was stuffing a bag, it's a pity.
Lidgate	2018	"One common view among parents was that informal care, especially grandparent care, was more lenient. One grandparent gave a possible explanation for this: "I think when it's your grandchildren they say 'please granny can I have it' it's very hard to not to be totally sort of 'nope'" (CG2G1). Multiple participants, including both parents and carers, were aware that grandparents treated their grandchildren with sugary foods such as sweets and chocolates: "Well I must say I always had to prevent granddad buying packets of sweets... he would be thinking he was being kind" (CG2G2).
Srivastava	2019	Participants explained that grandparents had both positive and negative influences on children's healthy eating. A few participants attributed food concerns to grandparents' cultural background: "That would be my mother-in-law and father-in-law, and their cultural background is Mennonite, which is kind of a Germanic religious background, and it focuses heavily on baked foods, and lots of desserts, lots of strudels and kolaches ... creamy sauces and gravies, things like that. And I know that when he [child] goes over there to spend an afternoon with Grandma, there will be cookies. There just will be cookies [laughs], so. It's an old fashioned way of eating that they still follow now."

		Dietary Provision
Pankhurst	2019	Most grandparents felt that providing food treats to their grandchildren while in adult settings, such as cafés, was a way to help them feel included and teach them social etiquette. As a grandmother, aged 52 years, explained (FG): 'It's part of their social development as well that, y'know, we're sitting down and having a coffee so it is inclusion ummm and, y'know, part of being social.' Most grandparents explained that food treats did not have to be discretionary foods, they frequently used core foods (e.g. cheese, blueberries) as a treat. Many grandparents also discussed the demands on modern parents and feared that grandchildren were 'missing out' on a variety of childhood experiences due to parents' lack of time and money. As such, they sought to compensate and aimed to provide grandchildren with treats that parents could not. Grandparents were able to provide core foods that were perceived by parents as cost prohibitive and frame these as treats. One grandmother, aged 63 years, mentioned berries (I): 'Blueberries, oh my gosh, that is a real treat because they are so expensive and they absolutely love them'. Another grandmother, aged 75 years, discussed avocado (FG): 'I buy the bag from [the supermarket] and they were up to nine dollars the other day for half a dozen, but he absolutely loves avocado.' Another grandmother, aged 52 years, said (FG): 'Even cottage cheese on a celery stick, peanut butter on a celery stick, to me that's not so bad [group agreement] ummm but it's a bit of a novelty, they perceive it as a treat.' This health awareness demonstrated by grandparents was supported by their beliefs regarding the importance of a good meal to provide essential nutrition and their practice of restricting food treats when a main meal (e.g. lunch or dinner) was imminent either back with the child's parents or while in the care of the grandparent themselves. For example, one 63-year-old grandmother said (I): 'I don't want to spoil their appetite either for when they get home so I either make sure that they're fed before they leave or hungry enough to eat when they get home.' Another grandmother, aged 61 years, explained how she responded to demands from her grandchild close to mealtime (I): 'Ummm just sort of say "Oh no we'll be having lunch soon" and he's sort of happy with that. If he puts on a turn, I just cut him up a piece of pear ..."Oh you can have some pear after, you need to have your lunch first" and he's sort of happy with that.'
Neuman	2019	"(Grandparent) very on board about making sure that he gets a well-balanced [diet] and low on the sugar content." Furthermore, she was also said to be "really strict specialized, like, almost like vegan diet for health problems so, the food that she eats and what she has at her house when Edgar is there is like really restrictive." Thus, not only did Sandra's mother continue to play a role in Edgar's feeding, but Sandra also claimed her mother was more nutritionally strict in what she offered Edgar.
Chung	2019	some parents spoke of fruit juice and soft drink being regularly offered by grandparents. In some instances this was seen as a treat, and therefore considered acceptable. However, some parents spoke of conflict where parents and grandparents held different views about suitable drink options. Of note, the grandparents who participated in this study reported being strict with their grandchildren in not allowing regular sweet drink consumption.
Eli	2016	In another example, a grandmother (Gp02G1F*) who was criticized by her son (Gp02P1M*) for feeding the children candy and fast food, stated that, compared to her son, she was providing her grandchildren with a more balanced eating environment, and suggested that it was important for their emotional wellbeing. A similar framing of balanced eating was presented by another grandmother, who said that she provided her granddaughter with occasional snacks to counteract her daughter's "strictness", and prevent the child from becoming fascinated with such foods, explaining: "I also have this really good friend, whose dad was [at] the start of the Macrobiotic diet. (...) Now she's forty years old and she just can't quit putting junk food in her mouth" (Gp07G1F*).

		Feeding practices
Eli	2017	While soda was mentioned as a favourite, the participants indicated that it was rarely allowed: He of course likes pop, but I don't give him pop. (Gp12P1) Juice was also among the children's preferred drinks, but most participants said they restricted juice consumption. Some participants described their preschoolers as inclined toward sugary beverage consumption and thus needing more restriction and control, while others did not. Some mothers and grandmothers said that prohibiting a beverage entirely could be counterproductive: I usually just say, "That's a sometimes food." It's not like I never ever let him have things, because I feel like if you have forbidden things, that's what they are going to focus on. (Gp04P1). She avoided drinking soda at home and that she restricted her soda consumption to a space her child did not access eg her university campus. The maternal grandmother of the same child described how she had changed her attitude towards role modelling after witnessing her daughter's strategies; she added that she now tried to be a better role model for her grandchildren. Many participants said they controlled the children's intake of sugary beverages by avoiding having these beverages in the house, and by making sure that healthy drinks were available and accessible: The most effective thing to do is have the proper choices available, what's in the refrigerator, what's at hand for them to eat. Make sure that's healthy stuff; don't have soda and chips, because that's what they're going to go for. (Gp07G1) Several mothers and grandmothers described how they made sure that their preschoolers had easy access to healthy choices, and pointed at the importance of making water the default choice. Most mothers and grandmothers highlighted the importance of consistent rules and communication about healthy eating and drinking outside the home, and teaching children about nutrition so that they would be equipped to make the right choices themselves All mothers and the majority of grandmothers restricted soda and similar sugary beverages (e.g., Capri-Sun and Kool-Aid), which they perceived as unhealthy Although some mother & grandmother dyads expressed similar views on restricting sugary beverages, in other cases, while one member of the dyad spoke only of restricting sugary beverages, the other spoke of using sugary beverages as treats or rewards. In some families, this disagreement followed the expected division between 'restricting' mothers and 'indulgent' grandmothers. This mother now limited her daughter's juice consumption to 6e8 oz per day. Yet her mother, who looked after the child on a daily basis, placed no restriction on juice as long as it did not contain HFCS e a rule she sometimes set aside: "Well she goes for the bad juice, I always read the bottle, high fructose corn syrup, now I encourage her to get something else. If she's really insistent on a certain thing, I'll get it for her. I don't figure it's going to hurt her too bad; we try and throw the bottle away before [daughter] gets home (laughs). If she finds it she gives me the look, and then we're ok. I claim grandmother privileges. (Gp07G1)" While soda was mentioned as a favourite, the participants indicated that it was rarely allowed: He of course likes pop, but I don't give him pop. (Gp12P1)
Jiang	2007	Although many grandparents knew that they should not always satisfy their grandchildren with food, they could not restrict themselves because they were reminded of their own experience of hunger when their grandchild demanded food. Happiness in life is to eat what you want, to eat the amount you want, and to eat whenever you want to. (No. 9, grandmother) Another aspect of having experienced poverty was the imperative to save food. Grandparents could not bear the thought of throwing away what was left over from a meal: I always push my grandson to finish the food in his bowl. It is not good to waste food. (No. 22, grandfather) Grandparents generally wanted the children to eat more meals and larger portions at served meals, whereas parents were of a different opinion. My mother-in-law would always put a lot of food in my child's bowl when we are eating dinner. Then she would push my son to eat more when he can't eat up everything. When I put less food into my child's bowl, she would ask my child again and again if the meal was enough. (No. 20, father) Grandparents declared in these families that the child was strong, not fat. Although parents disagreed, the grandparents' feeding practices prevailed as they were the primary caretakers. My son is already fat. But my mother-in-law often encourages my child to eat when he feels full. (No. 5, mother) Most grandparents tended to control child behaviour through food reward or deprivation. Young children's good behaviour was awarded with providing snacks. My daughter won a prize at a piano competition last month. My mother-in-law bought a lot of chips for her as soon as she found out. (No. 7, mother) The first response of most grandparents to their grandchildren's good behaviour was often to say: "Let me know what you want to eat!"

	Western fast foods were commonly used to influence young children's behaviours, because almost all the young children liked these. Threatening not to go to McDonald's was used as an example. Grandparents chose and bought food for their families according to the young children's preference. They always took the child's wishes into consideration when buying and preparing meals. My mother-in-law asks my child what she wants to eat every morning. She will then buy and cook for her the foods my daughter wants to have. (No. 21, mother) The choice of food for supper in my family is often decided by my child's preference. He likes shredded potatoes. So this dish is always a part of our supper. (No. 2, father) Grandparents were likely to purchase food items the child asked them to buy after having seen them in the supermarket. The young child's preference was considered important enough to be satisfied at all costs: My father-in-law is a thrifty man. But he always satisfies my child's wishes in food, even if it is expensive. (No. 6, mother) Although many grandparents knew that they should not always satisfy their grandchildren with food, they could not restrict themselves because they were reminded of their own experience of hunger when their grandchild demanded food. Happiness in life is to eat what you want, to eat the amount you want, and to eat whenever you want to. (No. 9, grandmother) Another aspect of having experienced poverty was the imperative to save food. Grandparents could not bear the thought of throwing away what was left over from a meal: I always push my grandson to finish the food in his bowl. It is not good to waste food. (No. 22, grandfather) Grandparents generally wanted the children to eat more meals and larger portions at served meals, whereas parents were of a different opinion. My mother-in-law would always put a lot of food in my child's bowl when we are eating dinner. Then she would push my son to eat more when he can't eat up everything. When I put less food into my child's bowl, she would ask my child again and again if the meal was enough. (No. 20, father) Grandparents declared in these families that the child was strong, not fat. Although parents disagreed, the grandparents' feeding practices prevailed as they were the primary caretakers. My son is already fat. But my mother-in-law often encourages my child to eat when he feels full. (No. 5, mother) Most grandparents tended to control child behaviour through food reward or deprivation. Young children's good behaviour was awarded with providing snacks. My daughter won a prize at a piano competition last month. My mother-in-law bought a lot of chips for her as soon as she found out. (No. 7, mother)

		Feeding practices
Mena	2015	"When my son goes to visit my parent's house, you've got the cookies, the juice, the cereals, the chocolate milk, the Oreos, whatever he wants, he gets. There's never a limit. So that's my struggle."
Rogers	2018	Notwithstanding their memories of a more strict and structured approach to feeding, many grandparents were child-centered in their approach to feeding their grandchildren. They considered children's desires and food preferences and some grandparents even came across as permissive in their food provisioning practices: I mean, they do pretty well, eat what they want to here. There's no rules about what they can eat; as far as we're concerned, we've got carte blanche [complete freedom to act as one wishes] if you like. (Gp2) My house is open when they come; they don't have to ask, they go around to the fridge, straight into the pantry. (Gp1) they were clear about the boundaries between the grandparent and parent roles in families, particularly in relation to responsibility and authority, feeling that parents had ultimate responsibility in feeding: I don't see that I have any responsibility in trying to educate them in nutritional health. (Gp2) Look, they're the parents, so you know that's it ... they're ultimately responsible and ultimately have to look after them. (Gp6) They justified giving treats on the basis of indulging children's desires and requests, rewarding good behavior, and demonstrating love: I just think it's nice to give her [grandchild] some sort of reward, whether it's a book or something or food ... I wanna see her happy. (Gp6) It's when they're well behaved; then I would suggest that they have an ice cream. (Gp4) Grand- parents focused their nutritional concerns on restricting sugar and food additives in their grandchildren's diets rather than restricting fat or salt, which are other nutrients of public health concern: I'm less worried about them having a pie or a wrap, because that's fat content stuff mainly rather than artificial colorings and things. (Gp2) I know her [grandchild] parents are very strict in terms of sugar; they restrict sugar in everything. (Gp5) However, dietary regulation was more often motivated by behavioral rather than nutritional concerns: The children tend to bounce off the walls with too much sugar. (Gp7) If I was going to put any value on the nutrition of what they eat, it's trying to avoid them overdosing on color and colorings and flavorings, which will hype them to the moon and back. (Gp3)
Toffemo	2013	"It's good to have grandparents close by, but my child knows that if she goes there, she'll have anything she asks"
Dwyer	2008	
Lindsay	2009	
Lidgate	2018	Increased snacking - One common view among parents was that informal care, especially grandparent care, was more lenient. One grandparent gave a possible explanation for this: "I think when it's your grandchildren they say 'please granny can I have it' it's very hard to not to be totally sort of 'nope'" (CG2G1).
Srivastava	2019	

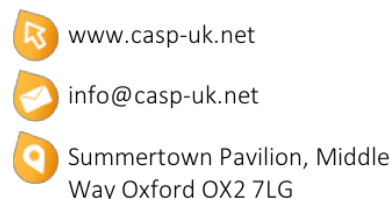
		Feeding practices
Pankhurst	2019	Grandparents described food treats as something that gives grandchildren pleasure but that are not given frequently. One 68-year-old grandmother explained (FG): 'I guess something they don't have very often. Ummm but it probably - it's something that they'd like to have more often but because you restrict it more, it is a treat when they do get it.' Most grandparents were opposed to using food treats for comfort, to ameliorate negative emotions or to control outbursts such as tantrums. Instead, most viewed food treats as an appropriate reward for an accomplishment, to reinforce good behaviour and to teach manners. A 63-year-old grandmother explained (I): 'If they are having a temper tantrum, a treat wouldn't be appropriate then. (:: :) the treat should be something special and something you get for y'know, maybe, just you have to be good to get it kind of thing. You can't be bad to get it.' When discussing discretionary foods as treats, most grandparents believed that it was important for children to be exposed to discretionary foods so that they could learn to balance and moderate their intake and apply self-control. When discussing the restriction of discretionary foods, a 72-year-old grandfather shared (FG): 'Y'know the balance (:: :) and you've brought the real point out, which is self-discipline. Ummm to try and impose it on kids and say "you can't have" and "you can't have"- gives them in their mind "the second that I get out of home I go berserk".' The rules surrounding the provision of treats Grandparents' own rules were predominantly informed by their personal health beliefs. Most discussed the importance of modelling healthy behaviours and being mindful of their own diet when grandchildren were present. One 53-year-old grandmother sought balance between health and pleasure (FG): 'I try to go for those kinds of things that will make her happier but is still healthy for her. I think the health issue is very important in today's world'. This health awareness demonstrated by grandparents was supported by their beliefs regarding the importance of a good meal to provide essential nutrition and their practice of restricting food treats when a main meal (e.g. lunch or dinner) was imminent either back with the child's parents or while in the care of the grandparent themselves. For example, one 63-year-old grandmother said (I): 'I don't want to spoil their appetite either for when they get home so I either make sure that they're fed before they leave or hungry enough to eat when they get home.' In one focus group, two grandmothers discussed breaking their own rules regarding treats as incentives in order to align with other family members. One grandmother (aged 72 years) mentioned the child's mother using treats as an incentive for toilet training the grandchild (FG): 'That wasn't instituted by me that was instituted by Mum and the other Gran, so I went along with it because it was easy.' Same here as well with [refers to granddaughter], when we were potty training, it wasn't me that started it. It was Mum [that] gave her a little treat afterwards if she performed.' Although these grandmothers said they did not normally use food treats as an incentive, they continued for the sake of consistency among carers for the child.
Neuman	2019	As Sandra said, her mother was still "very on board about making sure that he gets a well-balanced [diet] and low on the sugar content."
Chung	2019	Grandparents and peers - emerged a strong determinant of children's consumption of these drinks. I mean, like with everything with kids, they see someone doing it, then they want to do that. They see a kid drinking juice, they want juice. If they see their grandmother drinking juice, that's what they want.

		Feeding Style
Eli	2016	In particular, although grandparents correctly identified certain foods, such as processed meat (specifically chicken nuggets and fast food hamburgers) and candy, as less nutritious or not nutritious at all, they also spoke of “indulging” their grandchildren with such foods. In another example, a grandmother (Gp02G1F*) who was criticized by her son (Gp02P1M*) for feeding the children candy and fast food, stated that, compared to her son, she was providing her grandchildren with a more balanced eating environment, and suggested that it was important for their emotional wellbeing. A similar framing of balanced eating was presented by another grandmother, who said that she provided her granddaughter with occasional snacks to counteract her daughter's “strictness”, and prevent the child from becoming fascinated with such foods, explaining: “I also have this really good friend, whose dad was [at] the start of the Macrobiotic diet. (...) Now she's forty years old and she just can't quit putting junk food in her mouth” (Gp07G1F*). However, while most parents spoke of setting “rules” to curb preschoolers' consumption of sugary and fast food products while spending time with their grandparents, they also described “indulgent” feeding as part of the grandparental role (with several participants using the terms “indulgent”, “indulge”, or “overindulging”). grandparents spoke of holding certain “privileges” and having the right to “spoil” grandchildren with “treats” as part of grandparenting. they framed instances of indulging as introducing a sense of fun and creating a closer bond with the child. Whereas the four grandparents residing in multigenerational households endorsed feeding attitudes similar to those expressed by parents, those who lived apart from their grandchildren and spent limited amounts of time with them expressed more indulgent attitudes. For example, one participant, who moved to her own residence after a period of living with her mother, said that: “when we lived [with my mother], my mom has always been really respectful of, ‘If your mom said no then your mom said no.’ But now that [my daughter] just goes [to visit] on the weekend ... I try to just let them do whatever since it's grandma time” (Gp11P1F***). Likewise, her mother said: “with grandma, you're allowed to get away with stuff. (...) Since I do only have her for a night, once a week, it's fun to spoil her” (Gp11G1F***). While most parents described similar dynamics of compromise, it is important to mention that, in three families, parents said they limited the amount of time their children spent with grandparents, because the grandparents crossed the parents' boundaries of acceptable indulgent feeding.
Eli	2017	Participants described various strategies to moderate or restrict their preschoolers' intake of sugary beverages. Generally, mothers expressed greater concern and spoke about setting ‘rules’ for beverage consumption, while grandmothers expressed less concern but tended to follow their daughters' lead. Most mothers and grandmothers highlighted the importance of consistent rules and communication about healthy eating and drinking outside the home, and teaching children about nutrition so that they would be equipped to make the right choices themselves: All mothers and the majority of grandmothers restricted soda and similar sugary beverages (e.g., Capri-Sun and Kool-Aid), which they perceived as unhealthy. Although some mother e grandmother dyads expressed similar views on restricting sugary beverages, in other cases, while one member of the dyad spoke only of restricting sugary beverages, the other spoke of using sugary beverages as treats or rewards. In some families, this disagreement followed the expected division between ‘restricting’ mothers and ‘indulgent’ grandmothers. Some referred, however, to grandparents' prerogative to indulge grandchildren through providing them with ‘treats’ such as juice or soda when they spent time with them. his mother now limited her daughter's juice consumption to 6e8 oz per day. Yet her mother, who looked after the child on a daily basis, placed no restriction on juice as long as it did not contain HFCS e a rule she sometimes set aside: Well she goes for the bad juice, I always read the bottle, high fructose corn syrup, now I encourage her to get something else. If she's really insistent on a certain thing, I'll get it for her. I don't figure it's going to hurt her too bad; we try and throw the bottle away before [daughter] gets home (laughs). If she finds it she gives me the look, and then we're ok. I claim grandmother privileges. (Gp07G1) Key to this grandmother's explanation was the phrase “grandmother privileges”, through which she recast “bad” HFCS sweetened juice as a treat. Yet, in some families, it was the grandmother who expressed stricter views about beverage provision, while the mother described providing sugary beverages as treats.
Jiang	2007	Most grandparents thought that satisfying children with food was the basic way to love them. They enjoyed watching their grandchild eat because food was viewed as a way to transmit love. My parents-in-law take along food when they pick up my child at the kindergarten every afternoon. It makes them really happy to see their grandson eat. (No. 12, mother) My granddaughter has always had a very good appetite. She always opens her mouth whenever I feed her. I enjoy feeding her so much. (No. 8, grandmother) Grandparents chose and bought food for their families according to the young children's preference. They always took the child's wishes into consideration when buying and preparing meals. My mother-in-law asks my child what she wants to eat every morning. She will then buy and cook for her the foods my daughter wants to have. (No. 21, mother) The choice of food for supper in my family is often decided by my child's preference. He likes shredded potatoes. So this dish is always a part of our supper. (No. 2, father) Grandparents were likely to purchase food items the child asked them to buy after having seen them in the supermarket. The young child's preference was considered important enough to be satisfied at all costs My father-in-law is a thrifty man. But he always satisfies my child's wishes in food, even if it is expensive. (No. 6, mother)

Feeding Style		
Mena	2015	
Rogers	2018	"I think, my generation, baby boomer generation, were stricter, had very defined rules, and what was okay and what was not okay I never asked them, "What do you want for dinner tonight?" especially not as a little one. It would be, we're having whatever we're having for dinner tonight, and I would talk about it But now I often hear my daughter say, "Now, what do you want for dinner tonight? What do you want?" (Gp5) Notwithstanding their memories of a more strict and structured approach to feeding, many grandparents were child-centered in their approach to feeding their grandchildren. They considered children's desires and food preferences and some grandparents even came across as permissive in their food provisioning practices: I mean, they do pretty well, eat what they want to here. There's no rules about what they can eat; as far as we're concerned, we've got carte blanche [complete freedom to act as one wishes] if you like. (Gp2) My house is open when they come; they don't have to ask, they go around to the fridge, straight into the pantry. (Gp1) Grandparents' permissiveness was also contextualized by the part-time and secondary care relationship they had with their grandchildren: If it was 5 days a week...then I'd be taking a firmer line and saying, well this is what you are having- sorry. (Gp5) If they were here 5 days a week and we were feeding them pies and ice blocks and that sort of thing regularly all day every day, well then, yeah, I wouldn't do that. I'd assume more responsibility for their nutrition (Gp2) Grandparents enjoyed and valued their dietary care responsibilities, feeling that they were contributing to the lives of their grandchildren It's a privilege for me to be able to have them. I just love having them. (Gp4) It's very special; we can introduce them to new foods, and when we started looking after him [grandchild], he was starting to get a bit picky with food and just to be able to support and offer different ideas (Gp9) The part-time nature of the care relationship was also used to justify the limited impact of treats on the child's nutritional health Because me doing, taking the food away once a week isn't going to change anything. (Gp5) They justified giving treats on the basis of indulging children's desires and requests, rewarding good behavior, and demonstrating love: I just think it's nice to give her [grandchild] some sort of reward, whether it's a book or something or food ... I wanna see her happy. (Gp6) It's when they're well behaved; then I would suggest that they have an ice cream. (Gp4) For some grandparents, giving treats was an implicit grandparent –child social contract: Oh, he [grandchild] doesn't get treats all the time, but I s'pose being a nanna, you like to spoil them to a degree. (Gp8) However, dietary regulation was more often motivated by behavioral rather than nutritional concerns: The children tend to bounce off the walls with too much sugar. (Gp7) If I was going to put any value on the nutrition of what they eat, it's trying to avoid them overdosing on color and colorings and flavorings, which will hype them to the moon and back. (Gp3)
Tottemo	2013	"It's good to have grandparents close by, but my child knows that if she goes there, she'll have anything she asks for. I try, but it seems even harder to raise grandparents than children (laughs). But I think it's a well-known issue because grandparents somehow have a right to spoil them, especially with sweets. It's an everlasting job when we try to restrict this."
Dwyer	2008	'The grandparents want to spoil the grandchildren.. . Every time we go to grandma's house, there are huge quantities of chips and candy.'
Lindsay	2009	
Lidgate	2018	
Srivastava	2019	

	Feeding Style
Pankhur 2019 st	Grandparents often reconnected with their own past, some recounted tales of their own grandparents' indulgence and wanted to recreate that sensation for their grandchildren. One grandmother (aged 70 years) said (I): 'I try to give them some of the things that I had myself as a youngster and I know how jolly lucky I was.' 'Ummm just sort of say "Oh no we'll be having lunch soon" and he's sort of happy with that. If he puts on a turn, I just cut him up a piece of pear (:: :) "Oh you can have some pear after, you need to have your lunch first" and he's sort of happy with that.' Some grandparents felt the parent's rules were overly strict and sought to counterbalance with a softer, more lenient approach. One 72-year-old grandfather stated (FG): 'What happens at Grandma's stays at Grandma's. Ummm that's in her [the grandchild's] interests because her mother is very up and down the line with rules and that - that sometimes we vary the rule but there's a good reason.' In contrast one grandmother, aged 53 years, feared a contrary approach would have significant consequences and thus respected the parent's rules even when she disagreed (I): 'While I am looking after my granddaughter I want to make sure that my daughter is happy for me to do that. I love my granddaughter, but I love my daughter as well, so the last thing I want is to make her upset and then she may withdraw the granddaughter from me.' She further suggested that flexibility and understanding were key components in limiting conflict: 'I think you can have rules, but rules cannot be implemented one hundred per cent of the time. If you manage to implement your rule eighty per cent of the time, that's a good rule. But you have to be aware there is going to be those twenty per cent of the times where it's not possible.' As most grandparents and parents shared the same beliefs around whether grandchildren should have access to food treats, the final rules involved negotiation between grandparents and their grandchildren regarding the type and quantity of treats. This category intersected heavily with grandparent identity, as grandparents seemed to enjoy being viewed by their grandchildren as indulgent but at the same time they did not want to be manipulated or taken for granted. Therefore, grandchildren could request food treats, however there were clear rules and boundaries set. A 72-year-old grandmother said when discussing a jar of confectionery (FG): 'They get one or two and then they don't ask again. They know that's it, and it sits up on the shelf. They could go and get it if they climbed up on the chair and got it, but they don't.' One 70-year-old grandmother discussed the balance between being indulgent and being manipulated (I): 'They can me two or three times and then I think nup, enough's enough! We'll bring a little rule in so that it's not every time [they] see nanna [they] can have a doughnut.'
Neuman 2019	Sandra said, her mother was still "very on board about making sure that he gets a well-balanced [diet] and low on the sugar content." Furthermore, she was also said to be "really strict specialized, like, almost like vegan diet for health problems so, the food that she eats and what she has at her house when Edgar is there is like really restrictive." Thus, not only did Sandra's mother continue to play a role in Edgar's feeding, but Sandra also claimed her mother was more nutritionally strict in what she offered Edgar.
Chung 2019	For example some parents spoke of fruit juice and soft drink being regularly offered by grandparents. In some instances this was seen as a treat, and therefore considered acceptable. However, some parents spoke of conflict where parents and grandparents held different views about suitable drink options. Of note, the grandparents who participated in this study reported being strict with their grandchildren in not allowing regular sweet drink consumption.

10.5 Appendix 5 - Critical Appraisal Tool CASP Qualitative



CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- ▶ Are the results of the study valid? (Section A)
- ▶ What are the results? (Section B)
- ▶ Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly.

If the answer to both is “yes”, it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference:

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- what was the goal of the research
- why it was thought important
- its relevance

Comments:

2. Is a qualitative methodology appropriate?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal

Comments:

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:

4. Was the recruitment strategy appropriate to the aims of the research?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments:

5. Was the data collected in a way that addressed the research issue?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

Comments:

6. Has the relationship between researcher and participants been adequately considered?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:

Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

Comments:

8. Was the data analysis sufficiently rigorous?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
 - To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Comments:

9. Is there a clear statement of findings?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider whether

- If the findings are explicit
- If there is an adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

Comments:

Section C: Will the results help locally?

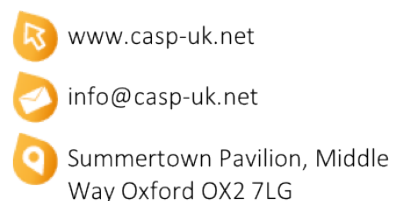
10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature)
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

10.6 Appendix 6 - Critical Appraisal Tool CASP Case Control



CASP Checklist: 11 questions to help you make sense of a [Case Control Study](#)

[How to use this appraisal tool](#): Three broad issues need to be considered when appraising a case control study:

- ▶ Are the results of the study valid? (Section A)
- ▶ What are the results? (Section B)
- ▶ Will the results help locally? (Section C)

The 11 questions on the following pages are designed to help you think about these issues systematically. The first three questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Case Control Study) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and

Section A: Are the results of the trial valid?

reference:.....

1. Did the study address a
clearly focused issue?

Yes

Can't
Tell

No

HINT: An issue can be 'focused' In terms of

- the population studied
- Whether the study tried to detect a **beneficial or harmful effect**
- the risk factors studied

Comments:

2. Did the authors use an
appropriate method to
answer their question?

Yes

Can't Tell

No

**HINT:
Consider**

- Is a case control study an appropriate way of answering the question under

- the
circumstances Did it
address the study question

Comments:

Is it worth continuing?

3. Were the cases recruited in an acceptable way?

Yes

Can't Tell

No

Comments:

HINT: We are looking for selection bias which might compromise validity of the findings

- are the cases defined precisely
- were the cases representative of a defined population (geographically and/or temporally)
- was there an established reliable system for selecting all the cases
 - are they incident or prevalent
- is there something special about the **cases**
 - is the time frame of the study relevant to disease/exposure
- was there a sufficient number of **cases selected**
- was there a power calculation

4. Were the controls selected in an acceptable way?

Yes

Can't Tell

No

Comments:

HINT: We are looking for selection bias which might compromise the generalisability of the findings

- were the controls representative of the defined population (geographically and/or temporally)
- was there something special about **the controls**
- was the non-response high, could non-respondents be different in **any way**
 - are they matched, population based or randomly selected
- was there a sufficient number of **controls selected**

5. Was the exposure accurately measured to minimise bias?

Yes

Can't Tell

No

Comments:

HINT: We are looking for measurement, recall or classification bias

- was the exposure clearly defined and accurately measured
- did the authors use subjective or objective measurements
- do the measures truly reflect what they are supposed to measure (have they been validated)
- were the measurement methods similar in the cases and controls
- did the study incorporate blinding where feasible
- is the temporal relation correct (does the exposure of interest precede the outcome)

6.(a) Aside from the experimental intervention, were the groups treated equally?

HINT: List the ones you think might be important, that the author may have missed

- genetic
- environmental
- socio-economic

List:

6. (b) Have the authors taken account of the potential confounding factors in the design and/or in their analysis?

Yes

Can't Tell

No

HINT: Look for

- restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

Comments:

Section B: What are the results?

7. How large was the treatment effect?

Comments:

- HINT: Consider
- what are the bottom line results
 - is the analysis appropriate to the design
 - how strong is the association between exposure and outcome (look at the odds ratio)
 - are the results adjusted for confounding, and might confounding still explain the association
 - has adjustment made a big difference to the OR

8. How precise was the estimate of the treatment effect?

- HINT: Consider
- size of the p-value
 - size of the confidence intervals
 - have the authors considered all the important variables
 - how was the effect of subjects refusing to participate evaluated

Comments:

9. Do you believe the results?

Yes	☐
No	☐

HINT:
Consider

- big effect is hard to ignore!
- Can it be due to chance, bias, or confounding
- are the design and methods of this study sufficiently flawed to make the results unreliable
- consider Bradford Hills criteria (e.g. time sequence, dose-response gradient, strength, biological plausibility)

Comments:

Section C: Will the results help locally?

10. Can the results be applied to the local population?

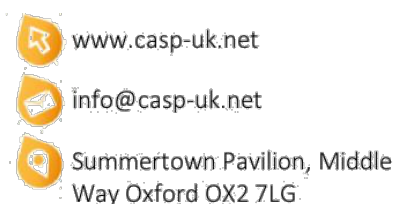
Yes	☐
Can't Tell	☐
No	☐

HINT: Consider whether

- the subjects covered in the study could be sufficiently different from your population to cause concern
- your local setting is likely to differ much from that of the study
- can you quantify the local benefits and harms

Comments:

10.7 Appendix 7 - Critical Appraisal Tool CASP Cohort Study



CASP Checklist: 12 questions to help you make sense of a **Cohort Study**

How to use this appraisal tool: Three broad issues need to be considered when appraising a cohort study:

- ▶ Are the results of the study valid? (Section A)
- ▶ What are the results? (Section B)
- ▶ Will the results help locally? (Section C)

The 12 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is “yes”, it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a “yes”, “no” or “can’t tell” to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

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Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Cohort Study) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference:.....

Section A: Are the results of the study valid?

1. Did the study address a clearly
focused issue?

Yes	☐
Can't Tell	☐
No	☐

HINT: A question can be 'focused'
in terms of
the population studied
the risk factors studied
2. Is it clear whether the study tried to
detect a beneficial or harmful effect
the outcomes considered

Comments:

2. Was the cohort recruited in
an acceptable way?

Yes	☐
Can't Tell	☐
No	☐

HINT: Look for selection bias which might
compromise the generalisability of the
findings:
was the cohort representative of a
defined population
7. Was there something special about the
cohort
was everybody included who should
have been

Comments:

Is it worth continuing?

3. Was the exposure accurately measured to minimise bias?

Yes	☐
Can't Tell	☐
No	☐

HINT: Look for measurement or classification bias:

- did they use subjective or objective measurements
- do the measurements truly reflect what you want them to (have they been validated)
- were all the subjects classified into exposure groups using the same procedure

Comments:

4. Was the outcome accurately measured to minimise bias?

Yes	☐
Can't Tell	☐
No	☐

HINT: Look for measurement or classification bias:

- did they use subjective or objective measurements
- do the measurements truly reflect what you want them to (have they been validated)
- has a reliable system been established for detecting all the cases (for measuring disease occurrence)
- were the measurement methods similar in the different groups
- were the subjects and/or the outcome assessor blinded to exposure (does this matter)

Comments:

5. (a) Have the authors identified all important confounding factors?

Yes	☐
Can't Tell	☐
No	☐

HINT:

- list the ones you think might be important, and ones the author missed

Comments:

5. (b) Have they taken account of the confounding factors in the design and/or analysis?

Yes	☐
Can't Tell	☐
No	☐

HINT:

- look for restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

Comments:

6. (a) Was the follow up of subjects complete enough?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- the good or bad effects should have had long enough to reveal themselves
- the persons that are lost to follow-up may have different outcomes than those available for assessment
- in an open or dynamic cohort, was there anything special about

6. (b) Was the follow up of subjects long enough?

Yes	☐
Can't Tell	☐
No	☐

the outcome of the people leaving, or the exposure of the people entering the cohort

Comments:

Section B: What are the results?

7. What are the results of this study?

HINT: Consider

- what are the bottom line results
- have they reported the rate or the proportion between the exposed/unexposed, the ratio/rate difference
- how strong is the association between exposure and outcome (RR)

Comments:

- what is the absolute risk reduction (ARR)

8. How precise are the results?

HINT:

- look for the range of the confidence intervals, if given

Comments:

9. Do you believe the results?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- big effect is hard to ignore
- can it be due to bias, chance or confounding
- are the design and methods of this study sufficiently flawed to make the results unreliable
- Bradford Hills criteria (e.g. time sequence, dose-response gradient, biological plausibility, consistency)

Comments:

Section C: Will the results help locally?

10. Can the results be applied to the local population?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider whether

- a cohort study was the appropriate method to answer this question
- the subjects covered in this study could be sufficiently different from your population to cause concern
- your local setting is likely to differ much from that of the study
- you can quantify the local benefits and harms

Comments:

11. Do the results of this study fit with other available evidence?

Yes	☐
Can't Tell	☐
No	☐

Comments:

12. What are the implications of this study for practice?

Yes	☐
Can't Tell	☐
No	☐

HINT: Consider

- one observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making
 - for certain questions, observational studies provide the only evidence
 - recommendations from observational studies are always stronger when supported by other evidence

10.8 Appendix 8 - Critical Appraisal Tool AXIS Cross-Sectional Studies

Appraisal tool for Cross-Sectional Studies (AXIS)

Critical appraisal (CA) is used to systematically assess research papers and to judge the reliability of the study being presented in the paper. CA also helps in assessing the worth and relevance of the study [1]. There are many key areas to CA including assessing suitability of the study to answer the hypothesised question and the possibility of introducing bias into the study. Identifying these key areas in CA requires good reporting of the study, if the study is poorly reported the appraisal of suitability and bias becomes difficult.

The following appraisal tool was developed for use in appraising observational cross-sectional studies. It is designed to address issues that are often apparent in cross-sectional studies and to aid the reader when assessing the quality of the study that they are appraising. The questions on the following pages are presented in the order that they should generally appear in a paper. The aim of the tool is to aid systematic interpretation of a cross-sectional study and to inform decisions about the quality of the study being appraised.

The appraisal tool comes with an explanatory help text which gives some background knowledge and explanation as to what the questions are asking. The explanations are designed to inform why the questions are important. Clicking on a question will automatically take you to the relevant section in the help text. The appraisal tool has areas to record a “yes”, “no” or “don’t know” answer for each question and there is room for short comments as well.

Appraisal of Cross-sectional Studies

	Question	Yes	No	Don't know/ Comment
Introduction				
1	Were the aims/objectives of the study clear?			
Methods				
2	Was the study design appropriate for the stated aim(s)?			
3	Was the sample size justified?			
4	Was the target/reference population clearly defined? (Is it clear who the research was about?)			
5	Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?			
6	Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?			
7	Were measures undertaken to address and categorise non-responders?			
8	Were the risk factor and outcome variables measured appropriate to the aims of the study?			
9	Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?			
10	Is it clear what was used to determine statistical significance and/or precision estimates? (e.g. p-values, confidence intervals)			
11	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?			
Results				
12	Were the basic data adequately described?			
13	Does the response rate raise concerns about non-response bias?			
14	If appropriate, was information about non-responders described?			
15	Were the results internally consistent?			
16	Were the results presented for all the analyses described in the methods?			
Discussion				
17	Were the authors' discussions and conclusions justified by the results?			
18	Were the limitations of the study discussed?			
Other				
19	Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?			
20	Was ethical approval or consent of participants attained?			

10.9 Appendix 9 - Quality Appraisal Review Agreement Scores CASP Case Control

Metbulut 2018

Question	Sophie's Answer	Colette's answers	Resolution	
	1 Yes	Yes		
	2 Yes	No (cross sectional more appropriate)	no	
	3 Yes	No(only those admitted to hospital with an acute symptom)	yes	Strange method but power calculation and a method of recruitment with minimum bias - convenience.
	4 Can't tell	No (controls not matched or randomly selected)	agree	
	5 Yes	No (Exposure was not clearly defined (fed by their mother and grandmother) and it is unknown how this was measured)	no	either mother or grandmother and mother
6a	It appears so?	Yes		
6b	Can't tell but I don't think it is required	No (no adjustment for confounds)		
	7 Appropriate analysis	Yes		
	Range of p values, most classified a sig and precision provided e.g. < .05 or < .01, confidence intervals not reported			
	8	Same as Sophie		
	9 yes	Yes		
	10 can't tell	Yes (no notes)	can't tell	not enough info
	11 yes	Yes		
agreement	eight out of 11			
		overall appraisal score		
		7 out of 11		

10.10 Appendix 10 - Quality Appraisal Review Agreement Scores CASP Qualitative

Question	Chung			Dwyer			Eli 2017		
	Sophie	Colette	Resolution	Sophie	Colette	Resolution	Sophie	Colette	Resolution
1	yes	yes		yes	can't tell	yes	yes	yes no (qual is appropriate but could have also used quantiative methods to assess practices	
2	yes	yes		yes	yes no (not justified)		yes	can't tell (not justified research design)	yes
3	yes	yes		yes		yes	yes		yes
4	yes	yes		yes	yes		yes	yes	
5	yes	yes		yes	yes		yes	yes	
6	no	no		no	no		no	no	
7	no	no		yes	yes		yes	yes	
8	yes	yes		yes	yes		yes	yes	
9	yes	yes		yes	yes		yes	yes	
10	yes Policy and future research suggested	yes		Influence on healthcare discussed- real life impact	yes		Addresses influence on policy	yes	
agreement									
10 out of 10		8 out of 10		8 out of 10		8 out of 10			
Final appraisal score		10		9 out of 10		9 out of 10			

Question	Jingxiong			Lidgate			Lindsay		
	Sophie	Colette	Resolution	Sophie	Colette	Resolution	Sophie	Colette	Resolution
1	yes	yes		yes	yes		no - not clear maybe I'm being harsh	yes An aim is described - describe perceptions but it is not clearly stated as an aim, the relevance and importance are discussed.	yes
2	yes	yes		yes	yes		yes	yes	
3	yes	yes		yes	yes		yes but no justification	no (no justification)	can't tell
4	yes	yes		yes	yes		yes	can't tell (Participant selection is described but no justification was provided. There was no discussion of recruitment)	can't tell
5	yes	can't tell (no discussion of how interview guide developed, where interviews took place, don't discuss data saturation)	yes	yes	yes		yes	can't tell (data collection setting was not justified, it is clear that semi-structured interviews and focus groups were used but this was not justified. The methods are not explicit - some description of interview guide development for the focus group is provided but not for the semi-structured interview and the authors do not provide an interview guide.)	yes
6	no	no		no	no		no	no	
7	yes	yes no (There is some description of the analysis process although no specific analysis method is provided. Participants were recruited to discuss the findings to find a consensus on the themes. Contradictory data is not taken into account. The researcher did not examine their own role)		can't tell - informed consent but maybe I missed where they said they got ethics from?	yes	yes	no	no	
8	yes	yes	cant tell	yes	yes		yes	no	yes

9	yes - but done poorly	yes	yes	yes	yes	yes
10	some mention of results linked to policy	yes	links to interventions in healthcare and communication in practise	yes	yes- section on implications for practise	yes
8 out of 10		8 out of 10		9 out of 10		5 out of 10
						6 out of 10

Question	Mena			Neuman and Eli			Pankhurst		
	Sophie	Colette	Resolution	Sophie	Colette	Resolution	Sophie	Colette	Resolution
1	yes	yes		no - not clear	yes Although not as clear as a health paper this paper examines how US parents and grandparents describe their provision of food to preschool aged children	yes	yes	yes	
2	yes	yes		yes	yes		yes	yes	
3	yes	yes		yes but no rationale	yes		yes	yes	
4	yes	yes		yes	yes		yes	yes	
5	yes	yes		yes	yes		yes	yes	
6	no	no		no	no		yes - partly	yes	
7	yes	yes cant tell (The data analysis is described in detail and it is clear how themes were derived from the data. The researchers role was not critically examined nor was contradictory data)	yes	yes	cant tell Ethical approval was sought but no detail on how the research was explained to the participants, or if any ethical issues were raised	yes	yes	yes	
8	yes			can't tell - no idea whether inductive or deductive, not detailed	yes	yes	yes	yes	
9	yes	yes		yes	yes		yes	yes	

10	related to current literature and suggests future work	yes	Some info on theoretical impact of the work	yes	future research and implication for practise discussed	yes

9 out of 10

6 out of 10

10 out of 10

9 out of 10

9 out of 10

Question	Rogers			Srivastava			Toftemo		
	Sophie	Colette	Resolution	Sophie	Colette	Resolution	Sophie	Colette	Resolution
1	yes	yes		yes	yes		yes	yes	
2	yes	yes		yes	yes		yes	yes	
3	yes	can't tell - no justification of research design	yes	yes	yes		yes	can't tell The researcher has not justified the design in reference to the aim	yes
		can't tell The researcher explains how the sampling was conducted (snowball, convenience and purposive), using flyers. Justification is not provided for this method. Justification is provided for the area chosen and for not sampling custodial grandparents.			no Doesn't explain how participants were recruited. No discssions around recruitment or why those participants				
4	yes	grandparents.	yes	yes		no	yes	can't tell The researcher has explained how participants were selected but does not discuss why the participants were the most appropriate. Recruitment was not discussed	can't tell

					can't tell Describe the setting and the method but doesn't justify them . Vague description of how interview guide developed . Don't know how they were recoded/the form of data. Does discuss saturation				can't tell The setting for the data collection was justified in the introduction, it is partially clear how the data was collected (semi-structured interviews) but justification is not provided. There is no indication of how the interview guide was developed, no piloting occurred and saturation is not discussed	
5	yes	yes can't tell The researcher used an interpretivist paradigm - allows the researcher to interpret with an understanding of subjective view however this is not discussed further	yes	yes	yes	yes	yes	yes	yes	yes
6	yes- partly	discussed further	yes	yes	yes		no	yes		yes
7	yes	yes cant tell - There is some description of the analysis process, the authors briefly describe how quotes were selected. Contradictory data was not considered. The researcher did not examin their own role and bias during analysis	yes	yes	yes		can't tell - informed consent but no mention of ethical approval	yes Ethical approval was granted but no discussion of this is in the paper.		yes
8	yes	during analysis	yes	yes	yes		can't tell - very brief	can't tell		

					no Findings are clear . Doesn't discuss evidence both for and against arguments or credibility of findings and doesn't discuss findings in relation to original research question					
9	yes	yes		yes		yes		yes		yes
	implications for research and practise discussed				implications for health promotion practitioners and researchers discussed			implications for practise discussed		
10		yes			yes				yes	
6 out of 10				7 out fo 10				6 out of 10		
			10 out of 10			9 out of 10				8 out of 10

10.11 Appendix 11- Quality Appraisal Review Agreement Scores AXIS Cross Sectional Studies

Question	Farrow			Speirs			Watanabe			Yue		
	Sophie	Colette	Resolution	Sophie	Colette	Resolution	Sophie	Colette	Resolution	Sophie	Colette	Resolution
13 (Reverse scored)	1	yes	yes	yes	yes		yes	yes		yes	yes	
	2	yes	yes	yes	yes		yes	yes		yes	yes	
	3	no	no	no	no		no	no		no	no	
	4	yes	yes	yes	yes		yes	yes		yes	yes	
	5	yes	yes	yes	yes		yes	yes		yes	yes	
	6	yes	yes	can't tell	no		yes	yes		yes	yes	
	7	no	no	no	no		no	no		no	no	
	8	yes	yes	yes	yes		yes	yes		yes	yes	
	9	yes	don't know	yes	no	yes	yes - mostly	no	no	yes- mostly	yes	
				no- although I can see p values were used	no		yes	yes		yes	yes	
	10	yes	yes	no	no		yes	yes		no	yes	
	11	no	no	yes	yes		yes	yes		yes	yes	
	12	yes	yes	yes	yes		yes	yes		yes	yes	
		no	no	cant tell no, can't tell if this is appropriate no detailed info on recruitment, e,g, number approached	yes	can' tell	no	no		can't tell	no	Can't tell
	14	no- not appropriate	no	yes	yes		yes	yes		yes	yes	
	15	yes	yes	yes	yes		yes	yes		yes	yes	
	16	yes	yes	yes	cant tell	can't tell	yes	yes		yes	yes	
	17	yes	yes	yes	yes		yes	yes		yes	yes	
	18	yes	yes	yes	yes		yes	yes		yes	yes	
	19	no	no	possibly- funded by maryland	no	can't tell	don't think so	no		can't tell	no	No
	20	yes	yes	no	no		yes	yes		yes	yes	
agreement	19 out of 20			17 out of 20			19 out of 20			19 out of 20		
	15 out of 20			10 out of 20			15 out of 20			15 out of 20		

Question	Kagamimori			Sata		
	Sophie	Colette	Resolution	Sophie	Colette	Resolution
5a	1 yes	yes cant tell Doesn't discuss cohort recruitment, recruited in one prefecture in Japan.		yes	yes	
	2 yes		can't tell	yes yes / maybe i don't understand this question	yes	
	3 can't tell	no	no		yes cant tell Subjective measurement, not validated or piloted. The methods were the same for the different groups.	
	4 yes	no no Haven't considered socio-economics, parental weight status	no	yes		can't tell
	5a yes yes- author adjusted the odds ratio		no	yes	yes	
	5b	no	yes	yes- adjusted for baseline	yes	
	6a no	no		yes	yes	
	6b no	can't tell		yes	yes	
	7 see results section? No confidence intervals, p values provided.	see results confidence intervals are provided		see results section? good precision, confidence intervals presented	yes	
	9 yes	yes cant tell The population and recruitment method is not described in enough detail to answer this.		yes	yes	
	10 yes - in country of work		no	yes - in country of work	yes	
	11 yes	yes		yes	yes	
	12 no	no		no	no	
agreement	8 out of 14			13 out of 14		
Final score	6 out of 14			12 out of 14		

10.12 Appendix 12 - Critical Appraisal Total Agreement

	195	239
	9	10
	19	20
	223	269
Initial	83% agreement	

10.13 Appendix 13 - Regression Results

ENERGY DENSITY

Iteration 0: log pseudolikelihood = -59187.61

Generalized linear models

Optimization : ML

Deviance = 486542.7813

Pearson = 486542.7813

Variance function: V(u) = 1

Link function : g(u) = u

Number of obs = 30,652

Residual df = 30,635

Scale parameter = 15.88193

(1/df) Deviance = 15.88193

(1/df) Pearson = 15.88193

[Gaussian]

[Identity]

AIC = 3.863018

BIC = 170069.3

Log pseudolikelihood = -59187.60985

(Std. Err. adjusted for 1,218 clusters in seriali)

		Robust				
EnergyDensity	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people						
Parent	Ref.					
Wider Family	0.32	0.12	2.70	0.007	0.09	0.55
Carer	-0.86	0.26	-3.26	0.001	-1.37	-0.34
No adult specified	-0.25	0.13	-2.03	0.043	-0.50	-0.01
Other	0.49	0.27	1.84	0.066	-0.03	1.01
Not recorded	-0.01	0.15	-0.10	0.919	-0.30	0.27
Child BMI						
Normal	Ref.					
Over-weight	-0.24	0.13	-1.82	0.069	-0.49	0.02
Obese	-0.13	0.17	-0.79	0.43	-0.46	0.20
Child Age						
Two	Ref.					
Three	0.18	0.13	1.30	0.193	-0.09	0.44
Four	0.21	0.15	1.45	0.148	-0.08	0.50
Household EquivInc						
Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500	-0.27	0.14	-1.85	0.064	-0.55	0.02
High > £32,500	-0.15	0.14	-1.03	0.302	-0.43	0.13
Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	-0.06	0.20	-0.28	0.781	-0.45	0.34
Black or Black British	-0.52	0.30	-1.76	0.079	-1.10	0.06
Asian or Asian British	0.47	0.24	1.93	0.053	-0.01	0.94

Any other group	-0.21	0.31	-0.67	0.503	-0.83	0.40
Child Gender						
Male	Ref.					
Female	-0.10	0.11	-0.92	0.359	-0.33	0.12
_cons	5.19	0.16	33.08	0	4.89	5.50
ENERGY Kcal						
Iteration 0: log pseudolikelihood	=	-123404.48				
Generalized linear models			Number of obs	=	30,652	
Optimization : ML			Residual df	=	30,635	
			Scale parameter	=	13408.07	
Deviance = 410756278.8			(1/df) Deviance	=	13408.07	
Pearson = 410756278.8			(1/df) Pearson	=	13408.07	
Variance function: V(u) = 1			[Gaussian]			
Link function : g(u) = u			[Identity]			
			AIC	=	8.053079	
Log pseudolikelihood = -123404.4817			BIC	=	4.10E+08	
(Std. Err. adjusted for 1,218 clusters in seriali)						
		Robust				
Energy (kcal)	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people						
Parent	Ref.					
Wider Family	14.82	4.21	3.52	0	6.57	23.08
Carer	-0.26	11.77	-0.02	0.982	-23.33	22.80
No adult specified	-12.18	4.16	-2.93	0.003	-20.33	-4.03
Other	15.89	8.06	1.97	0.049	0.09	31.69
Not recorded	-54.30	4.16	-13.07	0	-62.44	-46.15
Child BMI						
Normal	Ref.					
Over-weight	9.58	4.53	2.12	0.034	0.71	18.45
Obese	7.29	5.08	1.44	0.151	-2.66	17.24
Child Age						
Two	Ref.					
Three	15.01	4.13	3.63	0	6.91	23.11
Four	44.74	4.52	9.89	0	35.87	53.60
Household EquivInc						
Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500	-7.11	4.31	-1.65	0.099	-15.55	1.34
High > £32,500	-3.69	4.29	-0.86	0.39	-12.11	4.72

Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	11.43	10.41	1.10	0.272	-8.97	31.83
Black or Black British	32.32	10.27	3.15	0.002	12.19	52.45
Asian or Asian British	-10.70	6.71	-1.59	0.111	-23.85	2.46
Any other group	-17.54	8.46	-2.07	0.038	-34.12	-0.96

Child Gender						
Male	Ref.					
Female	-6.58	3.48	-1.89	0.059	-13.41	0.25
_cons	175.87	5.15	34.13	0	165.77	185.98

ENERGY KJ

Iteration 0: log pseudolikelihood = -150684.29

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,635
	Scale parameter	=	234719.8
Deviance = 7190640271	(1/df) Deviance	=	234719.8
Pearson = 7190640271	(1/df) Pearson	=	234719.8

Variance function: V(u) = 1 [Gaussian]
Link function : g(u) = u [Identity]

	AIC	=	9.833048
Log pseudolikelihood = -150684.2872	BIC	=	7.19E+09

(Std. Err. adjusted for 1,218 clusters in seriali)

		Robust				
Energy (kj)	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people						
Parent	Ref.					
Wider Family	62.03	17.62	3.52	0.000	27.48	96.57
Carer	-1.11	49.23	-0.02	0.982	-97.60	95.38
No adult specified	-50.96	17.39	-2.93	0.003	-85.05	-16.88
Other	66.48	33.73	1.97	0.049	0.37	132.59
Not recorded	-227.17	17.39	-13.07	0.000	-261.25	-193.09
Child BMI						
Normal	Ref.					
Over-weight	40.08	18.93	2.12	0.034	2.97	77.19
Obese	30.49	21.24	1.44	0.151	-11.14	72.12
Child Age						
Two	Ref.					
Three	62.80	17.29	3.63	0.000	28.92	96.69

Four	187.18	18.92	9.89	0.000	150.10	224.27
Household EquivInc						
Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500	-29.74	18.03	-1.65	0.099	-65.08	5.59
High > £32,500	-15.45	17.96	-0.86	0.390	-50.65	19.75
Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	47.82	43.54	1.10	0.272	-37.52	133.16
Black or Black British	135.24	42.97	3.15	0.002	51.01	219.46
Asian or Asian British	-44.75	28.08	-1.59	0.111	-99.79	10.29
Any other group	-73.37	35.39	-2.07	0.038	-142.74	-4.00
Child Gender						
Male	Ref.					
Female	-27.54	14.58	-1.89	0.059	-56.11	1.04
_cons	735.86	21.56	34.13	0.000	693.60	778.12

SODIUM

Iteration 0: log pseudolikelihood = -134032.68

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,635
	Scale parameter	=	40898.75
Deviance = 1252933118	(1/df) Deviance	=	40898.75
Pearson = 1252933118	(1/df) Pearson	=	40898.75

Variance function: V(u) = 1
Link function : g(u) = u

[Gaussian]
[Identity]

	AIC	=	8.746554
Log pseudolikelihood = -134032.6817	BIC	=	1.25E+09

(Std. Err. adjusted for 1,218 clusters in seriali)

		Robust				
Sodium (mg)	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people						
Parent	Ref.					
Wider Family	18.96	6.78	2.80	0.005	5.67	32.25
Carer	26.22	26.33	1.00	0.319	-25.39	77.84
No adult specified	-25.00	6.99	-3.57	0	-38.71	-11.29

Other	12.67	11.87	1.07	0.286	-10.58	35.93
Not recorded	-81.79	6.08	-13.46	0	-93.70	-69.87
Child BMI						
Normal	Ref.					
Over-weight	23.05	7.22	3.19	0.001	8.91	37.20
Obese	13.71	8.16	1.68	0.093	-2.28	29.71
Child Age						
Two	Ref.					
Three	26.47	6.44	4.11	0	13.85	39.09
Four	53.61	7.11	7.54	0	39.66	67.55
Household EquivInc						
Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500	-19.82	6.94	-2.85	0.004	-33.43	-6.21
High > £32,500	-19.69	6.83	-2.89	0.004	-33.07	-6.32
Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	8.22	16.60	0.50	0.621	-24.31	40.74
Black or Black British	10.04	15.82	0.63	0.526	-20.96	41.04
Asian or Asian British	-53.52	10.23	-5.23	0	-73.56	-33.47
Any other group	-52.29	13.18	-3.97	0	-78.12	-26.47
Child Gender						
Male	Ref.					
Female	0.80	5.49	0.15	0.884	-9.96	11.56
_cons	205.09	8.21	24.97	0	188.99	221.20

ADDED SUGARS

Iteration 0: log pseudolikelihood = -70020.255

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,635
	Scale parameter	=	49.49527
Deviance = 1516287.661	(1/df) Deviance	=	49.49527
Pearson = 1516287.661	(1/df) Pearson	=	49.49527
Variance function: V(u) = 1	[Gaussian]		
Link function : g(u) = u	[Identity]		
	AIC	=	4.569833
Log pseudolikelihood = -70020.25509	BIC	=	1199814

(Std. Err. adjusted for 1,218 clusters in seriali)

	Robust					
Added Sugars (g)	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]

Accompanying person/people

Parent	Ref.						
Wider Family	0.60	0.26	2.25	0.024	0.08	1.12	
Carer	-1.61	0.40	-4.05	0	-2.39	-0.83	
No adult specified	-0.38	0.24	-1.62	0.104	-0.85	0.08	
Other	1.03	0.48	2.15	0.032	0.09	1.98	
Not recorded	-1.03	0.24	-4.32	0	-1.50	-0.56	

Child BMI

Normal	Ref.						
Over-weight	0.19	0.31	0.61	0.545	-0.42	0.79	
Obese	-0.16	0.32	-0.50	0.617	-0.80	0.47	

Child Age

Two	Ref.						
Three	1.11	0.26	4.27	0	0.60	1.62	
Four	2.25	0.28	7.91	0	1.70	2.81	

Household EquivInc

Lowest <£17,500	Ref.						
Middle >£17,500 <= £32,500	-0.18	0.28	-0.64	0.52	-0.74	0.37	
High > £32,500	0.01	0.28	0.04	0.967	-0.54	0.56	

Child Ethnicity

White or White British	Ref.						
Mixed ethnic group	0.03	0.56	0.06	0.956	-1.07	1.13	
Black or Black British	0.98	0.72	1.35	0.177	-0.44	2.39	
Asian or Asian British	-1.46	0.36	-4.03	0	-2.17	-0.75	
Any other group	-1.46	0.47	-3.13	0.002	-2.38	-0.55	

Child Gender

Male	Ref.						
Female	-0.65	0.22	-2.90	0.004	-1.09	-0.21	
_cons	5.75	0.34	17.11	0	5.10	6.41	

TOTAL GRAMS

Iteration 0: log pseudolikelihood = -123284.24

Generalized linear models

Optimization : ML

Deviance = 405606183.3

Pearson = 405606183.3

Number of obs = 30,652

Residual df = 30,635

Scale parameter = 13239.96

(1/df) Deviance = 13239.96

(1/df) Pearson = 13239.96

Variance function: V(u) = 1

Link function : g(u) = u

[Gaussian]

[Identity]

AIC = 8.045233

BIC = 4.05E+08

Log pseudolikelihood = -123284.2391

(Std. Err. adjusted for 1,218 clusters in seriali)

	TotalGrams	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Accompanying person/people						
Parent		Ref.				
Wider Family		12.37	4.56	2.71	0.007	3.42 21.31
Carer		19.15	10.02	1.91	0.056	-0.48 38.79
No adult specified		-3.10	4.58	-0.68	0.498	-12.08 5.87
Other		0.10	7.81	0.01	0.989	-15.21 15.42
Not recorded		-40.57	4.05	-10.01	0	-48.51 -32.63
Child BMI						
Normal		Ref.				
Over-weight		16.05	6.14	2.61	0.009	4.02 28.09
Obese		10.38	6.27	1.66	0.098	-1.91 22.68
Child Age						
Two		Ref.				
Three		16.49	5.44	3.03	0.002	5.82 27.16
Four		36.91	5.70	6.48	0	25.74 48.07
Household EquivInc						
Lowest <£17,500		Ref.				
Middle >£17,500 <= £32,500		-3.45	5.81	-0.59	0.553	-14.82 7.93
High > £32,500		-5.92	5.60	-1.06	0.29	-16.90 5.06
Child Ethnicity						
White or White British		Ref.				
Mixed ethnic group		6.56	10.85	0.60	0.546	-14.71 27.82
Black or Black British		29.60	10.80	2.74	0.006	8.43 50.77
Asian or Asian British		-34.28	6.93	-4.95	0	-47.85 -20.70
Any other group		-27.80	14.76	-1.88	0.06	-56.74 1.13
Child Gender						
Male		Ref.				
Female		-3.51	4.53	-0.77	0.438	-12.40 5.37
_cons		201.65	6.46	31.23	0	189.00 214.31

SATURATED FAT

Iteration 0: log pseudolikelihood = -50675.132

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,635
	Scale parameter	=	6.500941
Deviance = 199156.3339	(1/df) Deviance	=	6.500941
Pearson = 199156.3339	(1/df) Pearson	=	6.500941

Variance function: $V(u) = 1$
 Link function : $g(u) = u$

[Gaussian]
 [Identity]

Log pseudolikelihood = -50675.13209

AIC = 3.307591
 BIC = -117317.1

(Std. Err. adjusted for 1,218 clusters in seriali)

	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Saturated Fat (g)					
Accompanying person/people					
Parent	Ref.				
Wider Family	0.24	0.09	2.76	0.006	0.07 0.41
Carer	-0.11	0.20	-0.54	0.593	-0.49 0.28
No adult specified	-0.11	0.08	-1.37	0.169	-0.27 0.05
Other	0.40	0.17	2.33	0.02	0.06 0.73
Not recorded	-0.73	0.08	-8.66	0	-0.90 -0.57
Child BMI					
Normal	Ref.				
Over-weight	0.17	0.10	1.67	0.096	-0.03 0.37
Obese	0.08	0.10	0.79	0.429	-0.12 0.27
Child Age					
Two	Ref.				
Three	0.09	0.08	1.09	0.277	-0.07 0.25
Four	0.48	0.09	5.25	0	0.30 0.66
Household EquivInc					
Lowest <£17,500	Ref.				
Middle >£17,500 <= £32,500	-0.09	0.08	-1.04	0.297	-0.25 0.08
High > £32,500	0.03	0.09	0.39	0.699	-0.14 0.20
Child Ethnicity					
White or White British	Ref.				
Mixed ethnic group	0.05	0.20	0.25	0.806	-0.34 0.44
Black or Black British	0.11	0.24	0.45	0.655	-0.37 0.59
Asian or Asian British	-0.11	0.13	-0.80	0.422	-0.37 0.15
Any other group	-0.16	0.15	-1.06	0.289	-0.45 0.14
Child Gender					
Male	Ref.				
Female	-0.04	0.07	-0.63	0.528	-0.18 0.09
_cons	2.79	0.10	28.12	0	2.60 2.99

VEG

Iteration 0: log pseudolikelihood = -190524.58

Generalized linear models		Number of obs	=	30,652
Optimization : ML		Residual df	=	30,635
		Scale parameter	=	1099.979
Deviance = 33733043.45		(1/df) Deviance	=	1099.979
Pearson = 33733043.45		(1/df) Pearson	=	1099.979
Variance function: V(u) = 1		[Gaussian]		
Link function : g(u) = u		[Identity]		
		AIC	=	12.4196
Log pseudolikelihood = -190524.5762		BIC	=	3.34E+07

(Std. Err. adjusted for 1,218 clusters in seriali)							
	SumVeg_sum	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]	
Accompanying person/people							
Parent		Ref.					
Wider Family		2.72	0.73	3.71	0	1.28	4.16
Carer		-1.46	1.64	-0.89	0.374	-4.67	1.76
No adult specified		-4.32	0.61	-7.12	0	-5.51	-3.13
Other		-2.68	1.99	-1.34	0.179	-6.58	1.23
Not recorded		-5.89	0.61	-9.64	0	-7.08	-4.69
Child BMI							
Normal		Ref.					
Over-weight		1.25	0.75	1.67	0.095	-0.22	2.71
Obese		-0.48	0.81	-0.59	0.556	-2.07	1.12
Child Age							
Two		Ref.					
Three		1.22	0.59	2.05	0.04	0.05	2.38
Four		3.32	0.69	4.83	0	1.97	4.66
Household EquivInc							
Lowest <£17,500		Ref.					
Middle >£17,500 <= £32,500		1.81	0.64	2.83	0.005	0.56	3.07
High > £32,500		2.56	0.64	3.99	0	1.30	3.82
Child Ethnicity							
White or White British		Ref.					
Mixed ethnic group		2.36	1.41	1.67	0.095	-0.41	5.13
Black or Black British		6.14	2.03	3.03	0.002	2.17	10.11
Asian or Asian British		0.61	1.11	0.55	0.583	-1.56	2.78
Any other group		1.29	1.53	0.84	0.399	-1.70	4.28

Child Gender							
	Male	Ref.					
	Female	-0.01	0.54		-0.01	0.992	-1.06 1.05
	_cons	9.20	0.72		12.74	0	7.78 10.61
FRUIT							
Iteration 0: log pseudolikelihood		=	-216813.45				
Generalized linear models				Number of obs		=	30,682
Optimization : ML				Residual df		=	30,665
				Scale parameter		=	4149.456
Deviance	=	127243058.5	(1/df) Deviance		=	4149.456	
Pearson	=	127243058.5	(1/df) Pearson		=	4149.456	
Variance function: V(u) = 1				[Gaussian]			
Link function : g(u) = u				[Identity]			
				AIC		=	14.13405
Log pseudolikelihood = -216813.4456				BIC		=	1.27E+08
(Std. Err. adjusted for 1,218 clusters in seriali)							
Robust							
	SumFruit_sum	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people							
	Parent	Ref.					
	Wider Family	-0.46	1.50	-0.31	0.757	-3.40	2.47
	Carer	11.74	4.56	2.58	0.01	2.81	20.68
	No adult specified	3.64	1.79	2.03	0.042	0.13	7.15
	Other	6.76	3.93	1.72	0.085	-0.94	14.45
	Not recorded	0.77	1.64	0.47	0.639	-2.45	3.99
Child BMI							
	Normal	Ref.					
	Over-weight	-0.60	2.20	-0.27	0.787	-4.91	3.72
	Obese	1.65	2.29	0.72	0.471	-2.84	6.15
Child Age							
	Two	Ref.					
	Three	5.56	1.75	3.17	0.002	2.12	9.00
	Four	8.65	1.88	4.60	0	4.97	12.34
Household EquivInc							
	Lowest <£17,500	Ref.					
	Middle >£17,500 <= £32,500	4.38	1.88	2.32	0.02	0.69	8.07
	High > £32,500	4.48	1.87	2.39	0.017	0.81	8.15

Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	2.14	4.11	0.52	0.603	-5.91	10.18
Black or Black British	2.82	4.40	0.64	0.521	-5.80	11.45
Asian or Asian British	-7.19	2.11	-3.40	0.001	-11.33	-3.04
Any other group	3.38	3.45	0.98	0.328	-3.39	10.15
Child Gender						
Male	Ref.					
Female	-4.06	1.52	-2.67	0.008	-7.04	-1.08
_cons	23.71	1.92	12.38	0	19.95	27.46

10.14 Appendix 14 - Socioeconomic Analysis

ENERGY DENSITY					
Iteration 0: log pseudolikelihood		=	-59179.175		
Generalized linear models			Number of obs	=	30,652
Optimization : ML			Residual df	=	30,625
			Scale parameter (1/df)	=	15.87306
Deviance	= 486112.3178		Deviance (1/df)	=	15.87306
Pearson	= 486112.3178		Pearson	=	15.87306
Variance function: V(u) = 1			[Gaussian]		
Link function : g(u) = u			[Identity]		
			AIC	=	3.86312
Log pseudolikelihood = -59179.1746			BIC	=	169742.2
(Std. Err. adjusted for 1,218 clusters in seriali)					

			Robust				
	EnergyDensity	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people							
	Parent	Ref.					
	Wider Family	-0.03	0.22	-0.13	0.897	-0.46	0.40
	Carer	-1.46	0.33	-4.40	0	-2.11	-0.81
	No adult specified	-0.55	0.23	-2.42	0.016	-1.00	-0.11
	Other	0.77	0.66	1.16	0.245	-0.53	2.07
	Not recorded	-0.31	0.28	-1.12	0.265	-0.86	0.23
Child BMI							
	Normal	Ref.					
	Over-weight	-0.23	0.13	-1.77	0.077	-0.49	0.03
	Obese	-0.12	0.17	-0.69	0.489	-0.44	0.21
Child Age							
	Two	Ref.					
	Three	0.17	0.13	1.25	0.21	-0.10	0.43
	Four	0.20	0.15	1.38	0.168	-0.09	0.49
Household EquivInc							
	Lowest <£17,500	Ref.					
	Middle >£17,500 <= £32,500	-0.45	0.18	-2.43	0.015	-0.81	-0.09
	High > £32,500	-0.45	0.18	-2.47	0.014	-0.80	-0.09
Child Ethnicity							

White or White British	Ref.					
Mixed ethnic group	-0.07	0.20	-0.34	0.731	-0.47	0.33
Black or Black British	-0.52	0.30	-1.75	0.08	-1.10	0.06
Asian or Asian British	0.48	0.24	2.00	0.046	0.01	0.95
Any other group	-0.23	0.31	-0.74	0.46	-0.83	0.37
Child Gender						
Male	Ref.					
Female	-0.11	0.11	-0.96	0.336	-0.33	0.11
Accompanying Person/People* # Household EquivInc**						
Wider Family # Middle >£17,500 <= £32,500	0.36	0.29	1.23	0.22	-0.21	0.93
Wider Family # High > £32,500	0.89	0.46	1.93	0.054	-0.02	1.79
Carer # Middle >£17,500 <= £32,500	0.25	0.30	0.84	0.4	-0.34	0.85
Carer # High > £32,500	0.09	0.82	0.11	0.914	-1.53	1.70
No adult specified # Middle >£17,500 <= £32,500	0.41	0.37	1.10	0.273	-0.32	1.13
No adult specified # High > £32,500	0.66	0.29	2.26	0.024	0.09	1.23
Other # Middle >£17,500 <= £32,500	0.81	0.54	1.50	0.134	-0.25	1.87
Other # High > £32,500	0.63	0.30	2.06	0.039	0.03	1.22
Not recorded # Middle >£17,500 <= £32,500	-0.55	0.74	-0.74	0.457	-2.01	0.90
Not recorded # High > £32,500	0.50	0.36	1.39	0.165	-0.21	1.21
_cons	5.36	0.17	31.16	0	5.02	5.69

ENERGY Kj

Iteration 0: log pseudolikelihood = -150677.13

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,625
	Scale parameter	=	234620.2
Deviance = 7185244943	(1/df)	=	234620.2
Pearson = 7185244943	Deviance (1/df)	=	234620.2
	Pearson		

Variance function: V(u) = 1

[Gaussian]

Link function : g(u) = u

[Identity]

AIC = 9.833233

Log pseudolikelihood = -150677.1339

BIC = 7.18E+09

(Std. Err. adjusted for 1,218 clusters in seriali)

	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
Energy (kj)					
Robust					
Accompanying person/people					
Parent	Ref.				
Wider Family	15.90	31.38	0.51	0.612	-45.60 77.40
Carer	-132.59	63.31	-2.09	0.036	-256.66 -8.51
No adult specified	-51.40	35.46	-1.45	0.147	-120.90 18.10

Other	65.17	78.37	0.83	0.406	-88.44	218.77
Not recorded	-210.93	33.80	-6.24	0	-277.17	-144.69
Child BMI						
Normal	Ref.					
Over-weight	39.15	18.80	2.08	0.037	2.31	75.99
Obese	30.70	21.24	1.45	0.148	-10.94	72.33
Child Age						
Two	Ref.					
Three	64.10	17.20	3.73	0	30.38	97.82
Four	188.17	18.83	9.99	0	151.26	225.08
Household EquivInc						
Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500	-39.97	25.53	-1.57	0.117	-90.00	10.07
High > £32,500	-26.87	24.42	-1.10	0.271	-74.74	21.00
Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	47.71	43.50	1.10	0.273	-37.55	132.97
Black or Black British	133.56	43.12	3.10	0.002	49.05	218.07
Asian or Asian British	-43.03	27.94	-1.54	0.124	-97.78	11.73
Any other group	-72.06	34.47	-2.09	0.037	-139.62	-4.50
Child Gender						
Male	Ref.					
Female	-27.23	14.60	-1.86	0.062	-55.85	1.39
Accompanying Person/People* # Household EquivInc**						
Wider Family # Middle >£17,500 <= £32,500	57.38	40.28	1.42	0.154	-21.57	136.34
Wider Family # High > £32,500	144.68	83.60	1.73	0.084	-19.17	308.53
Carer # Middle >£17,500 <= £32,500	5.18	44.42	0.12	0.907	-81.87	92.24
Carer # High > £32,500	6.89	91.68	0.08	0.94	-172.81	186.59
No adult specified # Middle >£17,500 <= £32,500	-17.13	44.21	-0.39	0.698	-103.78	69.53
No adult specified # High > £32,500	76.84	44.56	1.72	0.085	-10.49	164.18
Other # Middle >£17,500 <= £32,500	181.29	99.65	1.82	0.069	-14.02	376.61
Other # High > £32,500	-2.21	43.01	-0.05	0.959	-86.51	82.09
Not recorded # Middle >£17,500 <= £32,500	1.74	93.18	0.02	0.985	-180.90	184.37
Not recorded # High > £32,500	-30.92	43.60	-0.71	0.478	-116.37	54.52
_cons	741.90	24.43	30.37	0	694.02	789.78

SODIUM

Iteration 0: log pseudolikelihood = -134023.17

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,625

		Scale parameter (1/df)	=	40871.29
Deviance	=	1251683173		
		Deviance (1/df)	=	40871.29
Pearson	=	1251683173		
		Pearson	=	40871.29
Variance function: V(u) = 1		[Gaussian]		
Link function : g(u) = u		[Identity]		
		AIC	=	8.746586
Log pseudolikelihood = -134023.1698		BIC	=	1.25E+09

(Std. Err. adjusted for 1,218 clusters in seriali)

		Robust				
	Sodium (mg)	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
Accompanying person/people						
	Parent	Ref				
	Wider Family	-0.24	13.67	-0.02	0.986	-27.02 26.54
	Carer	-52.95	35.77	-1.48	0.139	-123.06 17.16
	No adult specified	-32.03	14.64	-2.19	0.029	-60.72 -3.33
	Other	-0.59	26.90	-0.02	0.983	-53.31 52.13
	Not recorded	-86.30	11.62	-7.43	0	-109.07 -63.53
Child BMI						
	Normal	Ref				
	Over-weight	23.06	7.23	3.19	0.001	8.90 37.23
	Obese	14.22	8.16	1.74	0.082	-1.78 30.22
Child Age						
	Two	Ref				
	Three	26.75	6.39	4.19	0	14.23 39.27
	Four	53.83	7.05	7.63	0	40.01 67.65
Household EquivInc						
	Lowest <£17,500	Ref				
	Middle >£17,500 <= £32,500	-26.75	9.78	-2.74	0.006	-45.91 -7.58
	High > £32,500	-31.97	9.33	-3.43	0.001	-50.26 -13.68
Child Ethnicity						
	White or White British	Ref				
	Mixed ethnic group	7.84	16.64	0.47	0.637	-24.77 40.46
	Black or Black British	10.21	16.02	0.64	0.524	-21.19 41.62
	Asian or Asian British	-52.87	10.09	-5.24	0	-72.64 -33.10
	Any other group	-52.60	13.31	-3.95	0	-78.68 -26.51
Child Gender						
	Male	Ref				
	Female	0.59	5.49	0.11	0.914	-10.17 11.36

Accompanying Person/People* # Household EquivInc**

Wider Family # Middle >£17,500 <= £32,500	25.11	17.40	1.44	0.149	-8.99	59.21
Wider Family # High > £32,500	31.57	17.10	1.85	0.065	-1.95	65.09
Carer # Middle >£17,500 <= £32,500	75.95	42.81	1.77	0.076	-7.96	159.86
Carer # High > £32,500	115.53	54.03	2.14	0.033	9.63	221.43
No adult specified # Middle >£17,500 <= £32,500	2.13	17.61	0.12	0.904	-32.37	36.64
No adult specified # High > £32,500	17.80	17.61	1.01	0.312	-16.71	52.31
Other # Middle >£17,500 <= £32,500	33.65	34.22	0.98	0.325	-33.42	100.71
Other # High > £32,500	11.94	31.57	0.38	0.705	-49.94	73.82
Not recorded # Middle >£17,500 <= £32,500	4.54	15.38	0.30	0.768	-25.60	34.68
Not recorded # High > £32,500	9.10	15.12	0.60	0.548	-20.55	38.74
_cons	211.26	9.13	23.13	0	193.36	229.16

ADDED SUGAR

Iteration 0: log pseudolikelihood = -70012.736

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,625
	Scale parameter	=	49.47238
Deviance = 1515091.786	(1/df)	=	49.47238
Pearson = 1515091.786	Deviance (1/df)	=	49.47238
	Pearson		

Variance function: V(u) = 1 [Gaussian]
Link function : g(u) = u [Identity]

	AIC	=	4.569995
Log pseudolikelihood = -70012.73599	BIC	=	1198722

(Std. Err. adjusted for 1,218 clusters in seriali)

	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Added Sugars (g)					
Accompanying person/people					
Parent	Ref				
Wider Family	-0.01	0.47	-0.02	0.987	-0.92 0.91
Carer	-2.62	0.60	-4.40	0	-3.78 -1.45
No adult specified	-0.17	0.42	-0.42	0.678	-0.99 0.64
Other	1.26	1.21	1.04	0.3	-1.12 3.63
Not recorded	-0.69	0.43	-1.60	0.11	-1.54 0.16
Child BMI					
Normal	Ref				
Over-weight	0.17	0.31	0.53	0.596	-0.45 0.78
Obese	-0.17	0.32	-0.53	0.597	-0.80 0.46
Child Age					
Two	Ref				

	Three	1.13	0.26	4.37	0	0.62	1.63
	Four	2.27	0.29	7.94	0	1.71	2.83
Household EquivInc							
	Lowest <£17,500	Ref					
	Middle >£17,500 <= £32,500	-0.33	0.39	-0.84	0.402	-1.09	0.44
	High > £32,500	0.07	0.36	0.20	0.839	-0.64	0.79
Child Ethnicity							
	White or White British	Ref					
	Mixed ethnic group	0.04	0.56	0.06	0.95	-1.06	1.13
	Black or Black British	0.94	0.74	1.27	0.204	-0.51	2.38
	Asian or Asian British	-1.43	0.37	-3.91	0	-2.15	-0.71
	Any other group	-1.43	0.45	-3.15	0.002	-2.32	-0.54
Child Gender							
	Male	Ref					
	Female	-0.65	0.22	-2.90	0.004	-1.08	-0.21
Accompanying Person/People* # Household EquivInc**							
	Wider Family # Middle >£17,500 <= £32,500	0.89	0.64	1.40	0.163	-0.36	2.14
	Wider Family # High > £32,500	0.89	0.66	1.35	0.178	-0.40	2.18
	Carer # Middle >£17,500 <= £32,500	0.95	0.85	1.12	0.262	-0.71	2.62
	Carer # High > £32,500	1.39	0.86	1.61	0.107	-0.30	3.08
	No adult specified # Middle >£17,500 <= £32,500	0.04	0.59	0.07	0.941	-1.11	1.20
	No adult specified # High > £32,500	-0.59	0.54	-1.09	0.276	-1.66	0.47
	Other # Middle >£17,500 <= £32,500	0.18	1.46	0.13	0.9	-2.68	3.05
	Other # High > £32,500	-0.57	1.36	-0.42	0.674	-3.24	2.10
	Not recorded # Middle >£17,500 <= £32,500	-0.25	0.60	-0.41	0.68	-1.43	0.93
	Not recorded # High > £32,500	-0.74	0.58	-1.28	0.199	-1.87	0.39
	_cons	5.76	0.36	15.82	0	5.05	6.48
TOTAL GRAMS							
Iteration 0: log pseudolikelihood		=	-123266.9				
Generalized linear models				Number of obs	=	30,652	
Optimization : ML				Residual df	=	30,625	
				Scale parameter (1/df)	=	13220.21	
Deviance	=	404869074.8		Deviance (1/df)	=	13220.21	
Pearson	=	404869074.8		Pearson (1/df)	=	13220.21	
Variance function: V(u) = 1				[Gaussian]			
Link function : g(u) = u				[Identity]			
				AIC	=	8.044754	
Log pseudolikelihood = -123266.9046				BIC	=	4.05E+08	

(Std. Err. adjusted for 1,218 clusters in seriali)

		Robust					
	TotalGrams	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people							
Parent		Ref					
Wider Family		5.51	8.46	0.65	0.515	-11.07	22.09
Carer		24.61	20.09	1.22	0.221	-14.78	63.99
No adult specified		13.25	9.82	1.35	0.177	-5.99	32.49
Other		-4.72	15.57	-0.30	0.762	-35.23	25.79
Not recorded		-31.07	6.98	-4.45	0	-44.75	-17.39
Child BMI							
Normal		Ref					
Over-weight		15.37	6.10	2.52	0.012	3.41	27.32
Obese		9.99	6.30	1.58	0.113	-2.36	22.34
Child Age							
Two		Ref					
Three		17.13	5.41	3.17	0.002	6.53	27.73
Four		37.48	5.66	6.62	0	26.38	48.58
Household EquivInc							
Lowest <£17,500		Ref					
Middle >£17,500 <= £32,500		0.85	7.11	0.12	0.905	-13.09	14.79
High > £32,500		0.14	6.75	0.02	0.983	-13.08	13.37
Child Ethnicity							
White or White British		Ref					
Mixed ethnic group		7.10	10.81	0.66	0.512	-14.09	28.29
Black or Black British		28.86	10.92	2.64	0.008	7.46	50.27
Asian or Asian British		-33.70	6.90	-4.89	0	-47.22	-20.18
Any other group		-27.36	14.08	-1.94	0.052	-54.95	0.23
Child Gender							
Male							
Female		-3.50	4.52	-0.77	0.439	-12.35	5.36
Accompanying Person/People* # Household EquivInc**		Ref					
Wider Family # Middle >£17,500 <= £32,500		9.24	10.84	0.85	0.394	-12.01	30.48
Wider Family # High > £32,500		10.00	11.47	0.87	0.384	-12.49	32.49
Carer # Middle >£17,500 <= £32,500		-31.29	25.17	-1.24	0.214	-80.63	18.04
Carer # High > £32,500		1.28	24.38	0.05	0.958	-46.51	49.07
No adult specified # Middle >£17,500 <= £32,500		-20.38	11.47	-1.78	0.076	-42.87	2.11
No adult specified # High > £32,500		-28.32	11.47	-2.47	0.014	-50.81	-5.83
Other # Middle >£17,500 <= £32,500		-0.48	18.77	-0.03	0.979	-37.27	36.30
Other # High > £32,500		8.63	20.12	0.43	0.668	-30.80	48.07
Not recorded # Middle >£17,500 <= £32,500		-9.51	10.23	-0.93	0.353	-29.55	10.54
Not recorded # High > £32,500		-18.91	9.60	-1.97	0.049	-37.73	-0.08

	_cons	198.00	7.04	28.14	0	184.21	211.79
SATURATED FAT							
Iteration 0: log pseudolikelihood		=	-50668.819				
Generalized linear models				Number of obs	=	30,652	
Optimization : ML				Residual df	=	30,625	
				Scale parameter (1/df)	=	6.498758	
Deviance	=	199024.4554		Deviance (1/df)	=	6.498758	
Pearson	=	199024.4554		Pearson	=	6.498758	
Variance function: V(u) = 1				[Gaussian]			
Link function : g(u) = u				[Identity]			
				AIC	=	3.307831	
Log pseudolikelihood = -50668.8194				BIC	=	-117345.7	

(Std. Err. adjusted for 1,218 clusters in seriali)

		Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Saturated Fat (g)						
Accompanying person/people						
Parent	Ref					
Wider Family		0.02	0.15	0.17	0.865	-0.26 0.31
Carer		-0.39	0.32	-1.23	0.219	-1.01 0.23
No adult specified		-0.30	0.14	-2.10	0.036	-0.58 -0.02
Other		0.48	0.35	1.36	0.173	-0.21 1.17
Not recorded		-0.66	0.17	-3.90	0	-1.00 -0.33
Child BMI						
Normal	Ref					
Over-weight		0.17	0.10	1.67	0.094	-0.03 0.37
Obese		0.08	0.10	0.84	0.398	-0.11 0.28
Child Age						
Two	Ref					
Three		0.09	0.08	1.08	0.279	-0.07 0.25
Four		0.48	0.09	5.23	0	0.30 0.66
Household EquivInc						
Lowest <£17,500	Ref					
Middle >£17,500 <= £32,500		-0.18	0.12	-1.48	0.139	-0.42 0.06
High > £32,500		-0.07	0.12	-0.61	0.542	-0.31 0.16
Child Ethnicity						
White or White British	Ref					
Mixed ethnic group		0.04	0.20	0.22	0.829	-0.35 0.43

Black or Black British	0.10	0.25	0.41	0.679	-0.38	0.59
Asian or Asian British	-0.10	0.13	-0.77	0.442	-0.37	0.16
Any other group	-0.15	0.15	-1.02	0.306	-0.45	0.14
Child Gender						
Male	Ref					
Female	-0.04	0.07	-0.60	0.552	-0.18	0.10
Accompanying Person/People* # Household EquivInc**						
Wider Family # Middle >£17,500 <= £32,500	0.27	0.19	1.38	0.168	-0.11	0.65
Wider Family # High > £32,500	0.37	0.22	1.64	0.102	-0.07	0.80
Carer # Middle >£17,500 <= £32,500	0.50	0.44	1.14	0.254	-0.36	1.36
Carer # High > £32,500	0.34	0.44	0.76	0.445	-0.53	1.21
No adult specified # Middle >£17,500 <= £32,500	0.26	0.19	1.37	0.171	-0.11	0.63
No adult specified # High > £32,500	0.31	0.20	1.52	0.129	-0.09	0.71
Other # Middle >£17,500 <= £32,500	0.07	0.45	0.15	0.884	-0.83	0.96
Other # High > £32,500	-0.18	0.43	-0.41	0.679	-1.03	0.67
Not recorded # Middle >£17,500 <= £32,500	-0.08	0.22	-0.39	0.697	-0.51	0.34
Not recorded # High > £32,500	-0.12	0.22	-0.56	0.579	-0.54	0.30
_cons	2.86	0.11	25.68	0	2.64	3.07

VEG

Iteration 0: log pseudolikelihood = -190510.91

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,625
	Scale parameter (1/df)	=	1099.579
Deviance = 33709784.07	Deviance (1/df)	=	1099.579
Pearson = 33709784.07	Pearson	=	1099.579

Variance function: V(u) = 1 [Gaussian]
Link function : g(u) = u [Identity]

	AIC	=	12.41937
Log pseudolikelihood = -190510.9079	BIC	=	3.34E+07

(Std. Err. adjusted for 1,218 clusters in seriali)

	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
Robust					
SumVeg_sum					
Accompanying person/people					
Parent	Ref				
Wider Family	1.73	1.23	1.41	0.157	-0.67 4.14
Carer	4.07	3.55	-1.15	0.251	-11.03 2.88
No adult specified	5.54	1.01	-5.50	0	-7.52 -3.57
Other	12.06	1.14	-10.60	0	-14.29 -9.83
Not recorded	-6.46	1.03	-6.28	0	-8.48 -4.44

Child BMI							
Normal	Ref						
Over-weight	1.25	0.75	1.66	0.096	-0.22	2.71	
Obese	-0.42	0.82	-0.52	0.602	-2.02	1.17	
Child Age							
Two	Ref						
Three	1.26	0.59	2.13	0.033	0.10	2.42	
Four	3.36	0.69	4.86	0	2.00	4.71	
Household EquivInc							
Lowest <£17,500	Ref						
Middle >£17,500 <= £32,500	1.01	0.96	1.04	0.296	-0.88	2.90	
High > £32,500	1.65	1.00	1.65	0.099	-0.31	3.61	
Child Ethnicity							
White or White British	Ref						
Mixed ethnic group	2.37	1.43	1.66	0.097	-0.43	5.16	
Black or Black British	6.06	2.05	2.95	0.003	2.04	10.09	
Asian or Asian British	0.61	1.10	0.55	0.58	-1.55	2.78	
Any other group	1.16	1.55	0.75	0.454	-1.87	4.19	
Child Gender							
Male	Ref						
Female	-0.01	0.54	-0.01	0.992	-1.06	1.05	
Accompanying Person/People* # Household EquivInc**							
Wider Family # Middle >£17,500 <= £32,500	2.15	1.77	1.21	0.226	-1.33	5.62	
Wider Family # High > £32,500	4.48	4.35	1.03	0.304	-4.05	13.00	
Carer # Middle >£17,500 <= £32,500	0.84	1.39	0.60	0.546	-1.88	3.56	
Carer # High > £32,500	7.44	3.13	2.38	0.017	1.31	13.58	
No adult specified # Middle >£17,500 <= £32,500	1.13	1.40	0.81	0.419	-1.61	3.88	
No adult specified # High > £32,500	0.70	1.72	0.41	0.685	-2.67	4.07	
Other # Middle >£17,500 <= £32,500	2.83	4.35	0.65	0.515	-5.70	11.36	
Other # High > £32,500	2.94	1.50	1.96	0.05	0.00	5.87	
Not recorded # Middle >£17,500 <= £32,500	14.12	3.43	4.11	0	7.39	20.85	
Not recorded # High > £32,500	0.53	1.58	0.34	0.735	-2.57	3.64	
_cons	9.74	0.85	11.45	0	8.07	11.41	

FRUIT

Iteration 0: log pseudolikelihood = -216796.43

Generalized linear models		Number of obs	=	30,652
Optimization : ML		Residual df	=	30,625
		Scale parameter	=	4147.246
Deviance	= 127133815.7	(1/df)	=	4147.246
Pearson	= 127133815.7	Deviance (1/df)	=	4147.246

	Pearson	
Variance function: $V(u) = 1$	[Gaussian]	
Link function : $g(u) = u$	[Identity]	
	AIC	= 14.13359
Log pseudolikelihood = -216796.427	BIC	= 1.27E+08

		(Std. Err. adjusted		for 1,218	clusters		
					in		
					seriali)		
		Robust					
SumFruit_sum	Coef.	Std. Err.	z	z	P>z	[95% Conf. Interval]	
Accompanying person/people							
Parent	Ref						
Wider Family	-3.16	2.61		-1.21	0.226	-8.27	1.95
Carer	2.41	6.31		0.38	0.703	-9.96	14.78
No adult specified	6.46	4.06		1.59	0.112	-1.50	14.43
Other	27.10	11.51		2.35	0.019	4.53	49.67
Not recorded	0.82	2.69		0.31	0.759	-4.44	6.09
Child BMI							
Normal	Ref						
Over-weight	-0.71	2.17		-0.33	0.745	-4.97	3.55
Obese	1.62	2.31		0.70	0.483	-2.90	6.13
Child Age							
Two	Ref						
Three	5.68	1.77		3.22	0.001	2.22	9.14
Four	8.74	1.89		4.62	0	5.03	12.45
Household EquivInc							
Lowest <£17,500	Ref						
Middle >£17,500 <= £32,500	4.53	2.45		1.84	0.065	-0.28	9.34
High > £32,500	4.27	2.38		1.80	0.072	-0.39	8.94
Child Ethnicity							
White or White British	Ref						
Mixed ethnic group	2.06	4.14		0.50	0.618	-6.05	10.17
Black or Black British	2.61	4.33		0.60	0.547	-5.88	11.11
Asian or Asian British	-6.97	2.12		-3.29	0.001	-11.12	-2.81
Any other group	3.44	3.44		1.00	0.317	-3.30	10.18
Child Gender							
Male	Ref						
Female	-4.13	1.53		-2.70	0.007	-7.13	-1.14

Accompanying Person/People* # Household EquivInc**	Ref					
Wider Family # Middle >£17,500 <= £32,500	2.94	3.62	0.81	0.417	-4.16	10.03
Wider Family # High > £32,500	10.37	8.86	1.17	0.242	-6.99	27.73
Carer # Middle >£17,500 <= £32,500	-3.24	4.72	-0.69	0.492	-12.50	6.02
Carer # High > £32,500	-19.75	13.28	-1.49	0.137	-45.77	6.27
No adult specified # Middle >£17,500 <= £32,500	-1.12	3.68	-0.31	0.76	-8.34	6.09
No adult specified # High > £32,500	5.05	3.79	1.33	0.183	-2.38	12.48
Other # Middle >£17,500 <= £32,500	11.91	9.73	1.22	0.221	-7.15	30.97
Other # High > £32,500	-5.09	4.69	-1.09	0.278	-14.29	4.10
Not recorded # Middle >£17,500 <= £32,500	-26.31	12.30	-2.14	0.032	-50.41	-2.20
Not recorded # High > £32,500	1.14	4.32	0.26	0.791	-7.33	9.62
_cons	23.71	2.11	11.25	0	19.58	27.84

10.15 Appendix 15 - Sensitivity Analysis

ENERGY DENSITY

Iteration 0: log pseudolikelihood = -59145.763

Generalized linear models

Optimization : ML

Deviance = 484410.9932

Pearson = 484410.9932

Variance function: V(u) = 1

Link function : g(u) = u

Number of obs = 30,652

Residual df = 30,632

Scale parameter = 15.81389

(1/df) Deviance = 15.81389

(1/df) Pearson = 15.81389

[Gaussian]

[Identity]

AIC = 3.860483

BIC = 167968.6

Log pseudolikelihood = -59145.76263

(Std. Err. adjusted for 1,218 clusters in seriali)

	EnergyDensity	Coef.	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people							
Parent		Ref.					
Wider Family		0.27	0.12	2.30	0.021	0.04	0.51
Carer		-1.09	0.27	-4.03	0	-1.62	-0.56
No adult specified		-0.31	0.13	-2.47	0.013	-0.55	-0.06
Other		0.33	0.26	1.25	0.212	-0.19	0.84
Not recorded		-0.10	0.15	-0.67	0.502	-0.39	0.19
Child BMI							
Normal		Ref.					
Over-weight		-0.23	0.13	-1.78	0.075	-0.48	0.02
Obese		-0.14	0.17	-0.83	0.409	-0.47	0.19
Child Age							
Two		Ref.					
Three		0.18	0.13	1.30	0.195	-0.09	0.44
Four		0.22	0.15	1.52	0.129	-0.06	0.51
Household EquivInc							
Lowest <£17,500		Ref.					
Middle >£17,500 <= £32,500		-0.26	0.14	-1.78	0.076	-0.54	0.03
High > £32,500		-0.13	0.14	-0.88	0.377	-0.40	0.15
Child Ethnicity							
White or White British		Ref.					
Mixed ethnic group		-0.05	0.20	-0.27	0.788	-0.45	0.34
Black or Black British		-0.54	0.30	-1.84	0.066	-1.12	0.04
Asian or Asian British		0.42	0.24	1.72	0.086	-0.06	0.89
Any other group		-0.27	0.31	-0.88	0.381	-0.88	0.34
Child Gender							
Male		Ref.					
Female		-0.11	0.11	-0.95	0.344	-0.33	0.12

EatingOccasion

breakfast	Ref.					
lunch	1.04	0.14	7.57	0	0.77	1.31
evening meal	0.41	0.12	3.38	0.001	0.17	0.65
snack	0.78	0.12	6.50	0	0.55	1.02
_cons	4.62	0.17	27.92	0	4.29	4.94

ENERGY Kcal

Iteration 0: log pseudolikelihood = -122590.38

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,632
	Scale parameter	=	12311.44
Deviance = 377123974.2	(1/df) Deviance	=	12311.44
Pearson = 377123974.2	(1/df) Pearson	=	12311.44

Variance function: V(u) = 1

[Gaussian]

Link function : g(u) = u

[Identity]

AIC = 8.000155

Log pseudolikelihood = -122590.376

BIC = 3.77E+08

(Std. Err. adjusted for 1,218 clusters in seriali)

Energykcal_sum	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]

Accompanying person/people

Parent	Ref.				
Wider Family	11.61	4.09	2.84	0.005	3.59 19.62
Carer	12.84	10.57	1.21	0.225	-7.88 33.56
No adult specified	-5.34	3.88	-1.38	0.169	-12.94 2.27
Other	20.00	7.70	2.60	0.009	4.91 35.09
Not recorded	-45.54	4.07	-11.18	0	-53.53 -37.56

Child BMI

Normal	Ref.				
Over-weight	10.10	4.44	2.27	0.023	1.40 18.81
Obese	6.59	5.02	1.31	0.19	-3.26 16.44

Child Age

Two	Ref.				
Three	14.39	4.06	3.55	0	6.44 22.34
Four	42.81	4.41	9.71	0	34.17 51.45

Household EquivInc

Lowest <£17,500	Ref.				
Middle >£17,500 <= £32,500	-7.25	4.23	-1.71	0.087	-15.55 1.05
High > £32,500	-3.10	4.18	-0.74	0.46	-11.30 5.11

Child Ethnicity

White or White British	Ref.				
Mixed ethnic group	10.36	10.31	1.00	0.315	-9.85 30.57

Black or Black British	32.30	9.79	3.30	0.001	13.11	51.49
Asian or Asian British	-4.98	6.79	-0.73	0.463	-18.28	8.32
Any other group	-12.40	8.69	-1.43	0.154	-29.43	4.63

Child Gender

Male	Ref.					
Female	-6.84	3.42	-2.00	0.045	-13.54	-0.14

EatingOccassion

breakfast	Ref.					
lunch	78.06	4.45	17.52	0	69.33	86.79
evening meal	40.19	3.85	10.45	0	32.65	47.73
snack	-32.43	3.51	-9.24	0	-39.31	-25.55
_cons	165.56	5.31	31.19	0	155.16	175.97

ENERGY KJ

Iteration 0: log pseudolikelihood = -149870.18

Generalized linear models		Number of obs	=	30,652
Optimization : ML		Residual df	=	30,632
		Scale parameter	=	215522.3
Deviance = 6601877988		(1/df) Deviance	=	215522.3
Pearson = 6601877988		(1/df) Pearson	=	215522.3

Variance function: V(u) = 1

[Gaussian]

Link function : g(u) = u

[Identity]

		AIC	=	9.780124
Log pseudolikelihood = -149870.1815		BIC	=	6.60E+09

(Std. Err. adjusted for 1,218 clusters in seriali)

		Robust				
Energy (kJ)	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people						
Parent	Ref.					
Wider Family	48.56	17.11	2.84	0.005	15.02	82.10
Carer	53.71	44.23	1.21	0.225	-32.99	140.40
No adult specified	-22.32	16.23	-1.38	0.169	-54.12	9.48
Other	83.67	32.22	2.60	0.009	20.52	146.82
Not recorded	-190.55	17.05	-11.18	0	-223.97	-157.14
Child BMI						
Normal	Ref.					
Over-weight	42.28	18.59	2.27	0.023	5.84	78.71
Obese	27.56	21.02	1.31	0.19	-13.65	68.76
Child Age						

	Two	Ref.					
	Three	60.20	16.97	3.55	0	26.94	93.46
	Four	179.12	18.45	9.71	0	142.96	215.28
Household EquivInc							
	Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500		-30.35	17.72	-1.71	0.087	-65.08	4.38
High > £32,500		-12.95	17.51	-0.74	0.46	-47.27	21.37
Child Ethnicity							
	White or White British	Ref.					
	Mixed ethnic group	43.35	43.14	1.00	0.315	-41.21	127.91
	Black or Black British	135.14	40.97	3.30	0.001	54.85	215.44
	Asian or Asian British	-20.84	28.40	-0.73	0.463	-76.49	34.81
	Any other group	-51.87	36.36	-1.43	0.154	-123.13	19.38
Child Gender							
	Male	Ref.					
	Female	-28.62	14.30	-2.00	0.045	-56.66	-0.59
EatingOccassion							
	breakfast	Ref.					
	lunch	326.61	18.64	17.52	0	290.08	363.14
	evening meal	168.14	16.09	10.45	0	136.60	199.68
	snack	-135.68	14.69	-9.24	0	-164.47	-106.90
	_cons	692.72	22.21	31.19	0	649.18	736.25
SODIUM							
Iteration 0: log pseudolikelihood		=	-133032.68				
Generalized linear models				Number of obs		=	30,652
Optimization : ML				Residual df		=	30,632
				Scale parameter		=	36828.25
Deviance	=	1128122828	(1/df) Deviance		=	36828.25	
Pearson	=	1128122828	(1/df) Pearson		=	36828.25	
Variance function: V(u) = 1				[Gaussian]			
Link function : g(u) = u				[Identity]			
				AIC		=	8.681501
Log pseudolikelihood = -133032.6831				BIC		=	1.13E+09
(Std. Err. adjusted for 1,218 clusters in seriali)			seriali)				
Robust							
Sodium (mg)	Coef.	Std. Err.		z	P>z	[95% Conf. Interval]	
Accompanying person/people							
Parent	Ref.						

	Wider Family	10.52	6.64	1.58	0.113	-2.49	23.54
	Carer	36.79	23.69	1.55	0.12	-9.64	83.23
	No adult specified	-15.67	6.55	-2.39	0.017	-28.50	-2.83
	Other	11.18	11.21	1.00	0.319	-10.79	33.15
	Not recorded	-70.42	5.93	-11.87	0	-82.06	-58.79
	Child BMI						
	Normal	Ref.					
	Over-weight	24.38	7.26	3.36	0.001	10.15	38.60
	Obese	12.06	7.88	1.53	0.126	-3.39	27.52
	Child Age						
	Two	Ref.					
	Three	25.30	6.31	4.01	0	12.94	37.67
	Four	50.66	6.93	7.31	0	37.08	64.24
	Household EquivInc						
	Lowest <£17,500	Ref.					
	Middle >£17,500 <= £32,500	-19.42	6.83	-2.84	0.004	-32.80	-6.03
	High > £32,500	-17.41	6.60	-2.64	0.008	-30.34	-4.48
	Child Ethnicity						
	White or White British	Ref.					
	Mixed ethnic group	6.36	15.85	0.40	0.688	-24.71	37.43
	Black or Black British	8.71	16.65	0.52	0.601	-23.93	41.35
	Asian or Asian British	-45.81	10.20	-4.49	0	-65.81	-25.81
	Any other group	-46.27	14.20	-3.26	0.001	-74.10	-18.44
	Child Gender						
	Male	Ref.					
	Female	0.16	5.38	0.03	0.976	-10.39	10.71
	EatingOccassion						
	breakfast	Ref.					
	lunch	200.80	7.91	25.37	0	185.29	216.31
	evening meal	94.82	6.02	15.74	0	83.01	106.63
	snack	-16.27	5.06	-3.21	0.001	-26.18	-6.35
	_cons	154.57	7.84	19.71	0	139.20	169.95

ADDED SUGARS

Iteration 0: log pseudolikelihood = -69977.189

Generalized linear models

Optimization : ML

Deviance = 1509450.937

Pearson = 1509450.937

Number of obs = 30,652

Residual df = 30,632

Scale parameter = 49.27693

(1/df) Deviance = 49.27693

(1/df) Pearson = 49.27693

Variance function: V(u) = 1

[Gaussian]

Link function : g(u) = u			[Identity]			
			AIC	=	4.567218	
Log pseudolikelihood = -69977.18877			BIC	=	1193008	
(Std. Err. adjusted for 1,218 clusters in seriali)						
		Robust				
Added sugars (g)	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people						
Parent	Ref.					
Wider Family	0.57	0.27	2.13	0.033	0.05	1.10
Carer	-1.68	0.39	-4.29	0	-2.44	-0.91
No adult specified	-0.38	0.24	-1.60	0.109	-0.84	0.09
Other	1.03	0.48	2.13	0.033	0.08	1.97
Not recorded	-0.95	0.24	-3.96	0	-1.42	-0.48
Child BMI						
Normal	Ref.					
Over-weight	0.19	0.31	0.61	0.539	-0.42	0.80
Obese	-0.17	0.32	-0.53	0.594	-0.81	0.46
Child Age						
Two	Ref.					
Three	1.10	0.26	4.24	0	0.59	1.61
Four	2.25	0.28	7.90	0	1.69	2.80
Household EquivInc						
Lowest <£17,500	Ref.					
Middle >£17,500 <= £32,500	-0.18	0.28	-0.63	0.528	-0.73	0.38
High > £32,500	0.03	0.28	0.09	0.925	-0.52	0.58
Child Ethnicity						
White or White British	Ref.					
Mixed ethnic group	0.02	0.57	0.04	0.965	-1.08	1.13
Black or Black British	0.96	0.72	1.34	0.182	-0.45	2.36
Asian or Asian British	-1.41	0.36	-3.90	0	-2.12	-0.70
Any other group	-1.42	0.46	-3.07	0.002	-2.32	-0.51
Child Gender						
Male	Ref.					
Female	-0.64	0.22	-2.88	0.004	-1.08	-0.20
EatingOccassion						
breakfast	Ref.					
lunch	1.15	0.30	3.82	0	0.56	1.73
evening meal	-0.45	0.26	-1.75	0.08	-0.95	0.05
snack	-0.50	0.23	-2.18	0.029	-0.96	-0.05

	_cons	5.87	0.38	15.60	0	5.13	6.61
TOTAL GRAMS							
Iteration 0: log pseudolikelihood		=	-122884.14				
Generalized linear models				Number of obs	=	30,652	
Optimization : ML				Residual df	=	30,632	
				Scale parameter	=	12696.85	
Deviance	=	388929897.4		(1/df) Deviance	=	12696.85	
Pearson	=	388929897.4		(1/df) Pearson	=	12696.85	
Variance function: V(u) = 1				[Gaussian]			
Link function : g(u) = u				[Identity]			
				AIC	=	8.019323	
Log pseudolikelihood = -122884.1379				BIC	=	3.89E+08	

(Std. Err. adjusted for 1,218 clusters in seriali)

	Total Grams (g)	Coef.	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Accompanying person/people							
Parent	Ref.						
Wider Family	10.54	4.50	2.34	0.019	1.73	19.35	
Carer	32.76	9.89	3.31	0.001	13.38	52.14	
No adult specified	2.93	4.51	0.65	0.516	-5.90	11.76	
Other	5.22	7.47	0.70	0.485	-9.43	19.86	
Not recorded	-33.45	4.04	-8.27	0	-41.38	-25.53	
Child BMI							
Normal	Ref.						
Over-weight	16.37	6.12	2.68	0.007	4.38	28.36	
Obese	9.99	6.26	1.60	0.11	-2.27	22.25	
Child Age							
Two	Ref.						
Three	16.05	5.44	2.95	0.003	5.40	26.71	
Four	35.33	5.65	6.25	0	24.25	46.41	
Household EquivInc							
Lowest <£17,500	Ref.						
Middle >£17,500 <= £32,500	-3.72	5.79	-0.64	0.52	-15.07	7.62	
High > £32,500	-5.82	5.59	-1.04	0.298	-16.76	5.13	
Child Ethnicity							
White or White British	Ref.						
Mixed ethnic group	5.75	10.95	0.52	0.6	-15.72	27.21	
Black or Black British	30.02	10.74	2.79	0.005	8.96	51.08	

Asian or Asian British	-29.64	6.92	-4.29	0	-43.19	-16.09
Any other group	-23.49	14.79	-1.59	0.112	-52.47	5.50
Child Gender						
Male	Ref.					
Female	-3.74	4.52	-0.83	0.408	-12.61	5.12
EatingOccasion						
breakfast	Ref.					
lunch	40.36	4.29	9.42	0	31.96	48.76
evening meal	31.78	3.90	8.14	0	24.13	39.43
snack	-29.69	3.55	-8.36	0	-36.65	-22.73
_cons	198.61	6.95	28.58	0	184.99	212.23

SATURATED FAT

Iteration 0: log pseudolikelihood = -50296.068

Generalized linear models	Number of obs	=	30,652
Optimization : ML	Residual df	=	30,632
	Scale parameter	=	6.248046
Deviance = 191390.1506	(1/df) Deviance	=	6.248046
Pearson = 191390.1506	(1/df) Pearson	=	6.248046

Variance function: V(u) = 1

[Gaussian]

Link function : g(u) = u

[Identity]

AIC = 3.283053

Log pseudolikelihood = -50296.06808

BIC = -125052.3

(Std. Err. adjusted for 1,218 clusters in seriali)

	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Saturated fat (g)					
Accompanying person/people					
Parent	Ref.				
Wider Family	0.19	0.09	2.16	0.031	0.02 0.36
Carer	0.09	0.19	0.50	0.615	-0.27 0.46
No adult specified	-0.01	0.08	-0.07	0.942	-0.16 0.15
Other	0.45	0.17	2.70	0.007	0.12 0.78
Not recorded	-0.61	0.08	-7.25	0	-0.77 -0.44
Child BMI					
Normal	Ref.				
Over-weight	0.18	0.10	1.77	0.077	-0.02 0.38
Obese	0.07	0.10	0.68	0.496	-0.13 0.26
Child Age					
Two	Ref.				

	Three	0.08	0.08		0.98	0.326	-0.08	0.24
	Four	0.45	0.09		4.99	0	0.27	0.63
Household EquivInc								
	Lowest <£17,500	Ref.						
	Middle >£17,500 <= £32,500	-0.09	0.08		-1.07	0.283	-0.26	0.07
	High > £32,500	0.04	0.09		0.51	0.613	-0.12	0.21
Child Ethnicity								
	White or White British	Ref.						
	Mixed ethnic group	0.03	0.20		0.16	0.872	-0.37	0.43
	Black or Black British	0.11	0.24		0.46	0.649	-0.36	0.58
	Asian or Asian British	-0.02	0.14		-0.18	0.861	-0.29	0.24
	Any other group	-0.09	0.15		-0.56	0.577	-0.39	0.22
Child Gender								
	Male	Ref.						
	Female	-0.05	0.07		-0.71	0.479	-0.19	0.09
EatingOccasion								
	breakfast	Ref.						
	lunch	1.23	0.11		11.69	0	1.02	1.43
	evening meal	0.72	0.08		8.80	0	0.56	0.88
	snack	-0.42	0.07		-5.60	0	-0.57	-0.27
	_cons	2.58	0.11		23.63	0	2.36	2.79
VEG								
Iteration 0: log pseudolikelihood		=	-188728.69					
Generalized linear models								
Optimization : ML				Number of obs		=	30,652	
				Residual df		=	30,632	
				Scale parameter		=	1004.773	
Deviance = 30810345.28				(1/df) Deviance		=	1004.773	
Pearson = 30810345.28				(1/df) Pearson		=	1004.773	
Variance function: V(u) = 1				[Gaussian]				
Link function : g(u) = u				[Identity]				
				AIC		=	12.30274	
Log pseudolikelihood = -188728.6858				BIC		=	3.05E+07	
(Std. Err. adjusted for 1,218 clusters in seriali)								
Robust								
	SumVeg_sum	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]	
Accompanying person/people								
	Parent	Ref.						

	Wider Family	1.34	0.71	1.89	0.059	-0.05	2.73
	Carer	0.41	1.54	0.27	0.791	-2.61	3.42
	No adult specified	-3.13	0.58	-5.36	0	-4.28	-1.99
	Other	-1.08	2.01	-0.54	0.59	-5.01	2.85
	Not recorded	-5.78	0.62	-9.38	0	-6.99	-4.57
	Child BMI						
	Normal	Ref					
	Over-weight	1.60	0.74	2.17	0.03	0.15	3.04
	Obese	-0.49	0.82	-0.59	0.552	-2.10	1.12
	Child Age						
	Two	Ref					
	Three	1.10	0.60	1.83	0.068	-0.08	2.28
	Four	2.94	0.69	4.23	0	1.58	4.30
	Household EquivInc						
	Lowest <£17,500	Ref					
	Middle >£17,500 <= £32,500	1.85	0.64	2.88	0.004	0.59	3.11
	High > £32,500	2.68	0.65	4.14	0	1.41	3.95
	Child Ethnicity						
	White or White British	Ref					
	Mixed ethnic group	2.31	1.45	1.60	0.11	-0.52	5.14
	Black or Black British	6.05	2.02	3.00	0.003	2.10	10.00
	Asian or Asian British	1.24	1.11	1.12	0.261	-0.93	3.41
	Any other group	1.35	1.69	0.80	0.425	-1.96	4.66
	Child Gender						
	Male	Ref					
	Female	-0.17	0.55	-0.31	0.759	-1.24	0.90
	EatingOccassion						
	Breakfast	Ref					
	Lunch	19.07	0.76	25.25	0	17.59	20.55
	Evening Meal	22.92	0.72	32.02	0	21.52	24.32
	Snack	6.02	0.33	18.36	0	5.38	6.67
	_cons	-1.85	0.71	-2.61	0.009	-3.24	-0.46
	FRUIT						
Iteration 0:	log pseudolikelihood	=	-216711.46				
Generalized linear models	Number of obs	=	30,652				
Optimization : ML	Residual df	=	30,632				
	Scale parameter	=	4128.556				
Deviance = 126589796.2	(1/df) Deviance	=	4128.556				
Pearson = 126589796.2	(1/df) Pearson	=	4128.556				

Variance function: $V(u) = 1$ [Gaussian]
Link function : $g(u) = u$ [Identity]

AIC = 14.1276
BIC = 1.26E+08

Log pseudolikelihood = -216711.4577

(Std. Err. adjusted for 1,218 clusters in seriali)

	SumFruit_sum	Coef.	Robust Std. Err.	z	P>z	[95% Conf. Interval]
Accompanying person/people						
Parent	Ref					
Wider Family	-0.59	1.50	-0.39	0.694	-3.53	2.35
Carer	8.66	4.53	1.91	0.056	-0.22	17.55
No adult specified	2.61	1.80	1.45	0.146	-0.91	6.14
Other	4.01	3.95	1.01	0.31	-3.74	11.76
Not recorded	0.11	1.62	0.07	0.947	-3.06	3.28
Child BMI						
Normal	Ref					
Over-weight	-0.63	2.21	-0.29	0.775	-4.97	3.70
Obese	1.62	2.30	0.71	0.481	-2.88	6.13
Child Age						
Two	Ref					
Three	5.56	1.76	3.17	0.002	2.12	9.01
Four	8.80	1.88	4.69	0	5.12	12.48
Household EquivInc						
Lowest <£17,500	Ref					
Middle >£17,500 <= £32,500	4.46	1.89	2.36	0.018	0.76	8.16
High > £32,500	4.66	1.87	2.49	0.013	0.99	8.33
Child Ethnicity						
White or White British	Ref					
Mixed ethnic group	2.17	4.11	0.53	0.597	-5.87	10.22
Black or Black British	2.62	4.41	0.59	0.553	-6.03	11.26
Asian or Asian British	-7.57	2.14	-3.54	0	-11.76	-3.38
Any other group	2.97	3.43	0.87	0.386	-3.75	9.70
Child Gender						
Male	Ref					
Female	-3.99	1.52	-2.63	0.009	-6.97	-1.02
EatingOccasion						
Breakfast	Ref					
Lunch	5.49	2.03	2.70	0.007	1.51	9.48
Evening Meal	-6.15	1.83	-3.37	0.001	-9.73	-2.57

Snack	2.90	1.75	1.66	0.098	-0.53	6.33
_cons	23.24	2.42	9.61	0	18.50	27.97

10.16 Appendix 16 - Email Study 2 advertisement

Title. Do you have a child or grandchild aged 2-4 years old? If so, you are invited to take part in our online study. £10 high street voucher for participating.

I am a researcher at the University of Sheffield. I am looking for parents and grandparents of children between the age of 2 and 4 years, 11 months old to take part in an online study. The study is looking at the similarities and differences between parents and grandparent's food provision to preschool aged children. To take part as a grandparent, you must look after your grandchild at least one day per week and provide them with at least one meal on that day. All participants will receive a £10 Love2Shop e-voucher upon completion.

This study has been approved by the University of Sheffield, SchARR research ethics committee. Ethics number 026363

For more information and to take part in the study please click on the link below

https://scharr.eu.qualtrics.com/jfe/form/SV_6WmClrwmQDFupDL

Colette Kearney

C.kearney@sheffield.ac.uk

SchARR

30 Regent Street

University of Sheffield

S14DA

10.17 Appendix 17 - Facebook Study 2 Advertisement

Hi all,

I am looking for your help. I am a PhD student looking for UK grandparents for my online study.

Specifically, I am looking for

- UK grandparents of 2-4 year old children
- Who look after grandchild/ren at least once a week
- Who provide at least one meal when looking after them

The study aim is to look at the similarities and differences between parent and grandparent food provision.

Taking part in the study involves two parts

1. completing an online questionnaire
2. completing an online 24 hour food recall for the food and drink provided to their grandchild

Participants will **receive a £10 love2shop e voucher** for taking part.

For more information and to take part in the study please click on the link below

scharr.eu.qualtrics.com/jfe/form/SV_6WmClrwmQDFupDL

This study has been approved by the University of Sheffield, SchARR research ethics committee. Ethics number 026363

10.18 Appendix 18 - Study 2 Participant Information sheet



Welcome page

We would like to invite you to take part in the following research project:

A comparison of parent and grandparent food provision to children aged 2 to 4 years old.

Before you decide whether or not to participate, it is important for you to understand why the research is being carried out and what it will involve. On the next few pages you will find a participant information sheet. This will tell you a little bit more about what the study involves. Please take time to read the information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Information sheet page 1

Participant information sheet

Research Project Title:

A comparison of parent and grandparent food provision to children aged 2-4 years' old.

What is the project's purpose?

I am a PhD student from the School of Health and Related Research at the University of Sheffield. My research focuses on nutrition and eating habits of young children. I am interested in conducting a comparison of parent and grandparent food provision to children aged 2-4 years old.

Why have I been chosen?

You have been approached to take part because you are a parent or grandparent of a child aged 2-4 years old.

Do I have to take part?

It is up to you to decide whether or not to take part in this study, participation is voluntary and you are free to withdraw at any point. If you wish to withdraw from the research, you do not have to give a reason, please contact Colette Kearney at c.kearney@sheffield.ac.uk. Please note that once data is collected from all participants it will be anonymised (estimated March 2020) at which point it will not be possible for data to be withdrawn from the research. Prior to this date you may contact the researcher at any time for your data to be removed.

What will happen to me if I take part? What do I have to do?

This study comprises of two parts; a survey and a 24 hour food and drink recall, both completed online. The survey asks a few questions about you; this will include your gender, age, weight, height, ethnicity and household income. You do not have to answer any of these questions and will be given the opportunity to skip each question. The survey also asks a few questions about your child/grandchild as well as questions regarding your feeding to your child/grandchild. If you have more than one child/grandchild in this age range, who you care

for on a regular basis, then please choose one of them to answer for. We will also ask you to complete the 24 hour food and drink recall for this same child. We will ask you to provide your child/grandchild's height and weight, either using the last known health visitors assessment (and the month and year this was measured) or, if you have the equipment, we will ask you to take a measurement of height and weight. The survey will take no more than fifteen minutes. For the 24 hour food and drink recall we will ask you to record everything that YOU provided to your child/grandchild over a day when they are in your care. This can be done online using a programme called MyFood24, which we will provide to you along with step by step instructions on how to complete it. The 24 hour recall will not be completed at the same time as the survey, instead you will receive a link within 48 hours of completing the survey to access MyFood24. We would like you to complete the 24 hour recall following a day when the child was in your care. Depending on the number of hours the child is usually in your care, this may not be all food and snacks provided to the child over the 24 hour period. We are only interested in what you provide. The 24 hour recall will take between 15 and 20 minutes.

What are the possible disadvantages and risks of taking part?

There are no risks associated with this study. As part of this study we do ask you to fill out a 24 hour food and drink recall and we appreciate this might be somewhat inconvenient whilst looking after a young child. The information we receive from the food and drink recall is the primary focus of the study and is an extremely valuable part of the research and so we hope that you will take the time to complete it. Examples will be provided as well as support and advice to assist in the process. This will ensure the task can be completed with ease and will only take a short amount of time per eating occasion (average of 13 minutes for a 24 hour period).

What are the possible benefits of taking part?

By taking part in this research you will contribute to our understanding of the dietary intake of preschool children. Overall our research will hopefully contribute to improving the health of young children. Once you have completed both the online survey and the 24 hour food and drink recall, each participant will receive a £10 Love2Shop high street e-voucher. Please note that both parts of the study (the online survey and the 24 hour food and drink recall) are required to receive this. The e-voucher can be used by anyone with a computer, tablet or smart phone and can be spent online or exchanged for a gift card to spend in a wide range of high street stores and restaurants.

Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept strictly confidential and will only be accessible to members of the research team. You will not be able to be identified in any reports or publications. If you agree to us sharing the information you provide with other researchers (e.g. by making it available in a data archive) then your personal details will not be included. What is the legal basis for processing my personal data?

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice

<https://www.sheffield.ac.uk/govern/data-protection/privacy/general>.

As we will be collecting some data that is defined in the legislation as more sensitive (information about ethnicity and weight and height) we also need to let you know that we are

applying the following condition in law: that the use of your data is necessary for scientific or historical research purposes.

What will happen to the data collected, and the results of the research project?

To collect data two online platforms are being used. The first is Qualtrics; Please note that any information you enter will be stored and processed using services provided by Qualtrics. These services have been the subject of independent assessment to ensure compliance with applicable data security standards. Further information can be found on the Qualtrics website (<https://www.qualtrics.com/security-statement/>).

The second is MyFood24; MyFood24 is compliant with the EU general data protection regulations (GDPR) and the University of Sheffield is the data controller. A participant email address is required by each participant to access MyFood24 and is unavoidably held by the software company (Dietary Assessment Ltd) however the company does not share this with third parties and it is not stored with the dietary data. The participant unique id is used at all times in the software.

The information that is collected about you and your child/grandchild during the course of the research will be kept strictly confidential, anonymised and stored on an encrypted hardware for maximum security, for a maximum of ten years. Throughout the research you will be given a participant identification number and your name will not be used to ensure your responses remain anonymous. As the data is anonymous it means that it cannot be traced back to you at any point. Only the researcher will have access to identifiable data and the research supervisors will have access to the data only once it has been anonymised. All identifiable

personal data (email addresses) will be kept in a separate file from the other data and destroyed after the participants have received their high street e-voucher.

The data generated from this research will be published in scientific journals and presented at academic and relevant conferences. Due to the nature of this research it is very likely that other researchers may find the data collected to be useful in answering future research questions. During the consent procedure we will ask for your explicit consent for your anonymised data to be shared in this way.

Who is organising and funding the research?

This research is funded by The Wellcome Trust (<https://wellcome.ac.uk/>).

Who is the Data Controller?

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

Who has ethically reviewed the project?

This project has been ethically approved by the School of Health and Related Research ethics review procedure. The University's Research Ethics Committee monitors the application and delivery of the University's Ethics Review Procedure across the University.

The application number is: 026363

What if something goes wrong and I wish to complain about the research?

If you would like to raise a complaint during the data collection you should contact Dr Samantha Caton (email: s.caton@sheffield.ac.uk). If for any reason you do not feel satisfied with the outcome you can contact

Professor John Brazier, Dean of School of Health and Related Research (email: j.e.brazier@sheffield.ac.uk; telephone: 0114 222 0726; Address: School of Health and Related Research, University of Sheffield, Regent Court, 30 Regent Street, Sheffield, S1 4DA). If your complaint relates to how your personal data has been handled, information about how to raise a complaint can be found in the University's Privacy Notice:

<https://www.sheffield.ac.uk/govern/data-protection/privacy/general>

Contact for further information

If you have any questions regarding any aspect of our research, please feel free to contact either Miss Colette Kearney (email: c.kearney@sheffield.ac.uk) or Dr Samantha Caton (email S.Caton@sheffield.ac.uk)

Thank you for taking the time to read the information sheet.

If you feel happy with the information provided to you and you are willing to take part in the research please proceed to the next page to complete the consent form.

10.19 Appendix 19 – Study 2 Consent Form

Participant consent form

Taking part in the project

I have read and understood the project information sheet or the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean)

☐☐

Yes

No

I have been given the opportunity to ask questions about the project.

☐☐

Yes

No

I agree to take part in the project. I understand that taking part in the project will include completion of both a questionnaire and a 24 hour food and drink recall.

☐☐

Yes

No

I understand that my taking part is voluntary and that I can withdraw from the study before March 2020, after which the data will undergo formal analysis and data withdrawal will not be possible. I understand that I do not have to explain why I am withdrawing from the study, if I wish to do so.

☐☐

How my information will be used during and after the project

Yes

No

I understand my personal details such as my email address will not be revealed to people outside the project.

☐☐

Yes

No

I understand and agree that other authorised researchers will have access to this anonymised data only if they agree to preserve the confidentiality of the information as requested in this form.

☐☐

Yes

No

I understand and agree that other authorised researchers may use my anonymised data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.



I agree that by proceeding to the next page of the online survey I am providing my consent to participate.

Random id

Here is your participant id, please make a note of this for future reference:

`{e://Field/RandomID}`

A bit about you

Thank you for taking the time to complete this questionnaire

This questionnaire is about you and your child/grandchild aged 2-4 years old.

If you have more than one child/grandchild in this age range, who you care for on a regular basis, then please choose one of them to answer for.

The questionnaire should take no more than 15 minutes to complete. The software will save your answers as you go. If you do wish to exit the questionnaire you can close the window and come back to it at any time within two weeks using the same link and device. If you use a different device you will have to start the questionnaire again. Once the questionnaire has been submitted you will not be able to edit your answers.

The following questions will tell us a bit about you

What is your gender?

- ☐ Male ☐ Female
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your age?

- ☐ Please write
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your height?

- ☐ Feet & inches (e.g. 5.8)
- ☐ Centimetres (e.g. 172)
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your weight?

- ☐ Kg (e.g. 72)
- ☐ Stone (e.g. 11.4)
- ☐ Pounds (e.g. 159)
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your annual household income? (Including any from pensions if applicable)

- ☐ £0–£9,999
- ☐ £10,000–£19,999 ☐
- £20,000–£29,999 ☐
- £30,000–£39,999 ☐
- £40,000 +
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your ethnicity?

- ☐ White
- ☐ Black or Black British ☐
- Mixed Ethnic Group ☐ Asian
- or Asian British
- ☐ Any other group
- ☐ Prefer not to say
- ☐ Withdraw from study

Are you a parent or grandparent (of a child aged 2–4 years old)

- ☐ Parent
- ☐ Grandparent
- ☐ Withdraw from study

Do you live with your grandchild?

- ☐ Yes ☐
- No
- ☐ Withdraw from study

How many days do you normally look after your grandchild per week?

- ☐ Days (e.g. 2)
- ☐ Withdraw from study

How many hours do you normally look after your grandchild per day?

- ☐ Hours (e.g. 5)
- ☐ Withdraw from study

How many meals do you normally provide to your grandchild per day?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ Withdraw from study

How many snacks do you normally provide to your grandchild per day?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 +
- ☐ Prefer not to say
- ☐ Withdraw from study

How would you define a snack?

- ☐ Please write

- ☐ Prefer not to say
- ☐ Withdraw from study

A bit about your child/grandchild

The following questions will tell us a bit about your child/grandchild

What is your child/grandchild's gender?

- ☐ Male ☐ Female
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your child/grandchild's month of birth?

What is your child/grandchild's year of birth

What is your child/grandchild's height?

(If you have the equipment to measure this then please do so, otherwise please use the measurement taken at the last known health visitors assessment)

- ☐ Feet & Inches (e.g 3.1)
- ☐ Centimetres (e.g. 94)
- ☐ Prefer not to say
- ☐ Withdraw from study

What is your child/grandchild's weight?

(If you have the equipment to measure this then please do so, otherwise please use the measurement taken at the last known health visitors assessment)

- ☐ Kilograms (e.g. 14)
- ☐ Stone (e.g. 2.2)
- ☐ Pounds (e.g. 31)
- ☐ Prefer not to say
- ☐ Withdraw from study

When was this measurement taken?

Month (Please estimate if unknown)

Year

A bit about feeding your child/grandchild

The following questions will tell us a bit about how you feed your child/grandchild.

Please read each question carefully and respond openly and truthfully

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
How much do you keep track of the sweets (sweets, chocolate, biscuits, ice cream, cake, pies, pastries) that your child/grandchild eats?	☐	☐	☐	☐	☐	☐	☐
	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
How much do you keep track of the snack food (crisps, Doritos, cheese puffs) that your child/grandchild eats?	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
How much do you keep track of the high-fat foods that your child/grandchild eats?	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
How much do you keep track of the sugary drinks (fizzy drinks/pop, juice drinks, milkshakes) that your child/grandchild eats?	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
Do you let your child/grandchild eat whatever s/he wants?	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
At dinner, do you let this child choose the foods s/he wants from what is served?	☐	☐	☐	☐	☐	☐	☐
When this child gets fussy, is giving him/her something to eat or drink the first thing you do?	☐	☐	☐	☐	☐	☐	☐
Do you give this child something to eat or drink if s/he is bored even if you think s/he is not hungry?	☐	☐	☐	☐	☐	☐	☐
Do you give this child something to eat or drink if s/he is upset even if you think s/he is not hungry?	☐	☐	☐	☐	☐	☐	☐
If this child does not like what is being served, do you make something else?	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
Do you allow this child to eat snacks whenever s/he wants?	☐	☐	☐	☐	☐	☐	☐
	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
Do you allow this child to leave the table when s/he is full, even if your family is not done eating?	☐	☐	☐	☐	☐	☐	☐
	Never	Rarely	Sometimes	Mostly	Always	Prefer not to say	Withdraw from study
Do you encourage this child to eat healthy foods before unhealthy ones?	☐	☐	☐	☐	☐	☐	☐

Please read each question carefully and respond openly and truthfully

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
Most of the food I keep in the house is ☐ healthy	☐	☐	☐	☐	☐	☐	

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I involve my child/grandchild in planning family meals	☐	☐	☐	☐	☐	☐	☐
I keep a lot of snack food (crisps, Doritos, cheese puffs) in my house	☐	☐	☐	☐	☐	☐	☐
My child/grandchild should always eat all of the food on his/her plate	☐	☐	☐	☐	☐	☐	☐
I have to be sure that my child/grandchild does not eat too many high-fat foods	☐	☐	☐	☐	☐	☐	☐
I offer my child/grandchild his/her favourite foods in exchange for good behaviour	☐	☐	☐	☐	☐	☐	☐

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
						Prefer not to say	Withdraw from study
I allow my child/grandchild to help prepare family meals	☐	☐	☐	☐	☐	☐	☐
						Prefer not to say	Withdraw from study
If I did not guide or regulate my child/grandchild's eating, s/he would eat too much of his/her favourite foods	☐	☐	☐	☐	☐	☐	☐
						Prefer not to say	Withdraw from study
A variety of healthy foods are available to my child/grandchild at each meal served at home	☐	☐	☐	☐	☐	☐	☐
						Prefer not to say	Withdraw from study
I offer sweets (sweets, chocolate, biscuits, ice cream, cake, pastries) to my child/grandchild as a reward for good behaviour	☐	☐	☐	☐	☐	☐	☐
						Prefer not to say	Withdraw from study

		Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I encourage my child/grandchild to try new foods	☐	☐	☐	☐	☐	☐	☐	☐
I discuss with my child/grandchild why it's important to eat healthy foods	☐	☐	☐	☐	☐	☐	☐	☐
I tell my child that healthy food tastes good	☐	☐	☐	☐	☐	☐	☐	☐
I encourage my child/grandchild to eat less so s/he won't get fat	☐	☐	☐	☐	☐	☐	☐	☐
If I did not guide or regulate my child/grandchild's eating, he/she would eat too many junk foods	☐	☐	☐	☐	☐	☐	☐	☐

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I give my child/grandchild small helpings at meals to control his/her weight	☐	☐	☐	☐	☐	☐	☐
If my child/grandchild says, "I'm not hungry," I try to get him/her to eat anyway	☐	☐	☐	☐	☐	☐	☐
I discuss with my child/grandchild the nutritional value of foods	☐	☐	☐	☐	☐	☐	☐
I encourage my child/grandchild to participate in grocery shopping	☐	☐	☐	☐	☐	☐	☐
If my child/grandchild eats more than usual at one meal, I try to restrict his/her eating at the next meal	☐	☐	☐	☐	☐	☐	☐

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I restrict the food my child/grandchild eats that might make him/her fat	☐	☐	☐	☐	☐	☐	☐
There are certain foods my child/grandchild shouldn't eat because they will make him/her fat	☐	☐	☐	☐	☐	☐	☐
I withhold sweets/dessert from my child/grandchild in response to bad behaviour	☐	☐	☐	☐	☐	☐	☐
I keep a lot of sweets (sweets, chocolate, biscuits, ice cream, cake, pies, pastries) in my house	☐	☐	☐	☐	☐	☐	☐

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I encourage my child/grandchild to eat a variety of foods	☐	☐	☐	☐	☐	☐	☐
If my child/grandchild eats only a small helping, I try to get him/her to eat more	☐	☐	☐	☐	☐	☐	☐
I have to be sure that my child/grandchild does not eat too much of his/her favourite foods	☐	☐	☐	☐	☐	☐	☐
I don't allow my child/grandchild to eat between meals because I don't want him/her to get fat	☐	☐	☐	☐	☐	☐	☐
I tell my child/grandchild what to eat and what not to eat without explanation	☐	☐	☐	☐	☐	☐	☐

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I have to be sure that my child/grandchild does not eat too many sweets (sweets, chocolate, biscuits, ice cream, cake, or pastries)	☐	☐	☐	☐	☐	☐	☐
I model healthy eating for my child/grandchild by eating healthy foods myself	☐	☐	☐	☐	☐	☐	☐
I often put my child/grandchild on a diet to control his/her weight	☐	☐	☐	☐	☐	☐	☐
I try to eat healthy foods in front of my child/grandchild, even if they are not my favourite	☐	☐	☐	☐	☐	☐	☐

	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Prefer not to say	Withdraw from study
I try to show enthusiasm about eating healthy foods	☐	☐	☐	☐	☐	☐	
I try to show my child/grandchild how much I enjoy eating healthy foods	☐	☐	☐	☐	☐	☐	☐
When s/he says s/he is finished eating, I try to get my child/grandchild to eat one more (two more, etc.) bites of food	☐	☐	☐	☐	☐	☐	

A bit about your interaction with your child/grandchild during meal times

The following questions deal with YOUR interactions with your child/grandchild during meal times.

Choose the best answer that describes how often these things happen. If you are not certain, make your best guess.

How often during meal times do You...

	Never	Rarely	Sometimes	Most of the time	Always	Prefer not to say	Withdraw from study
Physically struggle with the child to get him or her to eat (for example, physically putting the child in the chair so he or she will eat)	☐	☐	☐	☐	☐	☐	☐
Promise the child something other than food if he or she eats (for example, "If you eat your beans, we can play ball after dinner")	☐	☐	☐	☐	☐	☐	☐
Encourage the child to eat by arranging the food to make it more interesting (for example, making smiley faces on the pancakes)	☐	☐	☐	☐	☐	☐	☐
Ask the child questions about the food during dinner	☐	☐	☐	☐	☐	☐	☐
Tell the child to eat at least a little bit of food on his or her plate	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Most of the time	Always	Prefer not to say	Withdraw from study
Reason with the child to get him or her to eat (for example, "Milk is good for your health because it will make you strong")	☐	☐	☐	☐	☐	☐	☐
Say something to show your disapproval of the child for not eating dinner	☐	☐	☐	☐	☐	☐	☐
Allow the child to choose the foods he or she wants to eat for dinner from foods already prepared	☐	☐	☐	☐	☐	☐	☐
Compliment the child for eating food (for example, "What a good boy! You're eating your beans")	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Most of the time	Always	Prefer not to say	Withdraw from study
Suggest to the child that he or she eats dinner, for example by saying, "Your dinner is getting cold"	☐	☐	☐	☐	☐	☐	☐
Say to the child "Hurry up and eat your food"	☐	☐	☐	☐	☐	☐	☐
Warn the child that you will take away something other than food if he or she doesn't eat (for example, "If you don't finish your meat, there will be no play time after dinner")	☐	☐	☐	☐	☐	☐	☐
Tell the child to eat something on the plate (for example, "Eat your beans")	☐	☐	☐	☐	☐	☐	☐
Warn the child that you will take a food away if the child doesn't eat (for example, "If you don't finish your vegetables, you won't get fruit")	☐	☐	☐	☐	☐	☐	☐

	Never	Rarely	Sometimes	Most of the time	Always	Prefer not to say	Withdraw from study
Say something positive about the food the child is eating during dinner	☐	☐	☐	☐	☐	☐	☐
Spoon-feed the child to get him or her to eat dinner	☐	☐	☐	☐	☐	☐	☐
Help the child to eat dinner (for example, cutting the food into smaller pieces)	☐	☐	☐	☐	☐	☐	☐
Encourage the child to eat something by using food as a reward (for example, "If you finish your vegetables, you will get some fruit")	☐	☐	☐	☐	☐	☐	☐
Beg the child to eat dinner.	☐	☐	☐	☐	☐	☐	☐

Close

To proceed with the study and complete the 24 hour food and drink recall for your child/grandchild please provide your email address below. Within 48 hours you should receive an email containing a link to proceed to the food and drink recall

If you would like to receive a £10 High Street e-voucher for taking part then please confirm below. (Note: you will receive this, via email, once you have also completed the 24 hour food and drink recall)

- ☐ Yes, I would like to receive a £10 e-voucher via the email address provided in the previous question
- ☐ No, please do not send me a £10 e-voucher

For further reference, here is a reminder of your participant id:
\$ {e://Field/RandomID}

myfood24 participant manual



myfood24 is a new on-line 24h recall which has been developed by the Nutritional Epidemiology Group in the School of Food Science and Nutrition at the University of Leeds with funding from the Medical Research Council. Find out more at www.myfood24.org.

Accessing your diary

You will receive your personal link in an email from hello@myfood24.org like the one below, please click on it to be directed to your diary.

<https://myfood24.org/en/users/invite/15385816733475493081dadf2feb88a170c8e653>

You will then be able to read the project instructions and enter the food diary or you will be directed straight to the food entry. There is also a help section explaining some of the features.

A screenshot of the myfood24 website interface. At the top, there is a navigation bar with the myfood24 logo on the left, and links for 'Food Diary', 'Project Instructions', 'Help?' (circled in red), a UK flag, and a 'Logout' button. Below the navigation bar, a grey banner reads 'Welcome to myfood24, Sarah Beer' followed by 'Please review your project instructions.' On the left side, there is a white box with 'Hello' and a pink button labeled 'Enter Food Diary' with a right arrow. Below this box are links for 'Terms & Conditions', 'About myfood24', and 'Privacy Policy'. On the right side, there is a white box with a header 'Project Instructions' and two buttons: 'Project Instructions' and 'Help' (circled in red). The main content of the 'Project Instructions' box includes a paragraph about starting the food diary, a list of tips for searching (e.g., 'Add the specific brand of food or drink where possible'), and a section titled 'Additional features you might find useful:' with more tips (e.g., 'Use the Help? text and videos to assist you'). At the bottom of the box, it says 'Any questions please use the contact us details to contact your researcher.'

Entering foods

Type the food you wish to enter into the search bar and select from generic or branded items, you have the option of filtering by brand. There are 3 ways to record your portion size; the suggestions, the images or the weight. There is also a converter for ounces to grams.

The screenshot shows the myfood24 website interface. At the top, there's a navigation bar with links for Food Diary, Project Instructions, Help?, and a Logout button. A welcome message for Sarah Beer is displayed, along with buttons for 'Make a list' and 'Submit food diary'.

On the left, a 'Food Diary' sidebar lists meal times: Breakfast, Lunch, Evening dinner, Snack, and Drink. The 'Breakfast' option is selected.

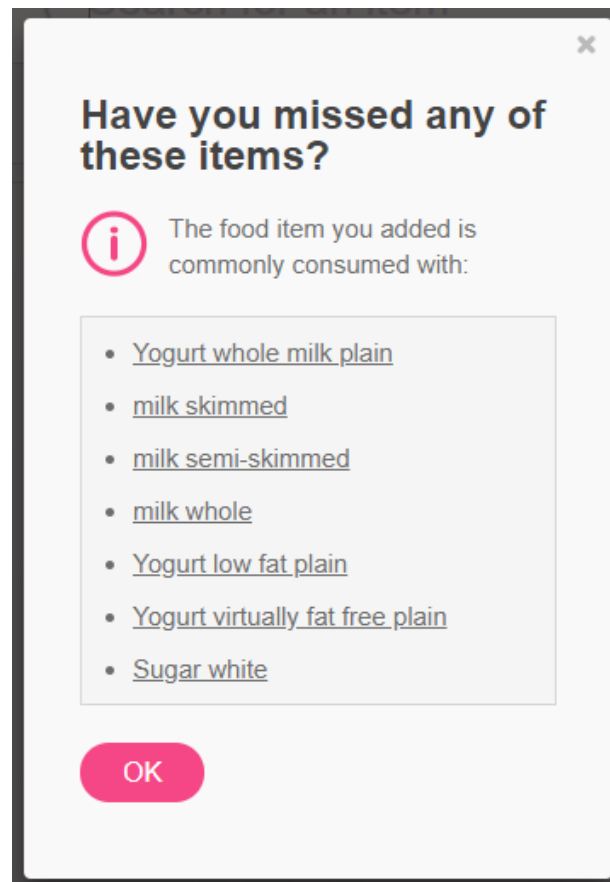
The main content area shows a search for 'cornflakes'. Below the search bar, there are filters for 'All', 'Recently used', 'Saved Recipes', 'Filter by category', and 'Filter by brand' (which is circled in red). The search results show 'Found 12 item(s) matching your search'. The first result is 'Corn Flakes' by 'Non brand (generic)', with a '- Close item' link.

Below the search results, there's a section titled 'Select box or enter weight directly in "Total portion size"'. It includes a prompt 'I consumed around Please select one' and four portion size options: 10g (tablespoon (dry)), 30g (small portion (dry)), 50g (average portion (dry)), and 80g (large portion (dry)). Each option has a corresponding image of cornflakes in a bowl. The 10g, 30g, and 50g options are circled in red.

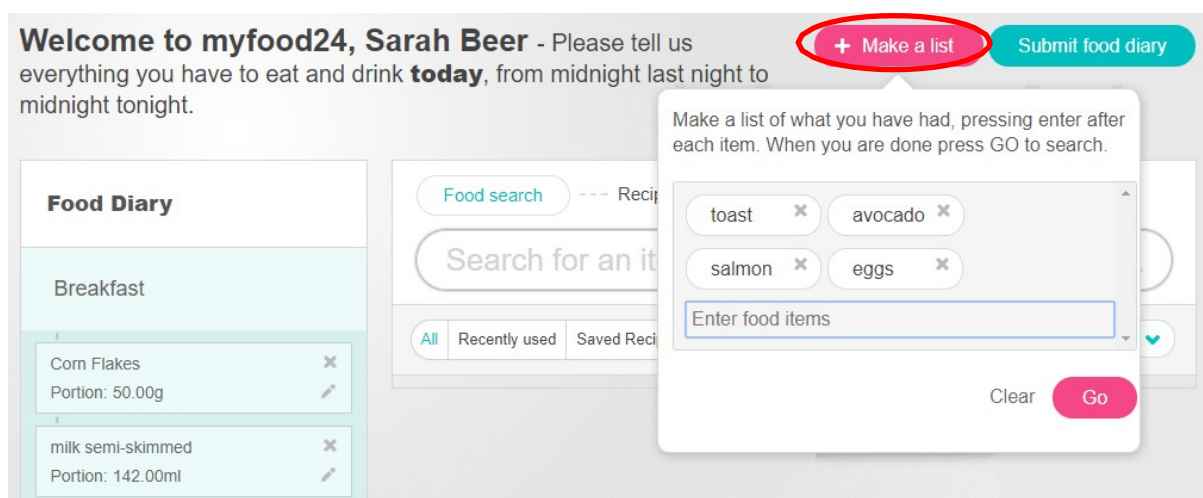
Below the portion size options, there's a 'Quantity' field set to '1.00'. The 'Total portion size' field is circled in red and set to 'g'. There's also a 'Need a converter?' link circled in red.

The 'Select meal' dropdown is set to 'Breakfast'. At the bottom, there's a 'Hide This' link and a '+ Add to Diary' button. The footer shows 'Corn Flakes Tesco' and a '+ Add item' button.

Some foods also ask for commonly consumed items like cereals, toast, tea and coffee etc. Any item that is selected will automatically be search for.



Alternatively there is a 'make a list' function where you can add the components of your meal and each item will automatically be searched for in turn and you can select your portion size.



There is also a recipe builder function for any meals you have made yourself, you can add all the ingredients and how many portions it makes then you can add one portion to your diary. If you add raw ingredients to the recipe they will be converted to the cooked weight and nutrients.

Welcome to myfood24, Sarah Beer - Please tell us everything you have to eat and drink **today**, from midnight last night to midnight tonight.

[+ Make a list](#) [Submit food diary](#)

Food Diary

Breakfast

Corn Flakes

Portion: 50.00g

✕

✎

milk semi-skimmed

Portion: 142.00ml

✕

✎

Lunch

Bread, brown, toasted

Portion: 62.00g

✕

✎

Avocado

Portion: 72.50g

✕

✎

Salmon, smoked

Portion: 40.00g

✕

✎

Egg, chicken, boiled

Portion: 136.00g

✕

✎

Evening dinner

Snack

Drink

[Clear diary](#)

[Submit food diary](#)

Food search [Recipe builder](#)

Create a recipe and calculate per-person portion by

Give your recipe a name:*

Chilli

 Beef, mince, raw

500 g

[✕ Remove](#)

 Onions, raw

150 g

[✕ Remove](#)

 Pepper, capsicum, red, bell sweet , raw

160 g

[✕ Remove](#)

 Mushrooms, common, raw

165 g

[✕ Remove](#)

 Courgette, raw

165 g

[✕ Remove](#)

 Red kidney beans, canned, re-heated, drained

240 g

[✕ Remove](#)

 Tomatoes, canned, whole contents

800 g

[✕ Remove](#)

 Garlic, raw

3 g

[✕ Remove](#)

How many people is this recipe for?*

4

1 portion =*

545.75

g

[Hide This](#)

[Save Completed Recipe](#)

Search for an item



All

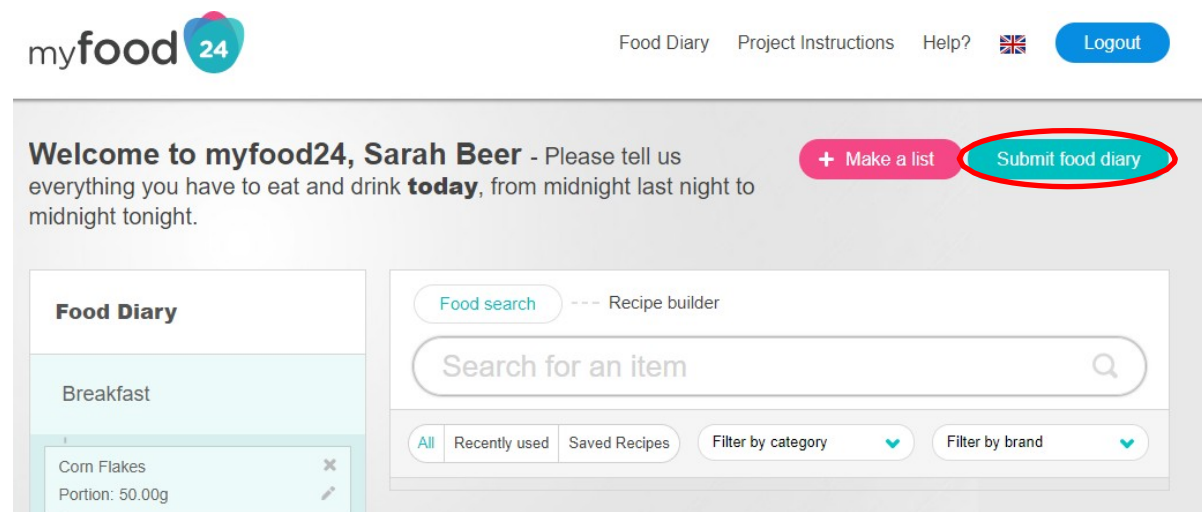
Recently used

Saved Recipes

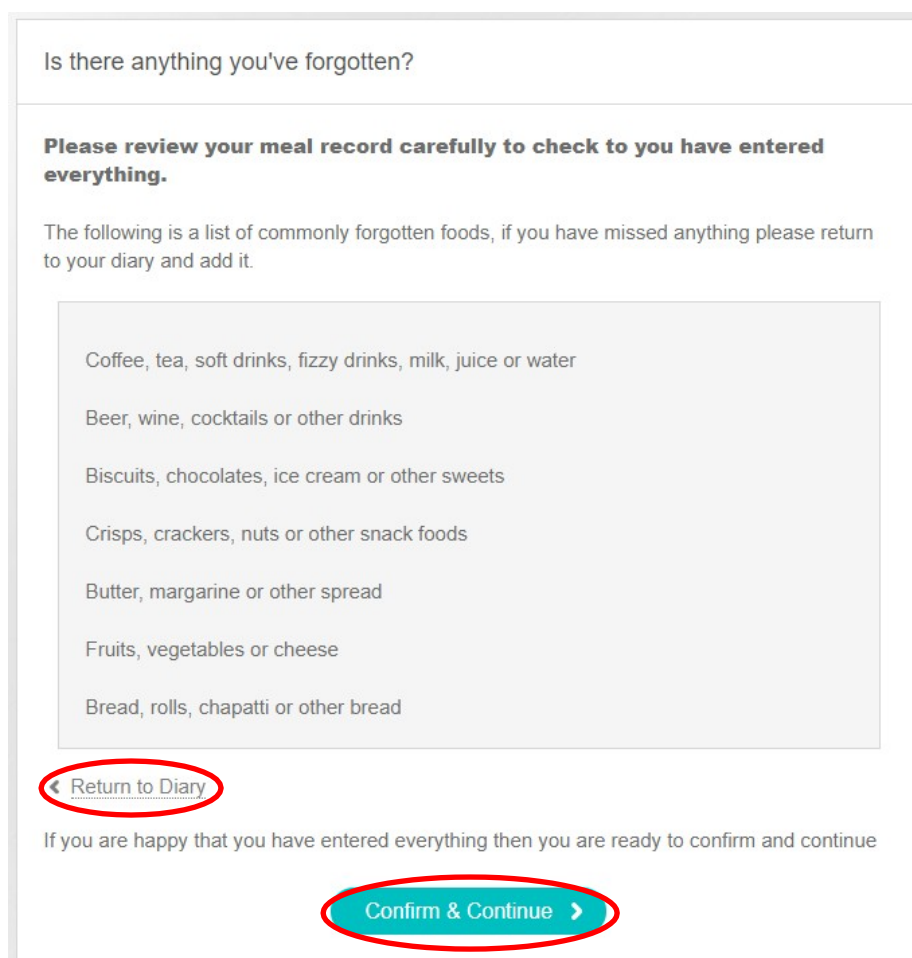
Filter by category

Filter by brand

Once you have finished entering all your items select submit food diary. Only do this once you have entered everything for that day as you will not be able to get back to the diary once it has been submitted, the diary will save as you go so you can exit and come back to it later using the link in your email before you submit.



You will be asked if there is any you have forgotten and there is an opportunity to go back to your diary to add any other items, otherwise select confirm & continue.



There may be some additional questions and there is an opportunity to leave a comment or feedback, this is the last chance to return to your diary or select submit.

Additional Questions

Please could you take a few moments to complete the following questions before you submit your diary...

Did you take any vitamins, minerals or other supplements during your day? If not then you can leave these fields blank

Type

Brand Name

Dose

Was the food consumed representative of a typical day?

☐ No ☐ Yes

Do you have any further comments / feedback?

Return to Diary

Submit

Note: you will not be able to make any changes to your diary once it has been submitted.

Finally there may be a summary of your diary against some reference values.

Thank You!

for participating in myfood24

You have successfully submitted your diary and it is now safe to close your browser.

Your Nutrient Summary	Project Consumption	Adult Reference Intake*
Energy	6,327kj	8400KJ
Calories	1,503kcal	2000kcal
Protein	81g	44g
Fat	52g	70g
of which saturates	16g	20g
Carbohydrates	191g	250g
of which sugars	66g	90g
Fibre (AOAC)	25g	24g
Salt	6g	6g

10.21 Appendix 21 - Study 3 advert

TAKE PART IN RESEARCH

Exploring grandparents' role in feeding preschool children



RECEIVE A £20 LOVE2SHOP
E-VOUCHER FOR TAKING PART

Are you a grandparent of a 2-4 year old?

Do you look after this grandchild at least 1 day per week, or did you before the coronavirus pandemic?

Then we need you...

The study will involve:

- a brief questionnaire completed online
- an online interview lasting between 30 minutes to 1 hour of your time.

Any questions? Contact Colette Marr at
c.kearney@sheffield.ac.uk

The research has been approved by the School of Health and Related Research Ethics Committee, University of Sheffield [Ethic application number: 035038]
It is funded by the Wellcome Trust Doctoral Training Programme

TO FIND OUT MORE SCAN THE QR
CODE OR VISIT THE LINK:



https://schar.eu.qualtrics.com/jfe/form/SV_6WQhq2AvzF4dtPv



10.22 Appendix 22 – Study 3 Recruitment email

Recruitment Email

Subject: Seeking grandparents of 2-4 year old children to take part in a research study exploring grandparents' role in feeding preschool children.

I am a researcher at the University of Sheffield. I am looking for grandparents of children aged 2-4 years old to take part in a research study exploring grandparents' role in feeding preschool children. The study involves a brief online demographic questionnaire and an interview conducted either online or over the phone, at a time convenient to yourself. The interview will last between 30 minutes and 1 hour.

In order to be eligible to participate, you must:

- Be a grandparent of a child aged 2-4 years old
- Care for this grandchild a minimum of one day per week or cared for them a minimum of one day per week before the pandemic began
- Provide/d at least one meal per day to your grandchild when you care/d for them
- Not provide/d full time care to your grandchild

To thank you for your time, all participants will receive a £20 Love2Shop e-voucher upon completion.

This study has been approved by the University of Sheffield, ScHARR research ethics committee. Ethics number 035038

For more information and to take part in the study please click on the link below:

https://scharr.eu.qualtrics.com/jfe/form/SV_6WQhq2AvzF4dtPv

Colette Marr (PhD student, Public Health, ScHARR)
C.kearney@sheffield.ac.uk

ScHARR
30 Regent Street
University of Sheffield
S14DA

10.23 Appendix 23 – Study 3 Participant information sheet



Information Sheet

Participant Information Sheet

Research Project Title:

Exploring grandparents' role in feeding preschool children: a qualitative study

Invitation paragraph

We would like to invite you to take part in a research project. *Before you decide whether or not to participate, it is important for you to understand why the research is being carried out and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.*

What is the project's purpose?

I am a PhD student from the School of Health and Related Research at the University of Sheffield. My research focuses on the nutrition and eating habits of young children. I am interested in exploring the role grandparents play in feeding preschool children.

Why have I been chosen?

You have been approached to take part because you are a grandparent of a child aged 2-4 years old.

Do I have to take part?

It is up to you to decide whether or not to take part in this study, participation is voluntary and you are free to withdraw at any point. *If you wish to withdraw from the research, you do not have to give a reason, please contact Colette Marr at c.kearney@sheffield.ac.uk.* Please note that once data is collected from all participants it will be anonymised (estimated December 2020) at which point it will not be possible for data to be withdrawn from the research.

What will happen to me if I take part? What do I have to do?

This study will involve two parts. The first part of the study will involve a brief demographic questionnaire completed online and the second part of the study will involve taking part in an interview, conducted online, at a time convenient to you. The online interview will be conducted via google hangouts meet. You will not need a google account for this and it can be done through your phone/tablet or any modern web browser on a pc or laptop. You will not need to download any software for the study. You will not require a webcam to complete the interviews as the researcher will ask you to switch off your camera during the interview. In the interview you will be asked questions regarding your feeding to your grandchild. We understand that in the current pandemic many grandparents are not able to look after their grandchildren. We will therefore be asking you to reflect on the time before the pandemic, when you were caring for your grandchild/ren and played a role in their feeding. The interviewer

will use open questions to allow you to provide your thoughts on the topic. It will last between thirty minutes and one hour and will be audio recorded. Participation will be on a first come first served basis. Completing the online questionnaire does not guarantee you will be interviewed. If the study reaches the required number of participants, you will be informed via email and you will not be invited to interview. In this case, all of your data will be permanently deleted and will not be used in the study. Only those who complete both the online questionnaire and the interview will receive a £20 high street e-voucher.

Am I able to take part?

In order to be eligible to participate, you must:

- Be a grandparent of a child aged 2-4 years old
- Care for this grandchild a minimum of one day per week or cared for this grandchild a minimum of one day per week before the pandemic began
- Provide/d at least one meal per day to your grandchild when you care/d for them
- Not provide/d full time care to your grandchild

What are the possible disadvantages and risks of taking part?

We know that many grandparents cannot look after their grandchildren at the moment due to the pandemic but we will be asking you to reflect upon a time when you were. Consequently this may cause you some mild distress due to engaging in social distancing/shielding and not interacting with your grandchild in the usual way. Please only take part in the study if you feel

happy to talk about your involvement in feeding your grandchild/ren when you did care for your grandchild/ren regularly. If you do feel distressed during the interview you have the right to stop the interview at any time.

What are the possible benefits of taking part?

By taking part in this research you will contribute to our understanding of how to improve dietary provision for preschool children. To compensate you for your time each participant will receive a £20 high street e-voucher for taking part.

Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept strictly confidential and will only be accessible to members of the research team. You will not be able to be identified in any reports or publications. If you agree to us sharing the information you provide with other researchers (e.g. by making it available in a data archive) then your personal details will not be included.

What is the legal basis for processing my personal data?

‘According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that ‘processing is necessary for the performance of a task carried out in the public interest’ (Article 6(1)(e)). Further information can be found in the University’s Privacy Notice <https://www.sheffield.ac.uk/govern/data-protection/privacy/general>.’

‘As we will be collecting some data that is defined in the legislation as more sensitive (information about ethnicity and weight and height) we also need to let you know that we are applying the following condition in law: that the use of your data is ‘necessary for scientific or historical research purposes’.

What will happen to the data collected, and the results of the research project?

During the interview we will be making an audio recording. These audio recordings will be transcribed as soon as possible after the interview and as soon as this is completed the file will be deleted. Any names that you or the researcher use during the interview will be anonymised during the transcription process so you, or anyone else you mention will not be identifiable from the transcript. We will also be collecting some basic information from you such as your age, the age of your grandchild/ren, ethnicity and other demographic information. You will be given a participant identification number and your name will not be used to ensure your responses remain anonymous. We will also be collecting your email address to correspond with you during the study. We understand that these sometimes contain identifiable information such as your name. Consequently, your email address will be kept in a separate file from the other data and will be deleted once you have completed the study and received your high street e-voucher. The data generated from this research will be published in scientific journals and presented at academic and relevant conferences.

Who is organising and funding the research?

This research is funded by The Wellcome Trust (<https://wellcome.ac.uk/>) and the University of Sheffield.

Who is the Data Controller?

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

Who has ethically reviewed the project?

This project has been ethically approved by the School of Health and Related Research ethics review procedure. The University's Research Ethics Committee monitors the application and

delivery of the University's Ethics Review Procedure across the University. The application number is: 035038

What if something goes wrong and I wish to complain about the research?

If you would like to raise a complaint during the data collection you should contact Dr Samantha Caton (email: s.caton@sheffield.ac.uk).

If for any reason you do not feel satisfied with the outcome you can contact Professor John Brazier, Dean of School of Health and Related Research (email: j.e.brazier@sheffield.ac.uk; telephone: 0114 222 0726; Address: School of Health and Related Research, University of Sheffield, Regent Court, 30 Regent Street, Sheffield, S1 4DA).

If you have any issues about the way we handle your own or your child's personal data, you can contact the University's Data Protection Officer, Luke Thompson on 0114 2221117 or dataprotection@sheffield.ac.uk. If you are not satisfied with how your complaint is handled, you may then escalate the complaint to the ICO (Information Commissioner's Office).

Contact for further information

If you have any questions regarding any aspect of our research, please feel free to contact either Ms Colette Marr (email: c.kearney@sheffield.ac.uk) or Dr Samantha Caton (email S.Caton@sheffield.ac.uk)

Thank you for taking the time to read the information sheet. If you feel happy with the information provided to you and you are willing to take part in the research please continue.

Please note that upon consenting to participate in this study, the researcher will email you your own personal copy of this information sheet.

10.24 Appendix 24 Study 3 Eligibility Questionnaire

Study Eligibility

Before we begin, we would like to make sure you are eligible for our study. Please answer the questions below:

Are you a grandparent of a child aged 2–4 years old?

- ☐ Yes
- ☐ No

Do you, or did you before the coronavirus pandemic, care for this grandchild at least one day per week?

- ☐ Yes
- ☐ No

On the day/s that you care/d for your grandchild do/did you provide at least one meal to your grandchild?

- ☐ Yes
- ☐ No

Are you a full time carer to your grandchild?

- ☐ Yes
- ☐ No

Unfortunately your answers to the eligibility questionnaire indicate that you are not eligible to participate in this study. Thank you for your consideration.

10.25 Appendix 25 – Study 3 Consent Form

Consent Form

Thank you for taking the time to complete the eligibility questionnaire. I can confirm that you are eligible to participate in the study. Before you agree to take part in this study, please read the following questions carefully and tick the appropriate boxes. Please note, if you answer 'no' to any of these questions, you will not be able to participate in this study.

Taking part in the project

I have read and understood the project information sheet dated 04/08/2020. (If you answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)

- ☐ Yes
- ☐ No

I have been given the opportunity to ask questions about the project.

- ☐ Yes
- ☐ No

I agree to take part in the project. I understand that taking part in the project will involve an audio recorded interview lasting between 30 minutes to 1 hour.

☐ Yes

☐ No

I understand that my taking part is voluntary and that I can withdraw from the study before 01.12.2020, when the

data will be fully anonymised and included within a larger dataset and therefore withdrawal will no longer be possible. I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.

- ☐ Yes
- ☐ No

I understand that I can request a copy of the transcript of my interview, or the field notes taken by the researcher up until the time when the research project ends (estimated July 2023)

- ☐ Yes
- ☐ No

How my information will be used during and after the project

I understand my personal details such as my name and email address will not be revealed to people/researchers outside the project.

- ☐ Yes
- ☐ No

I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs.

- ☐ Yes
☐ No

I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.

- ☐ Yes
☐ No

I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.

- ☐ Yes
☐ No

So the information you provide can be used legally by the researchers

I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.

☐ Yes

☐ No

Please type your full name in the box to indicate agreement to participate in this study

Project contact details for further information:

Lead Researcher: Colette Marr (formerly Kearney)

Email: c.kearney@Sheffield.ac.uk

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University of Sheffield

Western Bank
Sheffield
S102TN

Thank you for completing the consent form and agreeing to participate in the study

Here is your unique random id: (Please make a note of this for future reference)

☐ We would now like you to complete the first part of the study and ask a few questions about you...

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

What is your age?

- ☐ Please write
- ☐ Prefer not to say

What is your ethnicity?

- ☐ White or White British
- ☐ Black or Black British
- ☐ Asian or Asian British
- ☐ Mixed Ethnic Group
- ☐ Any other group
- ☐ Prefer not to say

What is your annual household income (including any from pensions, if applicable)?

- ☐ £0–£9,999
- ☐ £10,000–£19,999
- ☐ £20,000–£29,999
- ☐ £30,000–£39,999
- ☐ £40,000+
- ☐ Prefer not to say

What is your highest educational attainment?

- ☐ Higher Education & professional/vocational equivalents
- ☐ A levels, vocational level 3 and equivalents
- ☐ GCSE/O Level grade A*–C, vocational level 2 and equivalents
- ☐ Qualifications at level 1 and below
- ☐ Other qualifications: level unknown (including foreign qualifications)

- ☐ No qualifications
- ☐ Prefer not to say

Before the pandemic how many days per week did you care for your 2–4 year old grandchild?

☐ Days (eg.2)

Before the pandemic how many hours per day did you care for your 2–4 year old grandchild?

☐ Hours (e.g. 5)

Do you live with your grandchild?

☐ Yes

☐ No

Thank you for completing the demographic questionnaire. We will now need to contact you to arrange your interview. Please provide your name, contact details and preferred method of contact

Name

Email address

Telephone number

Please select your preferred method of contact

- ☐ Email
- ☐ Telephone

Thank you for your time. One of the research team will be in contact shortly to arrange the time and details for your interview. In the mean time, if you have any questions at all please contact Colette Marr at c.kearney@sheffield.ac.uk

10.27 Appendix 27 – Study 3 interview guide

Firstly, thank you for taking the time to take part in this interview. As you are aware from the information I sent you I am interested in exploring the role grandparents play in feeding preschool children. By taking part in this research you will contribute to our understanding of how to improve dietary provision for preschool children.

Once I start the recording we will first need to go through the consent procedure to gain your verbal consent for participation. It is the same consent form that you have signed online and unfortunately when read aloud, this is quite long and tedious but I have to do it for ethical purposes. Once we have done this we will begin the interview.

There are two themes to the interview, firstly I will ask you questions about your experiences of feeding your grandchild, the next set of questions will be around guidance for feeding your grandchild.

Remember, there are no right or wrong answers. As I go through the interview please remember that you do not have to answer a question if you'd prefer not to and you are free to end the conversation at any time.

You may see me taking notes during the interview, these will just be additional notes to help provide context to the interview but I will still be listening.

Can I just check that you are in a quiet and comfortable place, and you're not expecting any interruptions. Would you like to go and get a drink or anything?

We can now begin the interview. Before doing so can I request that you turn off your camera so that only your voice will be recorded. This is in line with the University of Sheffield's ethical guidelines for conducting online interviews.

We are now ready to start the interview. Are you happy for me to switch on the recorder and begin?

We will first begin with the verbal consent process

'have you read and understood the participant information sheet dated 04.08.2020?'

Would you like to ask any questions about the project?

Do you agree to take part in the project and understand that taking part will involve an audio recorded interview lasting between 30 minutes and 1 hour?

Do you understand that taking part is voluntary and you can withdraw from the study before 01.12.2020. After this date the data will be fully anonymised and included within a larger dataset and therefore withdrawal will no longer be possible. If you do wish to withdraw you don't have to give any reasons for why and there will be no adverse consequences.

Do you understand that you can request a copy of the transcript of your interview, or the field notes taken by the researcher up until the time when the research project ends (estimated at July 2023)

Do you understand that your personal details such as your name and email address will not be revealed to people/researchers outside of the project?

Do you agree that your words may be quoted in publications, reports, web pages and other research outputs. You will not be named in these outputs.

Do you agree that other authorised researchers may use your data in publications, reports, web pages and other research outputs only if they agree to preserve the confidentiality of the information as requested in this form

Do you agree to assign the copyright you hold on any materials generated as part of this project to the University of Sheffield?

Thank you for completing the consent procedure.

Now we can begin the interview questions I'm going to start by asking you a few questions about how you feed your grandchild....

1. As a grandparent what is your role in feeding your grandchild?
2. How do you decide what to provide your grandchild? Food & drinks?
3. What do you think a healthy diet looks like for children aged 2-4 years old?
4. How does what you feed your grandchild compare to what you fed your own child/ren?
5. What do you find easy with regards to feeding your grandchild?
6. What do you find difficult?
7. Are there any foods you struggle to feed your grandchild?

8. What strategies do you use if your grandchild refuses to eat? Are they successful?
9. Would you change anything about the way you feed your grandchild? If so what?
10. If you were caring for your grandchild on even more days how do you think this would affect what you feed them? (Question added in)
11. Do you and the parents of your grandchild agree on what food and drink should be provided? If not what do you disagree on and how do you manage this?
12. Recently, there has been a lot in the media about sugar and fat consumption in young children, what are your thoughts on this?
13. Grandparents are often described as spoiling their grandchildren, what are your thoughts on this?
14. Has looking after your grandchild influenced your own eating habits? If so how?
15. Does this have an impact on days when you are not looking after your grandchild, if so please explain?
16. Does this also have an effect on the diet of anyone else?

Identify what preferences grandparents might have for the content and structure of guidance for feeding their 2-4 year old grandchildren

I am now going to ask you a few questions on guidance for feeding your grandchild

1. Have you been given any advice before on feeding your grandchild (formally or informally)?
Prompts - if so from who, what did you think of that advice?
2. **IF YES** – did this make you think about or change anything in the food you provided?
3. **IF YES** - Did it make you think about or change anything in your own diet? Would this also impact upon the diet of anyone else?
4. Are you aware of any other guidance for feeding children aged 2-4 years old? Have you used it? If so what?
5. Is there any advice or support that you would find beneficial with regards to your grandchild's eating? (eating or behaviours around eating/food)
6. If you were to be provided with support/advice how would you like to receive it?

PROMPTS - Pamphlet, through parents, face to face sessions, group sessions, internet, media campaigns?
7. Who would you like to receive guidance from? (directly from parents, nhs, public health England like change4life, doctors, nurses etc)
8. If you were to change what you fed your grandchild how do you think this might influence your own diet?
9. Are you part of any grandparent networks? Whether this is formal ie an organised group or informal ie friends.

10. If so are there any aspects of feeding your grandchild that you discuss with them
11. Would you find grandparent networks beneficial? If so why?

Understand the factors that might influence grandparents engagement with guidance for feeding their 2-4 year old grandchildren

12. How willing would you be to change how you feed your grandchild?
13. What barriers do you think would prevent you from engaging with any support, ie attending face to face sessions, reading online material (e.g time, cost)
14. If you were to change what you fed your grandchild how do you think this might influence your own diet?
15. Would this also impact upon the diet of anyone else? If so who?

That was my last question. Before we finish I just wondered if have anything else you would like to add.

Perfect, thank you so much for such a great interview. I will now end the recording.

Before I let you go, I just need to mention that I will be providing your e-voucher for taking part via email within the next 7 days. Let me know if you don't receive this. Do you have any other questions?

10.28 Appendix 28 – Study 3 Transcript 1

Name of Transcription: Interview Participant 1 Name of Transcriber: Abby Constantine

Date: 07/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:24]

I: We can now begin the interview questions and I'm first going to start asking you a few questions about how you feed your grandchild. So, as a first question, as a grandparent, what is your role in feeding your grandchild?

P: Erm, we give him breakfast and lunch when he comes to stay with us when we're looking after him for the day, generally every week at the moment.

I: Yep, great, um and how do you decide what to provide your grandchild?

P: Erm, we've given him er, mostly we've given him food that we already have in the house. Occasionally we'll buy things in specially for him but it's usually what we have, already have in.

I: And is that the same with food and drinks?

P: Erm, with some drinks we've, we've bought some different drinks, I'll, do you want to know what they are?!
-laughs-

I: It's completely up to you -laughs-

P: Yeah, no, we, he, no I don't suppose it is special because we've already got it in so yeah, no, we have what we have in, he has what we've got in (aha) yeah.

I: So it's pretty much based on what you would already eat already?

P: Yes, yes it is.

I: Great and what do you think a healthy diet looks like for a child aged two to four years old?

P: Erm, variety, erm, we've got pretty good knowledge of what's nutritious and we're vegetarian. He's mainly vegetarian but now he's, is having other, so he's not, well he was vegetarian but he's now having other things that are not vegetarian just to introduce more first class protein (aha) so but we, we, he's vegetarian when he comes to our house, yeah.

I: Yep, great. What do you find easy with regards to feeding your grandson?

P: He's, he's -laughs- hungry when he comes for his breakfast in the morning [both laugh] so we have Special K or porridge and he's really hungry and he just eats it and doesn't mess around much, then he'll have toast or if we've got crumpets or er, hot cross buns or something like that he'll share that with us, we'll have our breakfast with him so he really tucks in for breakfast. He'll mess around a bit more at lunchtime [00:05:00] -laughs- 'well you're just playing a bit' you know? [both laugh] but we do, but we both, er one of us er will, I will sit with him while he's having his food (yeah) yeah.

I: Do you find, you say he's messing around a bit does, is there anything in particular that he'd do or?

P: Well he's, we don't let him have toys on the table or anything like that but he'll play with his food, he's got a mat with pictures on, he'll look at that, he'll pull funny faces and he just take, he's quite slow although he, he's not, he's just quite slow really -laughs- eating so -laughs-

I: And does he pretty much accept everything that you provide or?

P: Er, er, no, er we tend to give him things that we know he'll, he'll like (aha) yeah.

I: Is there anything you find difficult in feeding your grandson?

P: Erm, I think if we tried to introduce different things, he'd probably, er I think we'd have difficulty persuading him to eat them (aha). He doesn't like, but then I sort of think lots of children are like that, that they don't like mushrooms and broccoli and you know, you can disguise, if you, you can disguise these things but they just seem to you know, try them and er, and spit them out [both laugh].

I: Do you think you're um, you don't try things with him because erm, you know that he won't like them or because you don't think, because you only look after him on a short term basis or-

P: Erm prob' erm, probably just because it's on a short term basis, yeah.

I: Yep, great, so I mean this is kind of similar but are there any foods in particular that you feel that you struggled to feed your grandson?

P: Erm, I'd say sort of like more like raw vegetables, vegetables really yeah (aha) because he likes, yeah he like carbohydrates, he likes beans and eggs and things so we tend to give him things like that (aha). He'll have soup if you make soup and it's not full um, you know it's not a really strong flavour (yeah), we'll give him soup so that's a way of getting the vegetables, yeah [both laugh].

I: Good one (yeah). I remember my mum doing that with us -laughs-

P: Yes -laughs- yeah, yeah and so he won't eat tom', you know, he'll like, he'd like pizza but he wouldn't have tomatoes sort of thing, yeah -laughs-

I: Yeah -laughs- do you find that you have stopped giving him those things that he doesn't like or (yes) do you-

P: Yes, yeah, yes, yeah but I did give him some er, I did give him carrot sticks last week and I stuck them in hummus, he like hummus (yeah) and he did eat those and then he spat some of them out but he did eat some of it, yeah (laughs) because he likes apples so he eats apples and yeah [both laugh].

I: Yeah, typical two year old (yes, yeah). What strategies do you use if your grandson refuses to eat something entirely?

P: We use the old, the old good test of putting on the, loading it on the spoon and doing the 'choo choo train' going -laughs- down the tunnel (yeah) and then recently I've done the tractor going, oh no, car, that's right-going in the garage (yeah) [both laugh] so that can work, yeah [both laugh].

I: So it is kind of a successful tactic (yes, yeah) and you said before that you might provide something with hummus, is that something that you might try as well?

P: Yes, yeah, yeah, he likes that, so I thought I'd put something to dip in it to, yeah, to eat it that way.

I: Yeah, great. Is there anything that you would change about the way you feed him?

P: Erm, I think if, if he was staying for more, if I had, if I had him for more evening meals, which I say I did when I used to look at him at home, I would prepare things specially for him then (aha) and probably like freeze them or, like he's had little, oh what are those omlettey things called erm, that you cook with potatoes in?

I: Tortillas is it?

P: Yeah, no, yeah, are they tortillas or 'pistachas' or something? Erm, so yeah I'd probably prepare things and then freeze them and then use them the next week, you know like cook things that I thought, think he'd like, yeah.

I: Yeah, but that's if-

P: Yeah, like if he was having pasta I'd, could do him some you know, a pasta sauce and I'd save some of it for the week after sort of thing, yeah.

I: Yeah, so [00:10:00] that's if he was kind of, if you're looking after him more?

P: Yes, yeah because we have looked after him and he has stayed overnight so then we have done all the meals then.

I: Yeah, that's great, um, so do you and your grandchild's mother and father agree on what food and drink should be provided (yeah) to your grandson? Yes (yeah) entirely?

P: I, yes because I do what they've asked me to do [both laugh] (yeah) yeah.

I: So even if they've asked you do something and you'll do it, do you still agree with everything that they suggest?

P: Erm, yes, yeah, they actually probably have given him now, more sweet things if I, than I would've done. I've got a really sweet tooth and they've got quite a sweet tooth but obviously he's around them more when they're having you know sweet things (aha) so they're letting him have a bit now whereas I'd probably be more strict -laughs- That's the only thing though that I (yeah- laughs) yeah.

I: Have you ever discussed this with them or?

P: Er, not that, not that, no, I haven't said that no [both laugh]

I: So there's been no, you had no kind of disagreements on anything with regards to his feeding in the past?

P: No, no.

I: Great. So recently there's been a lot on the media about sugar and fat consumption in young children, so kind of touching on what you just said; what are your thoughts on this?

P: Erm, well, I, mine is that when they're little, like just the age he's at, he doesn't know what, you know he doesn't know what sugar is and that it, and I, I think they, obviously it's a human, something to do with being a human that as soon as you have things that are sweet you just, I think everybody, all children just love it you know? -laughs- (yeah) so but if you haven't, if you don't have it, you don't know what it is sort of thing. So he has plain yoghurt for instance, he doesn't have fruit yoghurt and he loves plain yoghurt and so, so he doesn't really know what fruit yoghurt is (aha) and he has had ice lollies but again they've been reasonably healthy ones in the sense that they're those fruit juice ones but they're still sweet (aha). So yeah, I think the later you can leave it 'til you actually introduce sugar into their diet, the better really (mm) but he does have, we're a pudding family we always have pudding, so er you know, me and his grandfather have pudding, you know we, so our kids, the boys quite like pudding so we have -laughs- introduced this thing that you have your, you know your main course, your savoury bit then you do have something sweet afterwards (yep) so, that is part of our family culture (aha) which I know isn't everybody's really is it but yeah.

I: What kind of things would you offer for pudding?

P: Erm, so with him it's been yoghurt, fruit- fresh fruit (aha), he likes quite a lot of that. Again some of it's quite sweet you know, mango he loves. He used to have grapes, we used to chop up grapes (mm), he loves bananas, he'd eat a whole banana, he just absolutely you know, wolf those down. He likes apples, yeah he likes apricots, he likes dried fruit, so he has a lot of, the little one of the treats he has is are those little packets

of raisins, then they're very sweet but er, fruit what else does he have? Yeah pears, straw', he has eczema (aha) and so they're not sure whether strawberries agreed with him but he will have the odd strawberry (yep) yeah.

I: So it's mainly fruit based puddings that you provide.

P: Er, he will have cake as well (yeah) and he does have some others like snacky bars which I don't suppose they're, which he might have which are sort of fairly you know but fairly healthy ones, they're not like, we wouldn't give him biscuits and normal cakes that we have (aha) but he might if it was like a special occasion at home, I imagine but we don't do that.

I: Yep, great, so this is probably not in reference to you after what you just said but- grandparents are often described as spoiling their grandchildren- and I just wondered what your thoughts are on this?

P: Um, yeah, no, definitely can see that that is an issue and I think I definitely would spoil him in other ways, but I don't feel I need to spoil him with the food thing. Obviously I'm living with his [grandfather] and if he, so I was doing more of the feeding and looking after him last year and I still do more of that cooking now [00:15:00] but definitely if his [grandfather] was left to his own devices, he would spoil him more (yep) with his cake and puddings and things. Erm I-

I: Just for the purposes of the recording, can you just say who [omitted name 00:15:13] is?

P: My husband, who is his grandfather then, yeah (thanks -laughs) yeah, so if so his grandfather would be more inclined anyway to spoil him ad yeah we've, I've never bought him, he's only ever had an ice cream when we've been out with his mum and dad so (aha -laughs) yeah. That might change, but that's what it's like at the moment (yeah) [both laugh].

I: Great, no, thank you -laughs-

P: Obviously we're like we're not out and about, I suppose another influence though is we're not out and about the same with him as we would be if the um, if the virus wasn't about. So for instance we might take him to the cafe and we might stop, you know, we might do different things if the Covid wasn't here with him and so we might be more tempted you know to treat him to an ice cream or something if we were out, yeah.

I: So you think maybe in the home, you're less likely to spoil them (yes) than kind of outside (yeah) sort of give treats (yes) yeah, perfect. I was just trying to think, there was a question I had then from what you were saying, um, so, in terms of er, no, it's gone completely [both laugh], move onto the next one -laughs-

P: Well I know, something else I was going to say though yeah, I don't, from like my experience of working with children anyway, I don't sort of believe that you should not give children any sort of ever you know, sweets or sweet things, that you should deny them completely you know once they're getting past three to four and (aha) because the odd the, you know the odd child that I have known like that, they tend to over' I always think they tend to over-react you know when they're older and then like really, because it's been something that's denied them, they sort of seem to like really crave them or, they just have a funny relationship with sweets and (aha) so I think there's a balance between letting them understand that sweet things are a treat; somehow you've got to work that out (yep) yeah.

I: So I remembered what the other thing I was going to mention was- so you said you'd much rather spoil your grandson with other things, can you just describe what that might be?

P: -laughs- Well actually, it's just by giv', we just give him loads of attention and we just play with him all the time (laughs) and like doing, yeah, really fun things erm, so, yeah we give him undivided attention when he's here -laughs- and we also do, his grandad does a silly thing where people across the road have got hens (mm) that we, and we have been to see the hens before now but then, since the um, the virus started we haven't gone you know over to, they have stopped giving us eggs (aha0 but we go over, his grandfather puts an egg in his pocket and we've got a little basket and his grandfather takes our grandson over and you know outside the hen, where the hens are (yeah) he pretends to find this egg and pretends that the hens have laid it and our grandson (aw) puts it in his basket and then he brings it back and then he has it for his lunch [both laugh] so-

I: That's really nice.

P: that's something they like, perhaps an example of something that we do that he, and then we'll usually like lift him up and watch the egg crack in the pan so, that's something we'd do too -laughs-

I: Aw, that's really nice (food entertainment), food entertainment yeah -laughs- that's great.

P: And he's picked, in the summer he picked strawberries and he's picked rasp', he's picked logan, well not, those, difference between the loganberries, something what we've got- lodanberries [sic] or something so he's picked fruit and picked a few bits of vegetables and things in the garden so um, but yeah so, I would, I don't feel like the need to treat him with, you know by giving him food because he's happy, he's happy with everything else that we do really.

I: Yep, no that's lovely.

P: And also I believe in the art' of distraction so if he hurts himself or is upset, then I wouldn't like reach for, I'd consciously not reach for food or a treat to make him feel better, I'd think of something else to try and you know make him feel happy again -laughs-

I: Yeah, oh that's great -laughs- So this might not be in reference to you then- so has looking after your grandchild influenced anything about your own eating habits? [00:20:00]

P: Erm, well we're just -laughs- hiding away the chocolate really (laughs) yeah -laughs- yeah so just like making sure there's nothing that he can see that we don't want him to have, we, I will hide it away yeah -laughs-

I: And on the days that you're with your grandson, hiding it away, does that impact on what you'll eat do you think?

P: Yeah it does actually yeah, now I think about it yes because well we're too busy to, so yes I'm too busy to snack on biscuits that he can't have or, yeah -laughs- yes, yeah.

I: Does it impact on any days when you're not looking after him?

P: Er, no! -laughs-

I: -laughs- Bring them out again! [both laugh} (yes, yeah). That's great. Does it influence anyone else in the house?

P: Erm, I think his grandad follows suit a bit yes, yeah, but I've got more of a sweet, his grandfather likes cake (yeah) but I've got more of a sweet tooth than him [both laugh].

I: That's great, so um, so now I'm just gonna ask you a few questions on kind of guidance for feeding, and I guess the first one is- have you been given any advice before on feeding your grandchild? Whether that's formal or informal.

P: Er, no.

I: No, do you, I guess you've spoken about having conversations with your grandson's mother and father, did they ever offer any advice?

P: Erm, we did, erm, I don't know whether I'd call it advice- they did talk about, so this thing with being vegetarian (mm) and but then because they've done a bit of research they've introduced like a few different, you know, fish and the odd bit of meat (aha) because they were worried about him not having enough first class protein, so we've talked about that and then we've talked about the milk, because he has eczema (mm) and sometimes we aren't sure whether he could be reacting to things, so we've talked about the milk, whether to reduce the milk, because he likes to drink milk (aha) and then recently we did try, been trying that Oatly,

that milk substitute, not milk substitute, it's made from oats it's called Oatly isn't it (yeah) and you can get yoghurt like that as well, so we've had those kind of conversations.

I: And so the information's mainly come from your grandson's mother and father (yes, yeah). Would you then look up any of the information yourself or do you kind of just go with exactly everything they've said?

P: Well I go with everything they've said (aha) and I've not looked it up because I think I know everything [both laugh]

I: So none of the things that you've discussed with your grandson's mother and father have been new to you?

P: Er, no, no, not really, yeah.

I: Perfect thank you, erm-

P: Maybe they should be but -laughs-

I: -laughs- No, it just sounds like you knew about it already right? [both laugh]

P: I think it is easier to find out these days isn't it you know, I don't know, because you can just look anything up can't you on your phone or tablet, so it is easy to find out and there's a lot more books; you know our grandson's mother has got books on wean', you know, er what's it called um, oh, what do they call it when a baby now goes from (weaning?) yeah, not weaning but the other one, to solid foods, they call it going onto real food or something, there's a name for it-

I: Complimentary feeding?

P: Er, no, there's some other name when they're given, giving babies, young children real food rather than giving them sloppy things-

I: Oh, and is it about giving it to them by hand, (yes) because I know there's a lot on 'baby led weaning' isn't there?

P: That's it, yeah, yeah, there's all, yeah, so as I say there's a lot, there's different information, there's a lot of information out there that easy, very easily accessible isn't it, yeah.

I: Yep, but you've never accessed it yourself kind of thing (no) or felt that you needed to? (No, no) that's good. So we've kind of touched on this, so you're aware of, that there's lots of advice for feeding children, are you aware of any advice in particular, or where you'd find that advice if you needed it, or any guidance?

P: I, I'd, yeah if I wanted, I'd look in one of our grandson's mother's books, as I say I haven't got any (aha) but hers will be up to date, so I'd look at them and I think I would be more, er when I think about it, more conscious now that they're getting all the right vitamins (aha) and I think he has vitamin drops [00:25:00] actually, which I didn't give mine when they were little, you know that wasn't, when I fed my own children when they were little (yeah). So that kind of thing I would try and find out about and yeah I'd look on the internet or look in one of her books, that's our grandson's mum.

I: Yep, so if you were kind of provided with kind of additional information, how would you like to receive it- would it be via internet or something else?

P: Yeah, no, the internet, yeah, yeah.

I: Aha and you'd prefer to seek it out yourself rather than be provided with something?

P: Probably, yeah, yeah, I think so.

I: Yeah, great and if you were to receive guidance from someone, what kind of public bodies or people would you like to receive it from? So you say you've received kind of information from your grandson's mother and father but are there other places that you would trust to give you information?

P: Erm yeah, I suppose a, like a I don't know what the right title would be but like a dietary, you know I know there's nurses, doctors, specialists who deal in nutrition and diet (aha) you know dietary which you could access through your doctor's surgery, so I presume you know there's specialist ones that deal with children so, yeah, somebody like that.

I: Yeah so like a dietician, is that-

P: Yeah, dietician, but one that specialised in children.

I: Yeah, and have you-

P: And I think I, I think I'd, if he had, he has got a few health issues, but I think if he had more serious health issues then I think that, that is a time to look for that kind of info', look for that kind of help and information, yeah.

I: Yep, are you aware of any campaigns for young children's feeding (erm-) kind of public campaigns, no.

P: No, no, no not (erm-) that's interesting I wonder if his mum is, so yeah, that's interesting, yeah.

I: Yeah -laughs- she probably passes information onto you anyway (yeah) [both laugh]. So, if there as, if you were to change anything that you fed your grandson, how do you think this might influence your own diet?

P: Erm, mm, er, I'm trying to think if it's sort of like if we introduced new foods to him (aha) erm, I think it would make, I'd definitely, it always makes me to be more conscious to make healthy food, you know to have more healthy food and we do get a bit lazy and buy more, a few sort of processed food (aha), you know vegetarian things, though I wouldn't do that for him so, yeah, so I'd cook, I'd cook more I think, yeah (aha), cook from scratch.

I: Like cook from fresh yeah (yes, yeah) and do you think that's if you were looking after him more or if there was any health problems, or what do you think, that would be the situation?

P: Erm, probably more, both you know if I was looking after him more, yes, if he was here for his evening, for his you know his afternoon, his evening meal as well (aha) yeah.

I: Does it affect anything you do now? I know you only do breakfast and lunch in that respect but do you find that you cook more from fresh for lunch now, for instance than you would've done?

P: Probably, yes, yeah and we sit down and make that time together (yeah) with him (nice) yeah.

I: Are you part of any grandparent networks, so either this is formal, so an organised group, or informal, you know discussions with friends, that kind of thing?

P: No, no, (no) no.

I: Do you ever discuss feeding your grandson with friends?

P: Er, no! -laughs- no (it's fine) [both laugh]

I: Do you think you'd find networks of grandparents beneficial?

P: Erm, if er, yes, if I found people with similar views I think, yeah, which is probably influenced by the fact that you know I'm vegetarian so, so I think that would have to be something that I would have in common, really, yeah.

I: Aha and if there was this kind of network, would you want it to be- obviously not in [00:30:00] Corona virus times- but some kind of face to face group or just an informal online thing or, what do you think you'd prefer?

P: Well I think erm, yeah like, a face to face group and then you can do a What's App. I couldn't imagine starting a group without meeting people first (aha) but then I could imagine you know, carrying it on in another form sort of thing but I couldn't quite imagine, I wouldn't feel like I needed it that much to do it in the first place if I hadn't met people I think.

I: Yep. Why do you think you'd find a network beneficial? What are the reasons that you might be kind of keen to have one?

P: Well because I think it is, because -laughs- I like talking about my grandson! (Yeah) -laughs- and so presumably other grandparents would, whereas you know, my other friends who haven't got any grandchildren you can't really go on and on about [both laugh] (yeah) your lovely grandchild and what they're doing and what they're saying and -laughs-

I: Yeah -laughs- nice to be able to discuss that with people -laughs- (yes, yeah). So, this is kind of now still on the same points of guidance but if you were to be offered advice on something, how willing do you think you'd be to change something you feed your grandson?

P: Yeah I think I'd be prepared to change, yeah, aha, yes.

I: And you find implementing changes quite easy to you think or-

P: Yes, yeah, yeah.

I: Yep. Are there any barriers that you think would prevent you from engaging with any changes or any support?

P: -laughs- Erm, well -laughs- I've just got to say what I think is relevant I suppose but I say the issue of like how much protein a little child should have (aha) and as I say because he, I don't really like, there's a lot of meat products that I just wouldn't be prepared to give him -laughs- or any child but I know that other people will (aha) because they already things like that. So I would have an issue with suggestions that a child should eat some types of animal protein I think, yeah, yeah, or the way it was processed or something like that.

I: Yeah, no that's fair enough, as a vegetarian [both laugh] I can see that [both laugh].

P: Mm, but otherwise I think you know hopefully any advice would be, if it was somebody that I respected it would be advice that would be worth taking, so I wouldn't, I'd hope it would be a positive thing, yeah.

I: Yeah and if there was, if you were offered you know, like if there was a group setting or content online, is there anything that would stop you from engaging with this?

P: Er, no I don't think so, no.

I: No, I was just thinking about kind of maybe some prompts over time or cost.

P: Well I've got time, but I'd, there would be a limit to how much time I'd want to spend during that (aha) you know I'd, would commit a small amount of time but not loads amount of time (aha) yeah. What was the other part of the question?

I: Er, time and-

P: Oh cost yeah (cost, yep) er, yeah so there wouldn't really be a cost issue but erm, unless I had to travel somewhere I suppose, yeah.

I: Aha, yep, so, I think there's just one question that I must've skipped through from before that I'll just go back to but- how do you think what you feed your grandson differs to what you fed your own children in the past?

P: I think my own children, I'd have been more um, probably would start particularly now, be, start being more assertive about him having different foods, different fruit and vegetables really (aha) yeah. He likes you know, he likes cheese, eggs, peanut butter, bread you know all the sort of quite what you might call normal, ordinary things but yeah I'd want him to, I'd want to encourage him to eat as wide a variety of things as possible (aha) I think, yeah, but I don't feel as if that's my, a priority for me because I'm just looking after him, every week (aha) but yeah. If my grandson's mother and father asked me [00:35:00] to do that, then I would, I, I could, I would do it but they haven't suggested that so (yeah) yeah.

I: No that's fair, and how does it differ to what you ate as a child?

P: -laughs- Hugely yeah! [both laugh] I think I, I must've been very much brought up on the, you know the two veg and meat like diet (mm) but having said that my mum was a really good cook so everything was homemade (aha). She baked, she did pastry and you know as I've got older I've realised she was actually a really good cook but she spent a lot of time cooking (aha) but also I was a bit, I was fussy (mm) so but she, like for instance she'd make a sort of a mincemeat pie or something but I didn't like onions so she'd make a little bit without onions in for me, but I, I was quite fussy so I was sort of like accommodated but there were some things I just, I didn't eat so, I, I don't want my children or my grandson to be fussy, as fussy as I was -laughs- (yeah- laughs).

I: And do you think he has any fussy tendencies or?

P: Um, yes, but I think I've, yes he does but I think maybe all two year olds do so I'm not worried about that, yeah [both laugh] I think yeah that's what, that's what almost like being two, two is about you know, finding what you like and then using what you like to get what you want and you know experimenting with all those -laughs- kinds of things (yeah-laughs). So I think just keeping relaxed about it all is one of the answers, so I'd definitely be conscious of not using food or meal times for any kind of battles of will or anything like that.

I: Yeah -laughs- so um, you kind of, I was just going to say how do you respond to his fussiness but you've kind of covered that but is there anything else you want to add to that (er-) if he is ever fussy?

P: Yeah I, it's, for me it's like a balance of um like I don't like crusts, so I don't make children eat crusts (aha) but I do know of other parents who will *make* their children eat crusts -laughs- but it's like to me it's just oh well, you know [both laugh] but then there are other, but then we are quite, he's, we've always encouraged him to finish what he's got on his plate (ah) even if he left the crusts, before he'd start you know, having something else (yeah) so we wouldn't just give into him saying like 'I don't like this, I don't want that', we'd be really encouraging him to try and finish what he's got (yeah) yeah. But in a positive way [both laugh].

I: So do you think you have I don't about rules but kind of, your own kind of ideas and ways of doing things that you'd try and stick to consistently with your grandson?

P: Yes, yeah, yeah (yeah) yeah.

I: And er, do you (we-) want to- (laughs) carry on-

P: Well I was gonna say he seems to like at the moment, since he comes to our house, he sits on one chair and then his grandad sits on the chair next to him and then I sit at the end of the table and then it's got to the thing now where if we sit on different chairs he's like 'no that's, you know, that's grandad's chair (laughs) and that's my chair' -laughs- so we've like got him now to be like 'oh these are our chairs and that's where we sit -laughs- to eat'.

I: -laughs- This is how it should be -laughs-

P: Yes, yeah, we've er, we've got little cutlery that he has that we had for, we found that in the cupboard that our children had so he has his own cutlery and his own mat and his own, he did have his own little seat but we don't use that any more, yeah. Sorry I've forgot what the question was now -laughs-

I: No, no, that's great. Do you ever get him involved in kind of planning food that he's gonna have or (we do-) in preparation?

P: Well we do with that egg obviously -laughs- (yeah) that's very elaborate, yeah (laughs), very elaborate, going and getting the egg from the chicken and as I say we have picked fruit and vegetables (aha) before now and yeah, if we feel like it you know he could stand up in the kitchen against and like watch us, if we were cooking you know, if we sort of, I think I made some little pancakes and he was watching making those but again that's only if there's two of us there, I think it's quite hard (aha) if you're on your own.

I: Do you think it influences whether he eats the things that you provide?

P: Yes, yeah, I think so, yeah (yeah). I think it influences him that [00:40:00] we also eat with him (aha). It's easy to do that now, yeah, it er yeah-

I: Do you always eat with him when he's eating or? (Yes, yeah) So that's, it's breakfast and lunch is it or is there a snack as well?

P: Yeah there's usually a snack, don't always eat when he's having a snack (aha) but he's a, but I have coffee or tea and he's aware that we're having a hot drink so you could call that a snack that we have, but not necessarily at the same time with him.

I: Yeah, but still-

P: Oh he drinks- [talk at same time]

I: you have a drink with him.

P: Yeah, he drinks water so always encouraging him to have water.

I: Aha, rather than tea and coffee (yes) [both laugh]. Right so I think that's the end of my questions, but before we finish I wondered if there's anything else you wanted to add erm (erm) if there's anything you wanted to say?

P: No I don't think I can think of anything else.

I: No that's fine [both laugh] just giving you the opportunity in case you did -laughs- (yes, yeah) so-

P: I think you'd have to keep asking me questions, then I can answer them (laughs) but no, I can't think of anything of my own bat -laughs-

I: Ah, no problem at all. So I'm just going to stop the recording now but I'll stay on the line and chat to you (ok), so I'll stop the recording now-

End of tape.

10.29 Appendix 29 – Study 3 Transcript 2

Name of Transcription: Interview Participant 2_PID1 Name of Transcriber: Abby Constantine

Date: 07/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:30]

I: So we can now begin kind of the interview itself properly- so I'm going to start by asking you a few questions about how you feed your grandchild (aha). So to begin with just kind of, as a grandparent what do you see as your role, or what is your role in feeding your grandchild?

P: Erm, oh my role is to make sure that he gets healthy, nutritious meals and that they're sufficient so that you know, they meet his needs basically throughout the day.

I: Yeah, and how many meals and snacks do you roughly provide kind of thing, throughout the day, what food-

P: Erm, at most, three.

I: Aha, so in terms of the food that you do provide, how do you decide what to give your grandson?

P: I do what he tells me (laughs), that wasn't the answer [both laugh] right, ok, several ways really (aha); obviously I talk to my grandson's mum about what he likes, what he doesn't like and also about what they want him to have and don't want him to have (aha) yeah? Erm and then I decide what to give him and sometimes we might try a new food with him or something different (mm) and generally, if it's lunchtime say, which is the main meal we do, I might offer him a choice of two things (yeah). So not endless choice, because that's not helpful with a three year old (laughs) but you know, 'do you want scrambled egg or do you want beans', that sort of choice.

I: Yep, great and is it the same kind of thing with drinks as well, how do you decide what drinks to provide?

P: Oh, drinks are really hard (aha) because we've had long periods when he doesn't drink enough and he gets really thirsty and then he goes to bed when he's thirsty and etc. etc. (yeah) and so with drinks, I very much tune into what my grandson's mother tells me at the minute and what we've been through is that we both started with the 'he'll drink water' (aha) yeah, fine; I can't get him to drink it, she can't get him to drink it, we try and try and try, he'll drink milk so we'll do milk perhaps in the afternoon (aha) and at the minute, I perhaps might give him sort of [00:05:00] very diluted cordial to get fluid into him, or my grandson's mother has tried things like fruity herbal teas and things like that or they might do a hot chocolate but it's sort of trial and error and talking to my grandson's mother because he doesn't drink enough generally and it's a problem.

I: Yeah -laughs- so you've tried different strategies (yeah) yeah, so is that strategy mainly trying different drinks or do you think there's other things that you might do to promote his consumption of drinks?

P: We try different drinks. Now he's a little bit bigger (aha), I try explaining to him, or whether it's to him or if he's doing role play with his soft toy 'that you have to have drinks every day or you get poorly' (yeah) and 'drink is really important, you've got to get drinks in' and we talk about drinks going in his tummy and then he'll say 'oh I've had this in my tummy and I've got water in my mouth' meaning the saliva (yeah) and he's starting to get the idea that drinks in the cup become fluid inside you and you need it (yeah). So we do that a bit and then generally it's just nudging (mm)- 'are you going to have a drink before that? No, you need to have a drink; do you want a little drink?' and just trying to remember (yep) [both laugh].

I: That's great and do you find it works, these strategies that you use?

P: Erm, to a degree, to a degree, I still don't think he drinks an awful lot but he is getting better.

I: Yeah -laughs- oh great, thank you. So, what do you think a healthy diet looks like for a child aged two to four years old?

P: I will just say, I ought to know the answers to these but I'm a human being, because I used to work with, partly within obesity management so I ought to be [both laugh] ha! So there you go, however, so I'll just be me now (laughs) yeah, so a balanced diet (aha) so the main food groups (aha), you know proteins, vitamins, some carbohydrate, some fat but not too much fat, not much sugar, minerals and then I think compared to when my own children were little (aha) because I have learnt more since then [both laugh] yeah, my great failing as an individual is sugar (yeah); I love sweet things so-

I: Don't we all? -laughs-

P: I do, I do a lot, so I try and very much moderate that and it's a treat (yeah) and so, so you know during the day, at some point, sometimes he'll have a snack in the morning, a snack in the afternoon, he doesn't always (mm) and there's lunch, so one of those times certainly or two he'll have some fruit or some fruit at once and dried fruit at another (aha). He'll probably have something protein in his dinner, whether that's eggs or cheese, some carbohydrate, some toast (aha) and then in all honestly, because I don't know why really, I tend to give him something sweet after his lunch (yeah) and I probably do that more than I know my grandson's mother would (mm), she would limit it a bit more and we're both at a sort of agreement that if he's with grandparents, things can be a teeny bit more treaty because that doesn't pass into the rest of his life (yeah); it's like just that day at my house (yeah) so (laughs) so he might have a piece of chocolate, white chocolate last week which was super exciting (laughs) or a biscuit and we baked gingerbread men this week so obviously-

I: Ooh that sounds nice.

P: we had a gingerbread man, yeah.

I: You've got to -laughs- (yes, quite) if you've baked it yourself as well -laughs-

P: yes but he didn't proceed through all the gingerbread men which is what he was going to do- 'I'll have another one', 'No, no, no, we've had one today' (laughs) so we do try and limit -laughs-

I: Yeah, great, thank you. So you've kind of talked about this a little bit or kind of touched on it but how does what you feed your grandchild compare to what you fed your own daughter?

P: Erm, I'm more aware of the health (yeah) aspects of it. I mean we've always cooked a lot and you know we have lots of home cooked meals and things like that (mm) we never had much, we had less instant meals then because there were less anyway (yeah) and we've always cooked a lot. I think one of my other things is I've always loved baking (yeah) and when I had children, I would tell myself I was baking for them, which of course is just a great lie (laughs) because it was always for me (laughs) and I was over, I'm not overweight now but I was when I was a young mum (mm) and I think I probably gave them too much sweet stuff (yeah) but within reason. We tried to be fairly healthy but I am more aware about stuff now, both because [00:10:00] I don't know, partly probably because of stuff I've done at work (aha) which has made me think about it more and seeing like obese and overweight children, and partly my daughter's very health conscious and her husband is an [job omitted [00:10:17] so he's obviously super careful-

I: With sugar and stuff especially yeah -laughs-

P: Sugars in particular, yeah (yep) you know so some of the time I'll be like 'oh surely he can have that?' and he's like 'no, that's bad because that's acidic in his mouth', which perhaps thirty years ago I wouldn't have thought of with my own children (yeah), so I am more aware.

I: Do you think you've learnt from your daughter and son in law then specifically with regards to feeding your grandchild?

P: Yeah, I think, I think with regard to sugar and teeth, most definitely (yeah) because erm, I think like so many drinks being acidic and I think for my grandson's father, by choice he didn't want to give my grandson sugar-free cordials (aha), we don't do any fizzy drinks, I wouldn't, but not even sugar free ones but I wouldn't anyway because they're just not something I ever use (yep) but my grandson's father has reluctantly come to sugar free cordial because he says they get a taste for sweetness from it (aha) and that's really not helpful but

in the end when the child doesn't drink, doesn't drink and he's waking up at night and you've tried everything (yeah) you bend, everyone bends a bit.

I: Yeah, you just want fluids in them (yeah) -laughs- Do you find it ok kind of discussing these things with your daughter and son in law, kind of taking advice (yeah), talking about feeding?

P: Yeah, yeah because we've got a good relationship, so mostly it's my daughter that I'll talk to and we do talk quite a lot about what my grandson eats, what he doesn't eat, any problems we've got, any fads he's got, you know (yeah) 'I can't get him to eat this and this' (yeah) so we do talk about it quite a lot, yeah.

I: Yeah, great, so with all this in mind, what do you find easy with regards to feeding your grandson?

P: Beans on toast (laughs). That's it um (laughs), yeah it's easy if it's just his lunch because he has his main meal at lunchtime (aha), if I did beans on toast every time he came, that is easy because I know he likes it and it is easy (yeah). So I try not to do that all the time -laughs- he is only here one day a week so it's not a big deal (aha) and we do try and vary it. I think the things that are less easy, some of the meals that we would normally eat, I find it a bit frustrating that if he doesn't like them. So say for a main meal (aha), if we had more what I might think of as a more traditional dinner, rather than say a pasta meal, it surprises me that he doesn't want to eat it and but partly it is worse at tea time, so it's probably there's a tea time thing go on that he doesn't generally, he's just too tired by then I think (yeah) [both laugh]. I probably didn't answer that question, I probably rambled-

I: No you did (laughs), no you definitely did answer that question, no that was perfect. So you find it easy to feed foods that you know he likes (yeah) yep, is there a kind of anything else that you find easy with regards to kind of food types, anything like that?

P: Erm, trying to think [pause] no just things I know he likes (yeah), I know that he'll enjoy canned fruit in juice (mm), it's a big treat so he'll enjoy that and he also, there was some fresh fruits that he very much likes (aha). It's just, yeah, it's just knowing what he likes that makes it easy (yeah) and sometimes if he's not eating or you just think he's really tired and he's therefore sort of being uncooperative, we then resort to games to get the food in, like pretending his mouth's a garage or pretending you're flying the plane in and my daughter said last week 'mum, we've just tried to, we're trying to stop doing that and he just eats it or he doesn't eat it' and then I do a bit of the 'yeah, but what he does at my house doesn't count' [both laugh] so but that's not often, to be fair, he's usually fine at lunchtime, he's usually hungry and eats (yeah) [both laugh].

I: So, kind of on the opposite end of that, what do you find difficult with regards to feeding your grandson?

P: Um, trying to think [pause] he's, because [00:15:00] we only have him usually for lunch and we don't do many evening meals (aha), he's not really very difficult for us, he's, because lunchtime he usually eats and I'm trying to think what is difficult? Um, honestly don't find anything, trying to think of anything difficult at the minute erm, also bear in mind, we've been having him back for about three weeks and then there's been a big gap of months and months and months (aha) so you're not quite as tuned in as you were (laughs- yeah, no-) when it's been weekly.

I: Understandable yeah, is he fussy at all would you say?

P: I think not fussy, fussy no, he's not, but I think certainly for main meals I think he's more restricted in what he likes (mm) than you might wish but I'm not usually there, so when I'm at, when I drop him at teatime at my daughter's, they might quite often have like pasta meals for example, rather than, so I know say, a few weeks before, I don't know when it was, time's just merging into lockdown and things now (yeah- laughs) we did a meal with like mashed potatoes, more of a traditional meal if you like (aha) and he didn't want it and we're there like thinking oh you've got great- it's mashed potatoes, they're lovely and I don't know how much that is simply what he's used to that perhaps like they have less at home (aha) or whether I don't know, I don't know but there is sometimes we'll do a meal, particularly if we do a main meal and we'll think he'll love this and he's not that interested in it or his tastes change over time (yeah). So when he was little, little, I remember us making a chicken in a cider sauce with apples and things and he loved it (mm) and then another time I thought well I'll make chicken sweet and sour, it's very similar and he just, 'no' (laughs) but I don't do main meals often

enough to work out whether it's just an off day and what his overall tastes are (yeah) yes, certainly I would say more traditional meal meals if you see what I mean.

I: Yep, what would you do if he did kind of refuse a meal and in that case didn't want to eat it?

P: Erm, yeah, I mean my grandson's mother at the minute is doing the 'ok if you don't eat it, you don't eat it' she says, whether she actually is carrying through (aha) I don't know because I'm not there every day (laughs). Certainly if there's dessert of some sort, we won't let him have that until he has his meal because say when it was the gingerbread men, 'oh I want the gingerbread man' (aha) 'you can have a gingerbread man when you've eaten your dinner' and that is very strict at home and here so he absolutely knows he will not get it (aha), so it just motivates him. If we were desperate we will feed him and play games but generally we don't need to do that because he's just eating and he's quite grown up with it and very good and sometimes he can just sort of oh, I think just whether it's a conversation or other things they ask, just take their mind off the food a bit and just be a bit more casual about eating the dinner rather than everyone starts to focus on you eating your dinner (aha) you know, talk about something else and then just back to him eating the dinner but they're the main things we do.

I: Yeah -laughs- that's great, thank you. So that was my next question but you've kind of touched on those; are there any other strategies you might use if your grandson refuses to eat?

P: I can't [pause] I guess occasionally I would make something else. I mean I'm, I try not to be the sort of person who there's just loads and loads of choice for toddlers (aha) you know and they can, I've known children who get so much choice and then they mess about with food and, so, generally, like I said I will offer him a choice of perhaps two things (aha) and then give it to him and expect him to eat it. Very occasionally, perhaps I've tried a different food that he's not used to or he doesn't really like and I'm just not with him every day to know and I'll make something else then (aha). So that is another thing I might do, because at the end of the day, children can't go hungry all afternoon, they've got to eat you know (yep), they'll just fade out very fast don't they, so you know erm, trying to think of the sort of [00:20:00] foods I've done lately that he's not liked? Erm, oh I can't remember but there have been things I've got, I've perhaps bought them and thought oh, my grandson will like this and he really doesn't like it (aha) and he clearly doesn't (laughs) so I've like 'ok, if you want such and such instead' and give him something else.

I: Yeah, so do you think you attempt to give him novel foods, or new foods to him?

P: Um, yeah we do, we do and it's like everyone else, sometimes he likes them and sometimes he doesn't -laughs- it depends (yeah- laughs) what they are, yeah.

I: Typical young child -laughs-

P: Yeah, and with typical people really as well -laughs-

I: Yeah, that's true -laughs- Is there anything that you would change in an ideal world about the way you feed your grandson?

P: Erm, no I don't think so. Generally I think meal times are enjoyable and he generally enjoys his food (mm) you know so it's nice, I'm quite happy. I probably in an ideal world I would stop baking (laughs), I've nearly stopped baking but I still do it and then yeah, in an ideal world I'd probably cut, it's sugar, it's my great weakness, I will bake things (yeah). We will have home-baked biscuits in and limit myself very much now (aha) and yeah, I'm pretty good but we'll have them in and it's my idea of a treat and I think I have that treat mentality too much (yeah), yeah so it's probably that.

I: Is that a treat both for you and for your grandson or (yes) yeah.

P: Yeah, although sometimes I'm a much better grandma and I eat my treat and hide it from him and he never knows [both laugh] (yeah) yeah.

I: That's a good strategy (yeah, exactly) so, so do you and your grandson's parents agree on what food and drink should be provided to him?

P: Yeah, I think we do pretty much, because we do talk about it and like when I took him back this Tuesday, you know, I'd say to my grandson's mother 'oh we've had a great day, we've done this, that and the other; he's been like this, that and the other' and 'has he eaten well?' and I'll be like 'yeah, he had this, this and this' (mm) and we talk about it and we talk about, we probably talk about food reasonably often, myself and his mother (mm), so for example when he was at a childminder at one bit or at a nursery, we would talk about the menu choices and whether we thought they were healthy or nutritious (aha) so it's something we're quite interested in.

I: Yeah. Have you had any disagreements at all?

P: Erm, no, not really. I think we've got a good enough relationship that we'd just talk things through and it doesn't really get to disagreement (aha), you know, listening to each other.

I: Great, thank you. So recently in the media there's been a lot about sugar and fat consumption in young children (yeah, yeah); I just wondered what your thoughts are on this (um, yeah) broadly speaking.

P: Yeah, I, I would totally agree, totally agree and as I said I did have a role in weight management in [city] (yeah) so I'm aware of all the stats and what's happening to children. I would like to see a different life where the foods that are high sugar, high fat are not as available. Whether that's done through taxation, however it's done (aha) but while ever they're there, they're there and people are buying them and I don't think education on its own and there's not that much of that (laughs) anyway is gonna get us from A to B with the problems we've got, so I definitely think they need reducing (aha) and even you know people, like lunch boxes, parents, parents also, they provide too much food, the portions are too big and they'll do the lunch box. I mean me and my grandson's mother have chatted about this like, she had a child recently and they've got some healthy sandwich that was healthy, but then the crisps and the chocolate bar and there's something else and you're like, this child is three (yeah- laughs) and those are really unhealthy foods and a child would just throw the sandwich away because clearly, she says, that's not the food he eats in life (yeah) yeah. So I do think it's a massive problem but it needs so much (aha) from Government on so many different levels to start changing it (yeah) and it's really worrying [00:25:00].

I: Yep, no, definitely. You touched on portion sizes there, is that something you're aware of in terms of appropriate portion sizes for two to four year olds?

P: Yeah, yeah, I am, I'm aware that they eat smaller portions basically and they're not adults (aha) you know and you wouldn't expect them to be so, you know if we -sighs- not exactly scientific about it but if we were having a meal (aha), my grandson would have a much smaller plate (yeah) for his meal you know and I think, what I try not to do as well, is this thing people do with children, it's almost like in built from when food was scarce, that you want them to always finish their dinner (aha) and you just want them to have eaten a lot and it's almost like in there, in the middle of you somewhere (laughs) you know? (Yeah. It's really weird sometimes because I remember talking to someone at work about her child with school dinners which are very small and the staff would be like 'you've got to eat it up, you've got to eat it up' and the portion's too big, my child wouldn't eat that (yeah) and they're trying to force them to eat bigger portions. So yeah, I am aware of portion size, definitely.

I: Do you have any rules for portion size or you've ready any guidance that you use or is it just-

P: I've not read the guidance (yeah) so, and to some degree I'm probably -sighs- taking a bit of a lead from my grandson (aha). I don't think, I don't think he's a child that eats unless he's hungry (aha); he doesn't, he's like 'I've had enough, I've had enough' (aha) so sometimes if he doesn't finish what we've given him, that's fine (yep) you know if you think well he's had quite a reasonable meal there, that's ok but I suppose if it was like I don't know, say scrambled egg and a piece of toast (aha), this is my cuisine, one piece of toast (yeah) you know, not two like I might have (aha) and I said a smaller plate and like this week he came, he had one piece of toast, he actually had beans and egg and then he asked for a bit more toast so I did another half a piece (aha) but generally he doesn't, he's usually had enough so I don't know scientifically, it's a rule of thumb and he's very slim, he's very active indeed, because he goes to outdoor nursery so he's using a lot of energy (aha) so I tend to think it's all working and in balance (great -laughs), I hope, yeah -laughs-

I: -laughs- Yeah that's perfect, thank you. So grandparents are often described as spoiling their grandchildren (laughs- yes); what do you think, what are your thoughts on this?

P: Erm, I think you do, I mean I've talked about the food and what I think, it's not spoiling, certainly with food I would never spoil him by 'oh I'm going to buy you a big bag of sweets as a treat', absolutely not (aha), that is not spoiling him. I think the spoiling him mostly and I don't think it is spoiling, is simply that when he's with us, he gets pretty much a hundred percent attention for a whole day (aha) from two adults (laughs) and that is not what children get normally in life, they can't, that is not reasonable and it's not particularly good for them (yeah) but I think with the grandparents what they get mostly is attention and a lot of it while they with us so, he thinks I'm his personal slave I think now [both laugh].

I: So you'd much rather spoil him with attention than with food, kind of thing.

P: Yeah, yeah, most of what my spoiling if you like is playing with him (aha) and I'm also very aware at the minute, that his play opportunities, he does go to nursery two days but there's less of other people in life because of the restrictions (aha) and there's less of other children than there was, so yeah, a whole day and we play together, we do all sorts, we make things, we were standing in the river for half an hour playing at rock pools yesterday (laughs) and etc. etc.; we do all sorts (yeah) and I just get involved with playing.

I: You must be exhausted by the end of the day -laughs- (absolutely -laughs). Has looking after your grandson influenced your own eating habits at all?

P: Um, not really, no, no. I, no because I, I would say over the last ten years my eating habits have changed a lot because I was quite overweight (aha) for, oh i don't know, 20 years, 15 years, i don't know how long, it went up and down (aha) but I was overweight, I was like [00:30:00] getting up to size 18 and over the last ten years I've changed, I've lost weight, I've got fitter, I've got much more, you know, stopped doing the denial about it (laughs) if you like, yeah and erm yes so I'd changed quite a lot anyway so this hasn't affected any of that.

I: Yeah, so even on the days that you look after him, your diet is the same as what it would be on the days that you don't look after him would you say?

P: Erm yes it is, it's pretty similar because I try to be really boring and lots of routine with food (aha) yeah.

I: Ok that's great -laughs- does it influence anyone else- I don't know whether there's anyone else in your household but does having your grandson around influence the eating habits of anyone else in the household?

P: It's my husband, not really, no. He's always been very healthy, fit, active person and his eating's not different because of our grandson now.

I: Yeah, great, thank you. So, now we're kind of moving onto our next section which is going to be talking about guidance on feeding two to four year olds; so, have you been given any advice before on feeding your grandson- that's whether that's formally or informally?

P: Erm, no, just conversations with my daughter.

I: Aha, and from your, the son in law (work) oh, and from work -laughs-

P: Yeah, yeah there was work but I wasn't doing direct delivery so I was always a bit broad brush about it all at work -laughs- (yeah). Yeah, I tend not to talk to my grandson's father that much, it tends to come via my daughter -laughs- (yeah -laughs); that's just the dynamic, yeah.

I: And when you do receive it what do you think of the advice or the kind of tips that you get?

P: Erm, I think if I look back to when he was a baby (aha), there's either a discussion about it and a to and fro and 'oh what about it, what about that'; 'I think this' - that sort of thing. Occasionally it might be something

and I might do my 'I'm old and I've seen it all and there's always new guidance and da-da-da-da-da' (aha) but, what I try to do, I don't know if I'm successful, you'd have to ask my daughter, if it's something like that, what I tend to say is 'gosh, there's just so much guidance now, I'm glad we didn't have so much guidance; there's so much to think about' (yeah) and make a little hearty joke of it because it's true, the more information there is, the more guidance there is, the more there is to worry about and it's like 'oh crumbs' you know (yeah- laughs) but generally we just discuss, yeah.

I: And when you do discuss these things does it make you kind of adapt your grandson's diet based on what you've discussed?

P: Yeah, yeah it does, erm I can't, I'm trying to think of an example. I think the drinks has been quite a big one (aha) where we've also tried quite hard to do drinks the same as his mum and dad are giving him and to try different strategies in the same way as they are and very much like, oh I don't know, just simple things like you know what children are like, like, like if my daughter might say 'oh he prefers to drink out of that sort of cup' we'd try that (aha), it's that sort of process of 'what about this, what about that' (yeah) really to get to ideas.

I: Yeah, trial and error (yeah) and giving it a go (yeah) -laughs- I know from your work you sound quite informed already but does these conversations and all this information that you hear, does it make you think about any changes in your own diet?

P: Erm, yeah, yeah I do, I think about it, I just, I don't know if it's good or bad any more (aha) I feel like, I think because I was overweight and then lost weight (aha) and then it's, and then I have a natural tendency to eat more than I should, left to myself, if I didn't stop myself rather, (aha) I never really quite switch off from food, food content, it's always in my head (yeah) all the time, every meal and you just, sometimes think oh it'd be really nice to just never have it there in your head and just eat in a sort of more natural way but it's there all the time (aha) how fattening's this, how many calories is this meal and it's just like a voice so (laughs) very annoying.

I: Trying to switch off that one isn't it -laughs- (yeah, yeah). So, other than kind of the things you've discussed with your grandson's mother, are you aware of any other guidance for feeding children aged two to four years old?

P: I don't look at any guidance so no, I'm probably not aware and I'm out of touch [00:35:00] with all the work world because it's four and a half years now since I worked in this (aha). I would certainly look at government, I know there is government guidance (aha), sorry, I'll just backtrack completely (laughs) erm, there's government guidance, I can't remember all the exacts where it is (aha) but yeah, I have found it and I am aware of it and I don't tend to look at it for personal interest at all (aha). I know it's there because last year I wrote a lot of the tender, the business tender for [omitted 00:35:45] the [omitted] I used to work for and we got, I did it as a consultant so I did obviously we look at all the government guidance on feeding children then (yeah) and I honestly at this point can't quote any of it (laughs) but I am aware it's there if I need it but I don't look at it personally, do you know what I mean? (Yeah). Do you know like people might have looked at Change for Life when that was around at personal level (yeah) or, I don't tend to do that.

I: But you'd know where to find it if you needed to kind of thing (yeah) and you'd be (yeah) able to find it (yeah) yeah.

P: Yeah, I would find it, yeah.

I: Is there any advice or support that would find particularly beneficial with regards to feeding your grandson?

P: I don't think so because I don't think there's anything we're doing that particularly needs help with, no, no, not really.

I: Aha, so if there was something that you did need help with, how would you like to receive that advice kind of thing or that support?

P: For myself, it would be probably a website and because at the end of the day, myself, my daughter's also a, she is a [job role omitted 00:37:05] at the minute, she's working in a [omitted] so I think with her and me and my grandson's father (aha), we're educated enough around these things to find information and access information. So it would be websites for me and it wouldn't particularly, I don't want any person to person support because I don't need it (aha), it wouldn't be apps because I don't need another app sitting on my phone I'd rather just go on a website (yeah) yeah.

I: No, it's obvious to me that you know where to go for yourself if you want it .

P: Having said all that, I guess, there's a lot that could be done in shops that would help me as well as everybody else with food labelling (aha) because that's massive because people, you know, I might sit there and read all the details on the food label, you don't do it for everything you buy and it's not obvious (yeah), yeah, there's just more that could be done.

I: Is that for things that you would feed your grandson as well as kind of yourself?

P: Yeah, probably, yeah, yeah.

I: So, if you were to receive any kind of information or looked at the internet, who would you want that written by or what bodies would you want it coming from, that kind of thing- who would you trust?

P: I would trust government/NHS (aha) for accurate information, yeah, yeah because like when I was at work, we might, so we were a [omitted type & location 00:38:53] I won't name it but (aha) there's information that they might provide but at the end of the day, I just don't think you need a plethora of information from everybody and everybody (aha), I think sometimes government/NHS ought to be the key to be able to look at some information you know?

I: Aha and just have the right amount (exactly, exactly) yeah -laughs- (yeah). Do you think there is the right amount out there or do you think it's information overload or?

P: Erm [pause] I think there's sort of, there's both (aha), too much and not enough so if you look for, if you were looking and were proactive, there's loads and loads and loads of information (aha); if you're more casual and you were say going to the shop [00:40:00] and buying certain foods, you might just never realise how unhealthy they are (aha), there's not information then, you know you might never realise how much, say, so say if you bought an instant meal (aha) and say it was a meat based meal- spaghetti bolognese or something and you gave part of that to your three year old (aha) I don't, you wouldn't quickly realise if you hadn't, if you weren't already informed about it (aha) and you didn't find this stuff easy, you might not realise what a salty meal and how much sugar there was in that meal for a child, never mind yourself (aha) because it's not obvious (yep). So I think I can access information because I think I've had enough education on nutrition to do that and the information is there, but it needs to be a bit more in your face for everybody, I think (laughs) yeah, so to speak -laughs-

I: Yeah -laughs- no that's yeah, definitely understandable there. So if there was anything that you know advice that was given and you'd changed how you fed your grandson (mm), do you think it would influence your own diet at all?

P: Erm, if there was, yeah, it does make you think (aha) definitely, so, yeah. So for example, if there's advice, say if there was advice about sugar free fizzy drinks (aha) for my grandson, I would also and have done actually thought oh, perhaps they're not a great idea at all. Not that I, it's a bit of a wrong, bad example, it's all I can think of because I don't like them that much (aha) but, you tend to think they're just very neutral because they've got no sugar but they're not actually good for you and they're still quite fizzy and (yep) everything, they're just not great, yeah so yes, to a degree yeah.

I: Aha, yep. I just wondered if you're part of any grandparent networks, whether this is formal/informal, so organised groups or friends or anything like that you might discuss feeding with?

P: No, I'm not. I think, before lockdown it was quite nice because we were going to a toddler group down the road and there were other grandparents there (aha) so, I'm not, we didn't particularly talk about food but it was a really nice way of meeting other grandparents in the village, same situation as us. Since lockdown we've not done that obviously and then at the minute it's, I don't even know if it's now running or not or whether it's allowed, I've no idea because we've changed our grandson's days so we can't do it (mm) but we were doing that, which was quite nice.

I: So, regarding kind of the Corona virus situation would you, would you find a network of grandparents beneficial or you know (erm), just something to do?

P: Yeah only, only if it just fitted in (aha), so like that was great because that was a play session, it was great for him and we also met other people so, which is what a lot of parents do don't they, they want, they want to go to playgroup where they can talk to parents and the children get the play opportunities (mm). Yeah, so if there's things like that locally, I would do that, I'm not, and I'm trying to think how much I actually know, I mean I have friends and know other people who are grandparents but I don't think we particularly discuss, yeah, no we do, we have friends and we do discuss the grandchildren (aha) but I think that was just quite nice in a way because when you're actually at a session with the children, you're very focused on you know them and how they play and what they do; when I see friends who are grandparents but we're just meeting socially (aha), we might say 'oh how are your girls, how are the grandchildren' but it tends to be at that sort of level, a bit more, yeah.

I: Less kind of concentrated about what the children are doing and (exactly) yeah-

P: Whereas in a play session that's what you're focused on, yeah.

I: And that's your common -laughs- (exactly) common ground at the place (exactly) isn't it yeah (yeah) so -laughs- yeah. So if there was kind of some new advice on feeding children in the two to four age range, how willing would you be to change how you feed your grandson?

P: Erm, yeah, I'm always willing to change because at the end of the day, it's his best interests which is obviously is all you want to do so, yeah, definitely.

I: Yeah and is there any, can you think of any barriers that might kind of prevent you from engaging with any support or [00:45:00] information?

P: Erm, not particularly for us, I don't think so, no because you know for some people I know there's real barriers but I don't think so really, I can't think of anything.

I: You feel like you've got the time (yeah) to do that-

P: We've got the time, we've got the time to cook, we like cooking, we've got reasonable income (aha), access to shops, you know I just, if we didn't follow the guidance at all and chose not to, there's no great barrier to it, it, yeah.

I: It's just, no, yeah, that's great (yeah) -laughs- that answers my question perfectly. So that was actually my last question, but I wondered before we finished if there's anything else you'd like to add about anything that we've spoken about, or anything else that you think might be relevant?

P: No, I don't think so, I think that's everything -laughs-

I: Perfect, so thank you so much for the interview. What I'm going to do now is I'm going to end the recording (ok) and I'll stay on the line though just to chat a few things through with you and yeah, so I'll just stop the recording now.

P: Right, ok.

End of tape.

10.30 Appendix 30 – Study 3 Transcript 3

Name of Transcription: Interview Participant 5 Name of Transcriber: Becky Brown

Date: 09/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:20]

I: So we can kind of begin the interview now. So first of all I'm going to ask you a few questions about how you feed your grandchild. And I'd like to begin with kind of a broad one, so as a grandparent what is your role in feeding your granddaughter?

P: Erm...well it's generally any sort of meals and snacks that er she'd needs when she's with us. So erm and we tend to follow the same pattern as at home, so she tends to have a mid-morning snack, lunch, mid afternoon snack and then we take her home before she has her tea. So that's general erm pattern. Do you want to know food content or what we give her, or is that for later?

I: It's completely up to you, can kind of go into that now if you want to erm....it's kind of a semi structured style interview, so as you speak I might prompt you for other things, it's not completely formal.

P: Okay yeah so erm the pattern we tend to follow is very similar to what she has at home erm with the odd grandparent treat, but generally it's sticking to the healthy eating plan that she has at home. So morning snack is usually something like breadsticks, or erm fruit or erm little pom bears, something savoury or fruit, she has a choice. And then lunch time we give her a choice, but she tends to go for homemade bread er, little halved cherry tomatoes, cucumber erm what else does she have, oh chunks of cheese and sometimes meat, and we put those all in little bowls, that's how she likes it, little bowls, it's self-selection so she chooses what she wants. She has a plate and then she chooses what she wants to have. And sometimes because I always have a sandwich and a yogurt, sometimes she'll have yogurt as well. She just has plain greek yogurt, nothing particularly, so she doesn't have a lot of sweet stuff. And then the afternoon is similar, if she's had breadsticks in the morning, she'll have fruit in the afternoon er unless we've been baking, we do a lot of baking. So she might have cake or we do a lot of little oat biscuits, a bit like the IKEA oat ones, but they're really easy to make and she loves making those, so it might be cake or something. But generally speaking it's quite healthy erm if, as I say 99% you'll ask what she wants and it's grandad's homemade bread

I: [Laughs] Good taste

P: Yeah it is delicious. Erm....she might have pizza or pasta, but erm so that tends to be, bit boring, because it's the same, not boring as such that's the established routine and I know children like routine so that's what we tend to have as food for meal times.

I: Not that's great. You said earlier there might be the occasional treat, how do you kind of define a treat?

P: Erm...well it's, it could be something like chocolate but it's not masses of it erm...she's, my granddaughter seems to be quite self-regulated she knows what she likes but she doesn't stuff her face. But there is a bag of giant erm chocolate buttons in the fridge and we'll say would you like chocolate and she'll get the bag and she says can only have two [both laugh] then she offers them and that's it, that's the treat. It is small treats erm...or if we go out to a café we'll you know, we'll share something, you know, something sweet but she doesn't, it's just the way she's been brought up, she's never been told no but, foods there to enjoy, but treats are treats. But her parents are the same, they do healthy eating, they do exercise, they're both skinny as a rake, well fit. They have treats, they've been taught foods there to be enjoyed, not a no go area. But treats are as they say treat it's not a chocolate bar every day or something like that so. But I mean in our family, as well, we like stuff, we like baking, we like treats, but you don't have them every day, because otherwise they're just, they're not a treat anymore. But yeah erm yeah so, where was I, oh yeah the philosophy of foods there to be enjoyed not to yeah. And I'm just really surprised that she doesn't stuff her face like some children do, you know, when they get something it's like ooooo

I: Yeah you're obviously doing something right. [Laughs]

P: I'm talking with my hands as well. Yeah so yeah erm it's that healthy balance really, so we're on the same wavelength. But I think my daughter and I, well obviously I brought her up, so we've got the same ethos about food, about it being there and trying new things, because she's always wanted to try new things, so we put things out. For instance I put some, well I know she's had ham before, but it's always different if it's at grandma's. And she will go I've not tried this before, and I know darn well she has but erm but only this week I'm going to taste it and see and she goes mmmm I like that. [Both laugh]. So we make food fun, it's not a ritual, it's not a you know, so everything's a bit of a treat really. Yeah erm....treat tends to be chocolate rather than the sugary sweets, you know, sweet lollies and things. Oh we have things in the freezer in the summer there was milk lollies that was her treat. So to me it's age appropriate it's not giving her a large magnum [yep] too much it's too big, but yeah to us that's treats.

I: No that's perfect thank you. So you've touched on this already, by saying you've got a routine and things like that, but how do you decide what to provide to your granddaughter?

P: Erm well she, sort of takes the lead on that, because I know what she likes so erm so er that's really her, so we always make sure there's a selection of foods in, there's always cucumber and the tomatoes, a selection of fruit, I mean at the moment there's blueberries and blackberries in the fridge, there's apples and oranges in the fruit bowl. Erm...so we ask her really, what would you like erm...she knows what we have and she's a child of routine so without, so we don't as we say if there's anything new it's on a separate plate for you to try and that's yeah. So that's how we choose what to have really.

I: And does she generally accept kind of the new things as well to try?

P: Yeah yeah, I think she's in a phase at the moment of being adventurous and wanting to try things, erm and we've always had the if you don't like it it's fine you can leave it, and erm you know, because I can sometimes see she's put food on her plate and not then, looked a bit as though she didn't want it, and I've said it's fine, leave it, do you want, would you like something else because she doesn't pile her plate up, she just takes a little bit and puts it on her plate. And she knows that erm...unlike when I was little, if you didn't eat your dinner you couldn't have pudding, I say it's fine would you like some yogurt now, or are you full or so as I say meal times are pleasant time. So she chooses and yeah. And I don't feel like it's a child's dominating because she's got such a wide range and she's just so keen to try new things because yeah. Because I think as well, we've done it and she does it at home from being very little, from being less than a year old if we've been preparing food she's sat on the side and helped. I know at home I've seen about 10 months old, sat on the side, and my granddaughter's mum chopping up potatoes and then she put them in the slow cooker, you know took handfuls and put them in the slow cooker. So she's always been around knowing that foods a nice experience erm and really learning from a really young age the science of food really, well you start off with these hard potatoes, or vegetables and it turns into this lovely stew, you know, casserole and things like that and erm we've always done that here, she's been part, been involved, if we've had carrots she's helped slice them erm it's just something we've always done. Because I know when I used to foster, I had one child, who well none of them, because I had fairly young ones, knew about food erm and erm we'd eat the raw carrots while my husband cooked tea, wouldn't eat the cooked one [oh really], so made a point of her standing there and helping, she got the nutrients

I: To see the process yeah, great.

P: Eat some vegetables, so we just carried on with that, been involved in the food prep and it's just and when I see people who say they don't like this, I find it strange because we don't have toys and household activities, everyone gets involved in everything. So my granddaughter at our house has been sat on the side, or when she got a bit bigger I bought a stool so she can stand and reach the work surface.

I: Yeah, stir the pots [laughs]

P: Yeah, yeah and you know, she's had a knife under supervision cut things and erm yeah so she's always been involved, so for her food is exciting.

I: No that's great

P: And try new things and we've shown her things so yeah

I: She's very receptive to it. So you've kind of mentioned a little bit about this, but how does what you feed your granddaughter compare to what you fed your own daughters?

P: Erm....I think my granddaughter does eat healthier because I've always said to my girls, with fostering and childminding, I practised on you, learnt and got better [laughs] so the grandchildren, not just with food but with behaviour, with allsorts I practised. So I always did home cooking, when my daughters were young erm...we weren't well off, we were just on the cusp, we earnt I think 50p or a pound too much to get benefits to top us up. So I've always cooked from scratch I've always done erm you know, so we've had to do with food, so they've always had home cooked food and healthy food, vegetables, and so they've always been like that. As I say I remember when she, with the carrots, she wouldn't eat pork pie she'd only eat homemade pork pie.

I: Again got taste [both laugh]

P: So we've always been like that, like I say my mum was an awful cook I didn't know what proper cooking was until I met my husband and went to his house. But his mum always did home cooked meals, really nice food, and food came from the ethos of food is to be enjoyed not just to endure and fill up. So, so that pattern has carried on, we've always, before it was trendy to do healthy eating, or you know big campaigns, it's always been because erm...vegetables, potatoes, carrots and stuff were always cheap, it was cheaper to do from scratch, and they were good fillers so you know [yep]. So we've always you know, we always used to lots of stews and mince and stuff, so we've always done without realising what we were doing, just healthy eating really.

I: Oh right, that's great, thank you. So in terms of, you were talking about healthy eating, what do you think a healthy diet looks like for a child aged 2 to 4 years old?

P: Right erm....well it's a balanced diet, of a mixture of not just all the "healthy" foods, erm it's getting the portions right, making sure there's some carbohydrates, some protein erm and er and dairy unless there's allergies and such. Erm but just being balanced but also having there's a place for treats and the sweet sugary stuff erm but erm we tend not to have pop or anything in our house. Because our granddaughter has always been brought up with milk and water, it's what I used to do in my childminding setting, have water already available and we always drink, I don't even particularly like the taste of pop and fizzy drinks it's too sweet, so we've never had that, don't particularly have it in our house so erm it's never been an attraction for her to want to have that. So we all have our own water bottles and she thinks it's lovely because we all have matching bottles.

I: All drinking yeah [laughs] aww

P: So you know, it's all available and yeah

I: Great, no, thank you. You talked about portion sizes making sure they're appropriate portion sizes, how do you judge that, do you use any rules of thumb or guidance on that?

P: Not particularly, but erm, I don't put all the food on her plate, what I tend to do is put the food that's for her on plates or little dishes, and then she helps herself, so she's self-regulating herself. If it was like er yeah, I put some of the bread on her plate, but then she can select all the other things, and she tends to eat quite a bit, but she tends to go, her favourites the tomatoes or the cucumbers at the moment [yeah]. Yeah it's rather than putting it on and being over faced, that's, and she knows when she's full. And I just keep an eye on things, it's a small plate, she has a small plate, so it doesn't, it looks quite a bit er rather than a big plate and it looking a bit lost yeah so erm yeah I know there's all sorts of plate sizes, and the eat well plates, and it's all divided up into sections and hands and fists, but I don't worry too much about quantities as such [yep] because I know she's going to eat you know, what she wants. And don't put loads out but some days she'll eat as much as I do and some days she'll pick, so I don't

I: No that's great thank you. Is there anything you find difficult or challenging in feeding your granddaughter ?

P: Erm...well not particularly apart from getting, sometimes, getting her to the table because she's engrossed, I'll give the 5 minute warning and she knows, go to the kitchen and help my husband get the lunch ready. But she's so into role play, all the babies have got to be fed and they've got to be settled, oh their crying and so rather than going come on it's time, it's time for lunch come on up to the table, we just sit down and say lunch is on the table and then she comes in her own time and it could be 5, 10 minutes after we've started. But she does come to the table on her own and then she gets on with eating. And erm...rather than making it a battle, it's because, she knows it's there and apparently at home, she does similar at home and my granddaughter's mum's rule is that she can come up to the table, when she's ready, so long as it's before they've finished their meal, so she wouldn't be allowed, you know, so 5/10 minutes is like her max really and then. But I just say to her, your lunch is on the table, are your babies, you know, your babies alright are they settled, go into the role play bit [yeah]. No but generally speaking, erm she's ready, she's hungry, she's ready, it's that timing, so that it is around ten past, quarter past 12 is lunch, erm...too early and she's not ready, too late and she's gone past it and I know she'll just go into a meltdown [too hungry]. Yeah, she's only had one sleepover, first ever sleepover was last week and said to my daughter told me, make sure she has some toast at 7 o'clock at the latest because without food she takes ages to come round, but without food she just goes into this gremlin [both laugh]. [hangry] That's right, so erm, we do make sure that she's fed.

I: Sounds fair. Are there any foods in particular that you might struggle to feed your granddaughter?

P: Erm...there aren't many, erm when there's, she really, well she, well I'd say up until this week she really wouldn't eat bananas, but then my daughter popped round on Saturday and she was, she just asked for a banana, so my daughter was eating a banana and my granddaughter came up and said can I taste, and she tastes, and of course you can yeah from being no, no bananas. Erm...I don't think there's anything off limits really, she loves pasta, rice, erm...you know not spicy foods, but I think her parents have always given her a little bit of everything, right from weaning at 6 months she had a wide variety of foods offered, so she's always had tastes and erm I mean if it's a curry make sure it's a mild bit, my daughter would take a portion out before she spiced it up. Erm but yeah, she's been exposed to a wide range of foods, [yep] so she's never been fussy or anything that she really doesn't. You know, there's sometimes when she'll have, like all of us, a food that she loved, she's gone ooo I really fancy that, I know if I have the same foods over and over again suddenly I don't want it. [Yeah]. There's never been any big tantrums over food or any big dislikes.

I: Is there any times, like if she does refuse a food item, what kind of strategies would you use?

P: Erm...well usually there's sort of a selection of foods out, so I'll say, that's fine do you want some, you know, whatever else is on the table. I wouldn't go and make another meal. I know some families who go ooo what do you want and they're cooking five meals [yep]. But she's involved in what we make. Like when we had the sleepover, she had a sleepover, obviously for tea, erm again it was what should we cook for tea for all of us, or grandad's planning on doing this is that you know. If she did refuse, I say that's fine and leave it. Because I think if they're not hungry and refusing food erm when, you'll be hungry later, and then in a better frame of mind. I'm not one of these helicopter parents who worry about 'oh they haven't eaten, they haven't eaten, better given them a biscuit, better give them something', you know, or do you want this do you want, I think it's because we're a very, meal time, anything to do with food we're very very calm and if she's having an off day, just go okay, shall I take the plate away and she's goes yeah or no. Or sometimes just leave it for a bit and she'll go back to it. So yeah, food just doesn't seem to have been an issue no really.

I: No that's good yeah, makes it easier doesn't it [laughs]. You might erm not have anything for this then but is there anything you would change about the way you feed your granddaughter?

P: No I don't think so, because I think erm we've refined, the way we do things, you know, with the choice, and it's refined from when my children were younger whereas, you know, I'd make a shepherd's pie I'd put it on the table they'd help themselves, whereas now I put a portion that I think my granddaughter will eat on a plate that's hers and then she can help herself to what she wants, so we've refined it that way. I

think we've got it as good as it's going to get, you know, for her and I do the same for other children as well. It's about giving them choice, giving them their own self-control really, rather than being told they've got to eat you know. They feel, for want of a better word, they feel like they're in charge, and I don't mind that because you've manipulated it, you've got what you want, but they think they've got what they want, so everybody's happy. You know, it's just strategies, so you don't get a battle, can't see the point in a battle so erm but you don't want them to rule the roost yeah. Because I think you can negotiate with a 2 year old, 2 to 4 year old, but with boundaries.

I: Yep, no that's completely right. So you've kind of spoken about this, and you've probably have said that you do, but just ask again in case, but do you and your daughter agree with the food and drink your granddaughter should be provided with?

P: Yes, yeah we do, erm, yeah I thought when she was a baby my daughter was really really strict but I stuck to what she said because I feel my, she's my daughter's daughter, erm, and that she has the right to say what's what. And we negotiated some lee ways, because when my granddaughter was a lot younger because as I said early I always had a yogurt as pudding, and my daughter said she didn't want my granddaughter thinking that food, every time you have food you have a pudding, so I deliberately didn't have that but erm then my daughter said that she will realise that when she's at grandma's she can have yogurt, you know, as pudding. And that's part of, erm, routine at grandma's, erm and we negotiated that sort of thing. I mean I would have stopped having yogurt, or had a sneaky one in the kitchen, but we did negotiate that, and er we have noticed that my granddaughter does switch, she understands er there are rules, different rules apply in different households and as a child minder I realised that because parents go oh they don't eat that at home, they don't sit at the table, and I'd say well they do here. And they know the rules are different and they know schools are different, so I have learnt that children do adapt to situations they are in or different households different rules apply and the same with food but as I say 99% of the time me and my daughter agree and if, and my daughter said the occasional treat is fine because that's part of being a grandma, you're allowed to give her treats but I try to do treats as more of an activity rather than food. But we all have to have chocolate.

I: Tastes so good [laughs] So on that, there's been a lot in the media recently about kind of sugar and fat consumption in young children, what are your thoughts on this in general?

P: Erm...I think personally, I do think a lot of children do have too much sugar and it's not just a recent thing. I've been at the school gate, where erm you know, parents are there with handfuls of sweets when they come out, oh well they need a treat, but this treat is everyday so it's not a treat, because I was the odd ball that turned up with a piece of fruit. But yeah generally speaking I think there's a lot in the media, and people think they are hard done by if they haven't had a McDonald's twice a week, you know, and I just think oh, I mean I don't like the taste, and I just think people think they have to treat their children all the time and it has to be a feel good thing with sugar and fat and erm...I think that's just our society and advertising says, you know, you're a bad parent if you don't treat your children and yeah I do, and that's seen in the obesity you know, in children in school. I'm a school governor, obviously not been in school with Covid, but I did do a socially distance visit to a class in the hall erm a couple of weeks ago because they wanted to interview me [laughs]. But yeah you do see, and parent's don't see the harm they're doing and I see very little children with a bottle of coca cola you know, well under threes, and I think what you doing, and they go oh they're only having a sip and go no that's the sugar, you get addicted to it. But then parents are addicted to coca cola and things so they can't see it you know, they don't. I think, I know there are campaigns and in school erm you know, the eat well and the change for life campaigns and such but I think more parents need to take that on board. Sorry I'll be on my soap box now.

I: No, this is great.

P: I am finding it hard you know [laughs]

I: So here's another point on that one, so grandparents are often described as spoiling their grandchildren, how do you feel about this? What are your thoughts on that?

P: Well I think grandparents are often, they feel obliged to do it, I'm one that stands out from the crowd really, I've always been a bit different. Treats, you know, at the school gates it was grandparents as well, haven't you brought your, but I think grandparents feel like they have to. I remember when I was little, when I went to see my grandma it was always a packet of ice gems, so it's not just now it's always been, a treat is something sugary and sweet. And yeah there are some grandparents who say we don't see them very often we've got to spoil them erm but again, and quite often people seem to think it's got to be something physical, like sweets and such. That it's a sign of loving them if you giving loads of treats and gifts and such, indulge them and erm it's a hard one, and I think that's really hard to stop or to you know, to get grandparents to do something different. Like spend time with them, take them to the park or, but some grandparents can't and I'm fit and healthy so I do those sort of things. I forgot how old I am sometimes and but yeah, you've got grandparents that are not very mobile. I think it's a big thing that, a treat is seen as something sugary or fatty because it gives you that instant rush. Erm...yeah

I: How would you spoil your granddaughter as opposed to treats?

P: I tend to buy her, or put together er, buy her sort of craft things, things she's interested in. I'm dreadful I go to Ikea and find more toys and I tend to buy things, I go with her interests. She's got the Ikea kitchen at our house and I bought, well I think she's got all the food, but that's the sort of treat. Or we go somewhere special. Two or three weeks ago we went to Cannon Hall Farm for the day that was her treat and we ate in the restaurant, you know, so again I know that's food but the main thing was to go, our treat is to go out somewhere and do something together that's our special.

I: Special time, yeah. Thank you. Erm I just wondered has looking after your granddaughter influenced your own eating habits at all? Either on the days that she's with you or on the other days?

P: Well certainly on the days that she's with us, I definitely stick to what she's having, I mean I might have the same snack as her, but I don't have the chocolate bars hidden in the back of the cupboard. I try be a role model, because we've looking after her from being erm must be about a year old, yeah my daughter went back to work when she was a year old so erm very much that, and I don't do the sneaky bit because it's too much like hard work. And it's not a hardship to stick to what, you know, what she's having and she likes to share, so we all have bread sticks or fruit. So yeah I tend to stick to that, and that gets to be a bit of a pattern er I mean I, we have got crisps, I say we have got crisps but I stopped buying them, we had them in lockdown but erm I just gone away from, we tend to be fairly healthy, but there is chocolate and there is stuff. But erm...I think because for two days you've been good the rest of the week you just get into the similar habits, so it's not two separate diets if you like yeah. Night treat and that's it.

I: Does it impact on anyone else in the household?

P: erm...well there's only my husband and I that live at home, I've got the two grown up daughters so erm...no cos my husband only works part time now, he doesn't work on my granddaughter's day so there's not, the only impact is that she gets our sole attention and food wise and such we're just shattered at the end. There's no great, I don't think it particularly impact others as such.

I: But would it affect er your husband's diet as well, so would he very similar on the days

P: Well er...yeah we both, because he does the cooking now, and he's done all the food shopping since lockdown started. So yeah, the impact, he's the same he'll not eat erm...he'll not eat things when she's, you know, but he does eat more chocolate bars, he has the little erm....the little Aldi dreamy bars in the bottom of the fridge and I hear them rattling, not on the days when my granddaughter is around, but if he gets peckish he goes and they're like mini milky ways he goes and has one of those. [Yep] I'm not, I'm not tempted as such, so the impact is he eats healthier on my granddaughter days. Just because yeah, I've always, if ones having something you can all have it, there's no, you know, so we're not, we want to be a positive role model really yeah. And I think we just too busy to eat sometimes, don't even get hungry because you're so busy with things she's doing and when she's bossing you about, you've got to sit there, you've got to hold the dollies and you've got to do this.

- I: Sorry that's my calendar. No that's great. So we're kind of moving on now to the second section of the interview, different from the first, but it's about kind of guidance on feeding 2 to 4 year olds. So I just wondered have you ever been given advice before on feeding your granddaughter whether that's formally or informally?
- P: Erm....Well there was informally things was er from my daughter, so we were following her lead and I think she's read every book under the sun about childcare, she's gone to all the parenting classes, all the healthy eating classes, anything and everything that Sure Start have put on and she's handed me leaflets and things, this is what we're doing. And erm so yeah we've had, both had sort of training I suppose really and. Sorry I've forgotten what the question was
- I: No no perfect, it was have you ever been given any advice before and you're answering it. And what did you think of that advice when you did get it, so when you got the leaflets or
- P: Well my daughter did baby led weaning, now I'd heard of it erm and sort of read about it but I'd never seen how you do it in practice so going round to my daughters when she started it so I could see, because I was going to, obviously visiting, before, and seeing this 6 month old with a big piece of broccoli in front of her and oh can't you mash it up, aren't you doing this and seeing it in action that was a learning curve for me because I don't, I'd always been taught to puree foods and then they go onto lumpy foods. So I've learnt what baby led weaning is and how you do it, and so yeah, I've learnt things, because we didn't, when it was my grandson I was looking after, and I looked after him since he was 3 weeks old, baby led weaning wasn't even on the horizon really, it was [yep] the puree and how you do that. So yeah I learnt a lot and about food, what children can and can't eat really, giving them a lump of banana and oh aren't you mashing it er...and er and exotic foods really, because when you start off, I was always taught you start off with the baby rice, plain foods whereas my granddaughter went straight in with into the tasty stuff like broccoli's got quite a sharp taste to it. And it makes sense to me, I'm thinking ooooh great the bland porridge and stuff that's gone out the window so yeah it was quite, an exciting time for me learning new things. Erm and you know I'm not one of those parents who go oh in my day we did it this way I wanted to get on board and learn. So yes. So I have learnt lots of things and put them into practice.
- I: Do you think that continued on from the weaning stage as well, so learning things as you went along beyond weaning and baby led weaning?
- P: Yeah. Yeah because it was then what sort of foods, I would have thought of just giving vegetables and things but yeah learning what she can eat, and it was basically anything what parents have, so she'd have following day what they had in the evening meal. So if it was spicy chicken, but not too much, again it was learning erm it was just really surprising how early she started having everything that you know, that parents have. Whereas I was taught, you adapt what you're having. But this was straight in, you go to a restaurant no you don't want the child's menu, we'll have you know. Because from very little she's not had anything off the child's menu, you know, like the standard fish fingers and chips or sausage and chips, you know, she's had the, you know, she'd have something you know, might be off the starter menu and such. I mean we did have a little bit of that with my grandson, he was never a well he didn't know what McDonald's was until his mother took him when he was about three. But you know he didn't even like chips and things because that's how, yeah when his mum used to take him out he didn't want what was on the child's menu, he wanted proper food. The pasta or the lasagne or. So yeah.
- I: That's good. Did erm did kind of learning this advice and guidance did it make you think about anything in your own diet or change anything in your own diet?
- P: Erm...it made me a bit more aware I think. You get into a rut, the same old same old, whereas I do eat a lot more salad, well cucumber on the sandwiches and things so erm I think just little changes. But I do think I eat more healthy because we've bought the food, so it's there, you don't think to buy, oh a cucumber it'll go off before we've eaten it because there's only two of us in the house and [yep] so you get a bit mundane, but I think it's kick started a little bit of erm yeah and I'm a bit more aware of portion control and stuff. So yeah I think I'm eating better, than prior to having my granddaughter. Erm so I think role modelling works both ways sometimes.

I: Yep, definitely. Erm.. so you talked about change for life before [yeah] are you aware of any other guidance for feeding 2 to 4 year olds?

P: Er yeah well there is the government guidance it was issued, two or three years ago, it's for childcare providers, childminders and such. And I can't remember the exact title of it, but it does give guidance for feeding, and there's loads of sample menus in the government guidance to help childcare providers at nursery, childminders, because I have used that guidance, or when I've been delivering training and students have asked, you know, questions about oh I don't know what to provide I've signposted them to that guidance. So yes there is stuff around yeah.

I: Have you used it when caring for your granddaughter or is it just for work purposes?

P: Just for work purposes really because my granddaughter has got, I think she's got, I mean I've looked at the eat well plates because when I was looking at some of the assessments, some of the assignments were about healthy eating and people, it's bog standard and they talked about the eat well plate, so I've seen the diagram so many times but it, the information sticks with you. So that's in the back of my mind when I'm providing food for my granddaughter. Er I think I mentioned, couldn't remember the portion, where the portions for so much protein and such. So yeah I do. But I don't go looking at it now and referring to it, because I think we've established what things matches the guidance so I'm following what my daughter does as well. And I know she'll have read every book under the sun. Wants to be the perfect mother I think. No to be fair she wants the best for her daughter, and she's doing the best to make sure that happens.

I: No that's lovely, that's great. Erm is there any support or advice you would find beneficial with regards to feeding your granddaughter, or your granddaughters eating?

P: I don't think so erm...I mean I think it there were, if there were sort of issues and such I would look on change for life because I think they do, and there's erm...oh is it the food trust? I know there was one that used to be based in [Name of place] I'm not sure whether it's

I: Children's food trust

P: Children's food trust that's it, because you know, for ideas for recipes and things you know if I was struggling for ideas and she was getting fed up of what we were giving her. But I think she's a creature of habit, but yeah just for some different ideas and recipes and you know, things to do, food things with her. Things to bake, she can make, because I'm a great believer in that if children make it they'll eat it. Er yeah so at the moment I'm fine, but because of my job I know where to look for ideas and things like that, just to pep up things and yeah, if there was an issue.

I: So you've spoken about I suppose going on the internet [yep] for that, is that the kind of support, is that how you'd like to receive information?

P: Erm...yeah I quite like, I mean erm...if I think, if there was, I know we can't do it in Covid but in the past I've attended, Sure Start used to put on Big Cook Little Cook sessions for parents, grandparents and the children and school have done similar, where I'm a governor, and school have done some parent food workshops er because they realise that some parents just don't know about healthy eating. They think they are doing the right thing and then but they just don't know about some foods, they've not learnt how to do it from scratch. And I might, before covid, I might engage in a session like that, you know, that are done local because it's with people I know er or some of them I know. Or the local groups, because we've got in this area, we've still got a Sure Start centre, but we've got a group called Best Start which is attached, which is community based and they put on workshops and things like that, so if I was struggling I might go to them see what they're putting on, because you know, they do do healthy eating sessions erm and erm and they have done some things during Covid, I think they did food packs with recipes and things. So people collected them so yeah there's things out there, so if I was struggling I would access that sort of thing.

- I: And it sounds like you know where to access it from as well so. Erm in terms of kind of who you'd kind of like to provide this support, this guidance, so you've talked about the Sure Start centre are there any other bodies or people that you would trust to receive information from?
- P: Erm...probably, if it was health visitor or you know local community groups, I think that's the key, and I think that's the key with most people if they've got a link to somebody, or a friend of friend then you're more likely to trust it than going oh [Name of establishment] or [Name of establishment] are putting on this course and you go woah this is way above me, but community based and the people who work for these companies, these groups are highly qualified erm you know I mean, well certainly, I know some of the staff at Sure Start and Best Start and erm yeah they are qualified in childcare because I've known them for years. Well one used to be a child minder, one was a trainer for [Name of place] Council, so I've been in the childcare circle, so yeah they're people you trust.
- I: Yeah so the community opportunities you're given are a lot [Yeah]. No that's great. Erm and if you did go to one of these sessions and learn something do you think that would influence your own diet as well, or just how you feed your granddaughter?
- P: Yes, no it would be my own, because I feel if you do it for one, I keep going back to being a role model, but if it's good enough for my granddaughter it's good enough for me. I get excited by learning new things, so if it was a new recipe, oh I've not thought of doing that but I'll give that a try.
- I: Are you part of any networks of grandparents whether that's formal or informal?
- P: Erm well the group I run [Name of group] we do, we have quite a few grandparents that come and bring their children so erm...yeah I do know quite a few grandparents, some of my friends are grandparents so I'm quite close to one, whose also a foster carer. She lives at [name of place] so it's more of a support on messenger, you know, it's a ten mile drive to go visit and with Covid and she's. But yeah I've got informal with other grandparents, and particularly through [Name of Group] and we keep in contact er pictures and stuff on Whatsapp. I keep a Whatsapp going. And that's sharing stuff about allsorts, it's not just about what the groups doing, the singing and things it's share what their grandchildren have been up to.
- I: Do you discuss feeding ever or food or diets or?
- P: We haven't particularly but when we were meeting, erm you know physically meeting, because we'd have the structured part of the group and then after we'd have tea and coffee and toast and all sit round. There was an opportunity then it might be grandparents or parents er we talked about allsorts of subjects and feeding would perhaps come up erm and because well it was always remarked the toast I give children has always been seeded bread and erm they won't eat white bread, and it'll be oh they won't eat, we only have white at home. And ooh where'd you get that bread from, even the parents and grandparents were ooh this is nice where's it from, I think it was 89p a loaf from Aldi or Tesco, ooh it's so tasty. And er and I'll have to get some for the children, they never eat toast at home so yeah I suppose the food thing does come up there, and talk about things so. Erm yeah so.
- I: No that's great. So you find these kinds of groups beneficial whether that's feeding or just in sharing.
- P: Yeah and just generally like-minded, you've got the grandchildren in common erm and yeah just to get out and about and just talk to another adult sometimes but yeah we're on the same wavelength. Now I'm, I don't mean, but I am choosy about who I chose to be part of my social network that might sound a bit snobby
- I: No not at all.
- P: But I can't, you know, it's I'm happy to be helpful but I don't want to be dragged down by erm negativity and you know. But yeah the group, anybody's welcome, and they just say what a nice group it is and they can share anything and you know, and I always say about confidentially, what's said in these four walls stays there but yeah it is helpful to have that support. For everybody myself included because I don't know all the answers, I always I like to find out new things or different ways of doing things. So yeah.

I: No that's great. Do you think there are any barriers that would prevent you from engaging with any support?

P: I don't think so. I know I've been talking a lot, I am quite shy and I do get anxious about new situations, going to new places and erm you know I just have to give myself a good talking to. Erm it, I can think of good excuses not to go, you know, if somethings been sorted and at the last minute not go. But I just have to think this will be good. Er...but I think as you get older you do, before you think what will people think of me, or they might not like me, and you still get an element of that, but as you get older you think oh I don't care. Erm take me as you find me and you either like me or you lump me.

I: If you think back to say the first group you attended erm do you think that was a barrier or felt like a barrier to going?

P: Erm....no I think, I don't think so, because looking back people were all in the same boat, it was a new group, it was other people it was their first time as well, after the first 10 minutes it's fine. You know.

I: Yeah, no I guess the more you do the more you realise that as well don't you, they are very friendly environments. So that was actually my last question, so thank you very much, but I just want to before, if before we finish is there anything you'd like to add based on what we've been talking about or anything else?

P: I can't think of anything, erm I mean if at anytime you think there's a gap you can always email me, and say er I thought we'd covered this but we haven't you know, just ask me, I don't mind you emailing me questions

I: Thank you

P: I can't think of anything that I've not said that doesn't answer, you know, what you want

I: No it's been really good, it's been great, thank you

P: Nothing oh I want to tell you this

10.31 Appendix 31 – Study 3 Transcript 4

Name of Transcription: Interview Participant 4 Name of Transcriber: Becky Brown

Date: 12/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:24]

I: What I'll do now is I'll start by asking you a few questions about how you feed your grandchild. So to begin with, as a grandparent, what is your role in feeding your grandchild?

P: What is my role? Erm well ooof that's a bit of a strange question. Erm I suppose it's, I see it as to provide erm, the sort of food and food choices that fit in with what her parents would provide for her.

I: Great, thank you. And erm how often do you provide food to your grandchild kind of on a weekly basis?

P: So granddaughter comes to me once a week, erm sometimes she has breakfast here, erm sometimes she doesn't, it depends on erm the hours of work for her mum. So if her mum, erm, is, pre Covid. Her mum's a health visitor, so sometimes her mum would drop her off on her way to her first call of the day. In which case I would give her breakfast, erm...always give her lunch, and sometimes she has tea here, again depending on where her mum's working and her hours of work.

I: Perfect. Thank you. Erm and how do you decide what to provide to your grandchild?

P: Erm well partly depends what I've got in [both laugh] erm although I usually make sure I have in the sort of things that she would want. Erm granddaughter is two and a half now so granddaughter gets a say in erm in in, what she has because she can verbalise that. Before that erm I suppose, erm I'm trying to think how old she was, she was turned one when I first started having her. So she's always been able to express a preference in terms of holding things up to her and saying would you rather have this or this. [yep] Erm yeah. So it depends on, you, so I do have in the sort of things that I know she likes that I know she would eat and as I say she gets a choice. And I usually talk to her mum, not about breakfast particularly because she'll have the same range of things for breakfast. But, about other meals I usually talk with her mum and say, you know, what did she eat yesterday, so that she doesn't have the same thing, you know, three days on the run or whatever, yeah.

I: Perfect. Thank you. So what do you think a healthy diet looks like for a child aged 2 to 4 years old?

P: Erm... I think it depends on the child because erm granddaughter is pretty good about eating lots of different things, she'll eat a variety of things, one of my other grandchildren, who's now 5 has a very limited diet because he's at the stage where he just erm... categorically says I do not like vegetables. So he won't eat any vegetables. He eats lots of fruit, but he won't eat vegetables. So I think it's about variety, erm I think erm, granddaughter is quite a wee little thing. Who erm is very lively and burns off a lot of energy and has quite a lot of erm like lots of two year olds doesn't like to sit for ages. So I think quite calorie dense stuff is quite good, because erm if she loses interest, I know she, you know, even if she's even only a certain amount of what's on her plate she's probably had enough to keep her going. I think it's about variety erm and you know all the different food groups, some protein, some fats, some carbohydrates, some fruit and veg erm....sometimes she'll eat meat, sometimes she won't. Erm....yeah so variety and, and I think it's quite important that the child has a fair amount of choice as well, because I think erm I think that's nice for them, and I think that's good habits for life.

I: Yeah. Great. Thank you. So how does what you feed your granddaughter compare to what you fed your own children?

P: I think it's quite different because erm...I think bringing up my own children, I think they had more processed stuff than I do now, than I do for my granddaughter. That's for lots of reasons, I think erm...we probably, 30 years ago we didn't, I don't think we knew or certainly not in the general public as much about you know, how good not so good process things were. Also erm...I've got a lot more disposable income now, than I had erm when granddaughters mum and sisters were little, erm.... There's only, you know, one small

child to think about and I'm not trying to do that, you know, and juggle that with working. I'm retired so I can take my time, I have a food delivery every week so I can pick things that I know she's going to like and are suitable. So it is probably quite different. Although when her mum was small, the one thing that's consistent is always try to do plenty of fruit and vegetables [yep] but yeah.

I: No that's great. Perfect. So you've said your granddaughter is quite easy to feed [yep] but is there anything in particular that you find easy with regards feeding your granddaughter?

P: Easy? Erm...Erm...no I don't think so no.

I: No. Is there anything you find difficult at all?

P: Erm...I think the most difficult thing, is she's very like her mum in that erm...she's, if she's hungry, she'll eat loads, but she loses interest quite quickly in what she's eating. Which I think is probably very healthy, so she'll eat enough to satisfy her hunger and then she just wants to get down from the table and get back and play. Erm...and that's okay if, if I think she's had enough to eat, but if she's had two mouthfuls and I know that, you know, actually there's not going to be more food on offer for another two and half, three hours, then that can be tricky. I usually end up in letting her get down from the table and then she'll come back and graze for a bit erm I'll keep the food there and you know, she'll just come and help herself whilst she's playing. Which is probably not good from a table manners point of view but her mum's 34 now and doesn't do that, so it's fine.

I: So in terms of strategies kind of you'll kind of leave things out, are there any other strategies erm to encourage her?

P: I'll probably offer bits to her if she's running around erm....sometimes if it's just her we might eat while watching a screen although not very often. Erm...but I suppose I just tend to live with it, because I know it was, well, I know it's what her mum did and also I know that's how her mum would deal with it as well. And erm...her mum's very good in terms of saying, you know, as far as I'm concerned it's my house my rules, I can, you know, within reason do things how I want. But I think it's helpful for my granddaughter to have a broadly similar approach, erm...and also I try to give her a choice as well. I mean at the moment she's heavily into eggs in terms of scrambled, fried, omelettes erm.. she really likes things like, she particularly likes strawberries, raspberries those sort of things. So I tend, I don't give her things that you know, I know she doesn't like, it makes it easier. And because there's only her she's not here with her sisters or her other cousins, it's easy to go with things that she likes.

I: Are there any foods in particular you might struggle to feed your granddaughter?

P: Erm...I wouldn't give her like erm....like large portions of say beef and things like that, because I know with all of my children they'd eat a small amount of that but actually if there's a lot of chewing erm....so I probably wouldn't give her a lot of that. I tend to give her things that she can eat quickly and easily, because although I think eating a meal is an enjoyable experience, for a two year old it's not the be all and end all she'd rather get on with life.

I: Yeah no I can see that. So would you ever kind of try new foods or novel foods with your granddaughter?

P: Yeah yeah, I would, and she's very good with trying new things, but she's also very good with letting you know whether she does or doesn't like them. Which is fine, especially if we were having something that I knew she hadn't had before, I would, you know, let her try it. Erm....or offer it to her, erm.. but I would probably make the main basis of her meal stuff that I knew she liked.

I: Yeah fair enough. So are there any strategies that you use erm if your granddaughter refuses to eat completely?

P: Erm....she does sometimes, erm....I would, I still, at two and a half try plonking a screen in front of her and feeding her while she's watching. But to be honest, if she's not interested in food she's not interested in eating and it usually means one of a couple of things. Either it's something she doesn't like, in which case I

might give her something different, that I know she does like erm....or it means she's really tired in which case she needs a nap. Erm....or erm....it can mean that she's not very well and erm....and if she's not very well and she doesn't want to eat, I'll just tell her mum and erm you know, children eat very different amounts on different days you know, yeah. So I mean I think, interestingly I think I'm less anxious as a grandparent about what she does and doesn't eat than I was as a parent. Her mum was quite a also like my granddaughter, quite tiny erm.... And she had a very interesting habit that if she wanted to stop eating she could make herself sick erm...and erm... she survived and she's fine so I don't think, and I worried more about her than I do about my granddaughter. I know she'll make up for it the next day. Erm....and also I think if children have plenty of energy then they are probably getting enough to eat.

I: Yep, no that's great. So erm there might not be from what you are saying, but is there anything you would change in an ideal world in the way you feed your granddaughter?

P: No I don't think so no.

I: No that's perfect. Thank you. So I think you actually have touched on this a little bit, but, so do you and your granddaughters parents agree on what food and drink you should be providing?

P: Yeah, yeah, I mean just occasionally my granddaughter has brought a packed lunch with her, but that's erm...because she's got sister's who go to school who've got a packed lunch box and of course she wanted her own packed lunch box [fair enough]. And then of course she has to pack her own lunch box to come here. Erm...but no, yeah I would always check. But also her mum is very allergic to peanuts, so I think if I was giving her something that was unusual or certainly something that had nuts in I would check with her mum first, and I certainly wouldn't give her peanuts

I: Yep, yep, so you've got quite an open communication about feeding with your granddaughters mum?

P: Yeah yeah yeah.

I: Recently there's been a lot in the media about sugar and fat consumption in young children, and I just wondered in general what are your thoughts on this?

P: Erm....what are my thoughts on that? I think if you're going to go down the route of erm...of limiting sugar I think you probably have to do it right from the beginning because I do think it's one of the those things that once they've got a taste for it, it's really difficult. I think I probably think in moderation with most things, it's probably fine. And if her mum said she didn't want her to have any then I wouldn't do it. Erm....but you know, she does eat cakes, biscuits, chocolate, but she also eats erm...lots of like I say fruit and vegetables. I think erm....I'm probably more bothered about erm....as I hinted right at the beginning about trans fats and things like that. So if she's going to have cake and things that's, 90% of the time that would be stuff I'd made and I don't cook with those sort of things. Erm....if she's going to have fats then it's going to be olive oil or butter that I've put into something erm.... So yeah I think I'm more fussy about that.

I: Yeah, do you think you do limit sugar or fat provision at all?

P: Yes I do, because I mean things like, sweets for example, they have family rules about what they're are allowed and when which you know we tend to, tend to stick with, yep so yeah I think I probably do but I think I'm probably a bit more relaxed than her parents are but with their consent because they'll just say well you're her grandma not her parent, she's not with you everyday that's fine. Within reason do what you want to do.

I: Can you describe some of those rules that the family has for like sugar consumption?

P: erm....so erm...things like erm...sweets for example, I think it's twice a week they're allowed sweets and they're allowed to have so many. So they have like a system of erm....we have a treat tin here and they have one at home and they are allowed to have kind of like, they started it as a maths things, like they'll say like you can have 15p worth, but that's not how much it's worth in a shop, that's how much it's worth in their value as it were. So somethings will be four units and somethings will be one. Obviously my granddaughter doesn't understand that something might be worth four, because she's only two and a half, but she does know

that there's a limit to how many you can have and she can count erm....and understand the one to one correspondence up to around 5 so she does understand that it's allowed. So I stick with those rules really erm....yeah.

I: Great thank you. I like the sound of the kind of buying the snacks. I think I have heard of that strategy before as well actually, it's not used that often though is it

P: No, no but it's quite good because it makes you think do I want that big chocolate button that's actually, I've got to use three of my points for or would I rather have three little gummy bears. So.

I: Or save them all up for tomorrow

P; Yeah

I: So grandparents are often described as spoiling their grandchildren, I just wondered what your thoughts are on this?

P: Oh I think I'm sure I spoil her [both laugh]. I mean they were all in lockdown last week so we we took round chocolate, and pizza, and magazines. Erm...and I think that's erm....fortunately my daughter and I see eye to eye on it we think that's a grandparent's prerogative. And she would always say to me erm...if she didn't want me to do something. Like with all of them, they weren't allowed sweets or chocolate til they were you know well turned one erm....and erm.....I could remember with her older sister remember saying can I give her such and such and her saying no, so I didn't erm....and I just think that's, I think it would be very rude not to and at the end of the day she's their child not mine, and yeah so I think that's fine.

I: So you kind of talk about how you would take chocolates and pizza and things, so do you use food as a way of spoiling, or are there other tactics as well, or other things you might use?

P: Erm... oh all sorts of things, so yeah, sometimes it's food but we have erm....we have nanna and granddaughter days and grandpa and grandson days so erm...we'll have them one on one and do something with them like erm....the oldest one we took her shopping and bought her some new clothes and had erm...cake and coffee and you know, we take them swimming, erm....we've taken them to clip and climb. So yeah we spoil them in lots of different ways, it's nice.

I: Lovely. Erm so erm where's my next question. Do you think looking after your grandchild or any of the other grandchildren when they were younger do you think that's influenced your eating habits at all?

P: No.

I: Nope. Even on the days you're looking after them?

P: Erm....no not really because they, we'll still eat the sorts of things we normally eat erm they, erm, all of them would be offered normal family foods, the little grandson I was telling you about who has a limited diet well, if he doesn't like what's on offer he'll have a jacket potato with beans or something like that erm...but we would still eat a wide variety of things. I think the only thing that it limits is, we wouldn't have a very spicy curry and expect them to eat that, we might have a mild curry and them eat it. But kids are just funny. I mean, I made some dahl the other week because, daughter and I had shared a recipe and she'd said oh they really like this and did they eat it, no.

I: Not that day yep

P: She made it a few days later and they lapped it up. And you just can't tell with kids. So yeah.

I: It varies everyday

P: It does

[Interviewer goes to let dog out of room]

I: I think our family are real foodies, so, you know, the whole of my wider family we enjoy our food, we enjoy trying different things, we do, I've got a great big dining table that will sit all of us round, it will sit up to 16 people. So we like, Covid permitting, when we can all getting together and cook a really nice meal and you know, have all the children joining in. I think one of the things that is nice, and that you haven't always got time to do, but is nice when kids get old enough to serve themselves out of bowls, I think that really helps. Interestingly, and I don't know if you're interested in this at all, one of my middle grandchildren, about a year ago, decided that she wanted to be vegetarian and has actually stuck to it. Which is quite interesting, and that can be a challenge, because I'm trying to find vegetarian things that she likes. She doesn't like quorn at all, because it tastes too much like meat, so it'll be interesting to see whether, and it's granddaughter's big sister, so it'll be interesting to see whether erm she picks up on any of these things from her sister as she gets older.

I: No it will be. You said kind of erm kind of serving, self-serving is something you did, does your granddaughter do that, or is she a bit young?

P: She will a bit, I mean I think it'll be a bit some and some really erm yeah. I mean it isn't something we'd necessarily do at every meal but it's very funny because she had, what did she have, oh she found, I had some, you know those snap pots of baked beans [yep]. She's obsessed with baked beans at the moment, she loves them, so erm she wanted them and not a tin, and she wanted to put her own food in the microwave and press the buttons. Which we did. And then erm I put some of them on her plate and said if you want some more you can always have some more. And that was fine. And then the next week when she came round we had to go through the whole palava again and I put them on her plate and she said and if I want some more I can always have some more.

I: [Laughs] she's got a good memory

P: She does but she has to be helped because she is only two

I: No no that's great. And when your granddaughter is eating erm do you eat with her or is it separately at different times?

P: Nearly always with her yeah, yeah.

I: Is that for meals and kind of snacks, or just meals or?

P: Erm I don't tend to eat snacks so just for meals really yeah

I: Do you provide your granddaughter with snacks at all?

P: Yeah I think erm I mean it's interesting, I wonder if the French have got it right and we've got it wrong but I do nearly always offer her snacks between meals and I wouldn't do that so erm yeah so she might have a biscuit, she might have a piece of cake, she might have fruit, she might have crisps, she likes crackers, you know, erm ritz crackers those sorts of things so.

I: Yeah. So it's different to what you'd kind of have, yep fair. So I'm now going to ask you a few questions on guidance on feeding 2 to 4 year olds. So have you ever been given advice before on feeding erm either your granddaughter at this age or any of your other grandchildren when they were kind of at the 2 to 4 year old age range?

P: Well in my working life erm I was a teaching first of all, a primary school headteacher. And then I went to work for the county council for the early years department and was responsible for erm Sure Start centres. So obviously we gave out a lot of information on healthy start erm and we also had kind of what were like sort of embionic (?) food banks then as well for families. I guess I was involved quite a bit in. I mean what was interesting that I probably wouldn't have known without that, is guidance on portion size, because often I think we often over estimate how much a child wants or needs. So that was quite helpful.

I: So do you use those portion size recommendations day to day with your granddaughter do you find.

P: Yeah I think I do tend to yeah. I mean, I think, the one that really surprised me was erm pasta. You know about , you know, what a portion size of pasta like spaghetti bolognaise should look like for a child. And I think without that I would have thought they needed a lot more than they do.

I: Yep, and were these images of portion sizes, or rules of thumb or what were they?

P: Rules of thumb. And I think I probably wouldn't be able to articulate to you, that's what it should look like although I do know, you know in adult sizes they'll be the size of your fist if you're giving erm a protein portion. And I also, you know, know about things rules of thumb that it should be you know you want a lot more in terms of fruit and veg and then I guess when I was growing up it was all about food pyramids as well erm so I think you probably take in bits from all of those don't you, or I do anyway.

I: Yeah. So do you think when you kind of see this advice you think about how you're feeding your granddaughter and you try and adapt?

P: Erm...do I think, I think. Yeah I think it's there at the back of my mind, I don't think I consciously think oh that's what it should look like. But I do think those things influence you, yeah. And also I think erm...I think...when I was in school, I mean when I was a Headteacher, that was the stage that they were just started weighing and measuring the reception children and the year 6s. So I think that's in the back of my mind too about you know, especially about the whole obesity thing. I mean one of my grandchildren, my grandson, finds it hard to control his appetite and his dad is the same and I think erm.....his mum would say, and I would obviously go along with what she does, for him especially trying to offer balance and veer more towards the healthy snacks is important.

I: Yeah great thank you. So you've kind of talked about Sure Start and school have you come across any other advice about feeding 2 to 4 year olds, whether that's formally or informally?

P: I don't think so.

I: Just checking. Perfect thank you. Does this advice make you think of anything in your own diet as well?

P: Erm...I don't think that makes me think about things in my own diet, I am conscious that I'm more addicted to sugar than I should be. Sugar aside, and by sugar I mean chocolate, chocolate aside we have I think a very healthy diet. And what has changed recently, is we've, I'm now trying to cook two meals a week that are meat free, it's a health thing, it's about the whole sort of you know, ecological stuff as well. Erm...so yeah I do try and be a lot more plant based now than I ever used to be, which I didn't even think about when I was bringing up my own children.

I: Yeah. And is that from your experience in Sure Start or do you think?

P: No I think that's kind of from friends and family who erm have, have taken up that way of living. I've got, one of my god daughters is a vegan, other friends that are vegans, and I think initially I thought that that was quite an extreme way of eating and something I would never consider and I think I've fallen into it over the past year or so and actually I think erm...I think we had erm...probably somebody in church that came to talk about environment and that made me think about actually eating less beef. Erm and then you've got to eat something different instead and that's why I went down the plant based route.

I: Great and do you think this influenced erm anything in the way you fed your grandchild?

P: Yeah I think so I think I, I think I definitely have, I'm much more aware of fruit and vegetable intake that I was, erm yeah.

I: No perfect. So are you aware of any other guidance or kind of erm recommendations for feeding children 2 to 4, other than what we've talked about?

P: No.

I: Is there any support or advice that you'd find beneficial at all?

P: Erm....no I don't think do

I: If there was something that you felt, you know, you would need information on how would you like to receive it, how would you like to be provided with it?

P: Erm...I think I would like to be signposted to stuff online. I think it's useful to go to websites to find advice, and also website sort of chats with other grandparents, I belong to gransnet which is like mumnet but for grandparents so if there was something then I'd probably go and have a look there because that is going to be people obviously in a similar situation to me so that's useful. Yeah I think that would be my first port of call, I wouldn't for example go to my GP, or I hate leaflets, I'd rather they just went straight in the recycling bin I really really think we have too many bits of paper knocking around so yeah.

I: Can you just sort of explain why you wouldn't go to a Gp?

P: Erm...for me or for my granddaughter?

I: For information for feeding your granddaughter

P: Because I think GPs have got far too much to do to you know, spend time telling me how to you know, feed my grandchild. If I wanted professional advice, I'd probably ask if I could speak to a health visitor rather than a GP. But since her mum and her aunt are both health visitors I'd ask them anyway.

I: Yep. No perfect. So do you get a lot of information from your grandchild's mum already or not in terms of guidance?

P: Yeah I think so

I: Is there anything particular that you can think of in terms of feeding or not, or does anything come to mind?

P: Erm...I think no, no I think, you know I said earlier that I think I'm a lot more relaxed with my granddaughter than I was with my own children. I think that comes from her mum. I think erm...and I think that's both personal and a professional thing with granddaughter's mum erm...I think she's kind of quite relaxed. I've got three daughters and two of them have children, and both of them who've got children are very pro breastfeeding, which I was as well. My granddaughter wasn't weaned until she was turned two erm and I think, all of that helped in terms of, when a child's still having quite a lot of breast milk then you can feel that they are getting a lot of what they need and what you're offering is not the be all and end all of their diet

I: Yeah complimentary. Yep, no great. So if there was kind of new advice about feeding 2 to 4 year olds how do you think that might influence erm kind of, would you be quite open to changing what you provided?

P: Only if my granddaughter's mum was happy with it erm...if she said actually that hasn't been validated yet can you wait until erm...you know, until we've got some information then I would. But if she came to me and said oh actually you know, a really silly example, if she said to me actually you know, you have to give two year olds tuna three times a week otherwise it will affect their brain development and I want you to do those then I would.

I: Yep so you're quite kind of receptive to what your daughter kind of says from her job?

P: Yes I guess I suppose in a way it's easy because we have similar ideas, I don't know how I would react if she, if she kind of said, I don't know what I'd do if she said well you know your granddaughter can only have this and I really disagreed. Probably then I would be less happy about having her and feeding her.

I: No fair enough. You're in the fortunate position where you don't have that though. Do you think if you were to change anything about feeding your granddaughter it would impact you own or anybody else's diet in the household?

P: No I don't think so

I: So you've talked about gransnet, so I guess that's sort of a grandparent's network [yes] are you part of any other kind of networks of grandparents.

P: No. Not formal ones I mean, I've got lots of friends that are in similar positions. And interestingly since Covid we meet up online more than perhaps we might have even met up in person. I've got one particular group of friends that we were part of a walking group together and we zoom once a fortnight now and chat about lots of things, including obviously our grandchildren.

I: Yep are there any aspects of feeding you might discuss as well or?

P: Erm...no not really only informal stuff about you know, about you know, you just talk about anecdotal things like you know, like so and so wouldn't eat this or did like that but no not big things really.

I: Is that the same with gransnet have you found things on there that you thought oh this is useful in regards to feeding or seen anything on there?

P: No I don't think so.

I: No that's fine thank you. Erm do you think if there was kind of support provided whether that was online material, which you've kind of put a preference for, there would be anything that would prevent you with engaging with the support?

P: No I think I would be very happy to yeah erm I mean I'm confident about using IT, we've got good broadband speed, I've got access to, I'm on a Macbook at the moment I've got a phone, I've got an ipad and another laptop so I've got plenty of opportunity to engage with the IT that's needed so it would be fine.

I: Perfect thank you. How would you kind of feel about face to face grandparent networks?

P: How would I feel about, sorry I didn't catch

I: Face to face grandparent networks, so say if there was something like gransnet but erm like a face to face meeting, like toddler group but with grandparents that kind of thing?

P: Oh before lockdown I used to take my granddaughter to toddler group once a week and that particular toddler group we went to, I would say erm....there was probably a third of parents, a third of child minders and a third of grandparents there. So actually that sort of informal stuff is really helpful, because you kind of get and receive that without really thinking about it.

I: Yeah and you enjoy it for that reason or?

P: Yeah yeah

I: No perfect. So that was kind of my last question but before we finish is there anything else you'd like to add, or you'd like to say or anything we've discussed today?

P: Only that I think erm from my kind of my working experience and everything, I think erm poverty plays a really big important part in terms of what parents feed their children and I think access to all the fruit and vegetables. Fruit and vegetables are expensive, I spend a lot of money on blueberries, raspberries, strawberries, peach those sort of things and actually if we are serious about healthy diets then we need to address that erm in terms of you know those people who cannot afford to buy them. When I was in school we erm that was when the free fruit for Key Stage 1 came in and erm we took the decision as a school to provide that for the

whole of the school and not just Key Stage 1 and we also took erm a considered decision, we started off by you know, the children would eat the fruit before they went out to play and you can guess what happened then, they took a bite out of it and then put the rest in the bin because they wanted to go out and play. So we then took the decision well okay it's probably not ideal to have children eating carrots or apples on the playground but that's probably better for them than not eating it. And guess what every playtime every scrap of fruit or vegetable that was put out there was always eaten. Yeah.

I: Adapting to the

P: Yeah it was really really interesting and you know, the children loved things like, they used to send like mini cucumbers they used to send peas in shells things like that, and the kids absolutely loved them. Erm and we got a good price for it because we got it from the same place that we got the free stuff from, the stuff paid from the government. But I do think if we're going to be serious then it does need to be you know, it needs to be available. I think Tescos, don't they do, free fruit for children [Yep], I don't shop in Tescos but I think they do.

I: Yeah I think when you go there with a kid. Do you think poverty is a barrier for grandparents looking after their grandchildren as well?

P: Yeah I do. And that comes across I think, particularly in gransnet. Because I, sounds smug, and I'm really sorry, but I don't have to think about if I want to buy this dress for my grandchild or if I want to take them out for coffee but actually there are, I'm sure, in the same way as some parents go short themselves in order to feed their children I'm sure there are grandparents that do the same.

I: Yep. Yeah and it's quite a stark difference on what you can provide depending on yeah

P: Because actually white process bread, you can buy a loaf from Lidl for 35-40p. I bake all my own bread actually you know, that's not a choice for a lot of people.

I: And you kind of get a lot of portions out of that loaf of bread, compared to say one banana for 30p

P: Absolutely, especially if you know that a child, and we kind of haven't discussed this in your questions I don't think, the one thing that was quite hard for me to get my head round because all of my grandchildren they did the erm... you know finger food weaning, they didn't have purees it was all you know I've forgotten the term

I: Baby led weaning

P: That's the one and the bit that was hardest for me to get my head round was how much goes in the bin [yep] erm and that is still the case, and I still have to swallow hard because I'm, I'm being 62 I'm of the era of you ate what was on your plate [yep] whether you liked it or not. And my parents were quite strict about that and not only all my grandchildren, they're encouraged but not forced to eat anything they don't like. Erm but even so there's still quite often, you will put stuff on their plate that erm especially if they haven't served themselves that will go in the bin, and I do still find that hard. I'm happy to do it but I do find yeah, I do find that a bit tricky.

I: So when you're looking after them you adopt the same strategies in terms of not expecting them to clear their plate?

P: Oh no I wouldn't expect them to clear their plate at all erm...and I think I said to you I'm a bit more realistic about portion sizes as well though yeah no I wouldn't expect them to clear their plate. But it does, it does sort of yeah, it will be a gulp, especially when you know there's three children there and you know the amount you put in the bin would have happily fed a child that you know and I'm not talking about the starving hoards in Africa I'm talking I live in [City name] and I know there'd be children a mile up the road that that would have been a meal for. And you know, that's hard. Yeah.

I: Yeah definitely it is. Yeah. So erm is there anything else you'd like to discuss before we close the recording and end the interview or are you happy that we covered everything

P; No I think that's fine

10.32 Appendix 32 – Study 3 Transcript 5

Name of Transcription: Interview Participant 5-P_ID20 Name of Transcriber: Abby Constantine

Date: 15/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:03:00]

I: So what I'll do is I'll start by asking you a few questions about how you feed your grandson; so as a grandparent, what is your role in feeding him?

P: Because I have my grandson two days a week (aha), from Tuesday morning to Wednesday evening, so I usually give him breakfast, lunch, tea and supper (aha) Tuesday; breakfast, lunch, sometimes tea on the Wednesday, it depends on what time he can go home. Not that he usually wants to go home but obviously he has to go home -laughs- (yeah- laughs). It's basically I'm just like a, well I'm a surrogate mother for two days in that respect aren't I (yeah) but yeah.

I: And do you provide snacks as well?

P: Oh yes, he provides them himself when he picks the fruit out the fruit bowl [both laugh]

I: So, on that, how do you decide what to provide to your grandson over those two days?

P: Erm, well we, I know he loves fruit so usually on a Tuesday morning he may have had milk at home because he still has milk of a morning and late at night and I know he loves fresh fruit and we, if I'm having porridge and fruit or my husband's having cereal you can guarantee he likes to taste them (laughs), you know what we're eating if you see what I mean (yeah). So, and I just prepare for that and then at [00:05:00] lunchtime he loves things like pasta with tomato sauce which I think is revolting but there we go (laughs) or he'll eat things like sausages, for lunch, lunch is usually a bit of a whatever he fancies having (yeah) then tea time because I cook for all of us he eats what we eat at tea time (yeah) but if he's good, so for example he's now potty trained and although he uses his potty, it's trying to get him to use the toilet (aha), so if he uses the toilet he does get a treat and we have those little freddos, little chocolate freddos or things like that (yeah) and he is allowed those. The other thing he likes in an afternoon if he's not eat- and he does help himself to apples, bananas, grapes, they're his favourite (yeah), he'll have those petit fours yoghurts (petit filous) yeah, those ones because they contain the most milk (ok yep) and it fills his tummy (laughs- yeah). So that and that's how we work.

I: Great, so would you say he has kind of free choice or you give him guided choices or?

P: Well I suppose they're guided choices (aha) because what I do is I make sure there are the things that he enjoys, so for example he knows in the fruit bowl (mm), he knows he can go and get a satsuma, an apple or a banana and he'll walk past and he'll look and I'll say 'yes, you can have one' which he does. Tea time he doesn't have a choice because I'm cooking for five of us (aha) so, but I will admit that on a Tuesday, I tend to do the easy things that both children like (yep), quite difficult between them, nine and a three (yeah). We tend to have fish and when I say fish, I usually buy battered frozen fish (yep) which they all like and they have fries and sweetcorn. I always put a veg with them (yep) and that's it really because by Wednesday evening he usually goes home for tea, it just depends what time his dad gets back as well.

I: Yep, no that's great. So as a kind of, what do you think a healthy diet looks like for a child aged two to four years old?

P: Ah, you're ask, funnily enough, my son has just done an online course (oh) and it's about children going into school and a well-balanced meal and one of the things that, and I've been doing it with him because I've found it quite interesting, and one of the things it does say is you know, different sizes, different levels of children need different nutrients (yep) as such. So for me providing he's getting protein, veg and certainly vegetables and fruit, that to me is a good balanced meal, but perhaps just a thing with me, if you see what I mean (yeah). My children will tell you that I'm a, I am a feeder (laughs) but I like them to try different things as well. Oh and the other main thing that we will do for our grandson is rice, he loves things with rice.

I: -laughs- Great, he eats quite a lot of food then really, you've got lots of options.

P: If I tell you his dad's 6ft5, he's three years old and he's wearing five to six clothes (oh wow), he's a tall boy (yeah). He's just a happy, healthy three year old so that's good.

I: Great, so how does what you feed your grandson compare to what you fed your own children?

P: My grandson will have pasta, rice, and things like that (mm) [00:10:00]. For my children at home, I have to say lunchtimes were always sandwiches (yeah) and we, I was working, so I worked full-time when they were at school (aha) so they either had sandwiches for school and certainly in the holidays we tended to be like that. One of my sons only ever ate crisp butties so (laughs) that was helpful (yeah) but it's because I'm a grandparent and I'm not working, I have the time to do different things (yeah) and certainly with my grandson, because my granddaughter's at school. Again, my granddaughter at nine, oh, oh, she likes things like cucumber and pepper and tomatoes (mm) so my grandson tends to eat cucumber at lun', at an odd meal you know you have pasta, cucumber and little sausages (yeah -laughs) so-

I: Kids love it though don't they?

P: They do, they do so, yes, I cook very differently, my family, my ex-husband and my children were very much English, basic foods, so you had your potatoes, your meat and your vegetables (yeah). They're not, even now, my daughter will eat other things but my boys won't, they're very much meat and veg.

I: Meat and two veg yeah -laughs- (definitely). Yeah, that's what my family was like as well -laughs- So, what do you find easy with regards to feeding your grandson then?

P: I think it's the fact that we have time to sit with him, we, so for example my husband and I, because he's with me when we have my grandson, we sit down together (yeah) and my grandson will always eat in the dining room, which is where I am now and we all eat in the dining room at tea time (yep). Breakfast is usually in the kitchen, so it's, it's the routine that we are in and he follows that so I don't know, not much else really -laughs-

I: He's quite easy to feed then?

P: Oh he is yes, yes. He, well he's fed himself for a long time but yes, provide, but again, I know the things that he likes, so whilst he's with me I don't have to, I'm not the one who's going to work, having to think about a meal for all the family, going home and cooking for tea (yeah) and 'yes you are gonna sit down and eat it'; we don't have, we have the luxury of having the time, I make sure I have the things in that they'll both eat at the same time (yeah). Life is very different.

I: -laughs- Thank you, that's (so-) so is there anything that you do find difficult at all?

P: Erm, not, for food, the only difficulty we have is we've brought them up to have good manners (aha) and even now, my son who lives with me and our granddaughter, will always say thank you (aha) for tea and they always ask to leave the table (yep). Of course as soon as my granddaughter asks 'can I leave the table please' my grandson- 'can I leave the table please' [both laugh] and he may not have finished; that's the only difficulty I have (yeah). When we do make sure our granddaughter stays at the table whether she, she doesn't like it, but until he has eaten, otherwise once he's distracted he won't come back (yeah) to it, so.

I: No that's fair enough. So, are there any kind of foods at all that you would struggle to feed your grandson?

P: Um, he doesn't like tomatoes (aha) and he's not a lover of peas but he'll eat carrots and broccoli (yeah) so, again, it's because I do have the time and I know what's going to happen and to make life easy for all of us (yeah), I plan out meals accordingly.

I: That's great, so are there any strategies that you would use if he completely refused to eat?

P: If he [00:15:00] refuses to eat he's ill (yeah) um, so we don't need to do that, he's always been very good (yeah) at eating and it's only if he's poorly he doesn't want to eat. We make sure he has plenty to drink (aha), he drinks mainly water but he sometimes asks for some blackcurrent (yeah) and obviously, well i drink it weak anyway, it's only a weak version of it and I'm even trying to think when he was younger but at this stage, no, I don't think we need to do that.

I: No, that's great -laughs- sounds like he's a good eater.

P: Oh he is, he's really good and he, he is a well behaved little boy and because he knows when he comes here, it's amazing, even yesterday I said 'oh we're going to have lunch now' and he says 'are we going into the dining room' and I'll say 'well we can eat in the kitchen if you want' and he'll say 'no, we'll eat in the dining room' (laughs) well that's the habit that you get isn't it?

I: Yep and he likes the routine.

P: Oh he does, yes.

I: -laughs- So there might not be anything for this question then, so is there anything that you would change about the way you feed your grandson?

P: Um, No, I don't think there is, I don't think there is. We, I ensure that, so if he has a snack in the morning, it's just a snack (yeah) otherwise he won't eat lunch but I think that's true of everybody so um, in afternoon if a friend comes to see us or something and they always bring a treat or whatever, we do allow that (aha), I don't have a problem with that but he does always eat (yeah) so there we go.

I: How do you decide on say how much to provide?

P: Er -laughs- I don't decide on it really because it depends what he wants to eat. If I, I do, I do measure out, I did Slimming World you see so this is -laughs- the reason why I measure out and they say 75 grams of pasta (yeah) a portion and you just know it's quite a big handful and he will eat that (yeah). If I was to cook and we'll eat a whole fish (yeah) so, I'm just trying to think what else. He would eat a lot of crisps but I don't want, I don't eat them so I don't tend to give them very often (yeah). I think you have to just think about a young child who, you give the smaller portions to and believe me if they're still hungry they'll say 'is there anything else' (yeah) you know so, that's when yoghurts are very useful.

I: -laughs- Something extra, yeah.

P: Yeah, that's the only way I work it I think.

I: No, that's great, so do you and your grandson's parents agree on what food and drink should be provided?

P: Um, do you know we've never had a discussion about it because um, my daughter knows how I am, obviously I brought her up, we had the same thoughts on behaviour and manners and eating correctly and what they want and how they believe (yeah) so, I must admit we've never had a discussion [both laugh] ?? [00:19:09]

I: You're obviously in sync -laughs-

P: Well I must be if you think of it that way, yes you know, yeah.

I: No that's fine. Do you ever talk about kind of what you, the food that he's eaten or anything like that?

P: No, not really. She will, the only time she talks about food is when he's been to nursery because obviously they have a nap, they tell them what the children have eaten that day etc. etc. (yeah) He had chicken chow mien the other day, it's not something I would think of cooking. He gets a good balance that way anyway doesn't he (yeah). No, the only thing I will say to her [00:20:00] 'he hasn't eaten a lot today' if, for example, if he was with me today (aha) it's sunny, we would be outside nearly all day and he's not bothered about eating.

So you make the effort to say 'come on, let's go and have some lunch and then we can play again later' (yeah) and I'll just say whether he's eaten enough or not, but he will tell his mum if he has.

I: Or if he's hungry -laughs-

P: Yes he will, yes. So-

I: So you'd say that you have complete autonomy over what you feed your grandson when you're looking after him, yeah?

P: Yes, definitely, yeah.

I: Perfect. So this is kind of a tangent but recently there's been a lot in the media about sugar and fat consumption in young children and I just wondered what your thoughts are on this.

P: Er, yes I think children do rely on an awful lot of sweets etc. etc. but I think in moderation there isn't a problem (aha) but, I am, I am person who was brought up just after the War, when there were limits on what we could have, but I grew up eating sugar butties (laughs). There wasn't an awful lot of other things you see (yeah) but we didn't have a lot of sweets (yeah). It's just a fact of life now that these things are there, they are advertised so much and children think ooh, it's a quick fix (yeah). I mean to me that's not what it should be, but I also appreciate there's an awful lot of parents who will do that to keep their kids quiet.

I: Yeah -laughs- just out of interest is a sugar buttie, is that just bread, butter and sugar?

P: No butter, just bread and sugar (oh right). I never had sugar anyway (yeah) but and it's very strange but growing up as a child and you know, I had sugar butties and across the road, I thought they were posh because they used to have fat butties, you know beef spread stuff?

I: Oh yeah, like dripping almost.

P: Oh yes and I never ate those and I still wouldn't. I used to think they must have had more money than us (laughs) yeah, but it's, and now looking at it, hasn't done me any harm (yeah -laughs). I'm not exactly sylph like but I'm not obese and it's just different things but I think parents use these sweet, sugar stuff just to shut the kids up basically (yeah) mm. So there we go, I'm just a miserable grandma who says 'have a banana' or 'have an orange' [both laugh].

I: Not miserable at all -laughs- I think it sounds like your grandson likes the fruit bowl as well so -laughs-

P: Oh he does, he does, yep. I have to say it's, erm, it's quite expensive in a lot of ways because I continue to buy, and because I eat them as well, strawberries and raspberries and blueberries and grapes (yeah) and then we have the fruit bowl as well so, it's just the way I think I've tended to go (yep) and if you have it there, that's what the children get used to (yeah) isn't it (definitely, yeah) yeah.

I: So grandparents are often described in general as kind of people who spoil their grandchildren (oh yeah); I wonder what your thoughts are on this?

P: Oh yes -laughs- definitely! [both laugh] But you know you can spoil in different ways; I have a plaque in my kitchen that says about being a grandparents and 'who cares if it's chocolate for breakfast' and all this, that and the other (yeah), well I do, but occasionally because my other grandson lives away, when he comes to stay, that's when I have the ten and the nine year old and I'll just go 'have what you want' (yeah) and make them pancakes and they put chocolate spread and jam on and things like that and I just think well do you know I only have them together for a short time (yeah) and that's what I do.

I: So you think there's a difference in terms of the amount of time that you're spending with them?

P: Oh definitely [00:25:00]. We, I was a mother who, although I worked, I didn't care if the house was untidy (yeah) you know because things can go away after they've gone to bed or they've helped put them away- not every often (laughs) but there we have it, and I think even more so with grandchildren (yeah), which is the

reason I was at the stairs and I didn't have my watch on (laughs) and my grandson just, we had trainsets out and garages and a pop up shop and we put lights in in yesterday (oh wow) he just loved it but grandma always has to be with him (yeah). Silly grandma gets her fat bum through the little door of the pop up shop you see, this is the thing (laughs) and it, yes because that's, that's what it is (yeah), your grandchildren you, you enjoy because you've got older (yeah), you don't have the pressures of I'm working, I've got to do this, I've got to do that. So, because you're getting older and you realise gosh, how long will I be here for, you make the most of it (yeah) and regardless of everybody saying 'oh you're only here once, life's too short, go and enjoy it' the confines of your life and restrictions that you have because you're working, you have a mortgage, you have blah, blah, blah, you're pressured (yeah) so the time with grandchildren is very, very different; and it's great [both laugh]

I: It sounds it -laughs- so how would you say that you would spoil your grandson for instance then?

P: Um, ah, read book, after book, after book (yeah) even if your eyes are tired; we take him out, I bought him you know these all in one suits, he just loves getting dirty (yeah), he loves jumping in puddles, loves being in a park and that's what you do (yeah). There's one bit of our garden that's his and he'll get the hose pipe and he'll just, it's just mud but who cares? [both laugh]

I: I bet he loves that.

P: That to me, I don't, it is spoiling but I think it's letting the children know (yeah) that they're loved, you want to be with them and their happiness comes through by what they're doing (yeah). You know, we were in a little pop up shop yesterday, it was quite difficult, I'll be honest but we had to keep saying, I had these little sparkling lights (yeah) and we hung them up inside this little shop and he goes 'aw, shall we make it halloween' and I closed the curtains, the blinds and my husband sort of like, typical man- 'what are you doing that for' but it's, it's special (yeah) and he so loved it and he was switching them off and on (aw). He has a little bear he takes everywhere with him and he'll say 'Bear Bear, do you like these lights' and he pretends he's Bear Bear-

I: Aw, that's so sweet.

P: My husband's just come in if you hear another noise (don't worry) if it's doing that (yeah), is that spoiling by giving time?

I: No I think that's er, he's a very lucky grandson right -laughs-

P: Well I like to think he is [both laugh] and in a few years' time he'll be going 'oh I haven't got to go and see grandma have I' (hopefully not -laughs). Oh they all do that, they all do that and I know and I'm quite prepared for it (yeah) so all I give him is, is giving us memories of that, that's what makes it.

I: Yeah, and for you as well.

P: Oh definitely yeah.

I: So has looking after your grandson influenced your own eating habits at all?

P: [Short exchange explaining to husband 00:29:33] Erm, I suppose we just make it that when it's the tea time on the day I have both grandchildren together it's nearly always fish, fries and veg or chicken strips, fries and veg (yeah) [00:30:00], that sort of thing, which I can do because I don't mind the fish and not so bothered about the chicken, but when he has lunch I tend to have a sandwich (yeah) but I'll make sure he's got what he wants or you know, what I tend to do for him (yeah) and that's the only difference really. I don't like to eat a cooked meal at lunchtime and at night (yeah), I find that a bit much so-

I: And is that the same as in terms of snacks as well, do you think your snacking habits or anyone else's snacking habits have changed by having your grandson in the house?

P: Oh yes, yeah, if he's having a freddo, why can't I have something? [both laugh] Erm, yes, I, I think it has although I am not an apple eater I'll eat bananas although you can have too many of those. No, if he's having

a treat and we make it so 'ooh come on, let's sit down and eat this treat' so we're sat together, so yes, we tend to have one.

I: Does it impact on days when you're not looking after your grandson?

P: I'm not as busy, I mean like so for today, Thursday I will always get into a bit of a routine in some respect, when we've had him for two days, there's a lot of sorting out needed (yeah). You know some Lego will be with something else and I like to keep them together (yeah) in the things so, we do tidy up and he has a habit of if we play a card game, like this little shopping game we played yesterday, if you've got little cards he shoves them under a carpet or under the settee (laughs) [32.04] ?? lots of games.

I: Where you have to find them all -laughs-

P: So but, so today, my husband's just some back and he'll have some lunch and after this I'll have some lunch but other than that, we just tend to carry on the same way really.

I: Yeah, no, that's fine. So does looking after your grandson impact upon the diet of anyone else in your household?

P: No, no, no, we, this is it because I do try to make us all eat together (yeah) so they know I mean my granddaughter, she loves Tuesdays because she gets things like chicken strips, fries and sweetcorn instead of a cooked meal (laughs). Or if we have a chicken curry then that's fine, but no, I don't think it does (no) I don't think it does.

I: That's great, so we're now moving onto kind of the second stage of the interview where I'll ask you about guidance for feeding two to four year olds; so I know that you said you've done some of this course that your son is doing, but have you been given any advice before on feeding your grandchild? (No-laughs) No, whether that's formally or informally in terms of you know, family, friends?

P: Um, no, I mean the only thing, no advice um, you know my, you were saying about do we have an agreement with my daughter for example, the only thing that has been ever said and I've only just thought of it is, she said 'will you still give him a bottle of milk at night' (yep) because that settles him and that's what we do and then he sleeps eleven and a half to twelve hours.

I: -laughs- He's a good sleeper as well -laughs-

P: I know, no, he's very good although he's started coming into us at half past six of a morning so I think oh, another hour might've been nice (yeah) [both laugh]

I: Yeah I can imagine, still a bit early isn't it, half past six.

P: No, no advice really.

I: Are you aware of any guidance for feeding children aged two to four years old? (No) No.

P: I'm not, no, just something you get on and do I think.

I: Yep and in terms of this course that you've done could you kind of describe, or that you've been looking at, could you describe what that involves?

P: Well it started, I did an OU many, many years ago (mm). I was dealing with children nought to three, three to five, to nine, to teenagers and it was behaviour etc. etc. (aha) and it's all very well doing these courses but in real life you don't tend to follow them (yeah). It's very nice on paper and [00:35:00] 'you'll deal with their anger issues in this way' (laughs) and well, do you know what at the time, you don't but, if you think that a food, so orange juice, we do not give orange juice (aha) to our grandson because he becomes hyper (yep). Now whether, and yet they've taken all the colourings out of everything but I think we only did that once (yep). So, no I think just doing the course reiterates, I believe that what I've done is just about right (yeah) and I can afford to do it.

I: Is it a paid course?

P: Oh um, because my son's doing, yes he is, no, what I meant was I can afford to feed in that respect, whereas I appreciate there are so many families out there and especially at the moment (yeah) who cannot afford to do what I can do (yeah). So that also makes a difference.

I: Yeah, what kind of things do you think it enables you to provide?

P: Um, in, in, do you mean for-

I: In terms of food and drinks.

P: Well I can buy whatever we want (yeah). I'm just lucky enough that we can do that. We're both, we're both pensioners (aha) but I am a believer that do you know what, you can spend money and we don't smoke, I do drink wine (laughs), I wouldn't say an awful lot of our money goes on that. You know my husband will say just out of curio', for example, I do shop at Aldi and Lidl (aha), I shop most places actually but Aldi do a particular tomato soup and my husband prefers that at something like 45p (laughs) to the Heinz soup at one pound something (yep) so, although we're, I feel that we don't have to worry about money I still like to think I'm getting the best for the money I have (yeah) and fortunately I'm in a very good position where I don't have to worry (yeah) that there is a difference isn't there.

I: Are there any particular items that you'd buy for your grandson or you wouldn't mind buying for him because of your situation kind of thing in terms of food?

P: Erm, I can't say I particularly go out to buy for my grandson because it's what we all eat (yep) so, erm, I'm just trying to think if there was anything special but, no. He eats what we have at home so.

I: Do you think you buy more fruit for instance or anything like that, or do you think it's just the same as what you'd have anyway?

P: It's the same, I, when you say 'buy more fruit', the only difference is because my granddaughter lives with us and we have my grandson, I always make sure that there are enough for when they're in the house, when they're at home, but other than that, no, it's what I buy.

I: Yep, no, that's great. is there any support or advice that you would find beneficial with regards to your grandson's eating?

P: I've not looked for any, I've not needed any erm, no.

I: Yep, that's fine, yeah. If there was something that you felt you wanted support with, how would you like to receive that information?

P: I think I, I am a person to person (aha), so I think it would be nice if there was a group set up (yeah). When I had my children and you had a health visitor who you saw regularly and there would be groups set up and we used to go to toddler groups so you see that it's just very different and especially at the moment with the pandemic, our grandson's not been to any groups (yeah) or things like that, so you don't meet other grandmothers and mums to talk to (yeah) and I would prefer that.

I: You'd like that, yeah, no I can imagine [both laugh], there's nothing on at the moment is there - laughs- [00:40:00].

P: No, it's very, very difficult for people.

I: Yeah, so in terms of if there was a group, who would you want to be kind of delivering those group sessions?

P: Um, ordinary people, not specialists (yeah) because you know specialists have these wonderful ideas and 'oh you should provide this, this, this and this' but in real life it isn't (yeah) and if you're talking to other, I just think it would be nice to just be a general group like some, say for example I said to my neighbours who are grandparents (aha) 'oh shall we all get together on a Tuesday' and then you start talking about how their behaviour is or what they eat and things and people come up with suggestions then (yeah) or ideas and I think that's more ?? [00:40:57]

I: Yeah, definitely (laughs), a nice atmosphere as well isn't it to do it really isn't it -laughs- with friends (yeah) and neighbours, yeah.

P: When I think you have a specialist organising it and being there, it's too formal (yeah), you feel that you can always say what you want (yeah) because you want to make it sound as though what you're doing is what they're telling you to do.

I: So have you ever been to some of these face to face sessions before?

P: Only er, no only informal, toddler groups and things like that (yeah) and you know, somebody has an idea and you get other people's thoughts on it, that's the only way.

I: yeah. Where would you say your nutritional knowledge kind of comes from, or your knowledge of what to feed your grandson?

P: Life (life). You know I've brought up a family (yeah), you know, you have grandchildren you try to maintain the same standards to a degree. Things have moved on in what children eat, I mean i would never have eaten a curry as a child, my children never ate curries (yeah) but foods are widely available and you can try them (yep) so.

I: If you were to change what you feed him, how do you think this might influence your own diet?

P: It depends what I was told that he had to have, I mean I, I, er, no because I don't mind trying a lot of things (mm). Doing Slimming World makes you try lots of different flavours and spices etc. (yeah) and we've enjoyed those but for children, they're too spicy (aha) which is the reason we tend to down our meal on a Tuesday night to a si>mplistic one.

I: Yep, yeah (so) -laughs- that's a thing I'm least looking forward to as a parent I think -laughs- I eat so much spicy food [both laugh].

P: Do you, oh! (yeah) If children are used to that then that's fine isn't it (yeah) yeah you know, I must admit it's only once I started Slimming World that I've used so many more spices and (yeah) everything like, it's very, very different-

I: To make it really flavourful, yeah.

P: Gosh it is yes (laughs).

I: So you spoke about you have kind of got friends who are grandparents or neighbours who are grandparents, have you erm, are you a part of any other formal kind of grandparent networks?

P: No, no, no.

I: And when you do kind of chat with these grandparents who are friends and neighbours, are there any aspects of feeding your grandson that you discuss with them?

P: Not really. My next door neighbour, it's usually we see them in the summer and they always hand over ice pops or ice lollies and (yeah) things like that, but no, we don't tend to think about. It's (yeah), it's the children playing and being together.

I: Yep, but would you, so you kind of touched on this already so, I'll ask it again in case you kind of want to say anything else but- would you find a kind of grandparent network beneficial, whether that's informal kind of one or formal one?

P: I think it would be nice (aha), I've met up with my grandson's nan and aw [dog appears in background]

I: That's my dog [both laugh].

P: Lovely colouring (yeah) and [00:45:00]. We tend to have a chat because we have a mutual interest in my grandson but she also has 22 other grandchildren so (laughs) it's very different (yes). She would say to me um, she used to have him on a Friday- 'oh well if he doesn't eat his sandwich, he doesn't get anything else' (yep) so they, it, it's just different isn't it; it's what they as opposed to what I do.

I: What would you do in that situation?

P: If, do you mean if he wouldn't eat his sandwich (mm), er, I don't, I don't know because I, I tend to know, he's not a big bread eater (yep). So I wouldn't give him a sandwich (yeah) but what they used to do is they used to go to the cafe at Asda (aha) so and that's where you get sandwiches and things. It, I do everything at home, we don't tend to go out to a cafe and eat (yeah) so it's very different (yeah). So I don't know.

I: -laughs- No that's, that's fair, that's fine. So, how willing would you be to change how you feed your grandson?

P: It depended on what it was. If for example it was a health issue (aha), I would obviously do it (aha) you know because we just want the best for the children (yeah). Yes it would depend why, if he's going to come and say 'I'm not eating that' I'll just say 'well that's tough because that's what you've got' (yeah) but I know I cook the things that I know he'll eat.

I: Yeah. Do you ever try him with any novel food items or new ones?

P: For example?

I: Just things that maybe you've not given him before or things that you know that he's not tried before.

P: Um, do you know I haven't- because we have such a mixture with our meals (aha) I suppose I haven't tried him with noodles but I know he eats those but I don't and I suppose that's what it is isn't it?

I: Yep -laughs- you want something you can eat together.

P: Yes -laughs- yeah.

I: No that's great. Are there any barriers that you think would prevent you from engaging with any kind of support in terms of feeding your grandson? Whether that's attending face to face sessions or reading online material or anything like that?

P: Um, no, I don't think there's anything, there aren't any barriers to it, it's just um, if I believe that what I'm doing is right and it's right for him and he's getting a balanced diet whilst he's with us (yeah), why do I need to go or to have a one to one with somebody to say 'try this'. He's a well-balanced, healthy little boy so, I think what we're doing must be right.

I: Yeah. Do you think you'd be more likely to do, to access something like that if you were having problems with your grandson's eating?

P: Oh, I think if you do have problems then you do look for solutions (yeah) and it wouldn't matter which format it was, providing you could find something (yeah) but then of course, you would also talk about it with my grandson's mum and dad- my daughter (yeah). If I said 'we're having problems with such and such, what are you doing' and she'll say 'oh, just try this mum'. Just because we've had him ever since he was very small

(yeah), she obviously thinks we're doing the right thing and she knows he loves being here, she knows we look after him erm, I mean she got married earlier this year and I had him for ten days. So you know -laughs- I think she, I think she would've been a bit apprehensive otherwise wouldn't she?

I: -laughs- Yep, she knows you're a trustworthy -laughs- (yeah) caregiver, definitely -laughs- ten days must've been exhausting though!

P: Oh for goodness sake, we were on our knees after ten days [both laugh]

I: I'm not surprised. So that was actually my last question (ok) but before we finish I wondered if there was anything else you'd like to add based on what we've talked about or anything else that you, you know, feel you want to [00:50:00]-

P: No, I don't think so. I think erm, you know depending on the parent or the grandparent- their attitude to life (aha), feeding your children, your grandchildren is just a normal thing and if you can, if you don't have any money worries; don't get me wrong, we are not rich or anything (mm) like that, we just know we can have a really comfortable life (yeah) and get on with things, but for an awful lot of grandparents it would be very difficult if they couldn't do that (yeah) and it must be heart-breaking to see, it's heart-breaking to see your child go without but it's even more so to see your grandchild go without (yeah), without spoiling them and, I'm very lucky in the sense that my grandson's parents both work (aha) erm, quite a well-balanced family and my grandson is. My granddaughter, who's nine, isn't somebody who demands things (aha) or you know, it's her birthday soon and she's asked you know her dad's kept saying 'is there anything you'd really like for your birthday' and she just said 'could I have some LED lights in my bedroom' (aw -laughs) but not ask for a lot of things (yep) but her dad's like that so she, you can see she's following her dad (yeah) but my [other] grandson, who's ten, he's spoilt rotten by his mother and demands everything and he gets everything and that doesn't work, that puts different pressures on people (yeah) and yet his mother forces him to eat what she decides (aha) so in a nutrition way, she's a [job role omitted 00:52:15] she makes him eat what is the right thing. So, it's balancing everything in life isn't it?

I: Yeah -laughs- it's a lot to deal with, kind of childcare isn't there, it's er (oh yes- laughs) yeah -laughs-

P: Without a doubt -laughs-

I: Yeah, feeding is not, it's just one small element -laughs-

P: Oh yes, yeah. It's been really good!

I: Yeah [both laugh] right I will, I'll just end the interview now then, well the recording anyway (ok) and then I'll stay on the line though just to follow-up kind of thing, but I'll stop the recording side of things (ok).

End of tape.

10.33 Appendix 33 – Study 3 Transcript 6

Name of Transcription: Interview Participant 6; PID7b Name of Transcriber: Abby Constantine

Date: 13/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:27]

I: So, we can now begin the interview and I'm going to start off by asking you a few questions about you feed your granddaughter. So, as a grandparent, what is your role in feeding your granddaughter?

P: Erm, well if I've got her overnight, I'll give her, her breakfast, maybe her dinner (aha). Sometimes even her tea, it depends what time her parents finish work to pick her up. If I've not got her overnight then it's usually just lunch and dinner and any snacks that she wants (prefect). That's about it, yet.

I: No that's great, thank you and how do you decide what to provide your granddaughter?

P: Well I usually just ask her mum what she's had for dinners for the last few days and then well she's not had this, I'll give that, if that makes sense and then I try and keep it with little sugar (aha) or as nutritious as possible but any sugars try and be natural sugars (yeah). She hasn't got, she does, well she bounces off the walls (laughs) but that's just her and it's, it's not, it doesn't appear to be sugar related -laughs-

I: Yeah -laughs- just a two and a half year old.

P: Yeah but we still like to, you know, her mum's very, she's very aware of what she feeds her so I follow what her mum wants and (perfect) yeah.

I: No that's great, thank you and is it the same with providing drinks, how you provide drinks as well or choose what to provide?

P: She only drinks water and milk before bed (aha), milk with her breakfast; drinks through the day it's just water.

I: Great, thank you and what do you think a healthy diet looks like for a child aged two to four years old?

P: Erm, usually she has a small amount of protein (aha), calcium, plenty of, she loves fruit so she gets her fruit and veg in (yep). Veg, not so much so sometimes I hide it. But it's just that, it's just [00:05:00] a balancing act' and but sometimes I must admit I mean, sometimes she does have things that she shouldn't have [both laugh] erm, but that's what grandparents do, that's a treat.

I: And what would you describe as things that she shouldn't have, just to elaborate on that kind of thing as a, for the interview purpose?

P: We, we, she slept overnight Sunday I think it was, she was here for her dinner, she had, we had a Sunday dinner, she has roast beef, Yorkshire pudding, vegetables, potato (aha) but then she had berry strudel and custard afterwards which, some, she wouldn't normally have (yeah) she had a pudding afterwards which I mean it's ladled with sugar in so [both laugh]

I: So you don't normally provide a pudding kind of thing with meals or, is it mainly every so often?

P: No, not as a rule it were, it were just a treat because she was here.

I: Perfect thank you and you said that sometimes that you might hide vegetables, does that work in terms of your granddaughter's consumption (yeah) yep (yeah, yes). Is that hidden within a meal kind of thing, or will you talk about a bit more?

P: Like if I do pasta or something I'll put it in with a pasta sauce and maybe blend it up and things. She's alright with things like broccoli, she'll eat broccoli (aha) and cabbage and she *loves* corn on the cob but things like green beans she won't (yeah) so I tend to sort of cut them up and hide them in mashed potatoes or (laughs) something-

I: Vegetables by stealth -laughs-

P: Yeah just, you know just basically trying to hide them (yeah) but yeah it works up to now, but she's only two and half so she'll figure it out soon.

I: -laughs- watch this space! (Yeah) [both laugh] So, how does what you feed your granddaughter compare to what you fed your own children?

P: My granddaughter, well with my granddaughter I follow what her mum wants (aha) you know erm, obviously balanced diet, this, that and other; when my children was that age, we're talking the early 90's (aha), nutrition wasn't, you wasn't as aware of nutrition back then (aha) as what you are now. I still used to try and feed them healthy but some of the meals what I thought was healthy back then (aha), isn't as healthy as what I thought (yeah). So noodles, you know, even now I mean you can have noodles within a nutrition, nutritious, start again, nutritious meal (yeah) but, you know you, back then it was a packet of super Noodles with some veg, Super Noodles, they're just full of fat, they're just full of everything you know (yeah) but you just think ooh, they're having noodles with a bit of veg, this, that and other, you thought you were feeding them nutrition (yeah) and you weren't, you were just feeding them rubbish (yeah) so-

I: Do you think-

P: yeah, there is a difference.

I: Do you think that your knowledge has come from feeding your granddaughter or has it come from other life experiences that you've had, kind of thing?

P: Life experience (yeah) definitely.

I: -laughs- Not in the last two years then [both laugh]

P: No but it has helped [both laugh]

I: It has helped, in what way

P: Erm, well because I, like I say I follow what her mum wants (aha) and her mum, she's, she's not, I'm vegetarian myself (aha), my daughter's not vegetarian but she does eat maybe five or six meals a week vegan-

I: I see, yeah.

P: so she's very aware of nutrition and things like that (yeah) and so she'll say to me 'oh, [granddaughter] has had red meat you know three times this week' so I don't give her red meat (aha) you know and it's, so, so, my daughter's taught me a lot in that respect but because I'm vegetarian myself I've learnt a lot over the years (yeah) I mean I'm in no way an expert or anything like that (laughs), I do get it completely wrong half of the time (yeah) but I- (yeah) and that's the main thing.

I: Oh definitely yeah [both laugh] So would you say you're quite kind of receptive and open to what kind of your daughter tells you about nutrition? [00:10:00]

P: Yeah, yeah because at the end of the day, she might be my daughter but [my granddaughter] is her daughter (yeah) so whatever, I respect her wishes regarding her daughter (yeah) and if she doesn't want her eating something then she doesn't have it; it's as simple as that.

I: Do you discuss feeding quite a lot with her or is it something that occasionally comes up or?

P: Erm, we always talk about food, but not specifically for your granddaughter (yeah), we just talk about, you know we swap recipes and 'oh I've baked this today' or 'I've made this today' or 'I've made that' or (yeah). Yeah, we do talk (yeah -laughs) about it a lot.

I: Yeah, great, so slightly changing the subject, what do you find easy with regards to feeding your granddaughter?

P: Food-wise, do you mean like a specific food group or-

I: Specific foods or anything that, or do you find that she kind of responds to foods you give her really well or is she, does she try lots of things?

P: She'll eat anything (yeah?) yeah she will, she'll eat anything; you put a hot curry down in front of her and she'll eat it (laughs). You know you put corn on the cob down she'll eat; she'll eat anything [both laugh] Yeah she has, she has a, been brought up with a wide variety of food and oh she enjoys her food [both laugh].

I: Is there anything that you do find difficult or challenging at all?

P: Erm, she's not overly keen on meat though-

I: On what sorry?

P: She's not overly keen on meat (oh yeah) but she will eat it (aha) you know. Just because I'm veg-, as I say I'm vegetarian, my daughter's, she's not vegan but she does eat a lot of vegan meats, but she doesn't bring my granddaughter up that way, she gives her you know, she gives her meat, her dad eats meat and everything but my granddaughter's not keen on it.

I: Aha, is there any kind of tactics you use to encourage your granddaughter to eat the meat or do you just kind of let her get on with it or see what happens?

P: Erm, we just kind of let her get on with it. She, she's not going to go hungry, she's not missing no food groups (yeah) if she doesn't want it, she doesn't eat it, in that respect (yeah) you know we're not gonna force it down her.

I: -laughs- What about kind of overall, so not just on meat- what would you do or what strategies do you use if your granddaughter refuses to eat?

P: Well just, as I say if, if you either eat it or you go without (yeah) I don't get up and make her something else (yeah) and she'll eat it or she'll go hungry.

I: Does it work, does it-

P: Not always [both laugh] no! She's very stubborn, if she doesn't want it, she'll not eat it.

I: That's fair enough. Is there anything that you would change in an ideal world about the way that you need your granddaughter?

P: Erm, I'd love to be able to give her organic (aha), so would her mum but purse strings don't, don't stretch that far.

I: Yeah, it's not cheap is it -laughs-

P: It's really not cheap -laughs- (yeah) I think -sighs- I think that's that the only difference I would make (aha) although probably organic but you know it's not gonna happen any time soon.

I: Yep, no, fair enough. So you've kind of touched on this question but do you and your granddaughter's parents agree on what food and drink should be provided? (Yes) yeah (yeah) have you ever had any disagreements? (Erm) Food and drink related, obviously -laughs-

P: -laughs- erm, I can't think of any (yeah) no, I can't think of any.

I: No that's fine, that's a good relationship then -laughs- (yeah, yeah). Recently there's been a lot in the media about sugar and fat consumption in young children and I just wondered what your thoughts are on this in general?

P: I think there's too much sugar in everything anyway (aha) but um, I think sugar and fat you need them up to a certain extent (aha) but the [00:15:00] snacks, drinks, it's just, it's too much in everything (yeah) and it's no wonder that you do get kids bouncing off walls, I work in a [omitted 00:15:13], I see it (yeah). They're getting sugar from natural sugars anyway, they don't need you know five cream cakes and a chocolate bar in their lunch bag at school, it's just ridiculous the amount of sugar in things, yeah, ridiculous.

I: Do you prefer to provide certain types of sugar to other types or?

P: I prefer natural sugar and-

I: Yeah, so when you say natural sugar do you mean fruit?

P: Fruit yeah, any fruits and things like that. I think artificial and I'd prefer if they're gonna have sugar, to have proper sugar, not the artificial sweeteners because I think they can be dangerous to be truthful (yeah) mm. I'd rather, much rather they had, you know if we were gonna bake a cake I'd much rather use actual proper sugar than artificial sugar.

I: Yeah, yep, definitely, I agree with that one, tastes better as well [both laugh] (definitely) yeah -laughs- Grandparents are often described as spoiling their grandchildren and I just wondered what your thoughts are on this?

P: Oh yeah [both laugh] there's no doubt about it, yeah, yeah. We, we, she, they I should say, they do get to play all, but it's not, I spoil them in a completely different way; I'll go out and buy them something to wear (aha) well it's usually always something to wear to be honest and it's not very often toys (yeah) but my partner, my granddaughter calls him Grandad bic bic (laughs) and he will sneak her biscuits, so from a very young age she's called him Grandad bic bic.

I: -laughs- She knows where to go -laughs-

P: Yeah when she wants a sweet treat she goes to her grandad.

I: Yeah -laughs- so does he provide different things to what you'd provide or do you think apart from that it's generally the same?

P: It's generally the same (aha), it's just that he will sneak her the odd biscuit and that.

I: -laughs- Grandad's prerogative -laughs-

P: Oh definitely, I mean she loves her grandad -laughs-

I: Do you think that um, looking after your granddaughter has influenced your own eating habits at all? (Er, no) No? Even on the days that you're looking after her?

P: No I don't think, no, no I wouldn't say it has (aha). I'm vegetarian anyway so, if I'm, if I'm cooking her some chicken (aha), that's not gonna influence me to eat chicken (laughs) mm.

I: It'd take a lot to do that then -laughs- (mm) yeah, I'm vegetarian as well so -laughs-

P: Oh are you? [both laugh]

I: That definitely wouldn't influence my meat consumption patterns -laughs-

P: No, I mean I've got no problem with cooking it (mm), I mean each to their own if, I'm not gonna force anybody to become vegetarian (aha). I've been vegetarian since I was five years old and I'm [age omitted 00:18:42] (mm) but yeah, the way I look at it is it is my choice, not theirs (yeah) you know and if she wants to choose to do that when she's older that's up to her (yeah) um, but what I feed her doesn't reflect on what I eat, no.

I: Yeah and when you do feed your granddaughter, do you feed her separately to when you're eating or is the same time?

P: The same time.

I: The same time so you eat together (yes) yeah and the only difference would be the meat component?

P: Usually, depending on obviously what it is, yeah.

I: That's great, thank you. So I'm now going to ask you kind of, on the second section of the interview I guess, a few questions about guidance on feeding two to four year olds (right). So, have you ever been given any advice before on feeding your granddaughter? (Erm, no). Whether that's formally or informally.

P: Well yes then, my daughter will, you know she' say 'she's gone off such and such a food and try her with this' maybe (and does-) but that's it- [00:20:00]

I: And does it (sorry?) and does it make you change or think about the food that you provide?

P: Erm, no, I wouldn't say it does really, no, erm. We've never really had an issue with her, she's basically always just had whatever's put in front of her.

I: Yeah, she's a good eater -laughs-

P: Oh yeah, yes -laughs-

I: Are you aware of any other kind of guidance for feeding two to four year olds?

P: Only guidance what i know through work (yeah) such as allergies and things like that. I've got no, no idea, I've not been given any guidance on you know 'this is not suitable for a child at that age' or (yeah) I know when mine were little they couldn't have nuts, if they had, if they have grapes it's got to be cut in half, I know things like that (yeah) but that's just your basics.

I: If there was anything that you thought that you didn't know, where would be the kind of place that you would go to find that out?

P: My daughter (your daughter) yeah.

I: Yeah, she'd be your first kind of port of call kind of thing (she would), that's great, thank you. Is there any advice or support that you would find beneficial at all with regards to feeding your granddaughter?

P: Erm, no, if I've ever been stumped on anything I've just asked my daughter (yeah). I've never, I've never looked anything up on line in that regard because every child's different (yeah), no.

I: No that's great, so if you were to be provided with any advice, you'd like to receive it from your daughter and kind of no other, other way, is that-

P: Oh no, I'm always open to suggestions, ideas (yeah) or whatever, but it's like I've said from the start, you know she's my daughter's daughter (yeah) so anything that I would introduce or anything I would go through my daughter first and ask her permission.

I: Yeah, so if you were to be provided with some kind of support, how would you like to receive it for instance?

P: I'd like to read it, whether it be in text or on line (yeah) yeah, I absorb things better that way, yeah.

I: Yeah, so that's rather than kind of face to face sessions (yeah) or big media campaigns or that kind of thing.

P: Oh I just switch off -laughs-

I: Fair enough -laughs- yeah [both laugh] yeah and who would you like, who would you kind of trust that guidance to be from? Is there any kind of people that you'd particularly trust to provide you with support and advice?

P: Um, someone who's already got children (aha) I think (yeah) yeah, because I think, I always remember when, completely non-food related but I always remember when my children were little and the Health Visitor coming round and 'you should do this' and 'you should do that' but she'd never had children of her own (yeah); she were going from a text book. I'd rather hear it from someone who's done it.

I: Yeah, from experience.

P: Yeah, yeah, but I think talking nutrition, I'd rather hear it from another mum, you know somebody who's experienced that.

I: Yeah, fair enough, and we've kind of touched on this and so it might just be the same answer but if you were to change how you fed your granddaughter based on some kind of advice, do you think it might influence your own diet at all?

P: Possibly, I mean if it was gonna be beneficial to my health then yeah (yeah), yeah I would, yeah.

I: Perfect, thank you. Are you part of any grandparental networks, so whether this is a formal organised group or kind of a friendship group of grandparents who care for their grandchildren?

P: No, just my real life friends that have got grandchildren, no group as such.

I: Do you discuss kind of feeding your grandchild with them?

P: Er, no, no it's can't say it's something that we've ever done.

I: It never crops up in conversation? [00:25:00]

P: No I don't think, I don't think it, no, no. Well I think it probably does (mm), it's just that it's not something that you're aware of, it's probably just in general conversation that we have.

I: Yep -laughs- yeah, talking about the cake you baked or something -laughs-

P: Yeah, just general day to day stuff that you'd probably completely forgot the next day and it's probably cropped up from time to time but (yeah) nothing that sticks in your memory.

I: Yeah, no, fair enough. So, if there was, have I already asked something like this? I'll ask it again just in case-if there was kind of some kind of new advice for feeding your granddaughter, kind of two to four year olds, how willing would you be to change how you feed her?

P: I'd be very willing, I'm open to all kinds of ideas and suggestions, like I say, I'm not perfect, I don't have all the answers to things you know and if something better came along and my daughter approved then yeah (yep), try it, mm.

I: That's great and do you think there would be any barriers to you that would kind of prevent you from engaging in any support, whether that's online material or something, you know a leaflet that you've been given or anything like that?

P: Barriers (aha) hmm, I can't think of any, I mean I'm not the type of person like you were saying earlier about these support groups (mm), I'm not the type of person personally to go to them (yep), but what I have noticed with all these groups, they all tend to be during the day, during the week (aha) when you're at work, so if there is anything that you're ever interested in doing, you can't do it anyway. That could be the only you know, the only thing that would stop me if I was you know, inclined to do it.

I: If you were kind of seeking that kind of thing. Sorry about that, that's a calendar notification or something. So that was actually my last question-

P: That was quick!

I: I know -laughs- before we finish though, is there anything else that you'd like to add either related to what we've said or something that you've thought of or-

P: No, no, can't think of anything but, that was really quick, I was expecting it to be ages! [both laugh]

I: I think it just depends on the kind of conversation, how it, so what I'll do is I'll end the recording now (ok) and I'll stay on the line just to carry on talking to (ok) but we don't need to record the rest so I'll stop the recording (right)-

End of tape.

10.34 Appendix 34 – Study 3 Transcript 7

Name of Transcription: Interview Participant 7; PID15b Name of Transcriber: Abby Constantine

Date: 14/10/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:23]

I: So, we can now start the interview. So first of all, I'm just going to ask you some questions about you feed your granddaughter. So, as a grandparent in general, what is your role in feeding your granddaughter?

P: We, when she gets dropped off, she gets dropped off early- at half seven, so we give her breakfast, a dinner, a lunch I mean and then we end up giving the dinner as well (yeah) on the ?? [sound cuts out]

I: I'm sorry could you repeat that?

P: On one day, you know one day that I'm minding her (yeah), we have her all day.

I: Perfect, thank you and how do you decide what to provide your granddaughter?

P: I'd only give her what's in the house that we're having, I don't, besides things like fromage frais, I wouldn't buy anything special (yep) usually.

I: So would you say it's things that you eat yourselves? (Yes) Ok and is that the same for food and for drinks?

P: Erm, well she only has milk or water so yeah.

I: Perfect, thank you. So what do you think a healthy diet looks like for children aged two to four years old?

P: There's a balance between protein things and roughage and carbohydrates, I suppose she's growing and busy (aha) so, I don't really think about it to be honest all that much.

I: Yep, no that's fine. So how does what you feed your granddaughter compare to what you fed your own child or children- I'm not sure how many-

P: I have three; very similar, I'm vegetarian (aha), all of them were brought up vegetarians, my husband isn't and he used to eat meat when he was working, outside the house, we don't have it in the house, though he doesn't work now, he's retired. So it's very much the same, I have probably quite a narrow group of foods that I would give them, give the children. We eat together with the children you know what I mean?

I: Sorry, say that again?

P: We've always eaten together with the children.

I: Ah ok, yeah.

P: Meals were always together, well with me gen', my husband would work away but I've always eaten my main meal with the kids.

I: And is that the same with your granddaughter? [00:05:00]

P: Yeah, she just joins in with us.

I: -laughs- And what do you find easy with regards to feeding your granddaughter?

P: That she knows her own mind, she's very good at telling me what she does and doesn't want (yeah) so it's quite simple you know, I will ask her, I'll give her a choice and she's quite clear on her choice and she's very

good at knowing then she's finished as well (yeah) so and I, I don't you know, if she's eaten what I think is enough I always, if she says 'I've had enough' or 'I don't want anymore' I leave her to, I'd leave it (yeah) I don't you know, yeah.

I: Great thank you and when you say you give her a choice, is that an open choice (no) or out of select things?

P: No, select things, so I'd say, she often says to me, I'll say 'do you want crackers or bread' or I'll say if I haven't got you know, I'll give her the choice and I'll say 'do you want humus on it or do you want peanut butter on it or do you want marmite' and then she'll tell me.

I: Yeah -laughs- got good preferences already (yes, yeah) and do you feed any snack or-

P: Can I just say, they're not the same each time, you know the preferences, she doesn't say the same thing every week.

I: Yeah, is that easy or is that hard to manage?

P: It's easy to manage.

I: And with regards to snacks, do you provide any snacks throughout the day?

P: Yeah, we do, well I have um, what do I give in the morning? So we have biscuits, though we're trying to reduce the biscuits because she gets a bit naughty about biscuits (laughs) and that would be something like a custard cream or a digestive and then I have things, I don't know what you'd call them because I shop in Aldi (aha) and I get kind of, well I supposed you'd call them 'healthy bars' in adverted commas, do you-

I: Yep, kind of the muesli/cereal bars is it or?

P: That kind of thing, the one, I don't, I try and get ones, I'm very keen on teeth and sugar (aha) so I get ones which aren't so high in the sugar. I know that raisins and things are high in sugar but I'm quite conscious about teeth (yeah). So yeah we give little treats like that but that's a treat not a snack, if you get the difference.

I: How do you define the difference between a treat and a snack?

P: Well a snack is like when we're out all the time and we're not gonna get our lunch for another hour so I will give her a snack (yeah), it could be that I've half a sandwich in my bag that I took with me, but a treat, she'll ask for a treat -laughs- so that's more that you know, it's been a boring morning or we're having a treat (yeah) you know, so there's a difference.

I: Does she ask for treats every day?

P: Erm, not every day; every time she comes in the house, sometimes she suddenly thinks of it even when we're not reminding her and she'll go to the cupboard and I'll say 'no, you, I didn't say you could have a treat' you know what I mean so she knows where they but she doesn't ask, she does ask, but not every day.

I: What makes you decide whether to give her a treat or not to give her one?

P: Depends if I want one [both laugh], if I want one or need to have one, then I have one with her (aha). Really it depends you know how well she's eaten or not eaten (yeah) so, yeah.

I: So if she's eaten well you'd be more likely to give her a treat then, than if she-

P: Well, if she's eaten well? Erm, well if she's eaten well I wouldn't give her a treat; if she hasn't eaten well, I'd be more likely to say 'I'll cut up an apple for you' (yeah) do you know what I mean? Whereas a treat's more a kind of on top of everything else (yeah), very well then I would do a healthier snack; I give her a piece of cheese or, and put it with an apple and I make the snack like that.

I: So more like snacks if she's not eaten very well (yeah) to kind of build her up and then, yep (yeah) ok, great -laughs- Is there anything you find difficult with regards to feeding your granddaughter?

P: Erm, no she's got better, when she was a bit younger she used to throw food, it used to drive me mad (laughs) because she used to you know throw, throw stuff when she didn't want it (yeah) but I think that was just more a kind of an attention seeking, it wasn't particularly about the food do you know what I mean?

I: Yeah, what would you do in that situation?

P: What would I do? I would just tell her 'you're not supposed to be doing that'. I probably would stop whatever we were doing because it means she'd had enough, we'd put it away (aha). She's the kind of child you, you can't pay too much attention to that because that's all you'd get (yeah), head down, do you know what I mean so I (yeah), I can ignore it because she's my grandchild not my child [00:10:00].

I: -laughs- Do you think that makes a difference?

P: Oh absolutely, I probably would've ended up shouting and carrying on with my own children (yep -laughs) with a grandchild you kind of think 'oh you know, doesn't matter' and I would be much more worrying about money when my children were small, worrying about, do you know 'you've made a mess of that' and you know (yeah) and that kind of thing, whereas I don't worry about that now.

I: Do you think that's because of, do you think it's the grandchild/grandparent relationship, or something else or?

P: Well I suppose I'm more relaxed about everything, I'm not ?? [sound cuts out 00:10:36] so, there's a lot more pressures just as a mother there's a lot more pressures and you don't even know that you're shouting and carrying on (yeah). Do you know what I mean because everything else, when she comes here I've only got to pay my attention on her (aha), I haven't got to look after all the other kids and you know that's, it's just less pressurised. So I would be much more laid back-

I: Yep, great, so it's a lot more relaxed.

P: Yeah, though I've always been very relaxed around food actually, I have a, I'm never one of these when they say 'oh they didn't eat' and I wouldn't offer them anything else, I would let them get on with it, so.

I: Yeah (yeah) and just let them, wait until the next meal kind of thing?

P: Absolutely yeah, that's the way I was brought up probably [both laugh]

I: Are there any foods in particular that you might struggle to feed your granddaughter?

P: Well I wouldn't touch meat to give her so, if she wanted meat, if there was meat, my husband would have to handle that (yeah), I wouldn't touch it. That doesn't really happen but sometimes he does occasionally have something like a pork pie, that looks nice to them, not me (no -laughs) I wouldn't touch that you know he'd have to touch that but actually yeah, ham, he might sometimes have. I don't have anything to do with the meat or fish or anything.

I: No that's, I'm vegetarian as well so -laughs- I understand [both laugh]

P: Well I can't cook it, I've never cooked it (yeah) I wouldn't know how to cook it neither.

I: Are there any kind of foods that she would just outright reject?

P: Erm, yeah, there are, I can't think, let me think what...erm...when she's kind of a bit moody so, she used to really like the little cherry tomatoes (aha) and she'll say 'no, I don't want those' when I put it on her plate but I think probably next week she might. I'm trying to think, there's nothing that I think oh she hates.

I: Yep, would you continue to offer say cherry tomatoes to her on another occasion if she-

P: Yes I would (yeah) yeah (if-) she's only three, I think she just says things you know, she's only three.

I: -laughs- Yeah, on a whim -laughs-

P: Yeah on a whim, yeah.

I: And what strategies do you use, you've kind of talked about some of them but if your granddaughter completely refuses to eat?

P: Erm, well I wouldn't be too worried really you know when they're healthy (aha). I might be worried because her mum might come back and say 'oh what did she have for lunch' and I'm thinking oh, I left her to it, um, (laughs) um, strategies? I probably um, I'd wait really, if she wasn't hungry at the time if it was say lunchtime and if I thought she wasn't well or something (ah) I would probably encourage her to drink milk (yeah) and then think maybe later on she'll be hungry if she's not unwell.

I: Aha, are they generally successful strategies in terms of you know, child feeding I guess?

P: Yes, yeah, I'm not, she's not, she's not a difficult child to feed. Some children are difficult aren't they so, mm.

I: Yeah, can I just get you to confirm hold old is your granddaughter?

P: She's three.

I: Three, perfect, thank you. Would you change anything about the way you feed your granddaughter in an ideal world? (No). No, that's fine, do you and your granddaughter's parents agree on what food and drink should be provided?

P: I've never discussed it (aha), erm, but she, but nothing's ever been said to us and when [granddaughter's] mummy comes in from work, she's a [job omitted 14.42] and she eats with us, there's never any comment about it, but my children were brought up vegetarian (yeah) so to them it's just what, it is food that you get at home. But that child's father, my granddaughter's father (aha) he is a big [00:15:00] meat eater and they've come to a compromise that he will get the children to eat meat. She's vegetarian still (yeah), he wants them to have a range of foods and then decide (aha) but we don't serve meat here like that to guests (that's yep -laughs-) not here, do you know what I mean?

I: Yeah, so you kind of have complete um, what's the word- autonomy over your granddaughter's diet when she's with you (yeah) yeah, perfect. Recent-

P: Sorry, I was gonna say I've never done things like bought them sweets you know from the, penny sweets, I've never bought them anything like that, I suspect if I did things like that I might hear something (yep) but I'm only guessing (laughs) you know what I mean, anyway sorry, go on.

I: No, that's fine. So recently there's been a lot in the media about sugar and fat consumption in young children and I just wondered what your thoughts are on this in general?

P: Well I'm a big, I agree on sugar (aha), I had terrible teeth growing up (aha) and I don't, for all kinds of reasons, I don't know why because we didn't get many sweets or anything but my teeth were so I've always been very conscious of that and so yes I agree, I don't know why loads of things, but even I eat, I wish they'd just reduce the sugar, I'm sure we'd still eat them (yep), those things, do you know what I mean you could put less sugar in. What was the question sorry again?

I: You're kind of covering it, so it was just um, recently there's been a lot in the media about sugar and fat consumption in young children-

P: Um, yeah, sugar I'm all into the sugar, I am ?? [16.40] with fat with my own children, there was a big thing that they shouldn't be having skimmed milk before an age, I can't remember the age; I only gave them skimmed milk [both laugh]. My children, I have three children, they were all really fat babies (laughs), I breast fed them for a real long time (yep) and they had that, they were just fat babies, you get fat babies don't you (yeah) so I was really worried thinking they won't, you know, all this fat they want to give them, so I didn't used to agree with all the fat and they always had plenty of energy and things so I don't, I'm not so big on the fat thing, I know they need it for energy (yeah) but they never seem to lack energy. Now I have the same with my granddaughter, now she's a petite child (aha) and now you kind of feel inclined that you can give her all these things but I would still worry that, I wouldn't want to make her fatter than she should be normally if you know what I mean?

I: Yep, no, definitely. So on a kind of different note- grandparents are often described as spoiling their grandchildren and I wondered what your thoughts are on this.

P: Erm, -sighs- I don't, well I, I mean I think I would spoil them with time and there are some things that I would buy, I know probably, that was an earlier question I was thinking about it, that I probably wouldn't have bought for my own and I'll tell you what it is, it's things like smoothies (yeah) would be, I bet if they'd have been around when mine were small I bet I'd be saying 'oh they're too expensive' or something like that, so I do buy smoothies. I used to but I've stopped doing it, you know the little very bland cheese in the red wax?

I: Yes, Babybel or equivalent (Babybel) yep.

P: Yes, I buy. I used, I sort of stopped and stuff but I bought, I had a run of buying those just because they enjoyed them (yeah) and I bet I wouldn't have done with my kids, I'd have thought god, I can be better off with a big pound of cheddar or something (laughs), you know, that's the kind of thing but I wouldn't be one for giving them, I mean we do baking so I suppose that has, is treaty but (aha) not giving all these sweetie things really.

I: Yep, so you're more likely to buy them kind of fruit based items or novelty core foods like cheese-

P: Yeah although I do (in general), if we were out, I would maybe buy, they would, I would buy them maybe sweets somewhere, an ice cream or something like that. I'm sounding like a proper grandmother (laughs) so things like that you know I would buy them an ice lolly or an ice cream (yeah) I wouldn't give them proper sweets of a Mars Bar or stuff like that.

I: Do you think being out and about with your granddaughter varies or kind of changes what you feed her?

P: It would because I find eating out is horrible a lot of the time (yeah), for myself and for kids and I just, it gets on my nerves when they have children's boxes and they have crisps in it and a fruit juice and I'm thinking they only want the box (laughs) so it's difficult, do you know what I mean because I don't want to be paying for stuff that I wouldn't give her normally.

I: Yeah. What do you do in that situation? [00:20:00]

P: Well tend not to buy it but if say I was down at the museum, you know the museum, [name omitted] (yeah) a kid's box and they, so I'd want to buy them a sandwich and they're of course wanting the kid's box (yeah) you know stuff like, I genuinely wouldn't buy it, I'm sort of a meany and then if I had to I'd probably just let them get on with it, if in my head I wouldn't be so happy.

I: yeah, no, fair enough -laughs- Do you think looking after your granddaughter has influenced your own eating habits at all? (No). Even on the days that you look after her (No).

P: No (no, perfect). I carry on exactly the same. The cereal I get is what I eat, so when she comes she has Shreddies (aha) that's what they have because I have it. So yeah, it's the same.

I: So it's more she eats what you eat rather than the other way round (yeah) yeah -laughs-

P: Lunch might be different (yeah) but we generally eat the same.

I: Generally do you eat the same items that your granddaughter is eating when you're eating together (yes) yep, ok. So We're now moving onto kind of the second section of questions and this is around guidance for feeding two to four year olds; so I just wondered have you ever been given any advice on feeding your granddaughter, whether that's formally or informally?

P: No (no). I get, well I mean yes -laughs- you wouldn't think so, I'm a [job role omitted [00:21:34] (aha), I haven't much to do with it but I don't, I kind of think I know what vaguely a balanced diet is so you know, I haven't looked it up and no one's ever told me properly. You gather things don't you along the way and I've never been worried about my children being brought up vegetarian (yeah) because I've never ate fish or meat all my life, I was just an odd child.

I: -laughs- I was the same.

P: I was considered this oddity you know, anything different and I'm still here.

I: -laughs- Even vegetarianism has changed quite a lot since then.

P: Yeah, yeah so, no I, so no one's ever told me formally and I've not sought it out, I don't seek out to find out about it.

I: Yeah, do you think it's just life experience?

P: Well I think there's a bit more to it than that I'm sure and I suppose if they had difficulties like constipation or you know they were getting eczema or if there were things I probably thought were related to the diet I'd probably be motivated to think about it and think oh maybe we should try this (yeah) but you know I'm not so.

I: Where would you go for that information or kind of advice if you needed it?

P: I'd go online, UK site, I'm into UK sites. I'd look up NICE Guidance or, do you know what I mean I would know a more reputable site to look up really (yeah) ?? [00:23:00 talk at same time]

I: -laughs- You've got to say that because you're a [omitted 00:23:03]

P: Oh I know, I am.

I: -laughs- Are you aware, so you've actually kind of touched on this but are you aware of guidance for feeding two to four year olds?

P: There probably is, yeah, I would be aware that's somewhere for people (aha), health visitors I suppose would look at it.

I: Yep, is there any advice or support you would find beneficial with regards to your granddaughter's eating?

P: No, well i suppose that answer may be different if she was not thriving or difficult to feed or was only into you know, one food group or you know those variations of things children go in for, because she's not, she's no different to- my own children weren't like that and the other grandchildren haven't been either so I've not been faced with that difficulty (yep). I'd have to look it up or ask for help.

I: Do you think she's just as easy to feed at home as she is with you?

P: I'd say she, erm, yes I think so actually yeah. I was gonna say that sometimes she might play them up but that's more to do with general behaviour at the end of the day when she's tired, other than that she's at her house not my house (yeah), she's the same. Quite relaxed here, she would have a tantrum, she's quite happy to kick off if she needs to [both laugh].

I: Like most two year olds (yeah, yeah). So you've kind of touched on this in saying the internet but if you were to be provided with support or advice for feeding your granddaughter, how would you like to receive it?

P: In a written form, I'd want them to send me the article or whatever it was, the guidance and I'd pick it up on the email [00:25:00] (yeah), that's how I'd want to get it.

I: Great and you'd prefer that to media campaigns or face to face sessions.

P: Well definitely face to face sessions I think is a waste of people's time (yeah); I can look at, I can read (laughs). I can't you know, it wouldn't suit everybody, if they were really struggling and feeling very upset about it then that face to face is really valuable (yeah). Dealing with it in a kind of academic way or a practical way then you know I'm happy to read it myself.

I: Yeah and you've talked about this saying NICE but I'll just ask again in case anything else comes up but who would you like to receive that guidance from?

P: Well I definitely want it from something you know, evidence based thing and in terms of advice in terms of behaviour and food, again I would want it not from a magazine, though I do, I would, I do read that thinking that's quite interesting (aha) but in terms of if I was personally affected I would want it really from a recognised outfit where there was research involved and some more kind of academic robustness, you know really.

I: Yeah. Do you find that easy to find on the internet?

P: Yes I do (yeah), I do get side tracked a bit with some things that aren't so good but look a bit more interesting but yes, I would know where to find it and I do find things on the TV interesting and I do get taken in by that, you know that Nanny, little kids on steps or whatever you know these kinds of programmes (yeah- laughs) but I don't you know, if I thought it was going to influence my behaviour, I would then, that might spark something; I would then want to find more out about it, I wouldn't just start doing something because the nanny on the television told me (yeah) because that's-

I: You'd want to read the evidence behind that-

P: Yeah I'd have a look at it and try what other people you know, a bit more around it, I wouldn't just start instigating some, you know something from the media, but I suppose the media it does make people think doesn't it and triggers ideas in people's heads and things. I'm not knocking that, I think it's a good way to reach a lot of people.

I: Yeah, even if it was just to get people to go and look further into something (yeah) isn't it (yeah), kind of yeah. So if you were to change how you fed your granddaughter did you think it would influence anything in your own diet?

P: [pause] Well I suppose if I made an assured effort to be really healthy, then I'd have to get rid of all the things like the snacks that are in the snack box. If I didn't have a snack box I'd still have grandchildren so I suppose that's one thing because I know I'd eat them when they're not even here (laughs) for me, do you know what I mean because I know they're there if I was thinking I couldn't be bothered to make a proper lunch and I was rushing out. So I probably would, if I got rid of all that it would change those things for me, it would make me eat more healthy.

I: Yeah. So do you think that looking after your grandchildren you eat more snacks because you have the snack box?

P: Yes (yeah, ok). That does include things like nuts though as well you know like (what's-) that's nuts, that's the only, have handfuls of nuts which again, in themselves aren't unhealthy but they are because I might have too many of them.

I: -laughs- How do you decide- kind of speaking about that, how do you decide on portion sizes for your granddaughter?

P: I don't, I just, I just, if it was like almonds, that's my current thing, so I might tip a few in my hand, that might be about seven (aha) and then I think ooh, four for you [granddaughter] do you know what I mean she's small, a bit smaller than mine (yeah). Mind you if she ate the four and asked for more I would give her things like more nuts. They're quite filling I think for little ones though.

I: Yep, are there things that you wouldn't give her more of?

P: Well I wouldn't give her more biscuits, I wouldn't give her, if we were bake, baked cakes which we do I wouldn't, if she wanted another one which she will always say she wants another one, I wouldn't give her another one (yeah). Just those kind of things I wouldn't give her another one.

I: That's great, thank you. Are you part of any networks of grandparents, whether this is formal such as an organised group or informal- friendship group?

P: Not really no, I have other friends who are grandparents and we occasionally talk about children but there's nothing that we do regularly together or you know, nothing formal anyway.

I: Yeah, do you ever discuss aspects of feeding with kind of your friends who are grandparents?

P: They do with me, actually I've got one very [00:30:00] good friend and they've got very fussy eaters (aha) so um you know who survive on I don't know, like three types of food it seems to me, but I will listen you know what I mean but you don't want to say 'ooh, mine's really good, you know I've no trouble'. So but I do hear about that- fussy thing, well she's got one, two grandchildren, one's really, really fussy and one loves everything (yeah); the boy is quite difficult.

I: So you kind of chat about that but without really-

P: Yeah and she says about the, you know how the mother makes smoothies and puts, I don't know, hides I don't what, spinach, there's all this hiding stuff to try and get some nutrition into the child, yeah.

I: Do you think they find being able to talk to you in a group helpful?

P: I think they're a bit like me actually because I don't think they're that bothered because they think oh th kids will grow up, they're just being nice to their children, fussed (yeah) because they realise that he's growing, they're just trying to be empathetic to the parent (yeah), so telling me, she's only telling me as a bit of information, she's not bothered (laughs) do you know what I mean? She said 'oh you know he won't eat this and he won't eat that and we have to do this and we have to do that' but she's telling me as a fact, not because she needs to share it or she's worried.

I: Yep, no that makes sense. Let me just move onto the next page, so if there was some kind of new advice on feeding two to four year olds, how willing would you be to change how you feed your granddaughter?

P: Well I would um, well I would look at it because if I was you know, if something came out that I don't know that, I dunno flour or gluten or, if something new came out like that that I was, that was quite new to me and I really felt that it was quite kind of robust evidence, then I would change yeah, I would change it. I just said gluten then but I don't know why I said gluten but you know how things suddenly come and they became the thing that they shouldn't have (yeah) but I would take notice of that, yeah.

I: Yeah but after doing more research by the sounds of things and-

P: Yeah, yeah, I wouldn't just change yeah.

I: Do you think there are any barriers that would prevent you from engaging with support or guidance?

P: No, I speak English and I can read and write, I can't think of any barriers and I would be you know I would listen to advice that was coming out. So no, not really, can't think of any barriers. It's different if you can't, you know if English isn't your first language or you know, you're not literate in your own language or you're so immersed in a culture that's different, they might be barriers but I don't think I have that.

I: No, that's great. So that was actually my last question but before we finish I wondered if there was anything that you would like to add, whether it's relevant to anything that might have come up or just something that you've thought of or anything.

P: No but I hope you get somebody to interview whose child is difficult, or you're gonna have a very -laughs- do you know what I mean, I think it's much better for you if the child was difficult and or lots of problems [both laugh] People will be kind of struggling a wee bit.

I: Yeah, although it's interesting though isn't it because it could be that children are a lot more easy to feed with grandparents, you know you never know.

P: Yeah, I ?? [sound cuts out [00:33:38] young child who really, she would just eat anything do you know what I mean and she used to go on and on and I'd just think my god, this child and she was a sturdy little thing, she's now like a complete rake (yeah) so I worry about feeding her too much because she wouldn't stop. I would say 'you've had enough now' you know what I mean (yeah). So they're all, you've got to change your tactics to the child because all the children are different aren't they (yeah, definitely -laughs) I'm a bit fatist, I wouldn't want them to be fat, no.

I: Yeah and you adapt your kind of feeding.

P: Yes I would, I wouldn't want to be, you know I can't bear it, I see toddlers who, not toddlers, when they're proper, four and five years going to school it breaks my heart.

I: Yeah, yeah because they've got no control over it really.

P: No, I think you know it's not because it's first child and the second child actually would both be the type of children who would eat and eat and eat and so they could've easily become like that (yeah). So yeah i do think yeah that makes me sad.

I: Yeah definitely, it's definitely child dependent as well isn't it because some aren't bothered about food at all -laughs-

P: Yes exactly, yeah, but also I think the attitude of the parents; my very good friend from school she, well she had trouble breastfeeding which I think is always tricky (aha) with her child, oh my god, it was just a, you know [00:35:00] it was they were dancing, all they did for seven odd years was dance around that child's feeding habits do you know what I mean and she ruled the roost (yeah -laughs-) I think-

I: Kids ?? [talk at same time 00:35:11] up on it don't they and just ?? -laughs-

P: Yeah, I don't think I was that ?? as a child but no one took any notice of me (laughs) 'don't be like that' and they just ignored me [both laugh]

I: They didn't feed the fire kind of thing -laughs-

P: No there was too many.

I: So I'll now stop the recording (ok) but I'll stay on the line just to talk about a few things so, I'll stop the recording now-

End of tape.

10.35 Appendix 35 – Study 3 Transcript 8

Name of Transcription: Interview 8 Name of Transcriber: Becky Brown

Date: 14/10/2020

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:25]

I: First of all I'm just going to ask you a few questions about how you feed your granddaughter. So just in general as a broad sort of start, as a grandparent what is your role in feeding your granddaughter?

P: Well I normally pick her up in the morning and sometimes she's had breakfast and sometimes she hasn't. If she hasn't had any breakfast I'll ask her if she wants something which is usually toast, because that's what she likes. And then I give her her lunch, and I usually offer her something what I know she likes which is either a ham sandwich or spaghetti bolognese or little pieces of ham, little pieces of cheese with some quavers. And then she generally goes home at 4 and has tea at home with mum, dad and her other sister. So I usually take her back for 4.

I: Perfect. And does she have any snacks throughout the day as well?

P: Er yeah, she knows where they are all kept unfortunately [Smart] so she'll go in kitchen get a bag of quavers or she'll go to the fridge and get a fruit shoot and she'll find in there, there's normally bags of buttons and things what's open, she only has a few or she'll point to something if she's seen something new like Haribo jellies and she'll say can I have them for a snack. Very rare she has a sandwich as a snack, a snack is only like bits like that, chocolate or she likes fig biscuits, so she'll have fig biscuits

I: oooo I like those as well

P: If she finds them. Odd for a child but they're her favourite

I: I love them

P: They're hers believe it or not

I: Yeah, it's an unusual child one though isn't it

P: It is yeah and when she sees them she's like oooo can I have two, I go yeah. So yeah that's her snack.

I: Great thank you. And so you've kind of touched on this with your granddaughter's likes and dislikes but how else do you decide what to provide your granddaughter?

P: Er depending whether I think she's really really hungry I'll offer her spaghetti bolognese because I always have it in freezer but generally I know she won't eat a lot, she's a very very tiny eater and I know exactly what she likes, and she knows exactly what she likes so I don't just offer things that I know she's not going to eat, I always tempt her with oh do you want a nice ham sandwich, because she likes lurpak butter, so she likes bread and butter. Which she don't always have at home, erm but mostly it's just little picky things, and sometimes I have to follow her around and pop em in her mouth because she won't you know eat a lot, it's difficult.

I: She forgets to eat.

P: Yeah, yeah she gets busy playing and then I just pop a piece in her mouth.

I: And does that work as a strategy? She'll eat it then?

P: Yeah it does yeah yeah

I: Perfect, thank you. So in, this is kind of a general question, but what do you think a healthy diet looks like for a child aged 2 to 4 years old?

P: Well I would think, offer em like, because other grandchildren that I've had, and my granddaughter is not keen on this, but they've been done by baby led weaning so it's been pieces of carrot, little pieces of cheese, little pieces of bread and butter and cucumber and little bits of tomato. I do offer them to my granddaughter but she's not bothered. So I would do that, with all my other grandchildren they've had that sort of start and they've enjoyed it, but she's not, she's not into that. No. I don't like it really, but nothing I can do, I have to give her what she'll eat. If she's offered it, because I have it sometimes, she'll say can I have some, I'll go yeah, she'll go no I don't like it. So that's how that goes.

I: But she tries things

P: But that's what I think it should be but yeah, not everyday crisps and everything but when she's having her little meal that bulks it out for her, but with others I wouldn't. I wouldn't offer them as a lunch option

I: Yep. Do you eat with you granddaughter when she's eating, or is it separate?

P: No I eat with her, sit at the table

I: Is that for all meals and snacks? Or just meals?

P: Erm....well if, yeah just meals really, snack I'm usually sat in the room and she'll come and join me, we'll be together but for our breakfast we'll sit at the breakfast bar, and if it's lunch we sit at breakfast bar again and she'll usually bring a toy to sit with her, it's either a doll or a particular teddy. And they will have lunch as well. [picnic] so you know she will sit for a while and that. But snack she'll join me sat in chair, she'll just bring it to me, and sit and eat it.

I: Aww that's nice. And is it the same, so if you're eating breakfast or lunch with her, is it the same food you'll be eating, or is it different?

P: Er different because it'll usually be toast if she's eating breakfast erm she does like dry cereal, but I don't have children's cereal because it wouldn't be profitable for me to keep a box of big cereal, so I usually give her toast with lurpak on which she loves. She does loves cheese spread sandwiches as well, so sometimes she'll have a cheese spread sandwich for her breakfast, dairylea. Other than that we have ham and little tiny chunks of cheese, she likes me to cut it up I know

I: She has a picnic with you and her dolls

P: Yeah that's what she likes, food yeah, picnic food

I: And how does what you feed your granddaughter compare to what you fed your own children?

P: Erm...a lot different, a lot different when I look back. Because it, you weren't, erm what can I say, even though I did it in my training, even when I did my training as a nursery nurse it still wasn't like it is now, baby led weaning I'd never heard of it until I've had these grandchildren. So offering that sort of food to a baby would have never entered my head and mine had jars, baby food jars which I don't give. Even toddler food and I'd always do them a dinner, but unfortunately I was a chicken nugget and smiley faces mother. When I look back, and baked beans and toast and beans and things like that. Totally different to what I give my grandchildren. [yep] absolutely yeah.

I: Do you think that's er, where do you think that awareness has come from?

P: Erm well as I worked back in schools it was becoming more apparent then so as my children grew up, it were like ooo I'd have never done that, but I do now. But it's mostly I think, what's influenced me mostly is my daughter-in-laws, saying what they eat, especially the one that started with the baby led weaning because none of the others in family had never done it it were like woah what you doing you don't give

babies chunks. But they've come on leaps and bounds so they've really guided me on a different path. So that's the path I'm on now.

I: Great, do they often give you, kind of, guidance on feeding their children, when you looked after them?

P: No, no to be honest, I've got carte blanche really, but their ways are coming through because sometimes, you know, one of me son's his wife's a vegetarian, so she lets them have meat but a lot of meals are vegetarian because that's how it is. So erm I you know I sort of take guidance from them, make sure I've always got pasta in because she'll just have pasta on of em. As I say, and that's what's really changed my way of doing it. But they don't mind, one of me son's will say oh mum no don't let her have any more sweets she's already had a little bag but me others they don't bother because kids don't really ask for it. That's the difference. The one that can't have it often, asks. The ones that can have it all the time don't.

I: So your granddaughter doesn't often ask then, because she's

P: No she goes routing round, my granddaughter, because she's the one that's had me the most easy, because I haven't worked since looking after her. So it's free and easy in my house she can come and go as she likes. Whereas the others don't know where I keep things, she's more aware, because she comes more often now that I'm not working.

I: And does she use, kind of, does she portion herself or how do you decide on a portion?

P: Erm well usually, if it's a bag of quavers, she'll tip, she always gets a dish and tips the whole bag in the dish. But if it's sweets erm no she'll accept quite a few out of a sharing bag, if I say go get a dish and you can have some and I'll put a few in, she will accept that and not ask for more. That will do, whatever I put in that bowl at that time. That will do for her. Whereas me other one, wants more you know can I have them all, can I have them all, and I say no we have to share. Reduce the portions.

I: And how do you decide how much to give?

P: Erm....well I usually think for a start their tummies aren't very big, so I look at what I'd probably have and think you know, I cut a little chunk of cheese and cut it into little pieces and think that's a lot for a little girl so then I dividing it up and looking. I always give them a child's plate, I look at how much is on the plate, to govern whether I think it's a big portion or I think it's a normal portion. I never overface em, I never over feed em. I'd rather them ask. So that really governs it I think what I'd have and then I reduce it down.

I: Yeah. Okay and you say she's kind of a erm she might not finish things on her plate is that right?

P: No she doesn't always, no, sometimes I'll follow her round but if she says no I don't want it, then it's a no, if she says I do and she'll usually finish it. And I know although she's not three yet, she's pretty good at saying yes and no and meaning it, not no no no and then having it. It's a definite answer what I get.

I: Great. So, in general what do you find easy with regards to feeding your granddaughter?

P: Er that it's finger food, that I'm not having to warm anything up, because she's quite happy because it's only her lunch she's quite happy to have little pieces of ham and cheese, that she can eat with her fingers and it's easy, I can sit her down and eat that without have to guide spoon feed her, because she can feed herself but it's not as easy warming a meal up. And then if she doesn't want it, I'm stuck with it, whereas finger food I can cover it over and she'll say ooo where's me dinner and I'll uncover it and she'll finish it. So that's the most convenient thing about it.

I: And when you give things like spaghetti bolognaise do you find that easy to give her as well?

P: Yeah, again if she wants that, then she will eat it all. But other times if she says I don't want it, I don't bother. I've heated stuff up in the past thinking she'll eat that and she'll say no I don't want it, then you're throwing it away because you can't keep reheating it. So that's the difference between the both. She does like it, if she wants it. I know, anyone would think she were 15.

I: I know, yeah. Two and a half going on 15.

P: she knows what she wants yeah.

I: And if she does refuse to eat what kind of strategies do you use?

P: Er well at first I usually find out if she's had breakfast, I like to know what she's had before she's come to me. And so that governs whether I do a lot of persuading. But generally if she doesn't want to eat, I don't force it. And they know that because they'll say to me what did she have today and I'll say well she had a bag of quavers and she wouldn't have anything else, and they'll go don't worry because she'll have her tea. They're not worried, I'm not worried, because she's well, she's a nice size, she's not fat by any means but she's a nice size and she's healthy and I always say to them you never starve a child when they are well because they'll always eat when they're hungry and drink when they're dry and that's really my theory, because my own weren't big eaters. I worried about me first one, but I never did the other two because I thought well he's alright and he hardly ever ate anything. But he must of done because he's grown. You know, I don't generally try and cajole her unless she's had nothing then I will offer her more options, but as I said it's either I want it or I don't and that's how the line goes.

I: And if she's had nothing and you offer her options is she normally quite receptive to that?

P: Yeah, yeah, sometimes. Sometimes she'll be persuaded. But it's usually a definite I want something or I don't and as I say seen as I'm only having her for the day, if it were going into the evening and she was still refusing I suppose then I would get a bit more concerned. But I know when she goes home and they're all at tea table she'll eat with them, they do a dinner most days, so I know she's going to have something [perfect] That's my theory.

I: Seems to be working. So is there anything you find difficult in regards to feeding your granddaughter?

P: Er if I think she should have something, and she definitely won't then I think, I say oh come on, come and try this, but no mostly, it's either yes she wants it, no she doesn't and I know now by having her regularly what it means. But if they said to me, she's eaten nothing since yesterday and then she eats nothing when she's with me, I would say to them you have to look at what's wrong with her because she's eaten nothing and nothing at yours but like I say she's healthy and she's a nice size so I don't worry, and I don't worry them with it unless she'd stop eating. But like I say no child will ever starve. That's my theory. They'll not starve.

I: When they get hungry they'll eat

P: Yeah when they get hungry they'll eat. Yeah yeah

I: Erm and do you ever offer her novel foods or new foods?

P: Er sometimes in fact she said, her mum had said she liked them dairylea lunchables where you make your own little tiny things, so I bought one, I bought one, it's in my fridge for next week so I'm going to see what she'll do with it, see if that will encourage her because she's making her own little ones. Will she mess or will she eat. I've yet to find out.

I: Watch this space

P: She knows I've bought it her. But I do try her with new foods if she says oh I like that, I had cheese and piccalilli sandwich on Monday when we had her this week and she was only having these cubes of cheese so when I was still eating my sandwich as she'd left the table, and she comes and says can I have some, I said yeah would you like it, but I said it has got pickle on. I don't want to put it in her mouth and her go eugh. And she looked at it, and she went no I'll not like it. But really, but it were only because it was pickle I didn't make her have it.

I: Yeah quite a strong flavour.

P: Yeah it is yeah. But she will try new foods, but usually if it gets in her mouth and it's a no no it's straight out so you know.

I: And is there anything you do once she spits it out? What would your response be?

P: If she spit it out? It wouldn't bother me, she could spit it anywhere, I'd just say ooo you don't like it, give it nan nan, put it in a tissue. It wouldn't be an issue. Because usually if she does, very rarely do that, she'll go sorry nan nan I sorry, and I'll go it doesn't matter you didn't like it. She's frightened I think that I'm gonna shout, well not that I ever do but the reaction would be *gasps* what you done that for. But I just say it dunt matter, doesn't matter and just wipe it up.

I: At least she tried it.

P: Yeah she tried it yeah.

I: So is there anything that you would change about the way you feed your granddaughter?

P: Erm no not really, I'm happy really now that she will eat, even if it's just ham and cheese, it dunt matter to me because I've only got her the one day and I'm happy with that. Erm...I would never go out and give her like chips in a tray or anything like that because she doesn't really like them. So I'm happy with her having, and if I take her anywhere I always make a little lunch box up and I'll usually put tiny squares of sandwich made with cheese spread and cut up into little 1cm square and I'll put them in a like container and so when we go anywhere and I think she's going to be hungry I just pop one of these in her mouth at a time so I know she's eating. She'll eat them. I'll always do bitesize, because my daughter in laws laugh at that, I always cut food up regular for em, it's always regular shape, regular size, so they don't choke with it and they can easily pop it in their mouth. They laugh because they don't. [Both laugh]. They'll just put something down in front of them and expect them to eat it, and I'll go cut it up, do it in little squares she'll eat it then

I: Yeah I think kids like it when it's small don't they

P: Yeah pop it in mouth yeah

I: So you've mentioned this already, but I'll ask again incase anything else comes up, but do you and your granddaughter's parents agree on what should be provided?

P: Yes, yes, it's totally left to me erm she knows I will look after her properly and I will feed her appropriately so I do get free reign really, with all of them, with all my daughter in laws, once they're in my care. They'll often ask me advice because I've done my nursery nurse training and done it for a lot of years. They'll come to me for advice and they do take it, with anything, bringing them up. But even with food, you know, they'll say what do you think and I'll say yeah yeah I think that's a good idea. I don't have much problem with my daughter in law on agreeing with things.

I: That's good. It's good to have a good relationship with them isn't it

P: It is yeah, oh it is yeah I know that.

I: So recently in the media there's been a lot about sugar and fat consumption in young children, and I just wondered in general what are your thoughts on this?

P: Er I do see it, er and it dunt bother me because I don't use a lot of that in my cooking, but I do see what they are saying about how much there is in fizzy drinks and things like that which I very rarely have in my house anyway. I'm really, because I carried weight all my life, not excess but I am overweight I'm very conscious of not having fatty things, greasy foods erm takeaways anything like that and fizzy pop which I do know and I'm very loathed to buy coca cola which I know is splashed all over having loads of sugar in it [yep] so I just don't buy them, so in my house the opportunity for the children to eat them isn't there, but

in general I do think there is a problem. But the main thing I think is the problem with snack food when you go out, and buy a sandwich, a drink and a bag of crisps you rarely can get a sugar free drink in that deal, and that's where I think the problem lay. Where all these drinks are to get a diet drink you're really asking earth, there's diet coke, normal coke, but I don't like coca cola so if I go for that sort of a meal deal there's no drink for me unless I have water. So I think there's a lot got to be done for that. What is available all over, even in pubs, you go in a pub and ask for a diet drink you'll get diet coke, rarely do you get offered anything else. Or diet tonic water.

I: Yeah you don't really see diet lemonade very often do you

P: No and I don't like coca cola, so if I want a drink with that I'm stuck with diet coke. And I think that's a problem with children, I do.

I: Yeah definitely. Yeah, so in terms of, we've not really spoken about drinks, in terms of drinks erm what do you kind of have in the household for your granddaughter?

P: Well I er we do have which I'm going off the idea, we do buy fruit shoots, which are convenient when I'm going anyway to take in my bag, just so she's got a drink, but I do buy sugar free dilute orange and blackcurrant. And that's all I have generally in my house. So but she always brings her own in her big drinking bottle with like all the go at the moment with her name on. But she never wants that she wants mine, but because I had fruit shoots for the holiday which we went away in August, there's still some left, so she now goes in their gets a fruit shoot, but wants it emptying into a glass and has a straw, so I'm going to move them because it's just a waste of money putting a fruit shoot into a glass to have a straw with it. I know.

I: When she could have squash

P: That's her thing at the moment but I only ever have dilute in and sugar free.

I: Yep. Perfect thank you. So erm grandparents are often described as spoiling their grandchildren, just wondered what your thoughts are on this?

P: Er I don't, well I'm saying I don't think I spoil them, I don't spoil them overindulge what I do is provide things what they wouldn't get at home, er but not overindulge. Like I always take those children away for me eldest son when he had the one that were autistic because they never got anywhere because they can't take him anywhere, he's really bad and he's getting to the stage that he'll be living in soon, he's 10 now, but he's a problem. So I've always took them away. Now people will always say what you take them away, ooh that's a bit you know, and then they can have what they want when they're there. But when I say what they want when they're there, it's not like here you are have a bag of crisps, have a bag of sweets, go to shop, go to amusements, they have whatever they need while they're on holiday. Which is we do go out, we do go out for the day. Er obviously they eat the same food as I'm eating. So I don't think I overindulge them, but they have things what parents can't give em. And that goes down the line now with all me children and me grandchildren. If they're having times hard like it is at the moment, erm one of my granddaughters needs a computer so for college, so I've said when you know what type you want I'll buy you one, but I don't know what you want. She's one of five and it's going to be difficult for them to suddenly pluck out their money 300 pounds for a computer so. But I do know sometimes they'll say oh they want to come to your house because you spoil em, but I don't get that said now. I used to to, but not anymore, I think they realise, biting the hand that fed em. You're not gonna say that anymore, yeah.

I: Yeah, definitely. So would you say you'd rather spoil with kind of experiences or necessary items, you know, kind of computer for your college rather than food?

P: Yeah I don't spoil them with food, not at all, I never do. I'm not one of them that turns up with a bag of sweets when I go, I'd rather er say to them do you want to come out, or do you want to come with me, or to the park or anything. I'm not indulging in things like that items no.

I: Perfect, thank you. Erm I just wonder how, if looking after your granddaughter has influenced your own eating habits at all?

P: Er no I don't think it has really, doesn't have any impact on mine, er other than I make sure I have something whereas I probably wouldn't. If I didn't have her in my house at lunchtime I probably wouldn't stop and have a lunch, I might have something on the go or not have something til 2 or 3 o'clock in afternoon. But I always look around half 11, 12 o'clock think is she getting hungry. Er she must be because I've had her since 8 o'clock so then you know thinking about having her lunch. But it doesn't influence me what I eat. But I wouldn't eat anything in front of her, I wouldn't sit and eat say ice cream when she's having cheese and ham. I wouldn't do that. So I'd always eat what's relevant to her having something. Or if we did have ice cream I'd wait til she'd totally eaten it and then say would you like some ice cream now and we'd both have it then so erm you know, I gear it round her what I do.

I: No, that's great thank you. Erm and I don't know if there's anyone else in your household, but does erm having your granddaughter in the house influence their diets?

(there was a momentary blip with the system. And reconnecting chat)

P: Yeah I do have a partner, whose stays with me, but it doesn't influence him because he's gone to work early in a morning, 4 o'clock and by time he comes home my granddaughter is usually ready to go home so it doesn't really affect him at all.

I: Yep, perfect. So we'll now move on to the second stage of the interview and this is about guidance on feeding 2 to 4 year olds. So in kind of broadly speaking, have you ever been given advice before on feeding your granddaughter whether that's formally or informally?

P: No.

I: No. Even from your daughter in law or son?

P: Er no, not really, no.

I: Erm are you aware of any erm guidance on feeding children aged 2 to 4 years old?

P: Oh yeah, the one that does baby led weaning but I don't see them very much because he's in the forces so but I do know she's got books on feeding because I do read them when I'm down there but she's never said will you read that or influence ya, you know.

I: Nope

P: Haven't had anything formally done. No.

I: So would you say kind of most of the things you know about are kind of books on feeding?

P: Most things are what sorry?

I: Are in book form? So kind of guidance in books?

P: Oh yeah, if she's had these books, and I've had a look at her books but nobody has said to me this is what you should be doing for her, I've just gone on what she likes or doesn't like, and what I know meself is basically healthy or not healthy I wouldn't push it you know.

I: And where do you think your kind of knowledge comes from on that?

P: Erm media obviously. Er and having me own in the past, and having me training in the past. I know things have changes an awful lot er from when I did me training which were 50 years ago. I know, but it has changed a hell of a lot so erm. But as I've picked it up from the media and daughter in laws making passing

comments like the baby led weaning which were like woah what you doing, never known it. You know, I remember her sending a picture first off, she's having her first food, I was like what cucumber and chunks of cheese no way! But yeah and so I've really picked it up from them, we've never sat down and had a, it's usually really what do you think, she likes so and so, well give it her or it's usually that sort of topic that's brought feeding up.

I: Do you think that discussions about baby led weaning, influenced what you provided?

P: Yes, definitely yeah. I looked at it in a different way. Like I say when mine were born and we fed ours it were all mashed up food, spoon-feeding. Whereas so much easier to do other, woah so much easier. Put pieces on and they pick it up I mean blimey that was novel for me to watch but it's opened me eyes yeah.

I: What age did you start looking after your granddaughter from as a grandparent?

P: Oh erm initially from she would have been 9 months, because she did go back to work for a little while, but then she gave it up. But I've had her formally one day a week ever since I retired, well from February this year er apart from through lockdown, couldn't have her obviously. But yeah I've had her

I: Do you think the kind of ideas of baby led weaning influence what you feed your granddaughter, you know now, since you started having her, since February?

P: Yeah definitely, yeah.

I: Perfect, thank you. Is there any advice or support you'd find beneficial with regards to feeding your granddaughter?

P: Erm no not really, I think because she's got access to all foods in her diet, because her mum's not vegetarian and they have everything, they have a varied diet, I think she's got all options there. But if you don't like something, you don't like it, it's there if she wanted it, but if she doesn't she doesn't eat it obviously. So no I think I'm quite happy with everything and finding out what I need to know about what she likes.

I: Where would you go if you needed to find something out? If you needed to

P: Er I'd look on internet first of all, then I'd look at book, yeah. I'm always on internet googling things, if I don't think something, you know. Anything about upbringing children or what's wrong with them, or why they're not well or why they've got a spot, or I'm always at it. But they usually ring me and say they're not very well, do you know what's wrong with em, and I go I don't know but I'll have a look.

I: Is there anything in particular around feeding, you talk about the internet, that you know of kind of where you'd go for advice or where you'd go for support or?

P: Er No I mean there's lots of pages. I mean there's things like mumsnet and I know Heinz have got a website, in fact I think all of them have got em but I don't go on them formally. I go on mumsnet somethings just to look at advice but not generally on feeding other things. But no, no I think as I say I know what I'm giving em is relatively healthy

I: Yep. No that's great. Erm so if there was something that you wanted kind of support or advice with how would you like to access it, how would you like to receive it?

P: Er Well if they were my children it's different to how I am as a grandparent, as a grandparent I would like it in paper form, because I like to sit down, read it, digest it. I will read it on internet but I do like things in paper form that I can refer back to so I would want a package, an advice pack from maybe erm Health service, what do you call em, that used to come out, baby people what do they call em

I: The health visitors or?

P: The health visitors yeah, I'd look there first of all, if I could find anything. Or pick it up in shops like boots, if any information on it. But I do like it in paper form, which I know isn't the way of the world.

I: No I think, that's still used isn't it, quite a lot so. How do you feel about kind of face to face er sessions or information?

P: Yeah that's as good, but I do like to back it up with paper so I can refer to it again if I need to know anything. Yeah face to face would be fine. If I needed to know anything, and I do sometimes ask people I have asked advice before on baby foods, when I've had them as babies. Like I say we had jars which you don't see as much of now, a lot of it's finger food so erm I would ask if I thought is that suitable or not suitable or advisable.

I: And who would you ask, just as an example?

P: Well I'd go, it'd have to be a Boots, a Boots I'm sure I wouldn't go in a normal little chemist and ask for that. I wouldn't go to health visitor because obviously I wouldn't be able to get in to see a health visitor, not my place to see doctor about it but yeah I'd ask Boots.

I: Perfect, thank you. So if there was something that er you know you'd read and you thought you'd change how you fed your granddaughter, do you think it would change or influence your own diet?

P: Er not really no, I know what I should have and what I shouldn't be having so I don't think it'd influence me. Unless it was a definite, come out that if you eat lurpak you're gonna die soon, I wouldn't eat Lurpak. Something, or this is really bad for you and it's been proven blah blah blah but other than that I try and eat carefully and not over indulge on one thing.

I: Nah makes sense. Erm are you a part of any er grandparent networks, whether this is formal so an organised group or informal such as a group of friends?

P: No. No.

I: Would you find in beneficial at all?

P: Er I might, I mean I exchange things with my friend verbally, but we're not on a group on here, but she's got grandchildren and I've got grandchildren so we talk about what we do and ideas and pass them on to one another. But not a formal group no.

I: Do you ever discuss feeding with your friend?

P: Yeah, oh yeah. We send videos to one another with ours eating and what they're doing. What they're up to yeah. Yeah I enjoy that, we share that information often.

I: Do you ever discuss kind of advice with her or

P: Yeah we do that, yeah. I usually send a video to my granddaughter's mum when I've got her either of her doing something, I send her two or three little videos during the day when I've got her. One might be having us lunch together or one might be her just sat doing something or anything, but I usually send em little videos to make sure they know they're alright that's just assurance really yeah.

I: Your phone must be full.

P: I know, it is. I know. About 300 videos of them yeah.

I: So if there was erm some sort of new guidance on feeding 2 to 4 year olds, how willing would you be to change what you fed your granddaughter?

P: Er I would be willing, I'd be open to change if I thought it was better yeah definitely

- I: Do you think there are any barriers that would kind of prevent you from engaging with any support?
- P: Er probably because I'm not directly my granddaughter's mother, it might not extend to grandparents this whatever they're wanting to do, it might just be parents directly involved in the feeding. That would be the only barrier if I were like one stage removed from being the main one.
- I: Perfect, so that was actually my last question. Erm so before we finish though I wondered if there was anything you'd like to add based on what we've been talking about or anything else you feel might be relevant?
- P: No I don't think so, I think we've touched everything what. I know, I'm happy with, I've enjoyed it yeah actually
- I: Oh thank you, I'm glad you have

10.36 Appendix 36 – Study 3 Transcript 9

Name of Transcription: Interview 9 Name of Transcriber: Becky Brown

Date: 23/10/2020

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:15]

I: So we can now begin kind of the interview questions, and first of all I'm going to ask you about kind of how you feed your grandchildren. So as a grandparent, what is your role in feeding your grandchildren?

P: Erm...my main role is feeding the ones that come to me for childcare regularly on a weekly basis. And erm I feed them, often er a sort of second breakfast when they arrive, snacks erm and a lunch. And very occasionally a tea as well, but that is occasional.

I: Okay, great, thank you. And how do you decide what to provide to your grandchildren?

P: Erm...I'm aware from talking to their mothers what sort of thing they like and don't like erm we do occasionally buy particular things for them but on the whole we give them what we have in rather than buy special food for them.

I: And is that the same with drinks as well?

P: Erm....it is now, at one point when they were younger we used to buy full fat milk for them, which we don't normally buy, but we don't do that anymore because they don't drink much milk so they get what milk we have in. Which is often oat milk actually now.

I: Yep and erm so you look after 3 of your grandchildren aged 2 to 4 years old, do they all, do you provide them with all the same?

P: Erm...I might present them with the same food, which isn't quite the same as providing I suppose. They're also not here together at the same time. That's the other thing, just to point out. Erm...of the three of them, one of them is erm a much fussier eater than the other two.

I: Are they older or younger just to clarify that one?

P: The fussiest eater is the oldest one, so he will 4 in December erm and all the others, the two others that you're concerned with plus the fourth one that's a bit younger are all actually very, eat pretty much anything you put in front of them.

I: Great makes it easier for you. Erm...so in general what do you think a healthy diet looks like for children aged 2 to 4 years old?

P: Erm...well variety I suppose, would be a key thing. Erm...and trying to, one of the things I try and do is ensure we have what I think of as healthy snacks in because they are very keen on snacks. I don't remember snacks being such a big thing as they are now. But they're always asking for snacks. Erm...we have a lot of fruit in, we have a lot of fruit in anyway so we're not specially buying fruit in for them but we have a lot of fruit and a variety of fruit. And erm again two of the three of them eat a lot of fruit and are flexible in the fruit they eat. Erm...and the other one does eat fruit but in a slightly more fussy manner. So a lot of fruit erm...some biscuits erm...they quite like making biscuits so that's something we sometimes do. Erm...make biscuits with them. Erm...we don't have cake in, we don't much anyway, but we wouldn't because my granddaughter would eat nothing but cake if we had cake in. I think that would be fairly clear to say yeah. Yeah. Erm...and then erm...if we're providing a meal then we'll, it'll usually be a cooked meal, so it might be, be a lunch, so it wouldn't be kind of a big roast dinner or anything but it would be maybe eggs, fish fingers is a big favourite, everybody likes fish fingers. That kind of thing. Sorry they all drink water, we never have juice in, we don't buy juice and we never have it in and they don't ask for juice erm...so the most likely drinks they get here will be water or milk, and milk will be nearly always now be

oat milk, though we do tend to have a bit of semi skimmed dairy on hand, but they'll drink oat milk happily. So that's the drinks.

I: That's the drinks yep. Perfect, thank you. And how do you decide how much to provide to your grandchildren?

P: Erm....well with the fish fingers, this is a really good example of this, so a number of fish fingers will be cooked, my husband will say erm...he's looking at me now because he's heard me, I'm going to have a fish finger sandwich when this is all over and then sometimes he doesn't have a fish finger sandwich because the children have eaten all the fish fingers that he's cooked. So how do we decide how much to cook, well it depends whose here. So certainly with erm with my grandsons erm it's almost like we can't fill them, just carry on cooking more fish fingers and they'll eat more fish fingers, so it's difficult, erm...I do think it's a difficulty feeding toddlers because there can be a lot of waste in feeding toddlers. And although those two have got good appetites, I would say that erm sometimes we will prepare too much food for them, er and then you're throwing it away thinking oh I should have only scrambled two eggs not four eggs, or whatever. So I think it's very difficult to decide how much to cook yeah.

I: And is it the same with your grandson and granddaughter?

P: Erm...well I would say although we're not doing any care for them here at the moment, er that they, although they are brother and sister they are very different in the way they eat. My grandson picky, fussy, will play around with scrambled egg on a plate but he's keeping an eye on what might be coming later, might it be something more exciting that I'm going to offer him afterwards. Whereas, my granddaughter will just eat whatever's in front of her, and she'll try anything, she's just turned two. This week and erm she was tucking into sauerkraut at home last week very happily.

I: That's an unusual flavour for a kid isn't it

P: She will notice what's on other people's plates and want to try it. My grandson will erm behave as if you are clearly out to try and poison him by suggesting he might like to try something on your plate. Very different.

I: No that's great. Erm and does, and how does what you feed your grandchildren erm compare to what you fed your own children?

P: Erm...that's a really good question. Erm...I think we're not vegetarians but we like a lot of [There is an issue with the sound dipping out, it's referred to in the interview]. We're not vegetarians erm but like a lot of people we eat a lot less meat than we used to do. So mine and my husband's diet now is vegetarian with occasional fish and meat, and that would be typical of what we give the kids. But looking back at our feeding our children we were eating a lot more meat then so they would have definitely had a lot more meat, but we've always been quite big vegetable eaters. So our three, we have three daughters, two of whom are involved with in grandchildren and one of whom I'm not, she's not in [Name of place]. So we've always, erm had a lot of vegetables, offered a lot of vegetables, encouraged a lot of vegetable eating. Erm...I'm just trying to kind of think back to when they were little, it's a long time ago now.

I: You mentioned snacks earlier does that, is there any differences there?

P: Well, snacks, I don't know, I don't remember kind of constant asking for snacks but maybe I'm kind of forgetting it, maybe it was there. Erm...they just seem a really big thing now, I mean we went for a walk yesterday, not to do with the child care, but we went for a walk in the woods with my grandsons and it was as soon as we got out of the car, my grandson said can I have a snack now erm as if the effort of getting there meant he needed an energy boost. I don't quite remember as much snack demanding or asking. When we did, we did packed lunches for the kids at school for quite, they had school lunches some of the time but they did have packed lunches for quite a bit as well. And I found that very taxing, trying to make a healthy packed lunch was very taxing. And they'd always be something in that, that I think you would say was a snack, I don't know maybe a little kit kat or something I don't know. That kind of thing. And because I don't know what happened when they got to school, maybe they ate the kit kat and didn't eat anything

else, I don't know. So erm... drinks I think it would be very much the same, we have never ever had fizzy drinks in the house, maybe at Christmas we might buy a bottle of lemonade or something, but we're not fizzy drink drinkers and we've never ever had fizzy drinks or given fizzy drinks to the children. Erm... we don't now and we didn't with our own children. Oh and the other thing that occurs to me just saying that, erm is er cereals, breakfast cereals. Because we always had quite a big thing when the kids were little, about sugary breakfast cereals. And the girls will talk about this now, actually, that they will say how much they used to hate it when they were little that we wouldn't let them have sugary breakfast cereals. And now they appreciate the effort we put into that, it's quite interesting that, because they used to love going to my sister's house, in school holidays and things like that, because their kids did get sugar puffs and whatever.

I: Coco pops and all of them

P: All that kind of thing. And it was an absolute treat. And the only time we bought them was when we went camping and we used to buy one of those variety packs. Erm and that was the big holiday treat, honestly the big holiday treat is coco pops. That's what we did. So yeah there were things were thinking about as parents all those years ago, which I suppose erm a lot of those thoughts are still there when we're feeding the grandchildren. I think we're probably a bit more indulgent at times with the grandchildren than we were with the kids. Especially if we're having them for a erm...like the sleepover that my grandsons came to for example. That's a bit of treat, and that's different to me to regular childcare. If you're doing the regular childcare then I think it's important that you erm have some sort of healthy eating ideas about it and also that you try to stay in line with what the parents would be feeding them at home. And that from my point of view that I would try to keep any treats in check to some extent. If it's something a bit different, if they're coming here for erm a special treat at the weekend or something then there might be a different attitude to food then maybe.

I: So do you differentiate between treats and snacks?

P: Er yes I suppose I do, I haven't had to think about this exactly like this before, but I would say if they are asking for a snack when we're doing the childcare I would be looking for something on the healthy side so it might be some fruit or it might be breadsticks, breadsticks are a great snack. Erm...breadsticks and raisins. Erm a treat would be definitely a bit of cake or a chocolate biscuits or something like that, and that would be something they wouldn't get on a routine child minding day.

I: Yep. And when they are with you and they ask for a snack, what is your response when they ask a lot or?

P: Erm...well I probably try to weigh up whether it's reasonable or not. So erm if they've just finished eating something and gone out to play and two minutes later are asking for a snack I might say no. It's not snack time yet, or ai might try and say we're going to have a cup of coffee in a minute and we'll all have a snack then. Erm...so I wouldn't just have a pot of snacks that I was doling out of constantly. I'd try to keep some sort of control. Not always easy though.

I: Do you have a kind of feeding routine then? You kind of mention that you know it's not time or

P: Erm...a routine, as sense of time you mean? What do you mean?

I: Time, or erm kind of activity structure or something like that. Do you have a routine in feeding during the day that the grandchildren are used to?

P: The ones we do childcare for I would say when they arrive here for us to do the childcare erm if they are wanting food then then we treat that as breakfast, they do get up incredibly early so to be fair they probably had their breakfast a couple of hours before they arrive here. So we might then at that point give them something that could be constituted as, or described as breakfast, so that might be some toast erm occasionally make some porridge at that point, but that would be unusual. Or maybe some fruit, but it would be roughly speaking something you could describe as a breakfast. And then we would go and do something, we'd do an activity, it might be inside it might be outside, we might go for a walk erm and any snack then would be hung onto that activity I think, sort of at the end of that. Right now we're going to have a snack. So we'd walk through the woods to the café and we'd have a coffee at the café and you can have a snack

here. Or if we're in the garden I'd go and make a coffee for us, so that would be that. And then lunchtime is lunchtime, and that would be a lunch, and you'd know that was a lunch and not a snack. I would say.

I: And is there anything in particular you find easy with regards to feeding your grandchildren?

P: Erm...easy, I think because three of the four of them are actually very easy to feed, so they'll eat pretty much anything and they won't make a fuss about it that's, that almost doesn't need any thought, you don't need to think have I got something in for lunch I know that we do, we've always got eggs, we've always got cheese, we've always got loads of fruit, we've always got fish fingers in the freezer. I don't have to kind of do a lot of worrying about what I'm going to feed them. Erm and with the fourth one, the fussy one, erm I don't particularly worry about that, to be honest, really because I just put in front of him what I'm going to put in front of him. There are things I wouldn't put in front of him because I know it would just be a complete waste. But things that I know he eats, he's just started eating broccoli, which is interesting. But he's just learned to like broccoli. So I don't get too wound up about what we're going to give them, because I always feel we've got, we don't need to worry about it, we never say oh we need to go shopping because we've got nothing to give the kids for lunch tomorrow.

I: Yep, so is there anything you might find difficult or challenging?

P: Erm...Well the snacks, think I've talked a lot about them, I do find them challenging at times. Erm...and I think your role as a grandparent is quite interesting there, because I think that the being an indulgent grandparent is what being a grandparent is about, but on the other hand when you're doing childcare for them I think that's something you've got to be mindful of. Erm that and there's tension there I think between being the indulgent grandparent and being the person actually contributing to the daily care of the children. So I think that can be a difficulty at times.

I: Do you separate it out in a way? You spoke about having kind of having treat evenings which is not, which is separate to your childcare, do you think you do separate it out from?

P: Erm...I think I do in my head, I don't know whether the children would see that or not. They probably think I'm incredibly inconsistent, we just never know with nanna whether she's going to make us eat an apple or give us a bit of chocolate cake. I don't know, quite the answer to that, I think I would have erm...I'd have an idea of doing that, but whether I'm successful I'm not sure.

I: Yep. Erm...keeps them on their toes. So you talked about how your grandson refuses to eat some things but what strategies do you use if any of your grandchildren kind of refuse to eat?

P: Erm...I think it would differ erm, from child to child so if for example my grandson had been asking for food and then we'd made my grandson some scrambled eggs and then he said he didn't want them erm, then I would be really pushing my grandson, I'd be saying look you were saying you were hungry, I've made you these eggs, you said you were hungry I want you to eat these eggs, and when you've eaten these eggs blah blah. Erm...my other grandson you'd have a slightly more erm...I think more coaxing, but actually that's something his mother is trying to avoid doing the coaxing bit, but we've all been through stages of trying to coax my grandson a bit more or try something and she's, she's using this learning to like thing at the moment. Which has actually been moderately successful with him. So if he says he doesn't like something, what she will say is it's just that you haven't learnt to like it yet. Erm..you know mummy likes it, Daddy likes it, your sister likes it but you've not learnt to like it yet. And that has been quite successful, I gave you the example of the broccoli with one or two things, but he will be persuaded just have a little taste and then say oh no I haven't learnt to like it yet. Or just occasionally he does learn to like it, so I might take that approach with him. We're probably erm if we were feeding say my granddaughter his little sister, which we're not really doing at the moment because of the circumstances but if we were and we were thinking oh what have we got for lunch, oh we've got a little bit of curry left from last night's supper, erm and I might say to my granddaughter do you want to try a bit of this and I would might say that to my grandson but I wouldn't expect him to say yes erm so I do have a different approach I think.

I: Depending on the child's behaviour

P: Yes yes, you don't know, you've got to be careful I think. I don't want to get to the situation where my grandson thinks oh well she never offers me any curry so it must be something about curry that isn't right for me. So I think got to try and even though you know the outcome is going to be different with a different child take the same approach.

I: And before when you said you might coax your grandson, what, can you describe what that would involve a bit more or?

P: Erm...I think in the past I would have done a little bit of this, well just have two spoonfuls and then you know you can stop. And actually I really try not to do that now because it's quite counterproductive I think because he's quite, he can be very stubborn about it, he's much better if you just kind of ignore it really, and say there's your lunch you've got that, I'm going to do something else now and then you'll come back and sometimes he'll have eaten some and sometimes he won't, and I'm not sure the coaxing bit but I've done it, have done it. I can hear myself coaxing in a way that I then think ah why did I do that, that didn't work.

I: And if he didn't eat anything is there anything you'd, what would you do then?

P: Erm...well it would be unusual for him not to eat ANYTHING, which I suppose is because I'm offering him quite a limited range of stuff most of which I know he will eat, he does eat, he eats at home and he will eat at our house, erm and if I've done some say scrambled eggs and some toast and erm you know, maybe some baked beans. And he's maybe eaten the toast maybe one mouthful of scrambled eggs but he's eaten the baked beans, so I wouldn't make anything of that, I wouldn't make an issue of that now, I might say are you finished, do you want anymore and he might sometimes ask for more. Ask for more toast or beans erm....and I would give him more if he asked for more.

I: Just specific items kind of thing, rather than the whole. No that's great

P: It's very, it's a bit sad sometimes I think. Erm....so when, I can't remember when they came, [talks to husband in the same room]. But I can't remember what we fed them that night, they've only been together, they're cousins of course, but they've only been together for sleepover this one time. There was certainly a time we made pizzas with them, and my grandson had such a good time making these pizzas and erm decorating them, we made a little face on the pizza with cheese and olives and things erm and my other grandson will engage in stuff like that but then he won't eat it, which I think is such a shame. He'll look at it as if to say it's beautiful but I'm not going to eat that, no no no. So that's, I feel that's a bit sad, and that why you end up, even if it's counterproductive sometimes trying to persuade them to eat things in a way that's perhaps is not helpful but it's because you're feeling a bit sad that he's missing out

I: Has he always been fussy or?

P: Erm...has he always been fussy, erm he's more, he, I think he's more fussy than he was. They moved to [Name of place] erm from [Name of place] about 2 years ago it would be erm, so obviously I didn't have as much direct involvement with him but I think he was less fussy erm in those, perhaps that first year after being weaned, he was less fussy and he got more fussy but he had quite a difficult time after they moved here, things were quite difficult around the time my granddaughter (his sister) was born, she was very poorly, she was back in hospital for a bit and it was very unsettling for him. I'm not directly saying that that was when he became fussy over food but he did become more fussy during that period of being two to three is when he became very fussy about food. He went to erm...day nursery for a while, after he came to [Name of place] erm where he had lunch and he actually then after the first couple of weeks refusing to eat anything at day nursery, I think he got quite hungry eventually and started to eat things which he'd never eaten before but that didn't last very long. He didn't stay at that nursery for all sorts of reasons for very long, that was a bit difficult to sustain. I think he, sometimes when you're a busy young mother and you're trying to feed a whole family, including during lockdown they had both step children, a 19 year old and a you know 2 year old and you know a nearly 4 year old, it's quite a challenging family to feed er and I think that just putting food on the table that you knew people were going to eat was probably an important thing.

I: Yeah makes life easier in a stressful time. Is there anything that you would change about the way you feed your grandchildren?

P: Ooo erm...I think I don't have any kind of, I might think oh it would be lovely to make them lots of homemade delicious things, but I actually don't get too worked up about that now. I'd probably be more worked up about that as a parent when I was trying to feed the children and thinking oh I'm opening too many tins or packets here I should be cooking more, erm I'm not so worried about that now. And I think it's different because it's limited, it would be different if we were feeding them every day during the week, we had them 5 days a week erm I might think differently about it.

I: That's actually my next question

P: We did actually we got a new freezer recently, which meant we had to sort out the old freezer and in there we found, and this is pre-lockdown, found all these little portions of spaghetti bolognaise, well it was lentil bolognaise sauce actually that we'd made for the children. So I do do some cooking for them. But probably could do more.

I: So you've kind of touched on this already just now but I'll ask in case there's anything you want to add, if you were caring for your grandchildren on even more days how do you think this might affect what you feed them?

P: I think I'd definitely plan it more, definitely, because it's at the moment only one day a week, I'm very, erm, like I said earlier on there's no need to plan it, I know I've always got food in that they will eat, I don't need to think what we going to give them for lunch because I know the standard stuff we have in will do. That wouldn't work if we had them everyday, erm I think even kids who like fish fingers might say what again. Can we have something different please. So we'd probably do a bit more planning, if we had them more regularly. I'd like to do more cooking with them when we have them, because they do really enjoy that erm and it's always successful, well in every way other than the chaos that is created, but successful in terms of them enjoying it and usually wanting to eat what they've made, except with my grandson and the pizza. Erm but erm yeah that's something I'd definitely try to do more if I had them more.

I: And do you and the parents of your grandchildren agree on what food and drink should be provided?

P: Er yes I think we do yes. Pretty much. Erm I'm just trying to think if there's any areas of disagreement. I don't think there are really, no really disagreements no.

I: Has there been discussions about it in the past?

P: Erm...before we took over regular, before we did the regular childcare we'd still have them over here quite a bit but we would have, because we see them quite often we know what they eat we know what sort of things their parents are feeding them, but we might have checked things out a bit. I'm thinking particularly the milk say, that when we were looking after them before lockdown that we needed to know what milk they drank and that's why we were ordering the full fat milk and erm my daughter was bringing, actually bringing, I'd forgotten this but she was bringing express breast milk for my grandson for us to give him. So there would have been a discussion about that but not particularly I think actually thinking about it, I hadn't thought about this before but I think the girls both erm trust us to feed their children well I don't there's been an issue really.

I: So would you say you've had kind of full autonomy about what you provide while you're looking after them?

P: Yeah I would say so. Yes.

I: Great, so this is a bit of a tangent but, recently there's been a lot in the media about sugar and fat consumption in young children and I just wondered in general what are your thoughts on this?

P: Erm....well sugar is something that I think we are quite aware of and concerned about. Erm and I think that's one of the things, well for example when I mentioned making biscuits to you before, because I am concerned about the amount of sugar that is in some of the biscuits you can buy. Also, separate point actually, very concerned about the plastic packaging that biscuits come in, so that's another good reason to make things rather than buy them. So I'm aware of all that, having said all that because we are feeding them a small fraction of the amount of food they are taking in over the week, it's not a major issue. We're not providing a big percentage of their diet erm so I wouldn't get too worked up about if they did have something with me that was higher in sugar. If we go out for example erm if we go for a walk in the woods and we go to [Name of café] erm and my grandson asks for a hot chocolate which is his absolute favourite thing, I wouldn't get too worked up that he'd had one drink that was higher in sugar and fat perhaps than was ideal. We're quite wary about low fat things because we know that often low fat things are often low fat because they've got other substitutes in them that you wouldn't want them to have anyway. In general we're not low fat eaters. I don't know I'm rambling a bit now.

I: No that's great. That's covered it I think. So grandparents are often described as spoiling their grandchildren, what are your thoughts on this?

P: Erm...yeah we've touched on that already a bit, I think it's a kind of natural thing to do, and we definitely do it at times, but I do think. My own view is, my own personal view is when you are child carers then it's encumbered upon you just to manage that a bit really, you want them to enjoy coming to you but you don't want to create problems for your children in that as soon as they get home they say oh nana let's me do this, or nana let's me eat this or whatever erm so. And I think you can enjoy and get pleasure from your grandchildren without necessarily spoiling them in the sense of just indulging every whim I suppose.

I: Yep, no that's great. Do you think looking after your grandchildren has influenced your own eating habits at all?

P: No.

I: Erm....has it influenced the eating habits of anyone else in your household?

P: Erm...my husband eats more fish finger sandwiches now than he used to.

I: He wouldn't have had those otherwise.

P: Er not very often, it wouldn't be a common thing, in fact we went 20 years without buying any fish fingers if I'm honest. So he's had about 20 years of wishing he could have a fish finger sandwich and never mentioned it before and now we're buying them he's yeah yeah. I haven't really thought about it before but I can see that we're going to have a discussion about fish finger sandwiches after I've spoken to you. Seriously I don't think it has really influenced the way we eat, or the way the household eats.

I: No that's great. So we're now moving onto the 2nd section of the questions and this is about guidance about feeding 2 to 4 year olds. So have you ever been given any advice before on feeding your grandchildren? Whether that's formally or informally

P: Erm not really no. I mean informally I suppose what I've already referred to which is the girls might say oh you know my granddaughter's still having full fat milk can you give her full fat milk that kind of thing, erm, I might erm of kind of check things out a bit like this is what we're thinking of giving them for lunch is that okay. Kind of thing. But nothing formal no.

I: And are you aware of any guidance for feeding children aged 2 to 4 years old?

P: Erm...not specifically no. We're quite aware, as a household, I'd say we're quite aware of erm food and what we consider good food, and we read quite a bit about food, so we might read newspaper articles and fat or sugar or whatever erm probably generally try to keep fairly well informed about things, but no not specifically feeding children.

I: Is there any advice or support that you would find beneficial with regards to your grandchildren's feeding or eating?

P: Erm...no, I don't think so, not at this stage. I think I feel that we've perhaps, we were aware of food issues and the importance of good food erm from the point that we became parents ourselves maybe before that, so this isn't just something that come upon us as we've become grandparents. We've always felt that food was important and healthy food was important. Forgotten what the question you asked was

I: Is there any support or advice you'd find beneficial?

P: No I don't think so.

I: That's fine. If you were to want or be offered advice, how would you like to receive it? In what kind of format?

P: Erm my preference usually would be to read stuff. So I think it would be, it would be that, it would be getting something that I could read which would either be a book or a booklet or an email attachment erm and actually I can imagine if my daughter said to me oh I've just seen this really interesting article about feeding toddlers mum, I'd say oh sent it to me I'll read that. So yeah that would be my preference.

I: And who would you, you kind of touched on this I guess in terms of maybe an article, or something but who would you like to receive that guidance from or that information from?

P: Erm...I don't, I'm not sure really, I can't imagine anything at the moment more formal in terms of receiving that information I tend to, with a lot of things not just eating but other things as well my daughter's who are both involved in a lot of local groups both actual groups before lockdown but now virtual groups or facebook groups or whatever. And they do a lot of alerting me to stuff like that, and that might be to do with interesting things to do, did you know there's this on in [Name of place] next week you might want to take the kids there, that kind of thing, activities or it might be toys or games or books or it could be to do with food. Erm...but they're probably my main source of that information really, I'm not going out and actively seeking that myself, but if they say oh you might find this interesting mum then I will certainly read that.

I: So kind of recommendations from the parents of your grandchildren, but the sources could be articles that kind of thing?

P: Yeah they could be.

I: if you were to change how you fed your grandchildren how do you think this might influence your own diet?

P: Erm...I suppose it might erm in that if I had bought something in especially, it would depend what it was, but if I'd bought something in especially for them I can imagine that we might then end up eating some of that. I'm trying to think of an example of that, if one of the girls said oh really really want them to eat some meat because I feel like they are missing out on some vitamin or mineral by not eating meat I might go buy some meat. We wouldn't throw the meat away we'd probably eat some of the meat. It kind of seems a bit farfetched to me that, because I know we're all basically on the same page in terms of the food we're eating. So I can't quite imagine a scenario in which I change the way I'm feeding the kids and that changes for me too.

I: Guess trying to think from what you've said, er you bought full fat milk when they were younger, would you have then drank full fat milk or not?

P: Erm...in exactly that way that I just talked about with the meat really, if we'd bought a pint of full fat milk and they'd been here and they'd drunk three quarters of a pint of full fat milk and we've got quarter of a pint then I might have put the full fat milk in my porridge the next morning say. I wouldn't pour it down

the sink I'd always try and use it. But not in a kind of sense of oh I really like this full fat milk I'm going to change to full fat milk. More in a try and avoid waste way I suppose.

I: Yeah, no that makes sense. Are you part of any grandparent networks whether this is formal organised or informal group of friends who look after their grandchildren?

P: Nothing formal, I do have friends who look after their grandchildren. But nothing formal no.

I: And are there any aspects of feeding children that you might discuss with friends?

P: Erm...we have discussed aspects of it at times. I've got one friend, actually it wasn't her grandchild now I think about it, it was her child who was a very fussy eater so we talked a bit about my grandson and she talked about her child whose now an adult and said you know this will pass, and I'm sure that's right, I believe that myself. So not, I haven't sought advice from anybody but kind of going for a walk with somebody it's one of the things you talk about is the grandchildren so yes little aspects of it might come up in conversation.

I: And do you kind of find that beneficial erm kind of chatting it through, having a network?

P: Yeah it's always helpful to talk things through I think, and hear from people who have had the same problem or erm has found a solution or erm just have a moan sometimes, moan about it. I think it's useful. I think if I felt erm I really needed some advice about something I don't know whether, trying to think what I would do, if I was really worried about something what would I do would I say oh I'm going to wait til I go for a walk with [Name of friend] and then talk to her about this or would I say I'm going to do a bit of reading around this issue. I think if I had a real concern about something I would probably have a bit of a multi-pronged approach about it, I'd certainly want to talk to the mother about of whichever child it was about it, erm I might do a bit of reading around it as well and I might talk to friends.

I: Yeah a kind of multi-aspect

P: Yeah, yeah

I: Get as much info as possible. Erm so how willing would you be to change what you feed your grandchildren?

P: Erm...I would be willing, yes I would, erm if I felt it was something really inappropriate they were asking me to, it's hard to imagine that because I don't think they would but if I did feel that's really inappropriate I might be a little bit reluctant. But if one of them said to me er we've discovered that my grandson will eat ham, right, erm would you like to try him with some ham, I'd probably go and buy some ham. Yeah. So I would be willing to change.

I: And try things out

P: And try things out, if they, I'm not sure what I would do if they tried to make me to do something that I thought was really inappropriate but I can't think what that would be really.

I: It sounds like you're on the same page with regards to feeding anyway

P: I think we are really, I think we generally are yes yeah.

I: Do you think there are any barriers that would prevent you from engaging with any support?

P: No I don't think so, I mean I think the main barrier would be me thinking I don't really need any support with this erm...that sounds a bit churlish really but. I wouldn't want to join a group or, there would be no reason for me, I've got enough support with you know with people that I'm directly involved with if I want to talk about something or I've got a worry about something. So I don't feel like I actively need to seek any support.

I: No that's great. That was actually my last question. So thank you for that, but before we finish I just wondered if there's anything else you'd like to add erm that you can think of that you might feel relevant based on what we've been talking about?

P: No I don't think so really. It's been interesting, it's always interesting to be pushed into sort of reflecting on something in a bit more detail, that you do without thinking about it erm and to actually have a little bit of thought about why you do things. So I've found it really interesting to do this.

I: Oh I'm glad thank you

10.37 Appendix 37 – Study 3 Transcript 10

Name of Transcription: Interview Participant 10; PID 4 Name of Transcriber: Abby Constantine
Date: 09/11/20

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:37]

I: So, we can begin the interview questions. So first of all, I'm going to ask you a few questions about you feed your grandchild. So, as a grandparent what is your role in feeding your grandchild and we'll go with kind of what is your role in feeding your granddaughter here because she's the one within the age range?

P: Right so if she comes over to me or stays overnight, or do i sort of take it from the morning, like when she gets up?

I: Completely up to you just yeah -laughs-

P: Yeah my granddaughter still likes to have milk in a morning so I give her whole milk (aha), I always buy whole milk in for her and she likes that warming up in a beaker (aha) so, she'll have it in a cup but she tends to have a beaker. Sometimes she'll have two which I don't mind because I think milk does her good (aha) and such a varied on what she sort of asks us for, I would probably give her something like she likes scotch pancakes, she may have toast with butter. She may even have bacon sandwiches or she'll have boiled egg and toast or bread and butter; so quite varied really.

I: Is this for breakfast, just to clarify?

P: Yeah, yeah not all that together (laughs) yeah, yeah.

I: Just to confirm yeah, just for breakfast.

P: So say she had, she might cereal she'd probably have milk and then she would if she wanted cereal, she would have that and I always give her fresh fruit. So I usually get things in like blueberries, raspberries, strawberries (aha) or chopped up grapes into small pieces or pear even, she likes me to peel her a pear. So she'd definitely a fruit person, she likes her fruit (yeah), though whether she has toast or cereal she'll always have fruit with it, I always put a dish of, I do for both of them (yeah) because they're both fruit lovers. So that would be a typical breakfast she'd have a choice of you know bacon, egg, cereal, toast, scotch pancakes and fruit; so one of those and she'll only eat what she wants to eat, she's not [00:05:00] greedy you know if she's had enough she'll leave it (yeah), she won't have it later. She's pretty good on that yeah she's a, quite a healthy eater I think, generally, yeah she's not, likes most things but I know she does love eggs so she'll have boiled eggs (laughs). So but I always give fruit (great), she'll eat it, all day she'll literally, she loves fruit.

I: Do you provide any other meals apart from breakfast?

P: If she's staying with me all day she might have a mid-morning snack (aha), which she'll probably have fruit which is probably her choice, a banana or something like that. Occasionally she might ask for a chocolate biscuit but not a lot because sometimes you can offer her a bar of chocolate, small bar of chocolate- sometimes she'll have it, sometimes she won't, she'll say 'no, I want fruit or an apple' and then she'd have lunch which she loves cherry tomatoes (aha) so she'd probably go for cherry tomatoes and a sandwich, she likes sliced cucumber, so she do have that. I'd offer her crisps but she doesn't want those, she might have her mini cheddars or she'd probably say fruit again.

I: -laughs- She's a fruit bat! -laughs-

P: Oh she is yeah, definitely and then I'd offer her a snack and obviously a drink each time and if she stayed for dinner she'd have various things. She might want chips, fish fingers and peas (aha) or she might want steak pie with gravy and vegetables, that's just she seemed to like. She might want pizza and salad; so quite varied really or if I were to do a dinner, she'd have a Yorkshire pudding and a bit of meat and a lot of veg. So various

things really you know. She would have beans and toast or egg and beans, things like that. all quite varying. She does like pasta, I'd do it for her but I'm not a pasta lover -laughs- but if she wanted it, yeah I do do her pasta (yeah) yeah so quite varied really. She'd have stew if you did her a stew with something or Yorkshire puddings, she does like that but she doesn't overeat, she just, if she's had enough she'll just leave it so she's generally quite slim and growing tall but she's still a, you know, still cuddly you know she's not skinny (yeah) she's really just nice really (laughs). Yeah and quite strong actually, she's quite strong -laughs- when she's got to pick things up (laughs) if we're doing something like-

I: So generally how do you decide kind of what to provide your granddaughter?

P: Well I might say to my daughter 'what do you think I should get her in?' (Aha) or I'll go and have a look round the shops and think well, sort of know what she likes or I might say 'what would you like for later?' She generally is quite good, she'll tell me what she wants and what she doesn't want.

I: Is that from a free choice or is that giving her options kind of thing, generally?

P: I'll give her a few, few options yeah (yeah) yeah. I'm not one of these- 'you'll have that and that's it' no, because I'd hate that (laughs) I know when I were a kid what was put on the table, you ate or you left it (yeah -laughs) but um, yeah I'd rather give her and see her enjoying something (yeah) as long as it's a good meal and it's pretty healthy (aha) you know, I'm quite happy to give her what she wants.

I: And how do you decide what drinks to give your granddaughter?

P: She usually likes milk, water or apple or orange juice (yeah). I don't tend to give her dilutes much, I'm not a big lover of dilute things, so I tend to give her either fresh apple juice or fresh orange juice (yeah), water and milk really, yeah.

I: No that's great so, in general what do you think a healthy diet looks like for children aged two to four years old?

P: I think it's got to be sort of quite varied, I think you've, [00:10:00] she's got to have obviously you should incorporate fruit and vegetables into it (aha) but some fibre and obviously certain amounts of fats, I only buy butter, I'll only buy Lurpack butter so but I buy the lighter one (aha). I don't buy margarine or anything because I don't, well it's mainly like rubbish margarine isn't it, it's not very good, I've never had it myself though, I tried it once, that were it -laughs- over many years ago (laughs). So I tend to give her butter and either white bread or wholemeal bread or sometimes 'best of both' (aha). I don't think she's, she doesn't eat an awful lot of bread, I wouldn't say she eats an awful lot of bread but she does like her bread and obviously I think you've got to incorporate fibre into it. She likes potatoes, either mashed, boiled, she likes chips but she doesn't eat an awful lot of them. So I think it's got to be varied all round; your fibre, your protein, small amount of sugar because I think so many foods now have got added sugar in so you, I would never like if she had a cup of tea I would never put sugar in her tea (yeah) or anything like that because I know what it was like, I had sugar as a child so I got two in, up to about aged 11, I could do with losing some weight here [both laugh] when I was about 11, I stopped having, never had sugar since (oh really) yeah, yeah, yeah.

I: It's what you get used to isn't it -laughs- So how does what you feed your granddaughter compare to what you fed your own daughter?

P: I think pretty much similar really (aha) yeah, I mean she'd always, I think my daughter probably would've gone for a few more sweets if she could especially if say my mum was picking her up she'd call at 'Sugar n Spice' and have a 10p mix didn't they in those days (yeah) and stuff, she's, my daughter's [age omitted [0:12:28]] in February but that was sort of thing then, but she still had things like her stews, meat and potato pie, not so much pasta. We always had salads (aha) and vegetables. Occasionally fish and chips or chips, fish fingers and peas, beans on toast, her breakfast (aha), a sandwich and fruit but she'd never liked, she liked tinned tomatoes but she never liked cherry tomatoes whereas both grandchildren now they just eat them, they could eat a box; if I put a box of cherry tomatoes they'd just eat them, the whole box yeah [both laugh]

I: Pretty good snack -laughs-

P: It is, I think it's really, it's got something in, is it lycopene I think in tomatoes (aha), it's supposed to be really quite good for you I think and I eat tomatoes so yeah, they just love them, nice and easy, yellow tomatoes, you know like the golden ones you-

I: The gold ones as well (yeah) yeah, so-

P: So must've got that off me [both laugh]

I: So what do you find easy with regards to feeding your granddaughter then?

P: She's just pretty easy anyway, she's, you know if you ask her she'll tell you what she wants (aha) and it's never rubbish, she'll say fruit or veg or something like that (ha) you know and if she wants a sandwich she'll ask for a sandwich. She is more, she likes a little bit of, she likes cheese, i give her cheese and she'll have ham, thin sliced ham or thin sliced beef or corned beef (aha) but I wouldn't like -laughs- I remember my mum giving me something called chickling, I wouldn't, have you ever heard of it?

I: no, I haven't, no.

P: Oh god -laughs- mum used to like 'do you want to try this?' I must have been about eight or nine- 'oh what's this?' and like you serve it with vinegar and pepper on it and it tasted alright actually (laughs) until I found out later on in years it's intestines (oh!) [00:15:00] and actually it's gross.

I: -laughs- but you liked it at the time?

P: Well it didn't hurt mum because she lived until she was 95 and a half.

I: -laughs- Full of lots of good stuff I'm sure in the intestines -oh -laughs-

P: Yeah but not for me, thank you.

I: No, not for me either (no) is there anything that you find difficult with regards to feeding your granddaughter?

P: No (no) no. I don't- [talk at same time]

I: Are there any foods, sorry carry on-

P: Sorry I was gonna say I don't think there's anything, I'm trying to think that she doesn't really like, you know she's pretty, pretty good you know with-

I: Has she always been like that?

P: Yeah (yeah) yeah, yeah, I mean she'll eat cauliflower, she'll eat broccoli, she'll eat cabbage, she'll eat turnip, she eats potatoes, she'll eat sprouts.

I: -laughs- She's got a very good palate hasn't she?

P: A little bit of lettuce, not so much on the lettuce, she'll eat a little bit of yellow pepper; quite a varied child you know. I'm trying to think what other veg she's, she's had, oh she'll eat sweetcorn you know, most things. Like my other granddaughter, she likes beetroot, she just loves beetroot (laughs) she gets that off me because I do as well -laughs-

I: You can see your influence in both of them.

P: I think so, yeah, yeah, definitely yeah.

I: So are there any strategies or what strategies would you use if your granddaughter refused to eat?

P: What strategies (mm) well I'd think there's probably something wrong if she refused to eat (yeah). I'd probably think she were perhaps not very well and just check her over and ask her how she felt. Generally if she's been not well, she's tended to have been a bit tired and obviously I'd know if she'd got a, I'd check her temperature (yeah) and see if she'd got a temperature and she'd probably say, she's really quite, she'd probably say 'well, I'm full nannan' you know 'I'm not hungry' or she might ask for something different but I wouldn't think, I don't ever really think she'd ever really say she doesn't want it because I tend to space it out, the meal times anyway (yeah), she would say if I said 'are you hungry', she would probably say no I'd think well I'll do it in a little while or something like that. She's really quite sensible.

I: -laughs- And how do you decide kind of how much to provide?

P: I usually use a small plate (aha), a thingy caterpillar cake, er plate you know, that little caterpillar design?

I: Is it Colin the Caterpillar or?

P: That's it, something like that or something and a little knife and fork and spoon, so I'd just put, put her on what I think and just watch how she eats it and then if she's eaten it and she wants anything, I would ask her 'would you like anything else' and she'd tell me yes or no (aha) but I know she'd never over-eat, she just doesn't (yeah), she just will tell you when she's had enough. I mean when my daughter was young I use to help out for a friend who were a medical secretary and I used to look after her little girl and [her son] was in my daughter's class at school, their little boy because there was about three years age difference (aha) and they were, they were shocking to eat, he would only eat lemon curd sandwiches or beans.

I: -laughs- Wow, interesting choice -laughs-

P: And the girl would only eat yoghurts and thin sliced ham sandwich, I couldn't give them anything else, that's all they ever ate (laughs). It hasn't done them any harm though because he's turned out to be a pilot [both laugh] so -laughs- ?? [00:19:30]

I: You're just lucky with your grandchildren then -laughs-

P: Oh god, I probably am yeah, yeah. I know friends what's had more difficulty with their grandchildren, you know they like this and they like that but I think you know maybe it stems from probably from me and way my daughter feeds them and has given them a varied diet you know and introduced [00:20:00] like I used to do my own like food and mash it all up and blend it and give it my daughter rather than too many jars and, jars were alright for just if you're nipping in town and you took them with you (yeah). I think so they get used to the taste and they both like to have a go at like helping (aha) in the kitchen you know doing things so, I mean I could quite easily say to my other daughter, who's 10 'I'm just going upstairs' and she'll 'oh, I'll start getting lunch ready' and she'll wash her hands and (yeah) put stuff in the sink ready, she can do it, yeah (oh great), she knows what to put together.

I: You've taught them well.

P: Well yeah [both laugh] I hope so, none of us are perfect but (laughs) you know I think pretty much well grounded (yeah) yeah.

I: Is there anything that you would change about the way that you feed your granddaughter?

P: No, I don't think so, no (no) no.

I: That's fine, if you were caring for your granddaughter on even more days (mm), how do you think it might affect how you'd feed her?

P: Erm, well I'd obviously make sure she had different, if she was eating like a week obviously varied, so she that she wouldn't sort of get the same thing twice (aha) but i know for a fact she'd ask for tomatoes -laughs- whatever day it was [both laugh] and strawberries and things. It costs me a fortune in strawberries.

I: I can imagine yeah -laughs-

P: Oh yeah, yeah they're expensive and they just like get through a box like nothing on earth. No I think i would still pretty you know, give them a varied diet you know (aha) and if I was to take her out for lunch, she used to say 'oh can we go', she wouldn't necessarily say 'can we go to McDonald's' (aha) she'd say 'can we go to Marks' & Spencer's' (laughs). She likes her little kids' lunches but you know, or I'll order extra sandwich and then she'll have part of a sandwich you know and yeah, she's pretty good and it always gets fruit with it so yeah, yeah. I'm hoping I'm doing the right thing anyway [both laugh]

I: And do you and your granddaughter's parents agree on what food and drink should be provided by you?

P: She, my daughter just leaves it up to me, you know, I'll just say to her 'oh I think I'll, I've got so and so in, shall I use that' and she might say 'oh well I think they'd like this or the other because they had that yesterday' or something and we'll just work it out between us but generally my daughter's quite happy with the type of food I get them in, seems happy, it's similar to what she has at home herself (yep) and yeah, I mean my daughter might do some different things but I don't do them. She'll do carbonara (aha) and I don't like carbonara -laughs-

I: You wouldn't be picking that -laughs-

P: No, no, I'm not, sort of like pretty much plain, English cooking (aha), although I like a bit of Italian (aha). I'm very funny with meat so if I were to have an Indian I would only want vegetable (yeah) and I'm very funny with where I get it from, I'm a bit picky with food like that. I don't eat Chinese food, i don't like Thai food or anything, I'm pretty much plain and easy (yeah) you know.

I: Kind of British meals mainly then and-

P: I think so (yeah) yeah, yeah. I like salads a lot and I like my vegetables and I like my Sunday lunch type dinners.

I: Don't we all -laughs- so recently there's been a lot in the media about sugar and fat consumption in young children and I just wondered in general what your thoughts are on this.

P: I think there's, I think too many people and I notice when I go into the Asda or say Sainsbury's (aha) how much and I notice the bins when I walk past you know like these bins where they put all these plastic bottles in (yep) and I'm thinking good god how many cans of coke do they [00:25:00] get through in two weeks and it's brimming over and I mean as a kid my dad used to have a shop and he used to sell pops, you know Tizer and you know so and I think I used to have too much as a kid, 'til I got old enough to know better (yeah), because it was there but I don't give it to my grandchildren because I know what it, it's like. I don't buy pop, what we call pop and soda in (yeah). I don't give them coke, I don't think kids should be having coke and things like that; there's a lot of additives and things and things what substitute the sugar. I don't have a lot of drinks like that myself, rare, I've got a couple of cokes in, I think I've had them in about a month and they're still there, you know (yeah). So I tend to go for and I know orange juice and apple juice and they do have sugar in but I think if you give it in moderation. They both drink a lot of water. I think it's ok you know, I know they don't always want to be drinking water all the time do they but yet water is good. They both do drink quite a lot of water actually but I think, I wouldn't, I will never buy them pop and things like that in (yep) and I don't really give them, unless they ask and want chips, fish fingers and peas, which is usually garden peas, I don't really do them sort of much fatty stuff. Now if I do bacon you see, unlike what I had as a child- it was done in a frying pan with lard (yeah), I don't do that, mine's done in the oven now although the other tastes better it's done in the oven and I always get like best smoked bacon which is lean and i'll do it in the oven and I don't add anything to it because there's just the natural fat in it anyway and if I do them a fried egg which is rare I use that is it the fry lite stuff? A little spray (a spray yeah), I do that but mainly they'd have

poached egg (yeah) so I'm not adding any extra fats in (aha) and if they want tomatoes they might want tinned tomatoes but they both like cherry tomatoes warmed in the oven.

I: That sounds good.

P: In a tray at the side of the bacon (yeah) and things, maybe a few mushrooms if they fancy them but I don't think not an awful lot of lovers of mushrooms, they like a little bit.

I: Kids often don't do they -laughs-

P: A thing you get used to when you get older isn't it?

I: Mm, definitely, took me a while -laughs- (yeah). So grandparents are often described as spoiling their grandchildren, I just wondered what your thoughts are on this.

P: Yeah, I think we do (laughs). I think most of us do.

I: And how do you spoil your grandchildren?

P: How would I spoil? Tend to buy them things, tend to, well spoil them in a way that you know like to take them out (aha) and talk to them and if they want something on the television that's good it's on and they use my tablet, my granddaughter uses my tablet. I'll buy some toys in for them or we'll do games, things like that like what did I get, it's not Playdoh, I got it from Mark's, it's like dinosaurs and when they were here last week we were doing that, like moulding and do these dinosaurs (aha) so I buy them stuff in, you know to play with and I like to spoil them with clothes when I can afford it but I don't think I, and yeah my granddaughter likes though Kinder Eggs, it's really the toys I think she likes (aha) so she might have one of those once a week off me and [my other granddaughter] will have something else (aha) but I don't think I over-do it with chocolate or anything you know because I know, I once did buy my [other granddaughter] a big bar of chocolate a few weeks ago and I thought [00:30:00] oh I'll get her that and then she can have it in and have it over several days and she turned round and says to me 'nannan, I don't want, just buy me a small bar' (laughs) Right! Should but you a small bar and here's me thinking it'll last you in the fridge (laughs). So, I talk to them a lot and have conversations and spend time together (aha) I know that's, that's not spoiling, it's just normal grandparent, silly things and little [other granddaughter] she'll, I didn't know she was videoing me for Tiktok and stuff like that [both laugh]

I: Oh, you're on the internet now -laughs-

P: Oh dear so yeah, you know, do little things you know and-

I: Yeah, activities and yeah (yeah). So-

P: We just gel together, if I'm like driving the car and she'll say 'oh can I have this song on', she'll connect it up to the bluetooth and put all these songs on [both laugh] while I'm driving (yeah -laughs). Oh one thing she does like, well, the older one- she likes to go in my make up. What did she want, to be a pink lady for Halloween although it didn't really materialise did it this year?

I: No, unfortunately not.

P: I've got this Elizabeth Arden lipstick which I'd never used, it were about twenty-odd pound and she said 'oh I like this nannan' and I said 'well you can have it' so, I think she's getting to that age where she wants to put a little bit on, so I said 'you can have that' you know (laughs) and I think I'd rather do that than say right, you can't have that and you're not wearing that because it has an adverse effect, so I'd rather say 'right you can have a little bit of that (aha) and use it in a proper way' and that teaches them I think to you know use it properly and how to use it you know. maybe I'm wrong I don't know, but that's me (laughs) you know?

I: No that's great, yeah.

P: My granddaughter's not to that age yet [both laugh] she loves Lego and we play ages with Lego, yeah she takes after my daughter about Lego, she's Duplo and Lego, so yeah and I've bought quite a lot of Lego for Christmas.

I: Aw, nice -laughs- So has looking after your granddaughter influenced your own eating habits at all?

P: Probably I think I'm a bit more careful about what I eat when she's around (aha) and [my other] granddaughter. Yeah, yeah I think that's right because you try and, I don't think I'm such a bad eater anyway, I think probably my downfall is chocolate (aha) but yeah I think you have to be a bit more careful because you don't want them sort of picking bad habits up do you, you know (laughs). I think most of us can eat chocolate you know, or think I'm just gonna have one piece and before you know it you've eaten a bar of chocolate [both laugh]

I: And do you think the kind of impact it has on your eating habits, do you think that impacts upon you when you're not looking after your granddaughter?

P: Probably yeah, yeah. I think my, I've got in my fridge now is pretty healthy you know (aha), plenty of salad, plenty of veg. I've got a quiche in, which I like a broccoli quiche and stuff like that you know and my eggs and things, plenty in for what I need, I think I've got everything quite varied, yeah (yeah) yeah, pretty good.

I: And does looking after your granddaughter impact on the diet of anyone else in your household?

P: There's only me in the house so yeah, yeah, it probably would've done but I lost my husband two years ago so yeah, yeah, he was a pretty good eater actually (aha), just unlucky with his health so (aw) yeah, think work related actually. So yeah but no, I think he was generally, he wasn't much of a meat eater, yeah, yeah but he liked his vegetables and his fruit so.

I: Sounds like you all do.

P: We all like our fruit, yeah [00:35:00] (laughs) yeah.

I: So I'm now going to ask you a few questions on kind of guidance for feeding two to four year olds, so it's kind of the second part of the interview. So have you ever been given any guidance before on feeding your granddaughter, whether that's formally or informally?

P: No I don't think I have, I think it's just common sense (aha). I mean obviously you're careful on the cutting up of things obviously because like certain things like grapes, you've got to be careful, you don't want them sort of grab one and have, you sort of chop it up you know, more of a safety thing (aha). But I don't basically think I have had any formal you know, no (no) nothing -laughs- (that's nice -laughs) in my experience -laughs-

I: That's fine. Are you aware of any guidance for feeding two to four year olds?

P: Well there's gonna be some somewhere isn't there because you know there's gonna be books out and yeah, but I don't know (aha). I sort of don't over-fill the plates, then if they do want some more, but because they're both quite active, very active and they do a lot of activities (aha) and I definitely know my granddaughter and [my other] granddaughter, they'll not over-eat and my daughter's a bit keen on that as well so obviously I wouldn't go against her and I don't think it's, I think probably I learnt a lot because I think my parents probably overfed us (mm), it didn't probably affect my brother but I was sort of quite chubby and as I say I think I told you earlier on I stopped taking sugar and then I got to about twelve or thirteen and I felt too heavy and fat (aha) and I dieted and went very, very, very thin and I can remember my grandma saying to me 'I don't think our [participant's name] is right, she doesn't look right' and I think if I hadn't have listened and stopped myself I could've actually been quite anorexic (aha). So I now that it's not good to over-face them and just stuff their faces because it's just gonna make them unhappy in the end; it's not gonna do their health any good (yep) and I learnt from my own mistakes so that's why I think I've always probably been a bit varied, not wanting to be mean, I'm not mean, and yeah you do want to treat them, but as long as I think their overall diet's pretty healthy (aha), I'll go along with that and if they were doing something silly, oh, can you see I've had a message come through-

I: I heard a buzz.

P: and of they were eating the wrong things I would tell them, yeah, i would tell them and (yeah) try and guide them into something more healthier [sic].

I: And is there any (but er-) sorry, carry on-

P: I've forgot what i was gonna say now (laughs), go on, I'll let you carry on-

I: Is there any advice or support that you would find beneficial with regards to your granddaughter's eating or your feeding?

P: No because she's, she's just, my granddaughter's just, I'm pretty lucky, she's very good (yeah), she doesn't overeat you know. As I says to my daughter I says last week, 'oh I think she's lots a little bit of weight' you know with getting her washed and dressed and she says 'well i think she's just getting taller' and I says 'is she eating her lunches at school', she says 'oh well she brings it back empty' (laughs) and she does do her varied and I'm oh, she hasn't given it away has she (laughs) but then she's not like starving when she comes home or anything, she might have a little snack while dinner time, you know her meal time (aha) but no she's not a greedy child at all, she'll tell you if she's had enough or if she wants something or she doesn't [00:40:00] So I think they're both pretty good, both my granddaughters on that (definitely lucky). We're just lucky!

I: Yeah -laughs- so if you were to be provided with any support or advice, how would you like to receive it?

P: Probably by email (aha) yeah.

I: So a written something, written down.

P: Yeah, yeah, either a book or by email, yeah, yeah. I mean I'm always open to anything (yeah) yeah, I mean you're never too old to learn anything are you when you think about it. I've probably made my mistakes and I should probably think we all do but that's what you sort of learn from. I mean I don't know what your thoughts are on this as a healthy diet you know, I don't know what you think! [both laugh]

I: I have to be really careful in these interviews what I say because I'm not meant to lead people to say things so -laughs-

P: No, that's alright-

I: otherwise you get very much just me nodding and -laughs- (yes, yeah) and afraid so -laughs-

P: Yeah I'm always open to finding out something new or any advice or any tips (yeah) yeah.

I: And who would you like to receive such information from if you were going to receive it?

P: Well probably obviously professional (aha) yeah, you know somebody what's done it and sort of found out that it works and obviously if you do such a various what, can I say research? (Aha) obviously you know, I think we can always learn from that, yeah.

I: Great and if you were to change what you fed your granddaughter, how do you think this might influence your own diet?

P: I'd probably have a go (aha) yeah, yeah I'd probably have a go and try something different [both laugh]

I: I know earlier you kind of spoke about chatting to other grandparents about kind of issues with their grandchildren's eating and stuff, are you, so are you part of any grandparental networks, whether that's formal, such as an organised group or informal with friends or-

P: A bit informal with friends really, yeah, yeah. My friend, she's got a couple of grandchildren which are similar age to [my two grandchildren] and I think the little one, she's a bit younger than my granddaughter's age, she'll just like eat most things, she's got a good appetite; the other one, the little boy he's a bit more picky (aha) and, yeah, I think most of them you know. My other friend has got a little grandson and I know her daughter who was at school from nursery with my daughter and she's a teacher, and you know I think she's, I think hers are you know she looks after him like a pretty varied diet (aha) you know. Yeah and my daughter, I mean my daughter works at [place omitted [00:43:38], she's a [omitted] and she does [omitted] and you know this injection so she's working with children a lot and so I think she's, she's pretty like health conscious and everything with what they eat. She tends to do, which I don't do, she does a board with what they're having each day (aha) for their main meal and it's not very often it's varied, you know once she sets it out for the week because she'll get all her shopping in for that but occasionally it is you know (yeah) I mean, yeah I think they went for a pre-lockdown dinner-

I: Oh that's nice.

P: at the [pub name & location 00:44:28] which I think they all enjoyed, it's really nice there. It is all home cooked food as well so (yeah) it is really nice.

I: I think those boards can help with shopping as well can't they, makes it easier if you write down what-

P: Yeah, yeah, yeah (mm) yeah, so that's what she does and I, I've tried that and it just doesn't work for me but I know what days generally I'd be looking after my granddaughters, helping out with them [00:45:00] (aha) and generally I just try to keep a pretty decent stocked fridge. I don't do an awful lot of frozen foods to be honest, I'm not a big frozen food fan, I tend to just like to buy it in fresh but yeah, I remember my next door neighbour the other week, 'oh' she says 'I've stocked up for four months with my freezer' and I was like (wow), well mine's only got four drawers [both laugh].

I: I don't think my freezer would fit four months' worth of food in, that's for sure -laughs-

P: Well definitely mine wouldn't and I wouldn't want to because I know I'd get fed up (yeah) you know like today I've got a really large cauliflower come and broccoli and potatoes and stuff and I know frozen vegetables are alright occasionally (aha) and they're fine and I think they're really quite good but I just prefer to do veg, you know my own fresh ones (fresh) but that's just me, yeah.

I: No I'm the same.

P: They taste better.

I: Yeah I think so, the texture's better isn't it as well.

P: Yeah definitely yeah.

I: So are there any aspects of feeding your granddaughter that you discuss with your kind of friends who are grandparents?

P: Um, yeah I think my friend [name], she's got a little granddaughter who's lovely and she's pretty good but earlier on in the year we went out for afternoon tea (aha), it was my birthday and daughter invited her to come with us with my two granddaughters and [my older granddaughter] asked a friend as well (aha) so my daughter ?? [00:46:57] and all (aha) and she were just amazed at how good they were at the food they were eating and how varied the foods they were eating. Yeah, she says you know 'they've got a really good appetite' and some children are quite picky- 'oh I don't want to eat that, I don't want to eat that' but they were trying different things which I think is really good (yeah, definitely) yeah. So you know like I said my friend's kids, years and years ago, they only eat like beans and lemon curd sandwiches or yoghurt and ham sandwiches and that was it. My god to try and get them to eat anything else -laughs- I were just wasting my time! -laughs-

I: I think I was a very fussy child as well -laughs- (was you) I think yeah, yeah, amazingly fussy. Now I'm not at all, well I'm vegetarian but I'm not fussy but yeah, when I was younger I was very fussy, didn't like a lot of things (yeah) for quite a while really so my poor mum! [both laugh] But not anymore.

P: I take it you were vegetarian?

I: Well I turned vegetarian when I was, what was it, 11? An probably just for being fussy and then like I had to just start eating vegetables then because what else could I eat and at the time I didn't like them so [both laugh] I was just the fussiest eater but I think turning vegetarian helped me in that I had to try new things and (yeah, yeah) but yeah, so how willing would you be to kind of change the way you feed your granddaughter?

P: Like I say I'm, you know I'm quite happy with what she eats (aha) and if she said to me 'I don't want meat' then I'd give her something else, extra of something else to substitute it (aha), probably some vegetables or something, or pasta or whatever. But she does seem to be a meat eater (laughs) and [my other granddaughter] would be the one which is a bit more picky with meat. I'd, I'm, I do like meat but certain meats, sometimes I could almost be stemming on vege', I have sort of phases where I (mm) I think, I just couldn't face meat and then, well maybe have a bit of roast beef or some (laughs) but then I'll get it and it smells great and then and I did a piece of beef yesterday (aha) and I just had two slices and then I couldn't face any more and then I'm sort of toying well, should I be eating this or not? [00:50:00]

P: Erm, yeah, there's certain things I won't touch- I wouldn't eat, never eat deer, anything (yeah) because I love the deer (laughs); they're beautiful animals.

I: They are beautiful aren't they, very majestic.

P: Yeah. I wouldn't eat lamb (aha) because they're gorgeous (laughs), although I did eat it as a kid -laughs- and they tasted every nice with mint sauce [both laugh] until I found out everything (laughs). Yeah i will eat turkey but I'll only eat the, I'm just a bit picky I, I could probably end up changing and not having meat at some stage. Sometimes I feel I feel I could do that and then other times I don't so it's a bit in between (laughs) and I think it all just depends what I read up and how animals are looked after (yeah, definitely). I don't think I could be vegan, I couldn't be vegan.

I: -laughs- Oh I tried it, it was hard -laughs- it was very hard! -laughs-

P: I do like my cheeses and things like that.

I: Yeah, me too.

P: I don't think, I don't think having cheese, it's a by-product of the animal isn't it so (mm), it's like cows' milk is good for you so I can't think, that's not hurting the cows or anything like that.

I: It tastes good as well -laughs-

P: And it tastes good, yeah, I remember my nan when I was a little girl, her friend, I used to call her Auntie, she was vegan (aha) and-

I: That's unusual back then as well wasn't it really?

P: Yeah. She only used to drink a cup of tea but she used to have it almost clear but she had got the most beautiful skin. I know, she were in a car journey with her once and I think my nan said 'oh look at them beautiful animals' and she just said 'oh, how repulsive' and you know, she said 'very repulsive' because she didn't like animals and she were totally vegan.

I: That's strange, yeah.

P: Yeah because you think you'd do it for loving animals wouldn't you, you want to protect them.

I: Maybe she found them so repulsive that she couldn't eat them -laughs-

P: Well maybe yeah, yeah.

I: I think I've only got one more question I think, yeah; are there any barriers that might prevent you from engaging with any support or advice with feeding?

P: No, no I don't think there are (so-) Yeah, I'm quite open to learn something new [both laugh] yeah. Whether I would agree or disagree with it. If someone had got a really good case on, a proven case why you shouldn't eat this, yeah I'd most certainly listen (aha) and then I'd make my own mind up, like sort of independent thinker (yeah) erm, but yeah, no, no, I'd listen up for any advice or any help.

I: -laughs- That's great, so, before we finish is there anything else that you'd like to add on the kind of topic that we've been discussing or anything else that you might think is relevant?

P: No, I don't think so, I think we've sort of covered- do you think we've covered?

I: Yeah, definitely, definitely, you've answered all my questions really well so thank you.

P: Oh ok -laughs- just sort of chunter on a little bit and get carried away and get waylaid on other things but, yeah, sort of have a lot of things going on. I don't know if you get like that, you're sort of thinking a lot of different things at the same time and I suppose you can't -laughs- really say what you want to [both laugh]

I: No, definitely, I think when you start talking about something you just end up kind of like- 'oh what was the question again' -laughs-

P: Yeah, yeah and when you're getting on with someone else like I'm getting on with you really well, you're a good interviewer, then it's just easy and relaxed and you're friendly and that puts people at ease, so that's really good.

I: Oh thank you [both laugh] it's strange doing it online, that's for sure. I mean you don't really get to know people, or it's harder to get to know people at the beginning I think but less so with you -laughs-

[00:54:47-00:55:40 general/social conversation]

End of tape.

10.38 Appendix 38 – Study 3 Transcript 11

Name of Transcription: Interview 11 Name of Transcriber: Becky Brown

Date: 12/11/2020

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:02:15]

I: First of all I'll ask you a few questions about kind of how you feed your grandson. So as a grandparent what is your role in feeding your grandparent?

P: So this last year's been, I've not been involved at all because of lockdown so the previous years his mother had a year off, and then went back to work. He went back to nursery and mother only did a three day week, so that's the background. Two of those three days that she was working I picked my grandson up from nursery around about 3 o'clock, half past two and looked after him until one or both parents usually, came to fetch him, and his brother, around about half 6, 6 o'clock something like that so I was looking after him. And I fed the both of them, my grandson especially their sort of evening meal around about 5 o'clock. So that would be Tuesday, Thursday and, Friday, I was pencilled in but sometimes not needed, so it was two definitely sometimes three days a week was my responsibility towards my grandson if that helps.

I: Perfect. Thank you. And did you provide anything else apart from the one meal?

P: Erm...no. Apart from, well yes, change that. Drinks, when they come from nursery they always seem to want a drink and a snack, something to you know, get them going and into the door. But they didn't get much because dinner wasn't far away. So generally a drink of milk or something like that, sometimes water, occasionally they might get an apple or a handful of grapes or rarely a biscuit.

I: Perfect, thank you. And how did you decide what to provide to your grandson?

P: Generally I was trained by my grandson to give what he liked to eat, I think that's the way I ended up looking at it. I had high ideas about what I should do as a responsible grandparent and eventually getting them to eat something seemed more important than utopian sort of diet, but they did eat, I like them to eat fruit and vegetables. Very keen on that myself so within their day, they definitely get fruit or vegetables and if they don't eat any of the fruit or vegetables they won't get any biscuits or any other treats. So that's it really. They like grapes. Grapes cut up in halves so they don't choke seem to be the easiest thing to get down them. And the occasional bit of banana seem to go well, or cut up apple was usually their preferred things, erm yeah that's it.

I: Perfect, thank you. And in terms of, you said you had an ideal of what you wanted to give and erm it may have changed based on what your grandson wanted, can you describe how that varied between the two?

P: So I would like them to have more I guess more vegetables, like I have. So carrots they seem to get on with, but potatoes they weren't keen on, erm rice they seem to be more keen on than potatoes. Which so, I have no issue with that, it's just variety I'd rather they had variety. Erm...broccoli strangely broccoli spears they would eat broccoli less so, cabbage they weren't that keen on erm...not sure why but anyway. To get a broccoli spear down them was a win, I thought that was really healthy and they liked it so their. Within the vegetables they would have their sort of protein bit of side of life and the winner by miles was roast chicken. Strange isn't it

I: Kids favourite.

P: Yeah roast chicken, certainly won by miles I could always get roast chicken, second was sausages but I'm not keen on sausages so they didn't get sausages very often.

I: Perfect. So what do you think a healthy diet looks like for children aged two to four years old?

P: Fruit, vegetables and some sort of low, well I'm not low fat-ish meat basing or fish. I'd quite like them to have fish. They did eat fish fingers but I'm quite happy to cook salmon or a white fish for them erm grilled

or otherwise. That they were happy to eat generally, a flakey fish like a cod seemed easier to feed them than anything, it's easier to make sure there's no bones in a big cod flakey fish than there is in a seabass so I would go for you know the safety side of the white fish or salmon. They did like salmon. And often they would like the skin on the salmon cooked so it was crunchy, and they would like chewing the skin off a salmon, which is interesting. Yeah.

I: Quite good eaters, eating salmon.

P: Yeah, so my view is generally I'll try and feed them with a mini version of what I'd like to eat, ? by they are only little, and it's a win to get anything healthy down them in my view. And I've only got to do it three days a week. The rest of it's sort of parental responsibility.

I: And how does what you feed your grandson compare to what you fed your, I don't know if you've got children or child?

P: Well I've got two, my daughters, so [Name of daughter] is the older daughter, she works in [Name of Place] with the other grandson. So you mean when they were little?

I: Yep

P: Compared to when they were little. I tried the same thing, when they were little and that worked generally and I think they've grown up to have the same diet as me. In fact we eat very very similar things, so they have a varied erm vegetable diet and quite a good interest in different foods. So hopefully the boys will carry on like that.

I: No that's great. And what do you find easy with regards to feeding your grandson?

P: Easy, in what to give him?

I: Just in, in general however you want to interpret that question, so it could be kind of the way he responds to food, or it could be the kind of foods that he eats that kind of thing

P: The easiest thing is to interpret my grandson's mood. And then you can get an idea of how interested he is in eating. The problem I have, I have had certainly as he's grown older is that nursery would give him an afternoon tea at 3 o'clock and it depends whether it was something he liked and ate a lot of, as to whether he was hungry for what I gave him at 5 o'clock or so. And I could have found out because their menus online except that means I had to go and look for it. But his mood when he came in you could tell he was either hungry or not and that depended on what he'd had access to at nursery. And then it went from there. And if I had his sort of, if there was roast chicken it wouldn't matter if he'd just eaten at nursery, he would always eat roast chicken and vegetables like that. There are certain things that he's always got a spare stomach for.

I: And when you said he had tea at nursery, do you mean a meal or do you mean a snack?

P: It's a sort of, they gave them access to a snack really, but a healthy snack so it would be rice cakes, fruit erm in the winter they might give them toast, cheese on toast that kind of thing, in the summer more fruit and a biscuit sort of thing and a drink. So it often time of year depends on how substantial it would be. So certainly later on, up until last year, I would pick him up later until, I wouldn't pick him up til 5 o'clock because more because he's having such fun there I can't compete with you know, other kids to play with. So I pick him up just to that's the time he gets picked up and you come home and I feed him if he wants feeding and it would depend then how engaged he is in their afternoon tea.

I: And what kind of strategies would you use to encourage him to eat in that situation?

P: It's unfortunate I end up getting trained to give him what he likes to eat, so erm...he will not eat what he doesn't like, erm even if he has nothing afterwards, so though he's got a very sweet tooth and he will demand his rights for pudding but in this household you have to eat what's good for you before you get

what's bad for you. And my grandson's mother does the same, in general there's no getting round it you have to have had something proper to eat before so. But to get him to eat it I end up giving him what he likes, and three days a week is no hardship for me to do a roast chicken, I probably once a month he'll get sausage, I'm anti sausage in general erm I'm not sure what's in them. Unless you can get a good sausage from a good sausage maker they don't seem to be that healthy. Erm he would love to eat pizza everyday, he doesn't get much of that. So really it's trying to give him what I know he'll eat and with his chicken he will eat peas or broccoli spears and rice rather than, really I've been trained to give him something that I can say to his parents he has eaten this [yes] and I've succeeded.

- I: We have won this evening. And you talked about pudding what would a pudding kind of involve?
- P: Cake, he loves cake. So over the years I have a few recipes for cakes that seem to go down well and one of them is ginger cake and he's a demon for ginger cake, so if I make a ginger cake he'll eat that. Erm... he will eat ice cream, but I rarely give them that, I'm you know, they rarely get that. On a really hot day in the summer I will get some, you can get some, I know this is an oxymoron but a relatively healthy ice lolly that's made of fruit juice rather than just sugar watered flavoured. So I keep some of those in or milk lollies, trying to kid myself there's something more healthy in it than just sugar. So those sort of things he will have. But definitely cake is one of his big things, and homemade cake definitely.
- I: Lucky grandson. And in terms of pudding do you offer your grandson pudding after every meal if he's eaten?
- P: Yes he seems to think that's his rights, so erm but sometimes he just not bothered, he's too tired, if he's too tired he will fall asleep somewhere on the couch and almost not be bothered with anything so I will, if he's really really tired I can hand feeding him, that encourages him to eat and he likes that, he sort of regresses into a one year old two year old kind of thing and then that helps him eat so handfeeding is a good tactic. Annoyingly, letting them try and eat in front of the television is erm another way of getting food down them which has never gone down well with me. But it's a way of winning, I mean if winnings getting them to eat then it's a win.
- I: Yep, I can understand that. So is there anything else you find difficult with regards feeding your grandson apart from when he's eaten before or he's tired?
- P: Just his moods. Sometimes he'll be in a temper over something and usually it's something his brothers done, or a toy that his brother's got that he's wanted and he feels hard done by and then he'll just not do anything he'll slink off and sulk in another room. And he seems to have a long memory, it'll take him an hour to get over his temper and sulk. And then, well, I don't bother pushing it, I just feed the other one and get on because I'm not going, it's up to him if he doesn't want to eat he'll get hungry and he'll realise maybe that he was wrong. Well that's my view anyway, I'm not sure it does or not, but generally I'm not chasing around after him if he wants to temper.
- I: So generally if he refuses not to eat, this is kind of my next question, is that the strategy you'd use or are there any other strategies you would use if he refused to eat?
- P: No if it's temper he can get on with it, if it's tiredness I'll get him on my knee and hand feed him, if he wants but I won't force it, if he really doesn't want I'll just send him on his way he can go play with his toys or often he'll fall asleep somewhere. If he's too tired, he's just too tired, you know by that time his mum would be in and it's her problem. [both laugh]
- I: Is there anything you would change about the way you feed your grandson?
- P: in those years, anything I would change....no I don't think so. Erm...I don't think there is. He gets the best food I could find for him, I don't see how I could improve on that. No.
- I: Perfect, thank you. If you were caring for your grandson on even more days how do you think it might change what you feed him?

P: I would find it harder to find variety that he, of things that I consider good for him that he would consider eating and that's the trouble with dominancy in general that 7 days a week you have to find 7 different meals and over a month not repeat days 1 to 7 every single day. So if I had to look after him 5 days a week I think that would be a challenge to find something I would think is good for him 5 days a week that he would like.

I: But you don't find it a challenge for three that you did look after him?

P: No three's not difficult

I: Thank you. So we've kind of touched on this I think, but do you and your grandson's parents agree on what food and drinks should be provided?

P: Generally, yes I might be a bit weaker than his mum but grandparents are allowed to be. But none the less we have a rule as a family that you do need to eat some dinner before you go anywhere near something that is more like a pudding. So we don't, so my daughter and I agree on everything generally. Yeah

I: Perfect. Is there anything you have disagreed on?

P: No.

I: No, that's great. Erm... recently in the media there's been a lot of about sugar and fat consumption in young children and I just wondered what generally your thoughts are on this?

P: Right, well I'm not a fan of sugar, I don't see how that's good for you and I think sugars are, I read some really good stuff on the internet that I read a lecture on how addictive some sugars are. And so I don't like them having sugar, but I can see that it's part of their life to have some sort of treat and within that context I'm happy. And as far as fats concerned I think fat has bad press and as part of a balanced diet fats good, full fat milk is good and in my lifetime, life's gone full circle I fear, like erm margarine used to be good, and some margarines had good press to say it was good for your heart and in general I think that is changing. And I've certainly gone the last ten years, I only have butter in the house won't have margarine and oddly cakes are much better cooked with butter they definitely come out better and I've cooked many with margarine in my flora days and definitely changing to butter makes a much better cake. And fats have fat soluble vitamins in and all that sort of thing so I think fats good in general in correct amounts. I do not like fatty meats though so lean meats, but butter and dairy in the right proportion is good.

I: Great, thank you. Do you think looking after your grandson has influenced your own eating habits at all?

P: No.

I: Erm...even on the days you're looking after him?

P: Oh I see what you mean. Well it has an influence on what I want to cook and what I want to eat and I still eat the same diet myself, but it erm I do modify what I buy so it's in tune with my grandson's desires so I mean on the days I'm looking after him, Tuesdays and Thursdays, will be once a week a roast chicken erm it has influenced me because with a roast chicken I make stock from the bones and that leads nicely onto a risotto made from the stock, my grandson won't eat risotto so I freeze stock and make risotto another day. If that's what you meant then it has influenced that style of my behaviour.

I: But maybe not on the days where you're not looking after him?

P: No. No I definitely free form

I: And does looking after your grandson effect the diet of anyone else in the household?

P: It effects his older brother's diet because on the days I'm looking after my grandson, his brother gets the same food, but then it's not bad food so I don't, it just means he doesn't get a choice

- I: Yep, no that's great. So grandparents are often described as spoiling their grandchildren I just wondered what your thoughts are on this?
- P: I think we can be a bit softer. Erm but in I give them a lot of quality time, which is difficult as a parent because of you've got all the other pressures of life, a job, running the home and stuff and feeling tired from working and bringing the kids and so I can give them that which is a way of spoiling them but then they deserve it. But as far as buying sweets and chocolates for them they don't get that sort of spoiling from me, but I will take them on special trips or maybe buy them a toy or I get nagged to buy them a magazine when we go shopping. And I know their mum wouldn't let them have it, but I do, but that's what we can do but as far as food is concerned they don't get any more out of me in the sweet department than they would out of their mother or father.
- I: Perfect. Thank you. So we're now moving onto the second section of questions so now I'll be asking you about guidance on feeding two to four year olds. So have you ever been given any advice on feeding your grandchild?
- P: No.
- I: Are you aware of any guidance on feeding children aged 2 to 4 years old?
- P: Do you know it's never crossed my mind til you've mentioned it. No. They've had really what my daughters have had which is a sort of, well I'm not sure, I've developed my style of eating from when my parents fed me and that's probably, but that was a long time ago and they were influenced by the way so we have a lot more spare, disposable money can buy better food some more international foods I suppose so erm yeah.
- I: Is there any support of advice that you'd find beneficial with regards to your grandson's eating?
- P: Until, well it's a difficult, I can't answer that I would say oh that's interesting, or that's not but erm...on the nutrition side, I think if they've had what's a balanced diet to me but tailored towards children's stomachs. They'll always, young children come up with maybe mother's milk if that's possible, if not baby milk, then full fat milk and then whatever's in the house that seems a fair thing. Erm....if there was any different advice I'd be surprised if it changed that much. Maybe you could tell me that. I mean to me good healthy, a varied diet that's not full of sugar has got to be sensible so I would be surprised if there was advice that went against that.
- I: No that's fine and is there any support or advice you would want in regards to your grandson's behaviour around food?
- P: Yes I would find that more interesting, if there was a different tactical game to play with getting them to eat and not just eat but as he gets older to use less hands and more, you know encourage them how to eat with a knife and fork. You know if there were techniques that would be interesting. And maybe how to manage his mood swings erm not that he's any different to any other child he's just tired after nursery and you know when you're tired you're grumpy so good days and bad days but sometimes that more, advice in getting him to eat at all when he's tired would be interesting if there are techniques and more educating him to eat with a knife and fork and with his mouth shut. You know, rather than the other things, if that's possible, I often feel they copy you and if you're doing it properly eventually they will follow suit.
- I: And if you were kind of provided with support or advice on this, how would you like to receive it?
- P: Erm...the easiest way would be some form of communication maybe from the nursery which is, would then be seen to be coming from somebody who's job it is to look after them and they would then have had years of experience, because they'd have like 50 children a day times days a massive amount of hours dealing with kids so if they had a little brochure or the modern thing would be a little thing online to say look try these. That would have been of interest.
- I: So something written and either via paper or e-form?

P: Yes. I think for my age group paper I get on with better. Although e-form, you evolve, but certainly I'd more naturally pick up a pamphlet than I would look for a podcast. A pamphlet I deal with, I'm closer to a tablet and chisel you know, than I am e things. But younger grandparents might, certainly podcasts might be natural to them, but pamphlet for me.

I: Pamphlet yep. And you've kind of touched on how you'd like this from nursery but is there anyone else you'd like to receive that guidance from? Or you'd trust that guidance from?

P: Not really, well trust, I would trust anybody who I would feel had an expertise in that role but I can't see anybody that I would come into contact with except for the parents themselves that might in the younger days, the really young days they see, what are they called, they're not called social workers but they have health workers every now and then weigh the baby and check development and they take them to the doctors to get measured and height wise weight gain. And if the information came from there via the parents to me that would be good as well. I can't see any other way that it's liable to interact with me.

I: So a health visitor via parents, that kind of thing?

P: Yes.

I: and if you were to change how you fed your grandson how do you think this might affect your own diet?

P: Erm I don't think it would be quite honest. I mean I know what I like, and I would, if information said I could do better I would end up eating what I want at a different time but I in many ways, well always we've tried to eat with the children, with my grandson and his brother and I always ate with my daughters because I like the family, I think the family eating things valuable. So I wouldn't really want to change too much or have two different dinners. I don't think me having a curry and them having you know fish fingers then the same thing wouldn't work for me.

I: No that's great. Sorry my dog's just barking. Erm are you part of any grandparent networks whether that's formal or informal with a group of friends?

P: No.

I: Erm would you find anything like that beneficial?

P: Erm...well you wouldn't know until you tried would you? But it, beneficial, I don't feel the need for support, I feel quite self-contained in myself, so erm if it was a bunch of friends. I mean my friends that I have, have only just started having grandchildren so their knowledge they are learning now wouldn't have helped me then and I wouldn't just join a group for the sake of it. Somebody would have to tell me I was doing a bad job and could benefit from it, rather than me just joining it for the sake of it.

I: Yep. And how willing would you be to change how you feed your grandson?

P: Evidenced based. Quite happily. I haven't got the monopoly on good feeding, but if somebody said this would work better, or a brochure or something from the health workers then I'd go for that straight away why wouldn't I

I: And are there any barriers you think might prevent you from engaging in support?

P: barriers? No. I don't have barriers, on that but I'd be, I'm not sure how it would have ever have happened at the time unless somebody gave it to me. So to get brochure and then I'm doing that wrong, I could not say doing it wrong but there would be improvements that could be made, that would be interesting and then I would change, but it would probably have to have come from that I wouldn't have sought out erm the knowledge.

- I: That's great. So that was actually my last question. But I wondered before we finished is there anything else you'd like to add based on what we've said?
- P: Anything like to add....erm....nope seasonally I would say seasonally in the summer I feed them salads and they love tomatoes, they're easy food, seems like tomatoes small cut in half or cut into quarters and cutting some of their food into different shapes to make it look attractive works well. Which is something I've tried and it's easy to do with salads and carrots and carrot sticks are a good snack while they're eating in front of the television. And makes less mess for me to clear up. I think we've covered quite a lot of what I can drag back from last year.
- I: Perfect so thank you very much for that

10.39 Appendix 39 – Study 3 Transcript 12

Name of Transcription: Interview 12 Name of Transcriber: Becky Brown

Date: 17/11/2020

I = Interviewer, P = Participant

Participant agreed to verbal consent between [00:00:00 and 00:03:15]

I: So we can now begin the interview questions. Erm and erm first of all I'll start by er asking a few questions about how you fed your grandson when you looked after him. So as a grandparent what was your role in feeding your grandson?

P: Erm well he would erm we would, after picking him up we'd give him breakfast, lunch erm we always had a shared meal at tea time so either at our house here or alternating with their house. So it was the day from breakfast right through to tea time, but tea either here or there, does that make sense?

I: Yeah that's perfect, thank you. Erm...and how did you decide what to provide to your grandson?

P: Erm...Erm...I would, I'm aware of what he likes and what he doesn't like but I'm also aware of the importance of food, and good food and erm..I would be, I would you know, for instance when we had breakfast, we always have wholemeal bread and that's what's on offer, you know what I mean, whereas sometimes he has said I'd like white bread, but we don't have white bread so, you know what I mean, so it's kind of this is what we have sort of thing, you know, in a nice gentle way. But so I try, you know, to accommodate what he likes but at the same time always have eye to what I think is good food you know, sounds awful doesn't it. But I definitely, you know, and also the pattern of eating, and you know, I think that's important. Anyway, yeah. Does that answer your question?

I: Yeah yeah. When you say the pattern of eating what do you mean by that?

P: Erm I would try not to, I would try to have clear, much clearer eating times, so we'd have breakfast, we might have a coffee mid-morning and he might have some raisins or something you know, and then at lunch, and you know, so I try, tried not to keep giving him, tried not to keep giving him more erm spaced intervals. Because I'm also aware of teeth, I know it sounds awful but you know I know that with erm you know I was always aware of their teeth, that I, if you eating stuff, you know, it's you know attacking your teeth really. So it's better if you have regular intervals. Which sounds terribly middle class doesn't it, but you know, I think, I think, I think these things happened much more naturally 50 years ago, but nowadays it's so tempting to just you know, to give them food at any time. Do you know what I mean, so I try to sort of, not in a controlling way or anything but just keep it at regular intervals

I: So a structured kind of meal times?

P: Yeah more so, and also it means that they eat better at meal times so if you're eating throughout then you don't eat your lunch properly that sort of thing. So it's kind of you know getting them to wait a bit, say we're having lunch soon and lets, and we can have that for lunch kind of thing. But the you know, I also always had to have a, in mind what happens at home, so how do they feed, what are they used to at home or at the child minder, you know there's a range of different approaches, so you're working with that too. Naturally, naturally. So it's a bit of a compromise sometimes but you know, yeah.

I: That's great thank you

P: That answer, is that alright?

I: Definitely yep. And how do you decide what drinks to provide to your grandson? Or did you decide?

P: Ah. Well that's interesting, because we, we, erm we had erm erm my grandson wasn't one for hot chocolate or anything like that, never was. His sister was he wasn't, he didn't like milk either. He naturally likes water so that was never a problem but he did like, we have fresh orange juice, you know fresh orange juice and

fresh apple juice and so they love warm orange juice and warm apple juice and so you know, that would be, and my husband is much more liberal than I am but anyway, there we go. That's another compromise. He would drink water, quite a lot actually, naturally would ask for it. But they did have apple juice and fresh orange juice not the you know, not the cordials but the fresh stuff with water in, hot water in. Erm so they did have that yeah.

I: Perfect. Thank you. And what

P: And they loved it because [Oh sorry carry on] they didn't have it at home so much they loved it here, they love it here because they can have it like that. You know, we can afford to do it, whereas at home, you know it's not quite the same is it, at this stage anyway. Yeah sorry go on.

I: No that's great, I don't want to interrupt you so.

P: No sorry

I: No no it's perfect. What do you think a healthy diet looks like for children aged 2 to 4 years old?

P: What do I think it looks like? Erm...I, erm, well erm. You're talking about the different meals going through the day or?

I: Just in general, just kind of what comes to mind to you when you think of a healthy diet for a 2 to 4 year old, so anything that you think of

P: I would always, I would always try and have, you know, whole foods, so wholemeal bread, my grandson was easy because he loved fresh vegetables, so he naturally loved fresh pepper, fresh cucumber, things like that. He, if I didn't have one in I would have to go out, go to the local veg shop and get, you know, get those things for him because that's what he would ask for. So he would have you know maybe a ham sandwich at lunch time and he would have fresh vegetables with it. Erm...so it would be fresh vegetables, you know, erm...he had ham, he liked ham, but you know, his sister liked tuna erm...you know something like that. So it would be always wholemeal, lots of fresh vegetables. My grandson liked fruit, so that was not a problem, he would ask for fruit, but he loved, we always did some baking so he would make buns but erm...that's not so good in some senses but we enjoyed it. So it would be fresh food really, fresh food. Erm..and he was quite happy with that

I: Sorry can you say that again it just cut out there

P: I think he was quite happy, he was quite easy, in that sense, you didn't have to sort of encourage him to do anything other than what he naturally liked. But for me our natural diet at home is wholemeal, whole foods and not a lot of meat but you know occasionally and much more fresh vegetables and things like that you know. So and he was easy to do that for, does that answer your question?

I: Yes that's great thank you. So what does how you feed or what you fed your grandson compare to what you fed your own children?

P: Oh my own children? When I was bringing them up you mean? When I was bringing my own up? [agreement noise] erm...that's really interesting, I think probably, I think probably much the same I think I was stricter with mine. I think I was stricter. Erm...you know because food, I was brought up on a farm and I think you know we had very simple food, but it was very good food and erm and we were you know, I think, there have been eating issues in our family. My sister, I'm going a generation back now, but my sister was anorexic and erm we had, there were lots of issues around food. So and it affected me, so I've always been very careful about going down the sensible, the middle route, not forbidding, being moderate all the time and I brought my children up like that to be moderate erm you know you have a bit of this and a bit of that it's never not that, not that. If you want some we'll have a bit you know what I mean, and so sweets for instance they would have once a week and they would have them as a pudding. And the same with, they liked, I don't know, my son liked erm...it wasn't coca cola it was lemonade or something and they'd have a bottle each and it would last the week and they could only have it with their tea you know

what I mean, it was them having all the sugar. It sounds terribly controlling but it wasn't, it wasn't they just knew, and I explained that it was, why we were doing that. And you know they all eat very healthily actually now and their children do on the whole. My daughter particularly, they really do. Erm but you know I think food is really important, I think it's important for mental health and physical health and your own being really and I try to you know I tried to always make them aware of that. If you're not hungry don't eat, you know, so it's that kind of, you don't have to eat this because people have different appetites as well. My grandson eats quite a lot, his sister doesn't really. So they have to be aware that they have different appetites you know. In a natural way, if you're not hungry, you know you don't need to have this if you're not hungry. I'm putting a whole lot into one question. I think it's balance and moderation and erm er I think food is really important to us as a family you know what I mean.

I: And do you think, so you said you were stricter with your children, how does that kind of influence feeding your grandson do you think? So what's the difference there, do you think, between how you fed your grandson to how you fed your own children?

P: I was probably slightly more erm rigorous with mine, you know, because I had more responsibility for it. I can see with my grandson his, their mother whose lovely, but they have a different, slightly different approach to food erm so I'm sort of trying to, listen to where their coming from, she's coming from and also bringing my, you know, bringing my input. It's the same with television, you know, we you know, the same sort of thing, I would encourage, television is the last kind of thing really you know we're doing other things, you know I mean. Whereas I don't think it's quite like that at home do you know what I mean, but this is a different house, you know but I wouldn't go against what they're doing, I just, we just do slightly our way. You know, there are different ways of doing it, you know, and this is slightly different, sort of thing. Without undermining anybody or anything, you know, because it's, we're not doing it for that reason you know, you know, yeah.

I: Can you kind of elaborate on those kind of differences between the home and your household?

P: Erm...

I: In terms of feeding I'm focusing on

P: Erm...I think it is, how would it be, I think I would, I'd have less processed food, I don't have any. It's just not part of how I live really, you know, I've always, being a farmer's daughter I've always cooked, I always cook. My gran used to say good ingredients in, good food out. And I've always tried to do that because I think it's right, I agree with it. So I think that would be, I would not, so that would be one thing. Say I buy yogurts, I just buy the organic ones, the yeo valley because they've not got as much sugar in that kind of thing. You know, I try to go with things, that's about as processed as I get really, otherwise we just have fresh things. And I think, I can see it's difficult when you have a family and it's more expensive but we can afford that now, so that's what I will do. But see having said that, when my children were little, I would have again, I wouldn't really have, it was all fresh cooking and fresh foods, you know things we'd baked rather than buying a lot of things in. So I think that's probably the difference, because you know both my son and his wife both work, not full time, they both have, they've done a lot of child sharing, care sharing and allsorts of things. But they do work so they have less time and you know and you know it's different really. So I think one of the main differences I have, you know, I do less processed things than they might, that'd be one of them. And I'd much, be much more structured about when they eat and when they don't eat. I think probably, perhaps. And I also, I also erm, always, we always ate the same, when my children, whatever we had they had, and they always had a spoonful or two of everything until they got used to it you know, that's what they had to do. And it's not quite so, it's not quite like that with my local family, you know, there can be two meals going on. And that's not my way of doing things, but you know, small thing really, but it's not my way of doing it.

I: And is that how you do it with your grandson now? So the kind of you eat the same, or you eat together?

P: Erm...we always eat the same breakfast, lunchtime we don't really eat lunch, my husband has a banana and a bit of bread, so I would be making a special meal for my grandson, which would be as I say either fish fingers or and peas or he loved macaroni cheese for a long time so I would make him macaroni cheese you see, or he'd have a ham sandwich with lots of fresh vegetables. He'd always have fresh peppers with

it, tomatoes and things. So erm so but the tea time, when if the meal was here I would often do two separate meals because I would know they would love fish fingers and peas and I didn't want any arguments with the meals, I don't like that, you know it was just easier to give them a simple meal of fish fingers and peas, they knew that's what they were going to get and then they had their bit of chocolate afterwards and then that's their meal. Do you know what I mean. So it kind of, at the end of the day you just want it to go as smoothly and they've had some good food and that's all. As they get older I'm definitely moving more towards we all eat together you know. It's always a tricky area that.

I: Is there an age that you have in mind that they should move towards eating together or?

P: We eat together, but you mean eating the same thing?

I: Yeah eating the same thing

P: I'm starting to do that more and more actually, yeah starting to do that more and more. It's gradually happening, in fact I was thinking the other day now that my grandson's at school we definitely, I'm not going to do separate meals anymore I'm just going to get them all in to one, you know what I mean. I've been thinking about it, and thinking it's time, you know he's old enough now to be able to compromise, to be able to say come on let's get on, have a go. Oh dear. Dig in and then we have, no he's a good lad.

I: So you've kind of touched on this with your grandson already but what do you find easy with regards to feeding your grandson?

P: What do I find easy? Erm... Well erm....he is an easy child to feed because he likes the right things really, he likes the right kind of food. He does like biscuits which is unusual, because none of, we're not great biscuit eaters but he'll come up to me and say can I have a biscuits and er you know I'll try and steer it towards a meal time, or certainly towards when we're having coffee or one of those key times during the day. I won't just give him a biscuit I'll try and steer him. But and I would always give him a plain biscuit anyway. But er he's easy really, he's an easy child from that point of view because he does like the right sorts of things, he loves raisins, he loves, you know we had them stay over this weekend and he said can I have muesli for breakfast, and he just has muesli and milk, bless him. You know, he's not, his sister wants Coco pops and you know they are very different so we have to you know. So he's quite easy really to be honest

I: That's great thank you. So did you find it a lot more challenging when you looked after your granddaughter at that age?

P: She is much more, yeah, yeah yes, I yes I did really. She has much more of a likeness for things, she loves chocolate and milk so she would love chocolate, coco pops, anything like that with milk on, she loves chocolate. She doesn't go for things like biscuits actually. Er...but she does like, I would say she is more challenging, she wouldn't has as many fresh things as my grandson, she wouldn't have fruit the way my grandson does so erm....from that point of view you know it's finding the thing she would feel like, so we'd go down the veg man and get what she'd like, would you like grapes today or would you like you know, so it was more of a challenge. She does yeah she likes more sugary things than my grandson I think. And wholemeal bread, she's a bit more resistant to wholemeal bread she'll have it if she's got the chocolate spread on, which is awful stuff to me, but we do get the reduced sugar. You know but, you know, fair enough you know. You've got all this to come?

I: I know I do, yes. Just depends on the child doesn't it.

P: It does. Yes it does, it does. It does it does, yeah yeah.

I: So in terms of strategies, you've touched on some, erm so when you found it difficult with your granddaughter you said you'd give her choices, go to the fruit and veg shop and let her choose, is there anything else you might do to encourage her to eat the things you wanted her to eat?

P: Er well I would talk about things being you know healthy, and good for their bodies, you know and good, and you know you're keeping well and it's really important and so on. And your teeth. I might say you know we'll have a bun after your lunch that kind of thing, we'll have that when you've had your lunch or we'll have that yogurt, you know, when you've had your sandwich, and try and always get them used to you know the progression, with varying degrees of success but never the less, you know. And it's always tricky because I was always slightly more into that than my husband was, he's much more indulgent you know. But that's not to criticise him, you know, I'm quite tough about some things and that's one of them I was fairly aware of you know what I mean. Erm...so that would be one thing, you know, we'll have this first and then we'll have that. As you say giving them choices, I did give them choices, and tried to, you know, give them a range of good things. I can't think of anything else off hand. I think it's what we ate as well, we're all having certainly for breakfast it was never questioned, you know, we only have wholemeal bread and that's what we do. And so your joining in with us, we're having this together. And letting them butter their own bread, because we always have butter, you can butter your own bread and put your own honey on and you know try and give them the experience of taking responsibility for it that kind of thing, rather than just giving it to them, they could do it themselves you know, instead of handing it out to them. They have more of, you know, they feel in touch with what's going on that type of thing.

I: Yeah no that's great. And erm you said your husband was more indulgent, does, was he as hands on with childcare as you were or do you think, why was that difference there?

P: Absolutely. No we're both completely involved with the children actually, both of us, yeah he was just the same. It's a bit tricky now because we've got three girls and they're all getting older so he's kind of you know, there's times when he has to step back but you know they understand that and it's fine you know. Because the other ones are older. But no no we're both totally involved. And like I say my husband was child psychologist and he's brilliant with children, and he's brilliant at playing with children. So you know, he's really good with them, I'm much more slightly to be confrontational where as he can get round them much more, you know, encouraging them, not that I don't but you know what I mean, I'm much more sort of black and white rather than him, he's much more sort of moving around. But we're both involved yeah. But I'm saying indulged in terms of oh give, let her, I would make a small hot chocolate and he'd make a big one you know, I can't you know, and I do try and say perhaps that's bit big but you know he you know he's himself and I honour that really, you know what I mean, so I can't it's not.

I: And who would you say is the main food provider between the two of you?

P: Oh me, definitely. Yeah, I'm the cooker, I cook, he clears up and I cook. It's the ideal situation

I: I know I hate clearing up.

P: So do I

I: Especially the washing up (both laugh)

P: after 40 or 50 years of it I've done my share, you know. Oh dear.

I: So is there anything you find difficult with regards feeding you grandson?

P: Erm....what do I find difficult.....

I: Whether that's behaviourally or food wise

P: He's a very sweet child actually, erm...I think it is, I mean we had quite a to do a couple of weeks ago because he came home from school and he was really hungry and I kept saying you know, he had something, I can't remember what I gave him now, some raisins or something and he said I'm still hungry and I kept, and he said can I have a biscuit and I said well we're having tea as soon as mum and daddy come at 5, and he said I can't, I'm hungry I want something to eat. And I said are you sure you're going to eat your tea, he said I'm really hungry I want something to eat and erm and I gave him a biscuit. And then when tea came he couldn't eat it. And I thought, you know he did have to eat actually but I thought I'm

really going to say to him much more clearly no, you know, because we're having tea you know and last time you weren't able to eat your tea very easily so let's wait, put it on a plate and you can have it after your tea but this biscuit can come after your tea but not now before your tea. It's there on a plate and you can have it as soon as you've had your tea kind of thing. Because I think he's learning to you know, he's learning to discipline himself a bit or you wait you know what I mean, and that's the problem with eating between your meals isn't it, you don't eat your meals properly. But I appreciate he was hungry and he does eat quite a lot actually. Much more than my granddaughter, you know he does eat quite a lot. But on the other hand he does say, I say to him, because he stayed for the weekend I said are you ready for your breakfast, he said no I'm not hungry now so they, he waited a bit which is fair enough you know what I mean. So he will say also no I'm not hungry, you know, so he can say, he's learning, he's getting both sides of it you know what I mean. And I think that's quite, I'm quite impressed by that really. I think it's quite good that he can say that, you know, I'm not hungry now you know. I think, I'm quite impressed by it, anyway, yeah.

I: So on that how do you decide how much to provide?

P: That is a tricky one. I ask them. Erm I always ask them. I'll say how many fish fingers do you want? Erm how many pieces of bread do you want. That is key actually you're dead right, that's key. And I'll get them to show me how many peas, you know how many peas, because you know I want you to eat this, can you tell me. I do ask them, I do ask them, and if I make macaroni cheese I get the pan how much can you eat, you only have to have what you think you can eat. That is a very good point, and I'm very very hot on that because you know people are different and have different appetites and you also go through phases of being hungry and phases of not being hungry. Because you're growing sometimes and you're not growing others so I think they have to learn to judge what they can, you know, what they can cope with and I think that's really important yeah.

I: Perfect thank you, are there any foods that you struggle to feed your grandson?

P: Are there any foods?

I: (agreement sound)

P: Erm....no no I don't think so because he'll compromise, like he will have wholemeal bread, although I suspect there's more choice at home you know, he will compromise and erm I don't er no I don't think there is anything I struggle. You know, he does like the right things, no I think it's alright really. Doesn't like potatoes which is a bit of problem. Because we eat a lot of potatoes and you know for an evening meal you quite often have potatoes. But erm but he'll have the rest, he'll have the vegetables and the meat if we have meat or whatever. Erm...he has very, he has things that he really likes. So he likes cous cous, pasta and he'll say, he doesn't ask for that here but he does at home, he'll say oh but I wanted some cous cous or I wanted some pasta, they may well make him some of that to go alongside the main meal that kind of thing. So he'll have some of the main meal and then he'll have some of the thing that he wanted because they're easy to prepare so his mum cook him a bit of something that he wants alongside what we're having, you know, as well as what we're having, you see what I mean [yeah] kind of a good step really. So he has some of what he wants but then he'll have some of what we're having [compromise] Yeah compromise. Absolutely. Yeah yeah

I: And what strategies would you use if your grandson refused to eat?

P: Erm....if he refused the food, erm....well it depends what it was really. It would depend if it was the main meal, well it would be otherwise it would be an issue. Erm...erm...so I'll say well you asked for this so how about, and then I would you know, say three spoonfuls then you know that kind of compromise again, you know, I'd say well, and certainly if you're going to eat something afterwards then this is good food you know what I mean. So I would always try and find compromise that kind of thing you know fine just a little bit, we'll have just some of it then, because you'll be hungry or whatever and so it's about the compromise really. And I can't think of anything else I would do. It's just trying to go for the sensible solution really and not having a shin dig, and not going for the full scale war, you know. Because I so worried, I used to worry so much with my own children about confrontation around food because when we

were brought up you know, you had to eat it and you know my sister used to be sitting at the table for hours. But in those days food was precious stuff erm and you know, but any way that's another story. So trying to avoid those kind of show downs really and yet moving a step forward of joining in with the family and we all eat together and we all have the same things, you know what I mean, sort of thing. Yeah. I don't have great confrontations with him really.

I: And would you change anything about the way you feed your grandson?

P: Erm....I think it's probably good enough. You know, it's all, you know, I could be a purist about these types of thing. I think it's good enough he's the kind of child that would work out what I was thinking and to some extent fit in with that, his sister wouldn't do that. So he's kind of aware of what my thoughts are and what I thinks important and he will try and adjust to that. Not entirely, and as he gets older that's slightly more untrue. But certainly he's aware of what the pressures are, you know, what the expectation is, where as his sister is not so aware at all she would battle on but he is much more, so he tried to do the right thing and yet, and I try to honour his personal needs as well you know, so you know, he really wants something I say we can do it this time you know and you know kind of thing you know, I don't know yeah. What was the question would I do it differently?

I: Would you change anything yeah, it doesn't have to be yes

P: I don't think so really, I don't think so, I mean he loves baking and licking the bowl out and stuff like that. He loves doing all of that. Yeah no I don't think so really he's been quite a treasure really with all of that, you know, and I just don't want there to be any, you know, I don't want there to be any pressure around eating you know what I mean. It's just a very natural thing and to be enjoyed and we sit together you know what I mean and so it's kind of keeping that atmosphere of this is an enjoyable time to be together and we're sharing food. You know and you know being thankful for it actually, you know those sorts of things.

I: And if you were caring for your grandson on more day erm how do you think that might have affected what you fed him?

P: Erm I don't think it would have affected me at all. I think I would just do the same thing, erm you know, I would just I don't think it would change anything. I always ask him, again going back to choice, I always ask him what he wants for lunch and I'll give him a range like do you want macaroni cheese, fish fingers, do you want a ham sandwich erm because we go round to the butchers and get some ham, we've got a local butcher in [Name of place] and erm and er so he would have a choice. Because you see I don't do things, oh he might, oh no he doesn't like baked beans very much. That's another option baked beans on toast but I mean, erm....I would give them a choice of one or two things and then he can choose and we can either go buy them or I'll go buy them while he's playing or whatever and so on. But I think I would continue that, I think that gives him control over what he's doing a bit, because it's not like we're eating with him, we're not eating the same things at lunchtime because I don't really eat lunch and my husband as I say just has fruit and a piece of bread. So he can choose what he has, and I think that's good really I like the fact he can choose some things you know.

I: So do you and your grandson's parents agree on what food and drink should be provided?

P: Sorry I couldn't hear what you said

I: Do you and your grandson's parents agree on what food and drink should be provided?

P: Erm....Yes I do, think so, I think, I think we do, I think we do erm I think we do erm. I think I wouldn't, I think the one thing we are different around is that I wouldn't snack as much as they do. I think that's the one difference. Is that. Because but you see it's, it's different patterns, I eat very little actually unusually small amount and I'm not thin particularly it's my Pennine rearing I think, I can survive all sorts of conditions. But my, my daughter in law needs to eat quite regularly and I think it's a reflection, you know she'll always have nuts and raisins and stuff around. Good healthy food and stuff as well, but she would naturally want to eat more than I would think of. And I think that's the underpinning difference really. Erm...is that I, you know I wouldn't think to eat so regularly and she does and that sort of means they snack

more, it's things like these cheese strips or I don't know they have lots of fruit, well at least my grandson, well they both do actually but I do think that would be the main difference I wouldn't snack as much. I think the food they eat is good food, they are very aware of healthy food and so on and what, and getting a balanced diet they're all aware of that. But I think it's just the frequency and that's you know a natural thing from our own eating habits really.

I: Yeah. So recently there's been a lot in the media about sugar and fat consumption in young children, and I just wondered what your thoughts are on this?

P: It worries me, it worries me a lot, you know, erm....and erm...yeah I just always want to go for, a) I would cook myself so I know what's in it, that would be a key thing and I'm aware of the rise of diabetes and everything, and those kind of things and so I'm very mindful of that and it worries me a lot. You know I am, you know, I am very aware of it and I would, you know try to, we don't buy the children sweets and things like that, and we try to keep, and if they have chocolate which they do have it as a pudding not as, they wouldn't have a sweet they'd just have a piece of chocolate as a pudding which is less bad for your teeth than sweets are. So yes I am very aware of it and yes I think it's really important and it's worrying. It worries me. You know, the way things are going in that sense, the ease you know that you can have these foods really, and how addictive in a way you know, you have one you want more kind of thing. Anyway, I don't know, it sounds awful doesn't it but I do, I am very aware of both the fat and the sugar.

I: Do you think looking after your grandson or your grandchildren in the past has influenced your own eating habits?

P: No not really. No.

I: Has it had an effect on the diet of anyone else in your household?

P: No cos, no not really no, no, no. They just yeah, no I don't think so. I've always cooked the same way I've always cooked and I try to cook healthy foods and fairly simple foods really but you know, they eat what you know. My son loves coming home because it's home cooking you know. What we, you know, because it's what we, it's you know. And I'm really proud of my children because they both learnt, I've got a daughter in [Name of Place] and a son here and they both learnt to cook you know, and they both cook and I'm really proud of that, actually because I think that's really important you learn, you feel confident around cooking you know and you do make your own food. And my son in law and my daughter in law both cook too, and I think that's a really good thing in a household, you cook your own food you know, and feel confident around that, and you know what you're cooking you know you know what you're putting into it, so you know, so I don't think, that's seamless in a way you know, between us and my grandson's family you know, we do erm eat erm it's all home cooked stuff you know what I mean and so on. I think the only difference would be I would buy meat from a butcher and that kind of thing whereas I think they have more you know the supermarket food and maybe go for the cheaper end you know Lidl you know what I mean whereas I wouldn't do, I just think, I don't know, I just want, you know it's terrible isn't it but you know I feel like I want to try and get the good food if I can and not very much of it do you know what I mean. But that's fine it's just if we can do it, if we can afford it then we'll do it. And I've always got a farmer's approach at the back of it you know. Oh dear. It is, no but I also agree with it you know I think you know, so I've been reading a lot about it lately and you know the old, the traditional farming techniques of biodiversity and soil care and all that kind of thing, and I think these things are obviously they are really important and I mean I know we have to feed millions of people and I understand that too but it's how you get the balance isn't it between intensive farming and but reducing the pesticides and insecticides and all that and erm you know I'm trying to be natural about it. I'm not being a purist about it just think what makes sense in terms of our environment, and us, and human beings who live off the earth, you know, that kind of balance really of how we can do this you know, respecting, you know human nature as well as as the planet, the earth really. But it's a foundation of most of how I think really, it's just good sense really to me, down to earth really I suppose I am.

I: So grandparents are often described as spoiling their grandchildren, I just wondered what your thoughts are on this?

P: We do but we don't do it with food. Erm...we'll buy them lego toys or buy them nice presents at Christmas, we'll take them out. So we do but, food is such a tricky area and I wouldn't do. To me it's you know I wouldn't spoil them with food and sweets and things like that. It's as simple as that, we do spoil them but not with that kind of thing. With food.

I: No that's great. So we're now moving onto the second section, it is more than half way, but I just want to check you're okay with time because we've, it's now half past 11 but are you okay to carry on?

P: I'm okay to carry on, the husband has gone out so I'm okay and we don't pick the children up until half past 2 so I'm alright

I: That's good the second section is shorter than the first so it's not as long. So now I'll be asking you about guidance for feeding 2 to 4 year olds. So have you been given advice before on feeding your grandson?

P: Have I what, sorry

I: Have you ever been given any advice before on feeding your grandson whether that's formally or informally?

P: No I haven't been given any advice, no.

I: Are you aware of any guidance on feeding children aged 2 to 4 years old?

P: Erm...I suppose it's there but I you know, I feel as though I know what I want to do, I feel as though I know enough about it to not need particularly any advice and I know how I brought my own children up and I like what they do as adults actually. I respect how they, they've got their own ways as they've been compromised by their partners but they still have a you know, I admire them, I admire what they do, you know. In the way they eat and the way they feed their children. My daughter is you know, she's, they've gone vegetarian or largely or flexitarian or whatever, but they eat very you know, they're much more, they're much more clear to approaches to food than my son is. Erm...but on the other hand my daughter is a brilliant cake maker erm so it's one of her hobbies she's really good at baking and er she you know she loves doing it, so they eat lots of cake, well you know that's not my scene at all. But you know, so they've compromised in all sorts of ways but essentially The food that they eat they will get all the right foods as well, so they will have lots of fresh vegetables lots of fresh fruit and erm you know, and wholemeal bread and that sort of thing, which I think are the important things yeah.

I: And is there any advice or support that you would find beneficial with regards to your grandson's eating or behaviours around food?

P: Er I think, I think, no I think he's a child that's fine, I feel fine with him you know I feel, no I think he's, I feel confident that you know that we've got sort of a good pattern with him, we had a good pattern with him. Perhaps it's an arrogance but I've thought a lot about food over the years, partly because of my own experience, you know of, and my family experience, I mean my own family, my childhood family you know, so I've thought a lot about it and I work really hard with my own children that it was a, it was a pleasant you know a pleasant time and there weren't pressures and you'd encourage them to eat what they asked for and that sort of thing and a bit of everything you know so trying to keep a, but not making in an unpleasant oh god. Or making an issue of it, where you focus too much on food because I think, I think it can be very difficult times. So no I don't, I feel as though I do know what I'm doing on the whole with food really I think.

I: Would you say the same was true for when you were looking after say your granddaughter who had a different relationship with food?

P: Erm...I think I do, I think she was much trickier and much trickier and she's a very emotional character and so erm...yeah I I, no I would, I'm very careful about how we approached it with her but you know she erm...you know, I don't know

I: Do you think there would have been any advice or support you would have liked then? Or not?

P: Er....Erm...I'm not sure anyone, I'm not sure it could have been given. Because it's a very individual I think we're all different personalities and temperaments, temperaments not personalities, temperament and I think she has a much much trickier temperament she's very strong character and erm my husband is particularly, I mean she's not unlike me in some ways, and my husband is very good at quietly guiding you know, erm....I think she's. I think it's going to be a much more tricky journey for her with food I think because she will eat, she will eat when she's not kind of hungry that kind of thing. So I'm constantly saying to her you know, not constantly I don't. But I'm beginning to think I'm going to say to her, and I did say to her at the weekend, if you're not hungry you don't need to eat, you know you don't need to eat if you're not hungry here you know. Because my grandson was saying he was hungry so I would say are you hungry to my granddaughter, do you think you need something to eat. And trying to get her to be more aware of when she's hungry, she's 7, when you're hungry and when you're not. Erm...you know what I mean, and I think because family, you know her mum eats a lot regularly and my grandson I think she needs to be aware that she's a bit different maybe, she doesn't need as much, you know so it's getting. You know, it sounds so calculating but I think you do have to be aware of when you're hungry and when you're not. People are different. I mean when I left home as a student I couldn't believe how much people ate. Because I'd not seen people eat as much as that, it made me realise how modest our family were even though we were outside a lot and I think people are very different and their metabolisms are very different and so on. And I think, I'm trying to sort of, I'm aware of that but of course she's little and you know, she's only 7 and. But I think she's going to have to be careful, she's going to have to be watchful of that in herself. Of eating when she's hungry and not when she's not.

I: So if you were to be offered support or advice or something how would you like to receive it if there was anything kind of thing? What kind of format?

P: Erm...probably, probably just talking it over like we're doing in a way, because I know a lot about the, I understand the mechanics of it all, and it's just helpful to talk about it sometimes you know sort of hear, to think about it, to just step back and think about it. Erm and talk about it without you know, maybe some input in that way because I think food is very complicated. I think it isn't just about eating it is about how much exercise, what your metabolisms like, what kind of temperament you have. I think all these things come into how you eat you know what I mean. And also you learn from your family, also some people have a sweet tooth, my dad loved sweet things you know, you know, you have to, I think it's about getting to know your own, and you know it's gently reflecting on that with a child as they grow up, you know somehow being aware. Oh it sounds, then you're going to have to be conscious about it. But I think there's so much food around now, that you can't be innocent you know, you have to be aware of you know what you eat and how much you eat. I don't know how you can get round it because it's so tempting isn't it, and there's so much advertising and so on and I think I do, I think the other side of this is being active and getting out doing lots of activity and being physically active you know. But I think you know, in a sense we don't lead a natural life anymore. You know there's so much around us that can, you know attract you and you know it's quite hard to make decisions, you know for your own body sometimes. It sounds awful but I think there's something in that. So I think talking it over, maybe even in a group situation where you share, you know where you hear other people talking, I think that, for me, because I know quite a bit about food so it's not like I don't understand what a balanced diet is and stuff like that you know it's more, it would be more, you know, ideas on how to you know, hearing other people and ideas of how to support your child in a healthy way sort of thing.

[pause to let dog out]

I: So if you were to have these kinds of discussions who would you kind of trust to receive this information from, who would you like to talk about it?

P: Erm...other grandparents. Erm...a whole range actually, you know, from erm...people of my, of different backgrounds really, because I think you learn to respect certain things more if you hear other challenges, that other people are having from different backgrounds you know what I mean and erm...you know when we worked at the food bank for quite a while you can see the challenges people have and erm....and you know they're very real and you want to you know so it's a kind of respect for the whole thing, rather than

judgemental. More a respect and you know, a you know and respect one another that kind of thing. Giving it a context rather than you know, giving things a context really and you know, and we learn a lot from each other don't we whoever yeah.

I: And if you were to change what you fed your grandson how do you think it might influence your own diet?

P: I don't think so at all because we're, er...you know as far as I'm concerned it's just simple eating, we just eat simply and good things you know we just eat the simple things that make you healthy and make you feel alive you know it's as simple as that really. What's good for your body and what gives you energy, and wellbeing and you know look after yourself, given the gift of life and you try and look after it and so we all do that, and he does that, and we're learning that. Erm...so I don't think it would have, I don't think it would change anything really.

I: Perfect. Erm and are you part of any grandparent networks whether that's formal group or informal with friends?

P: Er not a group no, obviously I've got friends who are grandparents but not in a group or anything

I: And do you ever discuss aspects of feeding with your friends? Who've got grandchildren kind of thing?

P: No not really, not really no.

I: Would you find a network of grandparents beneficial?

P: Erm...it's interesting that. er, erm...I don't even want to entertain the ideas because I know my husband wouldn't have anything to do it. And so erm so erm there's and there's no point going on my own. So no. I mean he's really, he doesn't like any kind of advice in that sense you know, he's a bit of an anarchist really and we work out our own salvation really. No I wouldn't, because it wouldn't work for both of us, he wouldn't entertain it and you know there's no point me going on my own. I mean I've got loads of friends, but they're my friends, I might share things with friends but not in a it drives me up the wall, my grandson didn't do this you know kind of thing. Nothing serious.

I: And how willing would you be to changing how you feed your grandson?

P: Er...well if I thought it was necessary I certainly would, I don't see you know. I think I would, if I thought there was some helpful way to go. But I can't, as I keep it very simple, and very straight forward you know, I can't see that would be, but that's foreclosing your question really, I don't know I can be quite entrenched about somethings so but very you know but not in other ways, so I like to think I would listen and take it on board if it were necessary you know. But I think I'm quite arrogant around food really, because I've done a lot of thinking about it. I mean not scientifically but in a practical down to earth way I think I, it matters a lot to me and I think it's very important and you know as I've said, so I've tried to do what I think is the right thing erm you know, in terms of their wellbeing and our wellbeing. You know it's things like knowing for instance it's important to have carbohydrates for you know, if you don't have carbohydrates it reduces your mental, you can have depression and I you know, you have to have a balance. And I think balance and moderation is a key, would be something you know is important you know, you know keeping that balance with things, you know of things, that's important, so you're not cutting things out just reducing what you have, you know that sort of approach rather than forbidding. Sorry I interrupted you

I: No no, that's great. And what barriers do you think would prevent you from engaging with such support that might be available? Apart from your husband [laughs]

P: Erm...er...what would. Erm...I'm trying to be real about it, I'm trying to really think about it, erm...I mean would it be admitting that you're not getting it right, you know or that you needed help. I don't know whether it would. Erm...you know, maybe it is sort of being you know it would be some kind of you know humility round it, I don't know. You know maybe thinking perhaps you could be doing this, that's not a good idea erm...you know maybe it's more questioning and having a more open attitude but that might, so

that might mean I'm reluctant to question what I'm doing. That might come into it you know. Erm...I don't know really.

[Chat regarding husband in the room]

P: I'm trying to be really honest about it and thinking because one can always you know, one always you know I don't know, yeah anyway yeah.

I: No that's great. So that was actually one of my last questions. But I just wanted to touch on something you said earlier before we do finish, you said that erm kind of you don't have snacks individually but your grandson and the grandchildren might have snacks has that influenced the way you eat all in terms of snacking?

P: No, no we don't snack. No definitely not. Erm...I did as a farmer, as a child we did a lot, because you know we're out you know, Dad would have a break and a cup of tea kind of thing, mid-morning and that sort of thing, and as children we always had biscuits and things because mum used to bake a lot. Erm...but I've never done that with my children, I've always tried to, and my husband, oh have you gone?

[chat to get reconnected]

P: But my husband doesn't snack at all, and never had, so we've had to sort of, but with my eating difficulties we just completely stopped snacking and erm and er so therefore we don't, it won't influence us, we won't eat if they eat a snack we won't have one.

I: No that's great. So that's the kind of final formal interview questions, but I just wondered if there's anything else you wanted to add based on what we've talked about or anything?

P: Erm...no I just you know, I hope it's been helpful, I feel like I'm not a very good person to talk to in a way, erm...because, er, because I'm very middle of the, sensible, middle of the road about it, down to earth about it. But yeah no, anyway I hope it's been helpful and a wish you all the best with your, what you come up with and the baby

I: And the baby, thank you very much

P: And you'll see how you go

I: Yeah exactly, yeah see how I get on

P: Food is a bit of a minefield isn't it, I think so. Do you think so? If we're off record now are we?

I: We're still recording, so I can either stop the recording now and we can carry on chatting or I can keep it recording it's up to you

P: No I was just saying that food can be such a minefield. I think how people eat can be, can be quite you know a challenging area really. Erm...you know, I think you've picked that up throughout the interview. I mean you can take that very innocently and that's fine. But I don't think, I think in the current culture I think you have to be quite mindful of it, or quite aware you know. That's a very educated perspective isn't it you know, and when we were children, we didn't have any option but to eat basic food really, but now there's so much going on, noise around it. It's quite a challenge. I think you're doing a good thing really. Because it isn't a naïve innocent approach anymore, I think you have to, it has to be thought over. I don't know yeah. Something like that.

10.40 Appendix 40 – Study 4 Search Strategy

Web of Science

1. TS= (Child* OR preschool*)
2. TS = (Diet* OR health* OR food* OR feed* OR 'health* eating' OR 'health* promotion')
3. TS = ((parent* NEAR/2 weight*) or (parent* NEAR/2 impact*) or (famil* NEAR/2 impact*) or (famil* NEAR/2 outcome*) or (parent* NEAR/2 obes*) or (parent* NEAR/2 bmi) or (parent* NEAR/2 'body mass index') or (parent* NEAR/2 outcome*) or (parent* NEAR/2 chang*) or (parent* NEAR/2 improv*) or (parent* NEAR/2 modif*) or (parent* NEAR/2 increase*) or (parent* NEAR/2 reduc*))
4. TS= ((sibling* NEAR/2 weight*) or (sibling* NEAR/2 obes*) or (sibling* NEAR/2 BMI) or (sibling* NEAR/2 'body mass index') or (sibling* NEAR/2 outcome*) or (sibling* NEAR/2 chang*) or (sibling* NEAR/2 improv*) or (sibling* NEAR/2 modif*) or (sibling* NEAR/2 increase*) or (sibling* NEAR/2 reduc*))
5. TS= ((caregiver* NEAR/2 weight*) or (caregiver* NEAR/2 obes*) or (caregiver* NEAR/2 BMI) or (caregiver* NEAR/2 'body mass index') or (caregiver* NEAR/2 outcome*) or (caregiver* NEAR/2 chang*) or (caregiver* NEAR/2 improv*) or (caregiver* NEAR/2 modif*) or (caregiver* NEAR/2 increase*) or (caregiver* NEAR/2 reduc*))
6. TS = ((sister* NEAR/2 weight*) or (sister* NEAR/2 obes*) or (sister* NEAR/2 BMI) or (sister* NEAR/2 body mass index) or (sister* NEAR/2 outcome*) or (sister* NEAR/2 chang*) or (sister* NEAR/2 improv*) or (sister* NEAR/2 modif*) or (sister* NEAR/2 increase*) or (sister* NEAR/2 reduc*))
7. TS = ((brother* NEAR/2 weight*) or (brother* NEAR/2 obes*) or (brother* NEAR/2 BMI) or (brother* NEAR/2 'body mass index') or (brother* NEAR/2 outcome*) or (brother* NEAR/2 chang*) or (brother* NEAR/2 improv*) or (brother* NEAR/2 modif*) or (brother* NEAR/2 increase*) or (brother* NEAR/2 reduc*))
8. TS= ((mother* NEAR/2 weight*) or (mother* NEAR/2 obes*) or (mother* NEAR/2 BMI) or (mother* NEAR/2 'body mass index') or (mother* NEAR/2 outcome*) or (mother* NEAR/2 chang*) or (mother* NEAR/2 improv*) or (mother* NEAR/2 modif*) or (mother* NEAR/2 increase*) or (mother* NEAR/2 reduc*))
9. TS= ((father* NEAR/2 weight*) or (father* NEAR/2 obes*) or (father* NEAR/2 BMI) or (father* NEAR/2 'body mass index') or (father* NEAR/2 outcome*) or (father* NEAR/2 chang*) or (father* NEAR/2 improv*) or (father* NEAR/2 modif*) or (father* NEAR/2 increase*) or (father* NEAR/2 reduc*))
10. #9 OR #8 OR #7 OR #6 OR #5 OR #4 OR #3
11. TS = ((cascade NEAR/3 effect*) or (seconda* NEAR/3 effect*) or (seconda* NEAR/3 outcome*) or (indirect NEAR/3 'causal effect*') OR (spillover* or 'spill over*' or externalit*) or (peer* NEAR/3 effect*) or (Peer* NEAR/3 influenc*) or ('social network*' or 'social* interact*' or 'unexpected benefit*' or 'unexpected effect*'))
12. #11 OR #10
13. TS=(obes* near/3 prevent*)
14. TS = ((Family* NEAR/4 strateg*) OR (family* NEAR/4 intervention*) OR (family* NEAR/4 therap*) OR (family* NEAR/4 program*) OR (parent* NEAR/4 strateg*) OR (parent* NEAR/4 intervention*) OR (parent* NEAR/4 therap*) OR (parent* NEAR/4 program*) OR (caregiver* NEAR/4 strateg*) OR (caregiver* NEAR/4 intervention*) OR (caregiver* NEAR/4 therap*) OR (caregiver* NEAR/4 program*) OR (community* NEAR/4 strateg*) OR (community* NEAR/4 intervention*) OR (community* NEAR/4 therap*) or (home nar/4 strateg*) or (home near/4 intervention*) or (home near/4 therap*) or (home near/4 program*))
15. #14 AND #2 AND #1
16. #15 AND #13 AND #12

10.41 Appendix 41 Table of Study Characteristics

Study Characteristics

Study Name	Date	Country	Aim	Design	Participants characteristics			Intervention details	Comparator	Length of follow up	Child Outcomes		
					Caregiver details	Child details	Child age				Key Child outcomes	Dietary assessment method	Key child results
De La Haye	2019	USA	This pilot study examines associations between maternal social network characteristics hypothesized to influence health behaviours and the target outcomes of a family-centered childhood obesity prevention initiative.	Pilot study to test feasibility and acceptability of intervention	26 mothers and infants. Age 16-44. 80% Hispanic Latina. 77% lived in households earning less than \$30,000 annually and 52% were single mothers. 73% overweight or obese	62% female. 1/4 at risk of overweight	3.8 months at baseline,	65% of analytical sample received intervention. Home visiting programme for low income families with combined obesity prevention components (nutrition and lifestyle) - nutrition goals, eliminate SSB's, portion sizes, breastfeeding, healthy feeding practices, increase physical activity	Home visiting programme without obesity prevention - focuses on parenting, child development and available resources	6 months	infant weight for length and weight status, infants consumption of ssb's and juices	Multi-pass dietary recall	Infants in the intervention, compared to those in the control group, showed a trend for greater WLZ increase, but also a trend for less uptake of SSB servings (an average increase of 0.1 daily servings in the intervention vs. an increase of 0.9 daily servings in the control group)

Walsh	2014	Australia	To investigate the effect of an early childhood obesity prevention intervention, incorporating a parent modelling component, on fathers' obesity risk-related behaviours.	Cluster randomized control trial	Mothers took part in intervention but this study had 460 fathers. Mean age 34, 69.2% overweight or obese, 40% high education level, 77% Australian.	542 children, avg age at baseline 3.9 months, 53% male	Followed from 0-20 months	Mothers took part in the Melbourne INFANT programme- 6 sessions delivered to first time parents groups. Intervention covered basic nutrition principles, parental modelling of eating, physical activity and sedentary behaviours, limiting sedentary behaviour and provision of opportunities for physical activity. Mothers were asked to share and discuss the provided resources to fathers and other carers of their child.	Usual care	children aged 9 months and children aged 20 months	From original trial paper (Campbell et al 2013) - dietary intake, physical activity, sedentary behaviour, bmi z scores	FFQ	Significantly lower non core drink intake (mean dif -4.57 p=0.009), sweet snack intake (mean dif -0.97, p=0.04) at mid intervention and sig lower sweet snack intake mean dif -3.6, p=0.01) and lower television viewing (mean dif -17.12, p<0.001) at post intervention . No other sig dif, no sig dif in bmi)
Lioret	2012	Australia	To assess the effect of a parent-focused early childhood obesity prevention intervention on first-time mothers' diets, physical activity and TV viewing time.	Cluster randomized control trial	357 mothers. Mean age 32, mean bmi 24.5, 54% high education level, 79% Australian	542 children, avg age at baseline 3.9 months, 53% male	Followed from 0-20 months	Mothers took part in the Melbourne INFANT programme- 6 sessions delivered to first time parents groups. Intervention covered basic nutrition principles, parental modelling of eating, physical activity and sedentary behaviours, limiting sedentary behaviour and provision of opportunities for physical activity. Mothers were asked to share and discuss the provided resources to fathers and other carers of their child.	Usual care	children aged 9 months and children aged 20 months	From original trial paper (Campbell et al 2013) - dietary intake, physical activity, sedentary behaviour, bmi z scores	FFQ	Significantly lower non-core drink intake (mean dif -4.57 p=0.009), sweet snack intake (mean dif -0.97, p=0.04) at mid intervention and sig lower sweet snack intake mean dif -3.6, p=0.01) and lower television viewing (mean dif -17.12, p<0.001) at post intervention .

No other sig
dif, no sig dif
in bmi)

Doring	2016	Sweden	The objective was to evaluate a manualized theory-driven primary preventive abstract intervention aimed at early childhood obesity.	Cluster randomized control trial	1039 mothers , mean age 30, 37% overweight or obese, 63% had post-secondary education	1053 infants Age 9-48 months	Followed from 9 months to age 4	Primrose - based on social cognitive theory and learning theory nurses used motivational interviewing and cognitive behavioural therapy to promote healthy food and physical activity habits in their children. Families took part in 9 sessions (1 group, 6 individual and 2 telephone sessions over 39 months). Parents formed goals	Usual care focussing on physical developments and immunizations	4 years	Child bmi, waist circumference and overweight prevalence, food habits, physical activity habits	FFQ validated using a food diary	No sig dif in bmi, waist circumference or prevalence of overweight or physical activity. Children in intervention group consumed sig more vegetables (mean dif 0.13, p=0.01), and less French fries (-0.37, p<0.001), sugared drinks (-0.49, p=0.04) and discretionary calories (-0.60, p=0.01)

Haire-Joshu	2008	USA	The High 5 for Preschool Kids (H5-KIDS) program tested the effectiveness of a home based intervention to teach parents how to ensure a positive fruit-vegetable (FV) environment for their preschool child	Group randomized nested cohort design	1306 families, 98% mothers, 81% white, 42% older than 30, 23% graduated college, 46% had annual household income over \$35,000, 59% overweight or obese	1306 children aged 1-6, 80% aged 1-3.	one to 6	H5-KIDS- Parent educators deliver a standardized curriculum via at least five home visits, on-site group activities, newsletters and kids resources e.g. storybooks. Provided annually to parents at the time of pregnancy until the youngest child in the home is 3 years of age (or 5 if underserved families). Based on social cognitive theory and an ecological framework. Targeting 1. intrapersonal environment of the parent (e.g., knowledge, FV servings), 2. interpersonal interactions between the parent and child (e.g., child-feeding practices, FV modelling) 3. the physical environment (e.g., FV availability in the home).	Standard Parent as teachers program - a parenting and child development program	6-11 months (avg 7months)	fruit and veg intake, child preferences	FFQ	Fruit servings, vegetable servings, and combined FV servings increased in normal weight, but not overweight children relative to controls (mean servings=.35, p=.02 compared to mean servings=.10 p=0.48). Vegetable preference decreased in both control and intervention groups but to a significantly lower degree among H5-KIDS children (mean dif 0.004, p=0.1)

Ostbye	2012	USA	Present the immediate post-intervention results of Kids and Adults Now - Defeat Obesity!, a randomized controlled trial to enhance healthy lifestyle behaviours in mother-pre-schooler(2-5 years old) dyads in North Carolina	randomized controlled trial	308 mother child dyads completed. From original 400 recruited - 60% obese, 75% White, 86% married, 70% had college or postgraduate degree, 57% household income above \$60,000	308 children, From original 00 recruited 24% overweight or obese , 56% male	two to 5, mean age 3.06	KAN-DO intervention to promote healthy weight in preschool children. The intervention material was delivered via 8 monthly mailed packets followed by a 20-30 minute telephone conversation using motivational interviewing techniques. Kits included child activities and incentives. Topics included communication and stress management, parenting styles, routines, portion control, health food options, exercise guidelines and tips for behaviour change. Based on social cognitive theory it also emphasized parental role modelling.	Received monthly newsletters emphasizing pre-reading skills	12 months	Fruit and veg intake, fast food and ssb intake , physical activity, child zBMI, sedentary time	Multiple pass 24 hour dietary recall	No significant differences in children's outcomes between study arms

Willis	2016	UK	To investigate the impact of HENRY using data collected routinely for quality control purposes.	Observational study - Analysis of routinely collected pre-post data from programmes delivered in the UK from January 2012 to February 2014.	144 programmes at 86 locations in 23 areas of the UK. 83% delivered in the most deprived areas of the UK. 624 parents with complete data. 76.4% aged 25-64, 89.6% female. 72.4% White British	Children of 624 parents - details not provided	0-5 years old	HENRY - 8 weekly group sessions supporting parents with parenting skills, eating patterns, healthy eating physical activity and emotional wellbeing	No control	8 weeks (end of intervention)	eating behaviour, food intake physical activity and screen time	FFQ	Frequency of consumption of fruit and vegetables increased for children (mean1 = 3.4, SD = 1.7; mean2=4.2, SD=1.5; t(600)=13.5, P <.001). Reduction in times per day parents reported that high fat and sugar foods were consumed by children (M1 = 2.1, SD = 1.2; M2 = 1.9, SD ¼ 1.1); t(593) = 4.7, P <.001). Number of children eating fruit and vegetables at least 5 times per day rose from 131 (22%) to 267 (44%) (X2(1) = 104.7, P <.001). In terms of meeting physical activity recommendations, the number of children spending three hours or more in active play rose from 312 (52.2%)

to 341
 (57.1%)
 $(\chi^2(1) = 4.5326, P = .033)$. Also
 children had a
 sig decrease
 in percentage
 watching less
 than 2 hours
 per day (3-5
 years olds
 (51%) to 242
 (67%) ($P < .001$)) (under
 2 rose from 302
 (66%) to 368
 (80%)
 $(\chi^2(1) = 40.6, P < .001)$)

Krystia	2019	Canada	to examine the effect of a pilot home-based childhood obesity prevention intervention on measures of anthropometrics and body composition in Canadian parents.	Pilot randomized control trial	60 parents (27 (45%) mothers, 33 (55% fathers). Mean age 35.3, 28.6% household income less than \$60,000 per year, 38% above \$100,000. 47.6% mothers overweight or obese, 70.6% fathers overweight or obese.	Detail from Haines et al 2018 - 53 children, 52.8% female, avg age 3, 32.6% risk of overweight/weight	1.5 - 5 years old	Guelph Family Health Study Intervention - based on family systems theory and self-determination theory uses motivational interviewing and goal setting. Either 2 or 4 home visits by a health educator - about limiting SSB consumption, engaging in family physical activity, establishing sleep routines to increase child sleep duration, limiting the children's sedentary time, and having more family meals. Families also sent weekly emails tailored to behaviour change goal of the family and resources e.g. children's book.	Received monthly emails containing publicly available handouts on general health e.g. current physical activity guidelines	6 months	(From Haines et al 2018) % fat mass (Child adiposity), dietary intake - fruit and veg and ssb's, physical activity and sedentary behaviour, sleep quantity, family meal frequency	3 day food records	Significant intervention effect on child adiposity at 6 months for those in the 2 health visit group vs control (- 3.54%; 95% CI - 6.11, - 0.97 p=0.01). Sig more fruit intake for children in intervention in both the 4 health visit (0.92 cups/day; 95% CI 0.33, 1.51, p=0.00) and the 2 health visit (0.68 cups/day; 95% CI 0.18, 1.17 p=0.001) groups. No sig effect on other outcomes.
Wilson	2016	Canada	to adapt and test the feasibility and acceptability of a pre-existing program that has been successfully run in community settings for parents in	Pre/post uncontrolled feasibility study	9 parents (5 fathers, 4 mothers) 55.6% white, 44.4% earned \$20,000-\$59,999. 11.1% University graduate . 66.7%	No other details provided	2-7 years old	PWT - parents working together. A workplace initiative combining parenting and weight related messaging - topics included child behaviour, knowing when children are full, sugar sweetened beverage intake, physical activity, screen time and sleep routines. Seven 30 minute sessions.	No control	7 weeks (at end of intervention)	sugar sweetened beverage intake, tv time, active play, outdoor play, sleep time	FFQ (previously validated in a paediatric population of children age 1-5)	No sig dif outcomes. All outcomes in the desired direction though e.g. parents reported that their children consumed fewer servings of sugar sweetened beverages at post-intervention

			their workplace		labourer s								than at baseline (change = -0.3 servings/day, p = 0.60) but not significant
Cloutie r	2018	USA	to test the feasibility of an ecologic approach to obesity prevention in children in the first year of life	Pilot randomiz ed controlled trial	47 mother newborn dyads (41 assesse d at 6 months, 34 at 12 months). Mean age 23, 43% earned less than \$15000, 60% Hispanic , 19% African America n/Black, 77% single, 30% greater than high school educatio n, 12.4% unemplo yed	No other details provided	New born s	ECHO - early childhood obesity prevention program. Weekly 60 minute home visits for 2 months and biweekly NFN home visits (Nurturing families network). Intervention group received NFN + in addition to standard NFN they also received additional modules and support on breastfeeding, sugar sweetened beverages, introduction of solids and portion sizes, screen time, sleep, tummy time, soothing and improved maternal diet and physical activity. Used goal setting, self-monitoring, problem solving, tool kit e.g. sippy cup, play mat, coupons for fruits and vegetables, signposting to cooking classes, exercise classes and breastfeeding support resources.	Standard NFN - focuses on link between child development and parenting and on key development topics e.g. attachment, discipline, health, nutrition, safety, sleep, transitions/rou tines, healthy births. Also focus on family well being	6 month and 12 month follow up	breastfee ding amount and duration, feeding behaviour s infant activity, sleep, tv viewing, infant bmi and weight for length z score, sugar sweetene d beverage intake	FFQ	Significantly more in intervention were breastfeeding at 6 months (8% vs 50% p=0.03) and 12 months (0% vs 44% p=0.0003) compared with control. Significant more nocturnal awakenings in control versus intervention at 12 months (1 vs 0.5, p=0.04) No significant difference in other outcomes

Lambri nou	2018	Belgium, Bulgaria, Germany, Greece, Poland & Spain)	to explore the mediating role of family- related determinan ts on the effects of the ToyBox- intervention on pre- school children's consumptio n of healthy and unhealthy snacks.	Cluster randomis ed controlled designed trial	5212 families, mean age 36, over 60% had greater than 14 years of educatio n. Recruite d from 309 kinderga rtens from three socio- economi c groups	49% female	Pres choo lers mean age 4.7	Toy box intervention - targeting four behaviours drinking, snacking physical activity and sedentary behaviour. Covered four levels 1) availability of healthy snacks at kindergarten 2) children's daily consumption of healthy snacks 3) interactive classroom activities 4) two newsletters, two tip-cards and one poster for parents/caregivers with key messages on healthy snacking. Level 1 and 2 were for a whole year, level 3 and 4 over six weeks.	Kindergartens standard curriculum	1 year (Parts of interventi on delivered over the whole year)	Unhealthy snack consumpti on, fruit and vegetable consumpti on	FFQ	No significant difference between intervention and control group for unhealthy snack consumption (mean 85.2 g/day vs 83.5 g/day) or fruit and vegetable consumption (mean 240.3 g/day vs 241.6 g/day)
Tomay ko	2018	USA	Healthy Children, Strong Families 2 (HCSF2) was a randomize d controlled trial of a healthy lifestyle promotion/ obesity prevention intervention for AI families.	Randomi zed controlled trial	450 adult/chil d dyads, avg age 31, 95% female, 10% with a college or postgrad uate degree, 29% earn <\$5,000. 20% >\$35,00 0. Over 81% America n Indian, 17% White2% other. 11% Latino ethnicity.	50% female, 86% America n Indian. 18% Hispanic /Latino ethnicity. Mean bmi percentil e 71	Age d 2- 5	Healthy Child Strong Families 2 (HSCF2). Wellness Journey - 12 monthly mailed healthy lifestyle lessons, items and children's books addressing six areas. 1) fruit and vegetable, 2) sugar consumption 3) physical activity 4) screen time 5) sleep habits 6) adult stress. Supported by social media engagement - text messages and Facebook group. Printed educational lessons, supportive items e.v. recipes measuring cups, pedometers, games and a children's book.	Safety journey - 12 monthly mailed safety newsletters and materials e.g. safety reflectors for biking	1 year (at end of interventi on)	BMI, diet pattern, fruit and vegetable intake, servings of sugar sweetene d beverage s, physical activity, screen time, sleep	FFQ	Children in the intervention group had a significantly greater postinterventio n improvement in overall healthy diet pattern compared with the Safety Journey (+0.16 vs +0.007, p=0.008). No significant differences in fruit and vegetable consumption, sugar sweetened beverage consumption or BMI. Trend for decreased

Mean
bmi 32

BMI z score in
intervention
but not sig. No
significant
differences for
other
outcomes.